



April 7, 2009

**VIA OVERNIGHT MAIL**

Dan McInnis  
Assistant Deputy Minister  
Energy Development Initiative  
1200-155 Carlton Street  
Winnipeg, Manitoba, Canada  
R3C 3H8

Re: *North American Electric Reliability Corporation*

Dear Mr. McInnis:

The North American Electric Reliability Corporation (“NERC”) hereby submits this notice of NERC’s proposed reliability standard, IRO-006-4 — Reliability Coordination — Transmission Loading Relief (“TLR”), contained in Exhibit A to this notice. The proposed NERC reliability standard was approved by the NERC Board of Trustees on October 9, 2007. NERC submits notice that the effective date of the proposed standard will be the first day of the quarter following FERC approval and after all applicable regulatory approvals for entities in each Interconnection have been received or the Reliability Standards otherwise become effective in those jurisdictions if regulatory approval is not required.

NERC’s reliability standard notice consists the following:

- This transmittal letter;
- A table of contents for the entire notice;
- Reliability Standard, IRO-006-4 — Reliability Coordination — Transmission Loading Relief (TLR) (Exhibit A);
- Record of Development of the Proposed Reliability Standard (Exhibit B);

- Standard Drafting Team Roster (Exhibit C);
- Mapping of Proposed Changes to Current Approved IRO-006-3 Reliability Standard Attachment 1 (Exhibit D) and
- Supporting Reference Documents (Exhibit E).

Please contact the undersigned if you have any questions.

Respectfully submitted,

/s/ Rebecca J. Michael

Rebecca J. Michael

*Attorney for North American  
Electric Reliability Corporation*

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**BEFORE THE  
PROVINCE OF MANITOBA**

**NORTH AMERICAN ELECTRIC                    )**  
**RELIABILITY CORPORATION                 )**

**PETITION OF THE  
NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION  
FOR APPROVAL OF PROPOSED RELIABILITY STANDARD**

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April 7, 2009

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## **I. INTRODUCTION**

The North American Electric Reliability Corporation (“NERC”) hereby submits notice of one reliability standard proposed by NERC, IRO-006-4 — Reliability Coordination — Transmission Loading Relief (“TLR”). This notice includes (1) changes directed by FERC related to the appropriateness of the NERC TLR Procedure with regard to mitigating violations of Interconnection Reliability Operating Limits (“IROLs”), and (2) changes associated with the transfer of the business practice aspects of the standard to the North American Energy Standards Board (“NAESB”).

On October 9, 2007, the NERC Board of Trustees approved this reliability standard proposed by NERC.

NERC’s existing TLR standard, IRO-006-3, will be superseded upon the effective dates of the TLR reliability standard proposed in this filing and the business practice standard concurrently submitted in NAESB’s filing.

Exhibit A to this filing sets forth the NERC reliability standard, and includes both the standard (IRO-006-4) and its attachment (Attachment 1 – IRO-006 – Transmission Loading Relief Procedure – Eastern Interconnection). Exhibit B is the record of development of the proposed reliability standard. Exhibit C contains the Standard Drafting Team roster. Exhibit D contains the mapping of proposed changes to the currently approved version of the reliability standard, IRO-006-3 Attachment 1. Exhibit E contains the supporting reference documents that were developed to facilitate the stakeholders’ understanding of the revised standard.

NERC filed this reliability standard with the Federal Energy Regulatory Commission (“FERC”) on December 21, 2007. FERC approved this standard in an order

issued on March 19, 2009.<sup>1</sup> NERC is also filing this standard with the other applicable governmental authorities in Canada.

## **II. NOTICES AND COMMUNICATIONS**

Notices and communications with respect to this filing may be addressed to the following:

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David N. Cook  
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## **III. BACKGROUND**

### **a. Reliability Standards Development Procedure**

NERC develops reliability standards in accordance with Section 300 (Reliability Standards Development) of its Rules of Procedure and the NERC *Reliability Standards Development Procedure*, which is incorporated into the Rules of Procedure as Appendix 3A.

The development process is open to any person or entity with a legitimate interest in the reliability of the bulk power system. NERC considers the comments of all stakeholders. A vote of stakeholders and the NERC Board of Trustees is required to approve a reliability standard for submission to FERC.

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<sup>1</sup> *Modification of Interchange and Transmission Loading Relief Reliability Standards; and Electric Reliability Organization Interpretation of Specific Requirements of Four Reliability Standards*, 126 FERC ¶ 61,252.

The proposed reliability standard set out in Exhibit A has been developed and approved by industry stakeholders using NERC's *Reliability Standards Development Procedure*, and it was approved by the NERC Board of Trustees on October 9, 2007 for filing with the applicable governmental authorities.

#### **b. Progress in Improving Proposed Reliability Standards**

NERC continues to develop new and revised reliability standards that address the issues NERC identified in its initial filing of proposed reliability standards in April 2006, the concerns noted in the FERC Staff Report issued on May 11, 2006, and the directives FERC included in Order No. 693, the first order FERC issued approving NERC's proposed reliability standards.<sup>2</sup> NERC has incorporated those activities into its *Reliability Standards Development Plan: 2008-2010* that was submitted on October 11, 2007. This reliability standard proposed for approval is a modified version of IRO-006-3. This project is included in the three-year work plan as Project 2006-08.

#### **IV. JUSTIFICATION OF PROPOSED RELIABILITY STANDARD**

This section summarizes the development of the proposed reliability standard and provides evidence that the proposed standard is just, reasonable, not unduly discriminatory or preferential and in the public interest. This section describes the reliability objectives to be achieved by approving the standard. In addition, this section describes the stakeholder ballot results and how key issues were considered and addressed by the standard drafting team.

The complete development record for the proposed reliability standard is available in Exhibit B. This record includes the successive drafts of the reliability

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<sup>2</sup> *Mandatory Reliability Standards for the Bulk-Power System*, 118 FERC ¶ 61,218, FERC Stats. & Regs. ¶ 31,242 (2007) ("Order No. 693"), *order on reh'g, Mandatory Reliability Standards for the Bulk-Power System*, 120 FERC ¶ 61,053 ("Order No. 693-A") (2007).

standards, the implementation plan, the ballot pool and final ballot results by the registered ballot body members, stakeholder comments received during the development of the standard, and how those comments were considered in developing the reliability standard. The standard drafting team roster is provided in Exhibit C. Exhibit D contains the mapping of proposed changes to the approved Reliability Standard IRO-006-3 Attachment 1. Supporting reference documents that were developed to facilitate the stakeholders' understanding of the revised standard are set forth in Exhibit E.

**a. Basis and Purpose of IRO-006-4 — Reliability Coordination — Transmission Loading Relief**

The proposed reliability standard is a product of the first phase of a three phase project to improve the overall quality of IRO-006-4, known as the 'TLR standard.' This first phase is intended to extract the business practices and commercial requirements from the existing IRO-006-3 Reliability Standard and transfer them into the NAESB business practices. Accordingly, other than meeting stated FERC objectives and separating out the business practices from the currently effective Reliability Standard, this filing does not seek to modify the remaining reliability requirements, with the exception that the Reliability Standard has been clarified to state, in accordance with FERC's directive in Order No. 693, that using the TLR procedure is not effective to mitigate an actual IROL violation. NERC and NAESB are filing separate but related documents to achieve the objective of this first phase. Pending the results of ongoing field tests, and to the extent the results of the field test support moving forward, the second phase would be the subject of a separate filing. The second phase would address possible changes to the regional differences associated with the Congestion Management Process used by the PJM Interconnection ("PJM"), the Midwest Independent System Operator ("MISO"), and



the Southwest Power Pool (“SPP”). Currently no changes have been made to the regional differences previously reviewed. The third phase, also to be addressed in a separate filing, will be a complete redrafting of the reliability standard to incorporate enhancements and changes beyond the separation of reliability and business practice issues.

This stated purpose of the proposed reliability standard is to provide for interconnection-wide TLR procedures that can be used to prevent or manage potential or actual system operating limit (“SOL”) and IROL violations to maintain reliability of the bulk power system. Proposed reliability standard IRO-006-4 prescribes the rules for the use of interconnection-wide Congestion Management Processes intended to reduce energy flows across equipment comprising the bulk power system that is at, or nearing, its SOL. Because other methods (such as local or regional procedures) may be more effective or efficient than an interconnection-wide procedure, the proposed reliability standard does not require the use of a specific method to address transmission congestion. However, the requirements in the proposed reliability standard identify that when requesting interconnection-wide congestion management, (i) entities in the Eastern Interconnection shall use the “Transmission Loading Relief” procedure<sup>3</sup>, in concert with corresponding NAESB business practices; (ii) entities in the Western Interconnection shall use the “WECC-IRO-STD-006-0” regional Reliability Standard procedure, and (iii) entities in the Texas Interconnection shall use the procedure specified in the ERCOT Protocols (published by ERCOT on December 22, 2006).

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<sup>3</sup>The “Transmission Loading Relief” procedure for the Eastern Interconnection is a multi-regional procedure that has been modified as part of this standard drafting as appropriate to support the changes resulting in IRO-006-4. Attachment 1 to the proposed Reliability Standard provides the details for the TLR Procedure used in the Eastern Interconnection.

The proposed reliability standard consists of five requirements, summarized as follows:

- Requirement R1. A Reliability Coordinator experiencing a potential or actual SOL or IROL violation may use one or more procedures to mitigate that potential or actual violation, including the specific interconnection-wide procedures listed.
- Requirement R2. A Reliability Coordinator may not invoke any procedure that the Reliability Coordinator does not have the right (either as granted by this reliability standard or given through contractual agreement) to invoke.
- Requirement R3. A Reliability Coordinator must undertake any action the Reliability Coordinator is directed of take pursuant to an interconnection-wide procedure. If pre-approved by the ERO, a Reliability Coordinator may undertake substitute actions in place of those directed by the interconnection-wide procedure.
- Requirement R4. If an interconnection-wide procedure directs actions that would result in the curtailment of a transaction that either sources or sinks in a different interconnection, Reliability Coordinators in the different interconnections must act to curtail the transaction.
- Requirement R5. Unless emergency action is required, any modifications to Interchange schedules must adhere to the normal Interchange scheduling standards.

**b. Demonstration that the proposed reliability standard is just, reasonable, not unduly discriminatory or preferential and in the public interest**

**1. Proposed reliability standards is designed to achieve a specified reliability goal**

Proposed reliability standard IRO-006-4 — Reliability Coordination —is designed to provide Reliability Coordinators with the ability to maintain the bulk power system within its identified operating limits. Requirement R1 grants the Reliability Coordinator the authority to utilize various procedures to mitigate potential or actual SOL

or IROL violations. It also identifies three specific interconnection-wide procedures for use in the Eastern, Western, and Texas Interconnections. Attachment 1 of the reliability standard provides the specific details for the procedure used in the Eastern Interconnection. Requirement R3 mandates that Reliability Coordinators respond to requests for relief through interconnection-wide procedures, while Requirement R4 mandates coordination between interconnections when needed.

2. **Proposed reliability standard contains a technically sound method to achieve the goal**

Consistent with IRO-006-3, the proposed reliability standard IRO-006-4 provides a reasoned and systematic mechanism for a Reliability Coordinator experiencing a potential or actual overload to obtain relief using local or interconnection-wide procedures (Requirement R1). The steps to implement the interconnection-wide procedure for the Eastern Interconnection are well formulated and sequenced (*see* Attachment 1 to the reliability standard); those for the Western Interconnection are described in “WECC-STD-IRO-006-0,”; and those for the Texas Interconnection are contained within the ERCOT Protocols.

3. **Proposed reliability standard is applicable to users, owners, and operators of the bulk power system, and not others**

The proposed reliability standard is applicable only to users, owners, and operators of the bulk power system, and not others. All five requirements in the reliability standard, and many of the requirements contained in the detailed interconnection-wide procedures, apply to Reliability Coordinators, which serve on behalf of one or more Transmission Owners or Operators and provide a “wide-area” operational view of the bulk power system. Requirement R5 also applies to Balancing Authorities, which are the entities that operate the generation resources

within the bulk power system (within a particular Balancing Area) to ensure energy produced is equal to energy consumed, adjusted appropriately for energy transfers with other balancing areas. Parts of Attachment 1 to the reliability standard also apply to Transmission Operators, which are those entities that operate the transmission facilities of the bulk power system. The proposed reliability standard does not impose requirements on any entities other than Reliability Coordinators, Balancing Authorities and Transmission Operators as detailed above.

4. **Proposed reliability standard is clear and unambiguous as to what is required and who is required to comply**

As discussed above, the proposed reliability standard applies to Reliability Coordinators, Transmission Operators, and Balancing Authorities. Each requirement in the standard or in the Attachment 1 to the standard explicitly identifies entities that have an obligation to comply with the requirement. Each applicable entity is clearly identified and the expected action is expressly stated. Additionally, each measure of compliance, and each violation severity level, identifies the entities responsible for compliance with the reliability standard. The proposed reliability standard requirements are clear and unambiguous as to what is expected from applicable entities.

5. **Proposed reliability standard includes clear and understandable consequences and a range of penalties (monetary and/or non-monetary) for a violation**

**Violation Risk Factor Assignments**

The proposed reliability standard includes a violation risk factor for each main requirement in the reliability standard. For all the requirements in this reliability standard, the applicable violation risk factors are either “lower” or “medium.” Non-

compliance with these requirements does not pose a high reliability risk to bulk power system reliability that will lead to cascading outages or a blackout. However, non-compliance with these requirements can increase the potential that other requirements (ones with “high” violation risk factors) could be violated.

The Requirements with “lower” violation risk factors,<sup>4</sup> and the rationale for the risk factor chosen, are as follows:

**Requirement R1.** A Reliability Coordinator experiencing a potential or actual SOL or IROL violation within its Reliability Coordinator Area shall, with its authority and at its discretion, select one or more procedures to provide transmission loading relief. These procedures can be a “local” (regional, interregional, or sub-regional) transmission loading relief procedure or one of the following interconnection-wide procedures:

**Requirement R1.1.** The interconnection-wide Transmission Loading Relief (TLR) procedure for use in the Eastern Interconnection provided in Attachment 1-IRO-006-4. The TLR procedure alone is an inappropriate and ineffective tool to mitigate an IROL violation due to the time required to implement the procedure. Other acceptable and more effective procedures to mitigate actual IROL violations include: reconfiguration, redispatch, or load shedding.

**Requirement R1.2.** The interconnection-wide transmission loading relief procedure for use in the Western Interconnection is WECC-IRO-STD-006-0 provided at:  
[ftp://www.nerc.com/pub/sys/all\\_updl/standards/rrs/IRO-STD-006-0\\_17Jan07.pdf](ftp://www.nerc.com/pub/sys/all_updl/standards/rrs/IRO-STD-006-0_17Jan07.pdf).

**Requirement R1.3.** The interconnection-wide transmission loading relief procedure for use in ERCOT is provided as Section 7 of the ERCOT Protocols, posted at:  
<http://www.ercot.com/mktrules/protocols/current.html>

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<sup>4</sup> The IRO-006-4 reliability standard was balloted and approved with violation risk factors set for several requirements at “low.” This designation is not an officially approved violation risk factor designation per the *Reliability Standard Development Procedure*. Thus, the violation risk factors have been changed in the proposed standard for Commission approval to “lower,” which was the level intended by the standard drafting team. The team did not intend to create a new designation for the assignment of violation risk factors.

Requirement R1 recognizes that there are many options for addressing potential or actual SOL and IROL violations, requires the selection of one or more methodologies to do so, and specifically references for each interconnection an interconnection-wide procedure that can be used. This Requirement is administrative in nature in describing how a Reliability Coordinator may choose a procedure to provide transmission loading relief. This Requirement is not intended to duplicate the Reliability Coordinator obligation to ensure the system is operated within SOL and IROL, as required in IRO-005-1, Requirements R3 and R5. Those two requirements are appropriately identified with “high” violation risk factor assignments. Provided the Reliability Coordinator is adhering to the requirements in IRO-005-1, there is no significant risk to reliability of the bulk power system as a result of a violation of requirement R1 of IRO-006-4.

**Requirement R2.** The Reliability Coordinator shall only use local transmission loading relief or congestion management procedures to which the Transmission Operator experiencing the potential or actual SOL or IROL violation is a party.

Similar to Requirement R1, this Requirement addresses what methods of congestion management are appropriate for a Reliability Coordinator to use, and recognizes that there are many options available to the Reliability Coordinator, which may include contractual arrangements to which the Reliability Coordinator may be a party. While it is important to coordinate transmission loading relief activities with the offending Transmission Operators, the risks associated with this Requirement are lower. Greater risks, and therefore “high” risk factors, apply to address the more critical issue of whether the Reliability Coordinator meets its obligation to ensure the system is operated within SOL and IROL, as required in IRO-005-1 (Requirements R3 and R5).

**Requirement R3.** Each Reliability Coordinator with a relief obligation from an interconnection-wide procedure shall follow the curtailments as directed by the interconnection-wide procedure. A Reliability Coordinator desiring to use a local procedure as a substitute for curtailments as directed by the interconnection-wide procedure shall obtain prior approval of the local procedure from the ERO.

This Requirement ensures that a Reliability Coordinator must follow the curtailments directed by the interconnection-wide procedure. It is important to coordinate transmission loading relief activities that require other Reliability Coordinators to act. However, related to the reliability of the bulk power system, an entity that does not follow these curtailments but instead implements alternate actions that provide relief has not necessarily created a significant, or even moderate, risk to the reliability of the bulk power system.

Requirements with “medium” violation risk factors, and the rationale for the risk factor chosen, are as follows:

**Requirement R4.** When interconnection-wide procedures are implemented to curtail Interchange Transactions that cross an interconnection boundary, each Reliability Coordinator shall comply with the provisions of the interconnection-wide procedure.

This Requirement deals with the need to ensure coordination between Interconnections when transactions that source in one Interconnection but sink in another must be curtailed. If such coordination does not occur, there will not be significant disruption to the bulk power system – the limited transfer capabilities across the DC-Tie facilities connecting the various synchronous networks keep actual transaction size low when compared to the total amount of power flowing within the Interconnection. Any situation where such transactions are curtailed in one Interconnection and not another would be addressed through other reliability safeguards (such as regulation service),

therefore keeping this from being a “high” risk item. However, since a lack of coordination can result in an “unbalanced” system, a violation of Requirement R4 cannot be considered a “lower” risk.

**R5.** During the implementation of relief procedures, and up to the point that emergency action is necessary, Reliability Coordinators and Balancing Authorities shall comply with applicable Interchange scheduling standards.

This Requirement is intended to ensure that all the procedures and protocols associated with the management of interchange transactions and scheduling are adhered to unless emergency action is required. The Interchange family (INT designation) of reliability standards have a significant amount of coordination inherent in their design, which is intended to ensure that at no time can a schedule be implemented without an appropriate change to ensure the system stays balanced (*e.g.*, an increase in load, or the reduction of a different schedule). Similar to the previous Requirement, safeguards exist to ensure that such an unbalanced scenario would not pose a “high” risk to the bulk power system. However, that scenario is not considered “lower” risk.

### **Violation Severity Level Assignment**

The proposed reliability standard includes violation severity levels that are specific to the individual Requirements. The ranges of penalties for violations are based on the applicable violation risk factor and violation severity levels and will be administered based on the sanctions table and supporting penalty determination process described in the NERC Sanction Guidelines, Appendix 4B in NERC’s Rules of Procedure.



Four violation severity levels exist for Requirement R1 (including its sub-requirements) based on the number of violations of interconnection-wide procedure requirements contained in Attachment 1 to the reliability standard (which describes the TLR procedure used within the Eastern Interconnection), the WECC regional Reliability Standard, or ERCOT Protocols, as applicable. These levels are intended to base violation severity on the degree of deviation from the Requirements by the violator. There is a single violation severity level for each of the remaining Requirements (R2, R3, R4, and R5), since each of these requirements is a “pass/fail” Requirement, indicating that the entity met the Requirement (therefore, no violation) or did not meet the Requirement (severe violation).

6. **Proposed reliability standard identifies clear and objective criterion or measure for compliance, so that it can be enforced in a consistent and non-preferential manner**

Each Requirement in the proposed reliability standard is supported by a measure that clearly identifies what is required and how the requirement will be enforced. These five measures will ensure the Requirements are clearly administered for enforcement in a consistent manner and without prejudice to any party. These five measures are included in Section C of the proposed reliability standard.

7. **Proposed reliability standard achieves a reliability goal effectively and efficiently - but does not necessarily have to reflect “best practices” without regard to implementation cost**

The proposed reliability standard helps the industry achieve the stated reliability goal effectively and efficiently. The proposed reliability standard includes no fundamental changes to the approach contained in IRO-006-3, and only implements the appropriate division of the requirements into reliability standards and

business practice standards. Since no substantial changes to the requirements are offered in the proposed IRO-006-4 standard, there are no additional impacts introduced to the applicable entities. In that context, this criterion is met because entities are not being required to perform differently under the proposed standard versus with the current standard.

8. **Proposed reliability standards is not “lowest common denominator,” i.e., does not reflect a compromise that does not adequately protect bulk power system reliability**

This proposed reliability standard does not reflect a “lowest common denominator” approach. It requires users, owners, and operators of the bulk power system to implement procedures to mitigate potential or actual SOL or IROL violations, offers three standardized interconnection-wide procedures that can be used in that mitigation, and mandates entities be responsive to requests for relief based on interconnection-wide procedure invocation. This proposed reliability standard does not modify the approach employed in IRO-006-3, and obligates entities to follow the same principles required by IRO-006-3. Therefore, there is no regression to a “lowest common denominator” standard. Further, (as discussed herein in the description of the development and balloting of the proposed standard) in the process of balloting the proposed reliability standard there were no ballot rounds in which the proposed reliability standard failed to achieve consensus (although a recirculation ballot was necessary due to receipt of comments in the initial ballot), and the proposed reliability standard was not revised to be less stringent in order to be successfully balloted.

9. **Proposed reliability standard considers costs to implement for smaller entities but not at consequence of less than excellence in operating system reliability**

The proposed reliability standard will apply equally to all applicable entities in a consistent manner. The record of development (Exhibit B) demonstrates that the cost impact to smaller entities was not a negative consideration in the development of the proposed reliability standard, as no stakeholder offered comments in the public comment periods that pertained to cost impact of the standard relative to the size of the entity. Further, the vital public interest in effectively managing congestion means that considerations for costs potentially incurred by any entity, regardless of size, should be given much lesser weight in determining if a standard on this topic should be approved. Upon approval of the reliability standard and once identified as an applicable entity, all designated entities must comply with this proposed reliability standard. Moreover, as the proposed reliability standard makes no substantive changes in reliability requirements as compared to IRO-006-3, the proposed reliability standard imposes no new cost burdens on entities beyond those to which they may already be subject under IRO-006-3.

10. **Proposed reliability standard is designed to apply throughout North America to the maximum extent achievable with a single reliability standard while not favoring one area or approach**

The proposed reliability standard is a single standard that respects the differing TLR procedures that are available for each major interconnection, and through the regional differences that are brought forward without change from the current approved version of the standard to this reliability standard proposed for approval, recognizes the unique characteristics associated with the differing market operations in PJM, SPP and MISO.

The ultimate goal of this reliability standard is to provide the reliability requirements for congestion relief, structured such that one generic reliability standard can be developed to accomplish this objective. At present, the various procedures and approaches in place within each Interconnection to provide TLR; the complexities of differing tariffs, market designs, regulatory jurisdiction and limitations; and inertia associated with capital investments in related technology infrastructure preclude the development of a common set of principles that is universally applicable. However, the long-term goal in the evolution of this reliability standard is a common set of requirements that supports reliability while at the same time allowing for regional or market innovation. The aforementioned third phase of standard development effort is the first step toward this goal.

**11. Proposed reliability standard causes no undue negative effect on competition or restriction of the grid**

The proposed reliability standard has no undue negative effect on competition. It also does not unreasonably restrict available transmission capability on the bulk power system beyond any restriction necessary for reliability and does not limit use of the bulk power system in an unduly preferential manner. It does not create an undue advantage for one competitor over another. This proposed reliability standard does not modify the approach employed in IRO-006-3, and it obligates entities to follow the same reliability principles embodied in the current Reliability Standard. The focus of the proposed reliability standard is to address only the reliability aspects of congestion management and not to address the commercial aspects of congestion management. The associated NAESB business practice standards are intended to focus on the competitive aspects of these processes. The goal of the proposed reliability standard is to identify the means to

obtain transmission loading relief with necessary latitude available to the Reliability Coordinator to request the level of reduction in transactions needed to maintain the bulk power system within established limits. The protocol for accomplishing this relief is contained in the Eastern and Western interconnection-wide procedures and the ERCOT protocols. Through implementation of these procedures the grid is necessarily restricted, but NAESB business practices related to this standard ensure that limitation is done in a manner that respects the various priority levels of those parties who contracted for transmission service.

**12. The implementation time for the proposed reliability standards is reasonable.**

As there have been no fundamental changes associated with IRO-006-4, entities that are obligated to comply, and are in compliance, with IRO-006-3 are already in compliance with IRO-006-4. Accordingly, there is no need to delay the implementation of the proposed reliability standard in order to give applicable entities time to learn the requirements of the reliability standard and come into compliance. Further, until IRO-006-4 is effective, applicable entities must comply with IRO-006-3; therefore, there is no need to expedite approval and implementation of the new reliability standard. For compliance enforcement, data collection and reporting purposes, the effective date for the proposed reliability standard is suggested as the first day of the first quarter following approval.

**13. The reliability standard development process was open and fair**

NERC develops reliability standards in accordance with Section 300 (Reliability Standards Development) of its Rules of Procedure and the NERC *Reliability Standards Development Procedure*, which was incorporated into the Rules of Procedure as

Appendix 3A. NERC's proposed rules provide for reasonable notice and opportunity for public comment, due process, openness, and a balance of interests in developing reliability standards.<sup>5</sup> The development process is open to any person or entity with a legitimate interest in the reliability of the bulk power system. NERC considers the comments of all stakeholders, and a vote of stakeholders and the NERC Board of Trustees is required to approve a reliability standard for submission to the applicable governmental authority.

The proposed reliability standard set out in Exhibit A has been developed and approved by industry stakeholders using NERC's *Reliability Standards Development Procedure*, and was approved by the NERC Board of Trustees on October 9, 2007 for filing with the applicable governmental authority. NERC has utilized its standard development process in good faith and in a manner that is open and fair.

**14. Proposed reliability standard balances with other vital public interests**

NERC does not believe there are competing public interests with respect to the request for approval of this proposed standard.

**15. Proposed reliability standard considers any other relevant factors**

NERC is not proposing any additional factors for consideration to support adoption of the proposed standard.

**V. SUMMARY OF RELIABILITY STANDARD DEVELOPMENT PROCEEDINGS**

**a. Development History**

NERC and NAESB made the decision to separate the commercial and reliability standards of the TLR standard in August 2004. This decision was supported by the Joint

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<sup>5</sup> Order No. 672 at PP 268, 270.

Interface Committee, consisting of NERC, NAESB, and the ISO/RTO Council. At that time, NERC and NAESB planned to utilize the IRO-006-0 reliability standard as the basis and migrate to Version 1 (IRO-006-1) by the end of 2005, completely separating the commercial and reliability aspects of the standard.

A Joint NERC/NAESB TLR Task Force was formed and held eight meetings to complete this separation. In June 2005, this team voted unanimously on the details of the separation and agreed that each organization would begin work on the Version 1 portion of the separated reliability standards.

In accord with the NERC and NAESB process for joint development and maintenance of reliability standards, the NAESB Business Practice Subcommittee completed its process to develop the requisite business practice requirements as demonstrated by approval of the Wholesale Electric Quadrant (“WEQ”) Executive Committee and subsequent member ratification on April 10, 2006. NAESB decided to hold the ratified business practices until NERC completed its reliability portion of the split so that both organizations could make their filings with the FERC at the same time.

In 2005, as a precursor to the submission of a standards authorization request (“SAR”), NERC posted the split agreed to by NERC and NAESB for industry comment. NERC received 12 sets of comments, six in favor of the split and six against the split. Those who submitted negative comments stated the following concerns: that the future management and coordination of the standards would be more difficult; the desire to keep the standards in one accessible location; and that NAESB business practices will be included in the Interchange Distribution Calculator (“IDC”) Reference Document. After extensive deliberation on the comments, the NERC Operating Reliability Subcommittee

(“ORS”) submitted a SAR to the NERC Standard Authorization Committee (now the Standards Committee) in July 2005. In its December 2006 conference call, the Standards Committee approved the SAR and directed the assembly of a standard drafting team, utilizing the individuals serving on the SAR development team as the initial members. The NERC TLR standard drafting team was thus formed in late 2006 under Project 2006-08 in the *Reliability Standards Development Plan: 2007-2009*.

### **Scope of Work Assigned to Project 2006-08 Standard Drafting Team**

The approved SAR under which the drafting team is operating contemplates three phases of drafting work. The three phases are:

**Phase 1** - A coordinated effort with NAESB to clarify and refine the steps in the TLR Procedure for the Eastern Interconnection. This effort affirms that the responsibility for the steps needed to support reliability and the steps needed to support commercial needs have been assigned to the appropriate organizations.

**Phase 2** - This phase involves further consideration of a change to the market flow calculation specified in PJM, MISO and SPP regional differences E.1 and E.2 in reliability standard IRO-006-3 to address a reliability issue when MISO, PJM, and SPP are unable to meet their relief obligations during TLR implementation. The proposed modification would change the market flow threshold for MISO, PJM, and SPP from 0% to 3%. Based on stakeholder comments received during the SAR development phase, this proposed change needed to be field-tested to verify that it would not have any adverse reliability consequences. The field test began on May 29, 2007, for PJM; October 1, 2007, for SPP; and November 1, 2007, for MISO. The field test is expected to end May 31, 2008, but may be extended to ensure a full-year's data for all three entities.



This proposed change would lead to the replacement of the SPP Urgent Action Regional Difference to IRO-006-3. Due to the delay in the start of the field test for the three participants, any changes that result related to Phase 2 will likely be introduced after Phase 3 is completed. The PJM, MISO and SPP Regional Differences also involve business practices that are addressed in Appendix D – Sections A and B of the companion NAESB business practice. Upon successful completion of the field test, these regional differences will be removed completely from the NERC reliability standard.

**Phase 3** - The third phase includes the changes needed to elevate the overall quality of the reliability standard and to address the additional technical issues that have been identified by stakeholders during the comment periods and by FERC in its orders and assessments. In addition to revising the *IDC Reference Document*, this phase may include other improvements to the reliability standards deemed appropriate by the standard drafting team, with the consensus of stakeholders, consistent with establishing high quality, enforceable and technically sufficient bulk power system reliability standards.

### **Development Status – Phase 1**

The proposed reliability standard presented for approval is related only to Phase 1 of the Project 2006-08 scope that divides the reliability and commercial aspects of IRO-006-4. This work included the development of measures, compliance elements, and other standard components to meet the requirements of the *NERC Reliability Standards Development Procedure*. In conducting the first phase of this work, the team retained the original requirements to the extent possible to avoid creating new elements that could have precipitated lengthy debates and delayed implementation of the split. However,

where in the judgment of the team the reliability standard requirements as written were deemed to create difficulties in developing the necessary measures and compliance elements, the team re-worded and clarified the requirements to achieve those objectives.

The standard drafting team submitted its initial draft of IRO-006-4 reliability standard and associated Attachment 1 for a 45-day industry comment period from May 1, 2007 – June 14, 2007. NERC received eleven sets of comments during this period.

Comments were predominantly supportive, although there were several suggestions for further improvement.

- Two commenters requested that the Transmission Operator be restored to list of applicable entities. The standard drafting team complied with the request.
- Several commenters also made suggestions regarding issues that were outside the scope of Phase 1. The standard drafting team retained these items for future consideration in Phases 2 and 3.
- Two commenters felt the violation risk factors were too low on certain requirements. The standard drafting team responded that since IRO-006-4 was primarily the “how” of relieving congestion, not the requirement to actually relieve the congestion, it believed the violation risk factor assignments were appropriate.
- Four commenters disagreed with the violation severity levels, indicating they were too high. Upon consideration, the standard drafting team lowered some, but defended the level chosen for others. *See Exhibit B, Consideration of Comments from 45-Day Posting, responses to Question 7.*
- Some commenters suggested that the manner through which compliance with Attachment 1 of the standard would be achieved was unclear. In response, the standard drafting team developed a set of compliance guidelines as an informal aid to both applicable entities and compliance personnel. *See Exhibit E, Violation Severity Level Guideline for IRO-006-4 Attachment 1.*

Based on the comments received, the standard drafting team did not believe significant changes to the standard or to Attachment 1 were required to necessitate a second comment period for Phase 1 of the project. Accordingly, the draft reliability standard with accompanying Attachment 1 was posted for a 30-day pre-ballot review from July 20, 2007 – August 19, 2007. To foster the industry’s understanding and

acceptance of the drafted reliability standard containing the split reliability requirements and commercial practices, the standard drafting team also developed the following supporting documents, included in Exhibits D and E:

- A white paper that describes the events that led to the proposed reliability standard contained in this filing (Exhibit E)
- A draft of a Joint Operator Manual to provide operators an integrated view of both the NERC and NAESB reliability standards (Exhibit E);
- A Violation Severity Guideline, to assist entities in complying with Attachment 1 (Exhibit E);
- A reference<sup>6</sup> to the approved NAESB business practices (to show where commercial aspects will be covered); and,
- An annotated mark-up of the original IRO-006-3 that highlighted how the reliability and commercial aspects of the standard were divided (Exhibit D).

The posting noted that the standard drafting team was only requesting approval of IRO-006-4 and Attachment 1, and that all other supporting materials were being provided for reference only.

The initial ten-day ballot for IRO-006-4 took place from August 20, 2007 – August 29, 2007. A quorum was achieved, but eleven negative votes were submitted with comments, necessitating a recirculation ballot. In the opinion of the standard drafting team, none of the comments submitted with negative votes merited a change to the balloted reliability standard.

- Many of the commenters that submitted negative votes objected to parts of the reliability standard that were not related to the Phase 1 effort. The Phase 3 effort will consider and address their concerns.
- Two commenters objected to the division of responsibility between NERC and NAESB. The standard drafting team justified why the changes the entities requested were either not appropriate or would need to be considered in Phase 3.
- Several comments expressed confusion about when ERO approval of a local procedure was required. The standard drafting team reiterated that ERO approval of a local procedure was only required when the entity wished to use the local

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<sup>6</sup> The NAESB TLR Business Practice Standards are available at [http://naesb.org/misc/fa\\_weq\\_r06002\\_attachment%202 .pdf](http://naesb.org/misc/fa_weq_r06002_attachment%202.pdf) and are being separately submitted to the Commission by NAESB. The NAESB business practice standards are copyright protected. Should you need to obtain a copy of the NAESB standards for other purposes, please contact the NAESB office.

procedure in lieu of responding to a request for relief by another reliability coordinator using an interconnection-wide procedure. Use of the local procedure requires pre-approval by NERC as has been the practice in place prior to the development of NERC's Version 0 standards.

- The standard drafting team also received several suggestions for improvements to the accompanying reference document, *Joint Operator Manual*.

The recirculation ballot was conducted from September 13, 2007 – September 23, 2007 with the following results:

Quorum:	93.82 %
Weighted Segment Approval:	92.33 %

Phase 1 of the Project 2006-08 was hereby completed, as a 75% quorum of the ballot pool voted with an affirmative vote exceeding 66.67%. Accordingly, the NERC Board of Trustees approved the proposed reliability standard for filing with FERC and applicable government authorities in Canada on October 9, 2007.

Respectfully submitted,

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## **Exhibit A**

### **Reliability Standard Proposed for Approval**

**A. Introduction**

1. **Title:** Reliability Coordination — Transmission Loading Relief (TLR)
2. **Number:** IRO-006-4
3. **Purpose:** The purpose of this standard is to provide Interconnection-wide transmission loading relief procedures that can be used to prevent or manage potential or actual SOL and IROL violations to maintain reliability of the Bulk Electric System.
4. **Applicability:**
  - 4.1. Reliability Coordinators.
  - 4.2. Transmission Operators.
  - 4.3. Balancing Authorities.
5. **Proposed Effective Date:** First day of first quarter after BOT adoption.

**B. Requirements**

**R1.** A Reliability Coordinator experiencing a potential or actual SOL or IROL violation within its Reliability Coordinator Area shall, with its authority and at its discretion, select one or more procedures to provide transmission loading relief. These procedures can be a “local” (regional, interregional, or sub-regional) transmission loading relief procedure or one of the following Interconnection-wide procedures: [*Violation Risk Factor: Medium*] [*Time Horizon: Real-time Operations*]

This requirement simply states; the RC has the authority to act, the RC should know at what limits he/she needs to act, the RC has pre-identified regional, interregional and sub-regional TLR procedures.

**R1.1.** The Interconnection-wide Transmission Loading Relief (TLR) procedure for use in the Eastern Interconnection provided in Attachment 1-IRO-006-4. The TLR procedure alone is an inappropriate and ineffective tool to mitigate an IROL violation due to the time required to implement the procedure. Other acceptable and more effective procedures to mitigate actual IROL violations include: reconfiguration, redispatch, or load shedding.

Comment: see FERC Order 693 paragraph 964 regarding recommendation for using tools other than TLR to mitigate an actual IROL.

**R1.2.** The Interconnection-wide transmission loading relief procedure for use in the Western Interconnection is WECC-IRO-STD-006-0 provided at: [ftp://www.nerc.com/pub/sys/all\\_updl/standards/rrs/IRO-STD-006-0\\_17Jan07.pdf](ftp://www.nerc.com/pub/sys/all_updl/standards/rrs/IRO-STD-006-0_17Jan07.pdf).

**R1.3.** The Interconnection-wide transmission loading relief procedure for use in ERCOT is provided as Section 7 of the ERCOT Protocols, posted at: <http://www.ercot.com/mktrules/protocols/current.html>

Note: the URL has changed.

**R2.** The Reliability Coordinator shall only use local transmission loading relief or congestion management procedures to which the Transmission Operator experiencing

the potential or actual SOL or IROL violation is a party. [*Violation Risk Factor: Low*] [*Time Horizon: Operations Planning*]

- R3.** Each Reliability Coordinator with a relief obligation from an Interconnection-wide procedure shall follow the curtailments as directed by the Interconnection-wide procedure. A Reliability Coordinator desiring to use a local procedure as a substitute for curtailments as directed by the Interconnection-wide procedure shall obtain prior approval of the local procedure from the ERO. [*Violation Risk Factor: Low*] [*Time Horizon: Operations Planning*]
- R4.** When Interconnection-wide procedures are implemented to curtail Interchange Transactions that cross an Interconnection boundary, each Reliability Coordinator shall comply with the provisions of the Interconnection-wide procedure. [*Violation Risk Factor: Medium*] [*Time Horizon: Real-time Operations*]
- R5.** During the implementation of relief procedures, and up to the point that emergency action is necessary, Reliability Coordinators and Balancing Authorities shall comply with applicable Interchange scheduling standards. [*Violation Risk Factor: Medium*] [*Time Horizon: Real-time Operations*]

Comment: R5 will be reviewed during Phase 3 of the TLR drafting team work. See white paper for explanation of the three phases of changes to this standard.

### **C. Measures**

- M1.** Each Reliability Coordinator shall be capable of providing evidence (such as logs) that demonstrate when Eastern Interconnection, WECC, or ERCOT Interconnection-wide transmission loading relief procedures are implemented, the implementation follows the respective established procedure as specified in this standard (R1, R1.1, R1.2 and R1.3).
- M2.** Each Reliability Coordinator shall be capable of providing evidence (such as written documentation) that the Transmission Operator experiencing the potential or existing SOL or IROL violations is a party to the local transmission loading relief or congestion management procedures when these procedures have been implemented (R2).
- M3.** Each Reliability Coordinator shall be capable of providing evidence (such as NERC meeting minutes) that the local procedure has received prior approval by the ERO when such procedure is used as a substitute for curtailment as directed by the Interconnection-wide procedure (R3).
- M4.** Each Reliability Coordinator shall be capable of providing evidence (such as logs) that the responding Reliability Coordinator complied with the provisions of the Interconnection-wide procedure as requested by the initiating Reliability Coordinator when requested to curtail an Interchange Transaction that crosses an Interconnection boundary (R4).
- M5.** Each Reliability Coordinator and Balancing Authority shall be capable of providing evidence (such as Interchange Transaction Tags, operator logs, voice recordings or transcripts of voice recordings, electronic communications, computer printouts) that they have complied with applicable Interchange scheduling standards INT-001, INT-

003, and INT-004 during the implementation of relief procedures, up to the point emergency action is necessary (R5).

## **D. Compliance**

### **1. Compliance Monitoring Process**

#### **1.1. Compliance Monitoring Responsibility**

Regional Entity.

#### **1.2. Compliance Monitoring Period and Reset Time Frame**

Compliance Monitoring Period: One calendar year.

Reset Period: One month without a violation.

#### **1.3. Data Retention**

The Reliability Coordinator shall maintain evidence for eighteen months for M1, M4, and M5.

The Reliability Coordinator shall maintain evidence for the duration the Transmission Operator is party to the procedure in effect plus one calendar year thereafter for M2.

The Reliability Coordinator shall maintain evidence for the approved duration of the procedure in effect plus one calendar year thereafter for M3.

#### **1.4. Additional Compliance Information**

Each Reliability Coordinator and Balancing Authority shall demonstrate compliance through self-certification submitted to its Compliance Monitor annually and reporting by exception. The Compliance Monitor may also use scheduled on-site reviews every three years, and investigations upon complaint, to assess performance.

Each Reliability Coordinator and Balancing Authority shall have the following available for its Compliance Monitor to inspect during a scheduled, on-site review or within 5 days of a request as part of an investigation upon complaint:

**1.4.1** Operations logs, voice recordings or transcripts of voice recordings or other documentation providing the evidence of its compliance to all the requirements for all Interconnection-wide TLR procedures that it has implemented during the review period.

**1.4.2** TLR reports.

### **2. Violation Severity Levels**

#### **2.1. Lower. There shall be a lower violation severity level if any of the following conditions exist:**

**2.1.1** For each TLR in the Eastern Interconnection, the Reliability Coordinator violates one (1) requirement of the applicable Interconnection-wide procedure (R1)



- 2.1.2** The Reliability Coordinators or Balancing Authorities did not comply with applicable Interchange scheduling standards during the implementation of the relief procedures, up to the point emergency action is necessary (R5).
- 2.1.3** When requested to curtail an Interchange Transaction that crosses an Interconnection boundary utilizing an Interconnection-wide procedure, the responding Reliability Coordinator did not comply with the provisions of the Interconnection-wide procedure as requested by the initiating Reliability Coordinator (R4).
- 2.2. Moderate. There shall be a moderate violation severity level if any of the following conditions exist:**

  - 2.2.1** For each TLR in the Eastern Interconnection, the Reliability Coordinator violated two (2) to three (3) requirements of the applicable Interconnection-wide procedure (R1).
- 2.3. High. There shall be a high violation severity level if any of the following conditions exist:**

  - 2.3.1** For each TLR in the Eastern Interconnection, the applicable Reliability Coordinator violated four (4) to five (5) requirements of the applicable Interconnection-wide procedure (R1).
- 2.4. Severe. There shall be a severe violation severity level if any of the following conditions exist:**

  - 2.4.1** For each TLR in the Eastern Interconnection, the Reliability Coordinator violated six (6) or more of the requirements of the applicable Interconnection-wide procedure (R1).
  - 2.4.2** A Reliability Coordinator implemented local transmission loading relief or congestion management procedures to relieve congestion but the Transmission Operator experiencing the congestion was not a party to those procedures (R2).
  - 2.4.3** A Reliability Coordinator implemented local transmission loading relief or congestion management procedures as a substitute for curtailment as directed by the Interconnection-wide procedure but the local procedure had not received prior approval from the ERO (R3).
  - 2.4.4** While attempting to mitigate an existing IROL violation in the Eastern Interconnection, the Reliability Coordinator applied TLR as the sole remedy for an existing IROL violation.
  - 2.4.5** While attempting to mitigate an existing constraint in the Western Interconnection using the “WSCC Unscheduled Flow Mitigation Plan”, the Reliability Coordinator did not follow the procedure correctly.
  - 2.4.6** While attempting to mitigate an existing constraint in ERCOT using Section 7 of the ERCOT Protocols, the Reliability Coordinator did not follow the procedure correctly.

## E. Regional Differences

1. [PJM/MISO Enhanced Congestion Management](#) (Curtailment/Reload/Reallocation) Waiver approved March 25, 2004. To be retired upon completion of the field test, and in the interim the Regional Difference will be contained in both the NERC and NAESB standards.

This section on Regional Differences is highlighted for transfer to NAESB following completion of the MISO/PJM/SPP field test as described in the white paper.

2. Southwest Power Pool (SPP) Regional Difference – Enhanced Congestion Management (Curtailment/Reload/Reallocation). The SPP regional difference, which is equivalent to the PJM/MISO waiver, shall apply within the SPP region as follows:

This regional difference impacts actions on behalf of those SPP Balancing Authorities that are participating in the SPP market. This regional difference does not impact those Balancing Authorities for which SPP will continue to act as the Reliability Coordinator but that are not participating in the SPP market.

SPP shall calculate the impacts of SPP market flow on all facilities included in SPP's Coordinated Flowgate List. SPP shall conduct sensitivity studies to determine which external flowgates (outside SPP's footprint) are significantly impacted by the market flows of SPP's control zones (currently the balancing areas that exist today in the IDC). SPP shall perform studies to determine which external flowgates SPP will monitor and help control. An external flowgate selected by one of the studies will be considered a Coordinated Flowgate (CF).

In its calculation, SPP shall consider market flow impacts as the impacts of energy dispatched by the SPP market and self-dispatched energy serving load in the market footprint, but not tagged. SPP shall use a method equivalent to the PJM/MISO Market Flow Calculation methodology identified in the PJM/MISO waiver. Impacts of tagged transactions representing delivery of energy not dispatched by the SPP market and energy dispatched by the market but delivered outside the footprint will not be included in market flow.

SPP shall separate the market flow impacts for current hour and next hour into their appropriate priorities and shall provide those market flow impacts to the IDC. The market flows will be represented in the IDC and made available for curtailment under the appropriate TLR Levels. The market flow impacts will not be represented by conventional interchange transaction tags.

The SPP method will impact the following sections of the TLR Procedure:

**Network and Native Load (NNL) Calculations** — The SPP regional difference modifies Attachment 1-IRO-006-1 Section 5 “Parallel Flow Calculation Procedure for Reallocating or Curtailing Firm Transmission Service” within the SPP region.

Section 5 of Attachment 1-IRO-006-1 requires that the “Per Generator Method without Counter Flow” methodology be utilized to calculate the portion of parallel flows on any Constrained Facility due to Network Integration (NI) transmission service and service to Native Load (NL) of each balancing authority.

SPP shall use a “Market Flow Calculation” methodology to calculate the portion of parallel flows on all facilities included in the RTO’s “Coordinated Flowgate List” due to NI service or service to NL of each balancing authority.

The Market Flow Calculation differs from the Per Generator Method in the following ways:

- The contribution from all market area generators will be taken into account.
- In the Per Generator Method, only generators having a GLDF greater than 5% are included in the calculation. Additionally, generators are included only when the sum of the maximum generating capacity at a bus is greater than 20 MW. The market flow calculations will use all positively impacting flows down to 0% with no threshold. Counter flows will not be included in the market flow calculation.
- The contribution of all market area generators is based on the present output level of each individual unit.
- The contribution of the market area load is based on the present demand at each individual bus.

By expanding on the Per Generator Method, the market flow calculation evolves into a methodology very similar to the “Per Generator Method” method, while providing increased Interchange Distribution Calculator (IDC) granularity. Counter flows are also calculated and tracked in order to account for and recognize that the either the positive market flows may be reduced or counter flows may be increased to provide appropriate relief on a flowgate.

These NNL values will be provided to the IDC to be included and represented with the calculated NNL values of other Balancing Authorities for the purposes of identifying and obtaining required NNL relief across a flowgate in congestion under a TLR Level 5A/5B.

**Pro Rata Curtailment of Non-Firm Market Flow Impacts** — The SPP regional difference modifies Attachment 1-IRO-006-1 Appendix B “Transaction Curtailment Formula” within the SPP region.

Appendix B “Transaction Curtailment Formula” details the formula used to apply a weighted impact to each non-firm tagged Interchange Transaction (Priorities 1 thru 6) for the purposes of Curtailment by the IDC. For the purpose of Curtailment, the non-firm market flow impacts (Priorities 2 and 6) submitted to the IDC by SPP should be curtailed pro-rata as is done for Interchange Transaction using firm transmission service. This is because several of the values needed to assign a weighted impact using the process listed in Appendix B will not be available:

- Distribution Factor (no tag to calculate this value from)
- Impact on Interface value (cannot be calculated without Distribution Factor)
- Impact Weighting Factor (cannot be calculated without Distribution Factor)
- Weighted Maximum Interface Reduction (cannot be calculated without Distribution Factor)

- Interface Reduction (cannot be calculated without Distribution Factor)
- Transaction Reduction (cannot be calculated without Distribution Factor)

While the non-firm market flow impacts submitted to the IDC are to be curtailed pro rata, the impacting non-firm tagged Interchange Transactions could still use the existing processes to assign the weighted impact value.

**Assignment of Sub-Priorities** — The SPP regional difference modifies Attachment 1-IRO-006-1 Appendix E “How the IDC Handles Reallocation”, Section E2 “Timing Requirements”, within the SPP region.

Under the header “IDC Calculations and Reporting” in Section E2 of Appendix E to Attachment 1-IRO-006-1, the following requirement exists: “In a TLR Level 3a the Interchange Transactions using Non-firm Transmission Service in a given priority will be further divided into four sub-priorities, based on current schedule, current active schedule (identified by the submittal of a tag ADJUST message), next-hour schedule, and tag status. Solely for the purpose of identifying which Interchange Transactions to be loaded under a TLR 3a, various MW levels of an Interchange Transaction may be in different sub-priorities. The sub-priorities are shown in the following table:

Priority	Purpose	Explanation and Conditions
S1	To allow a flowing Interchange Transaction to maintain or reduce its current MW amount in accordance with its energy profile.	The MW amount is the lowest between currently flowing MW amount and the next-hour schedule. The currently flowing MW amount is determined by the e-tag ENERGY PROFILE and ADJUST tables. If the calculated amount is negative, zero is used instead.
S2	To allow a flowing Interchange Transaction that has been curtailed or halted by TLR to reload to the lesser of its current-hour MW amount or next-hour schedule in accordance with its energy profile.	The Interchange Transaction MW amount used is determined through the e-tag ENERGY PROFILE and ADJUST tables. If the calculated amount is negative, zero is used instead.
S3	To allow a flowing Transaction to increase from its current-hour schedule to its next-hour schedule in accordance with its energy profile.	The MW amounts used in this sub-priority is determined by the e-tag ENERGY PROFILE table. If the calculated amount is negative, zero is used instead.
S4	To allow a Transaction that had never started and was submitted to the Tag Authority after the TLR (level 2 or higher) has been declared	The Transaction would not be allowed to start until all other Interchange Transactions submitted prior to the TLR with the same

	to begin flowing (i.e., the Interchange Transaction never had an active MW and was submitted to the IDC after the first TLR Action of the TLR Event had been declared.)	priority have been (re)loaded. The MW amount used is the sub-priority is the next-hour schedule determined by the e-tag ENERGY PROFILE table.
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SPP shall use a “Market Flow Calculation” methodology to calculate the amount of energy flowing across all facilities included in the RTO’s “Coordinated Flowgate List” that is associated with the operation of the SPP market. This energy is identified as “market flow.”

These market flow impacts for current hour and next hour will be separated into their appropriate priorities and provided to the IDC by SPP. The market flows will then be represented and made available for curtailment under the appropriate TLR Levels.

Even though these market flow impacts (separated into appropriate priorities) will not be represented by conventional “tags,” the impacts and their desired levels will still be provided to the IDC for current hour and next hour. Therefore, for the purposes of reallocation, a sub-priority (S1 thru S4) should be assigned to these market flow impacts by the NERC IDC as follows, using comparable logic as would be used if the impacts were in fact tagged transactions.

Priority	Purpose	Explanation and Conditions
S1	To allow existing market flow to maintain or reduce its current MW amount.	The currently flowing MW amount is the amount of market flow existing after the RTO has recognized the constraint for which TLR has been called. If the calculated amount is negative, zero is used instead.
S2	To allow market flow that has been curtailed or halted by TLR to reload to its desired amount for the current-hour.	This is the difference between the current hour unconstrained market flow and the current market flow. If the current-hour unconstrained market flow is not available, the IDC will use the most recent market flow since the TLR was first issued or, if not available, the market flow at the time the TLR was first issued.
S3	To allow a market flow to increase to its next-hour desired amount.	This is the difference between the next hour and current hour unconstrained market flow.

To be retired upon completion of the field test, and in the interim the Regional Difference will be contained in both the NERC and NAESB standards.

## F. Associated Documents

### Version History

Version	Date	Action	Change Tracking
0	April 1, 2005	Effective Date	New
0	August 8, 2005	Removed “Proposed” from Effective Date	Errata
1	August 8, 2005	Revised Attachment 1	Revision
3	February 26, 2007	Revised Purpose and Attachment 1 related to NERC NAESB split of the TLR procedure	Revision
4	October 23, 2007	Approved by Board of Trustees	Revision

**PLEASE NOTE: items designated for inclusion in the NAESB TLR business practice following completion of the standard revision were deleted. Please see the mapped document to see which items were move to NAESB and what future changes are expected.**

## Attachment 1 — IRO-006

### Transmission Loading Relief Procedure — Eastern Interconnection

#### Purpose

This standard defines procedures for curtailment and reloading of Interchange Transactions to relieve overloads on transmission facilities modeled in the Interchange Distribution Calculator.

#### Applicability

This standard only applies to the Eastern Interconnection.

The flexibility for ISOs and RTOs to use redispatch is contained explicitly in the NAESB business practice Section 1.3.

#### 1. Transmission Loading Relief (TLR) Procedure

- 1.1. Initiation only by Reliability Coordinator.** A Reliability Coordinator shall be the only entity authorized to initiate the TLR Procedure.

**1.1.1. Requesting relief on transmission facilities.** Any Transmission Operator may request from its Reliability Coordinator relief on the transmission facilities it operates. A Reliability Coordinator shall review these requests for relief and determine the appropriate relief actions.

- 1.2. Mitigating SOL and IROL violations.** A Reliability Coordinator may utilize the TLR Procedure to mitigate potential or existing System Operating Limit (SOL) violations or to prevent or mitigate Interconnection Reliability Operating Limit (IROL) violations on any transmission facility modeled in the IDC. However, the TLR procedure is an inappropriate and ineffective tool as a sole means to mitigate existing IROL violations due to the time required to implement the procedure. Reconfiguration, redispatch, and load shedding are more timely and effective in mitigating existing IROL violations

- 1.3. Sequencing of TLR Levels and taking emergency action.** The Reliability Coordinator shall not be required to follow the TLR Levels in their numerical sequence (Section 2, “TLR Levels”). Furthermore, if a Reliability Coordinator deems that a transmission loading condition could jeopardize Bulk Electric System reliability, the Reliability Coordinator shall have the authority to enter TLR Level 6 directly, and immediately direct the Balancing Authorities or Transmission Operators to take such actions as redispatching generation, or reconfiguring transmission, or reducing load to mitigate the critical condition until Interchange Transactions can be reduced utilizing the TLR Procedure or other methods to return the system to a secure state.

- 1.4. Notification of TLR Procedure implementation.** The Reliability Coordinator initiating the use of the TLR

This notification is automated in the Interchange Distribution Calculator (IDC) and populates a message on the NERC RCIS.

Procedure shall notify other Reliability Coordinators and Balancing Authorities and Transmission Operators, and must post the initiation and progress of the TLR event on the appropriate NERC web page(s).

**1.4.1. Notifying other Reliability Coordinators.** The Reliability Coordinator initiating the TLR Procedure shall inform all other Reliability Coordinators via the Reliability Coordinator Information System (RCIS) that the TLR Procedure has been implemented.

**Actions expected.** The Reliability Coordinator initiating the TLR Procedure shall indicate the actions expected to be taken by other Reliability Coordinators.

**1.4.2. Notifying Transmission Operators and Balancing Authorities.** The Reliability Coordinator shall notify Transmission Operators and Balancing Authorities in its Reliability Area when entering and leaving any TLR level.

**1.4.3. Notifying Sink Balancing Authorities.** The Reliability Coordinator for the sink Balancing Authority shall be responsible for directing the Sink Balancing Authority to curtail the Interchange Transactions as specified by the Reliability Coordinator implementing the TLR Procedure.

This notification is automated in the Interchange Distribution Calculator (IDC) and populates a message on the NERC RCIS.

**Notification order.** Within a Transmission Service Priority level, the Sink Balancing Authorities whose Interchange Transactions have the largest impact on the Constrained Facilities shall be notified first if practicable.

**1.4.4. Updates.** At least once each hour, or when conditions change, the Reliability Coordinator implementing the TLR Procedure shall update all other Reliability Coordinators (via the RCIS). Transmission Operators and Balancing Authorities who have had Interchange Transactions impacted by the TLR will be updated by their Reliability Coordinator.

**1.5. Obligations.** All Reliability Coordinators shall comply with the request of the Reliability Coordinator who initiated the TLR Procedure, unless the initiating Reliability Coordinator agrees otherwise.

**1.6. Consideration of Interchange Transactions.** The administration of the TLR Procedure shall be guided by information obtained from the IDC.

**1.6.1. Interchange Transactions not in the IDC.** Reliability Coordinators shall also treat known Interchange Transactions that may not appear in the IDC in accordance with the procedures in this document.

**1.6.2. Transmission elements not in IDC.** When a Reliability Coordinator is faced with an overload on a transmission element that is not modeled in the IDC, the Reliability Coordinator shall use the best information available to curtail Interchange Transactions in order to operate the system in a reliable manner. The Reliability Coordinator shall use its best efforts to ensure that Interchange Transactions with a Transfer Distribution Factor



of less than the Curtailment Threshold on the transmission element not modeled in the IDC are not curtailed.

**1.6.3. Questionable IDC results.** Any Reliability Coordinator who believes the curtailment list from the IDC for a particular TLR event is incorrect shall use its best efforts to communicate those adjustments necessary to bring the curtailment list into conformance with the principles of this Procedure to the initiating Reliability Coordinator. Causes of questionable IDC results may include:

- Missing Interchange Transactions that are known to contribute to the Constraint.
- Significant change in transmission system topology.
- TDF matrix error.

Impacts of questionable IDC results may include:

- Curtailment that would have no effect on, or aggravate the constraint.
- Curtailment that would initiate a constraint elsewhere.

If other Reliability Coordinators are involved in the TLR event, all impacted Reliability Coordinators shall be in agreement before any adjustments to the Curtailment list are made.

**1.6.4. Curtailment that would cause a constraint elsewhere.** A Reliability Coordinator shall be allowed to exempt an Interchange Transaction from Curtailment if that Reliability Coordinator is aware that the Interchange Transaction Curtailment directed by the IDC would cause a constraint to occur elsewhere. This exemption shall only be allowed after the Reliability Coordinator has consulted with the Reliability Coordinator who initiated the Curtailment.

**1.7 Logging.** The Reliability Coordinator shall complete the NERC Transmission Loading Relief Procedure Log whenever it invokes TLR Level 2 or above, and send a copy of the log via email to NERC within two business days of the TLR event for posting on the NERC website.

Creation and distribution of the TLR Procedure Log is now automated in the IDC.

**1.8 TLR Event Review.** The Reliability Coordinator shall report the TLR event to the Operating Reliability Subcommittee in accordance with TLR review processes established by NERC as required.

**1.8.1 Providing information.** Transmission Operators and Balancing Authorities within the Reliability Coordinator's Area, and all other Reliability Coordinators, including Transmission Operators and Balancing Authorities within their respective Reliability Areas, shall provide information, as requested by the initiating Reliability Coordinator, in accordance with TLR review processes established by NERC.

**1.8.2 Market Committee reviews.** The Market Committee may conduct reviews of certain TLR events based on the size and number of Interchange Transactions that are affected, the frequency that the TLR Procedure is called for a particular Constrained Facility, or other factors.

The Market Committee no longer exists and this requirement will be removed in Phase 3.

**1.8.3 Operating Reliability Subcommittee reviews.** The Operating Reliability Subcommittee shall conduct reviews to ensure proper implementation and for “lessons learned.”

## **2. Transmission Loading Relief (TLR) Levels**

### **Introduction**

This section describes the various levels of the TLR Procedure. The description of each level begins with the circumstances that define the TLR Level, followed by the procedures to be followed.

The decision that a Reliability Coordinator makes in selecting a particular TLR Level often depends on the transmission loading condition and whether the Interchange Transaction is using Non-firm Point-to-Point Transmission Service or Firm Point-to-Point Transmission Service. There are further considerations that depend on whether the Constrained Facility is on or off the Contract Path. It is important to note that an Interchange Transaction using Firm Point-to-Point Transmission Service on all Contract Path links is considered a “firm” Interchange Transaction even if the Constrained Facility is off the Contract Path.

### **2.1. TLR Level 1 — Notify Reliability Coordinators of potential SOL or IROL Violations**

**2.1.1.** The Reliability Coordinator shall use the following circumstances to establish the need for TLR Level 1:

- The transmission system is secure.
- The Reliability Coordinator foresees a transmission or generation contingency or other operating problem within its Reliability Area that could cause one or more transmission facilities to approach or exceed their SOL or IROL.

**2.1.2. Notification procedures.** The Reliability Coordinator shall notify all Reliability Coordinators via the Reliability Coordinator Information System (RCIS) as soon as the condition is foreseen. All affected Reliability Coordinators shall check to ensure that Interchange Transactions are posted in the IDC.

### **2.2. TLR Level 2 — Hold transfers at present level to prevent SOL or IROL Violations**

**2.2.1.** The Reliability Coordinator shall use the following circumstances to establish the need for entering TLR Level 2:

- The transmission system is secure.
- One or more transmission facilities are expected to approach, or are approaching, or are at their SOL or IROL.

**2.3 TLR Level 3a — Reallocation of Transmission Service by curtailing Interchange Transactions using Non-firm Point-to-Point Transmission Service to allow Interchange Transactions using higher priority Transmission Service**

**2.3.1.** The Reliability Coordinator shall use the following circumstances to establish the need for entering TLR Level 3a:

- The transmission system is secure.
- One or more transmission facilities are expected to approach, or are approaching, or are at their SOL or IROL.
- Transactions using Non-firm Point-to-Point Transmission Service are flowing that are at or above the Curtailment Threshold on those facilities.
- The Transmission Provider has previously approved a higher priority Point-to-Point Transmission Service reservation over which a Transmission Customer wishes to begin an Interchange Transaction.

**2.4. TLR Level 3b — Curtail Interchange Transactions using Non-Firm Transmission Service Arrangements to mitigate a SOL or IROL Violation**

**2.4.1.** The Reliability Coordinator shall use the following circumstances to establish the need for entering TLR Level 3b:

- One or more transmission facilities are operating above their SOL or IROL, or
- Such operation is imminent and it is expected that facilities will exceed their reliability limit unless corrective action is taken, or
- One or more Transmission Facilities will exceed their SOL or IROL upon the removal from service of a generating unit or another transmission facility.
- Transactions using Non-firm Point-to-Point Transmission Service are flowing that are at or above the Curtailment Threshold on those facilities.

**2.5 TLR Level 4 — Reconfigure Transmission**

**2.5.1.** The Reliability Coordinator shall use the following circumstances to establish the need for entering TLR Level 4:

- One or more Transmission Facilities are above their SOL or IROL, or
- Such operation is imminent and it is expected that facilities will exceed their reliability limit unless corrective action is taken.

**2.5.2. Reconfiguration procedures.** The issuance of a TLR Level 4 shall result in the curtailment, in the current hour and the next hour, of all Interchange Transactions using Non-firm Point-to-Point Transmission Service that are at or above the Curtailment Threshold that impact the Constrained

Facilities. If a SOL or IROL violation is imminent or occurring, the Reliability Coordinator(s) shall request that the affected Transmission Operators reconfigure transmission on their system, or arrange for reconfiguration on other transmission systems, to mitigate the constraint.

**2.6. TLR Level 5a — Reallocation of Transmission Service by curtailing Interchange Transactions using Firm Point-to-Point Transmission Service on a pro rata basis to allow additional Interchange Transactions using Firm Point-to-Point Transmission Service**

**2.6.1.** The Reliability Coordinator shall use the following circumstances to establish the need for entering TLR Level 5a:

- The transmission system is secure.
- One or more transmission facilities are at their SOL or IROL.
- All Interchange Transactions using Non-firm Point-to-Point Transmission Service that are at or above the Curtailment Threshold have been curtailed.
- The Transmission Provider has been requested to begin an Interchange Transaction using previously arranged Firm Transmission Service that would result in a SOL or IROL violation.
- No further transmission reconfiguration is possible or effective.

**2.7. TLR Level 5b — Curtail Interchange Transactions using Firm Point-to-Point Transmission Service to mitigate an SOL or IROL violation**

**2.7.1.** The Reliability Coordinator shall use following circumstances to establish the need for entering TLR Level 5b:

- One or more Transmission Facilities are operating above their SOL or IROL, or
- Such operation is imminent, or
- One or more Transmission Facilities will exceed their SOL or IROL upon the removal from service of a generating unit or another transmission facility.
- All Interchange Transactions using Non-firm Point-to-Point Transmission Service that are at or above the Curtailment Threshold have been curtailed.
- No further transmission reconfiguration is possible or effective.

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section 3.3

**2.8. Curtailment of Interchange Transactions Using Firm Transmission Service**

**2.8.1.** The Reliability Coordinator shall direct the curtailment of Interchange Transactions using Firm Transmission Service that are at or above the Curtailment Threshold for the following TLR Levels:

**2.8.1.1. TLR Level 5a.** Enable additional Interchange Transactions using Firm Point-to-Point Transmission Service to be implemented after all Interchange Transactions using Non-firm Point-to-Point Service have been curtailed, or

**2.8.1.2. TLR Level 5b.** Mitigate a SOL or IROL violation that remains after all Interchange Transactions using Non-firm Transmission Service has been curtailed under TLR Level 3b, and following attempts to reconfigure transmission under TLR Level 4.

**2.9. TLR Level 6 — Emergency Procedures**

**2.9.1** The Reliability Coordinator shall use following circumstances to establish the need for entering TLR Level 6:

- One or more Transmission Facilities are above their SOL or IROL.
- One or more Transmission Facilities will exceed their SOL or IROL upon the removal from service of a generating unit or another transmission facility.

**2.9.2 Implementing emergency procedures.** If the Reliability Coordinator deems that transmission loading is critical to Bulk Electric System reliability, the Reliability Coordinator shall immediately direct the Balancing Authorities and Transmission Operators in its Reliability Area to redispatch generation, or reconfigure transmission, or reduce load to mitigate the critical condition until Interchange Transactions can be reduced utilizing the TLR Procedures or other procedures to return the system to a secure state. All Balancing Authorities and Transmission Operators shall comply with all requests from their Reliability Coordinator.

**2.10 TLR Level 0 — TLR concluded**

**2.10.1 Interchange Transaction restoration and notification procedures.** The Reliability Coordinator initiating the TLR Procedure shall notify all Reliability Coordinators within the Interconnection via the RCIS when the SOL or IROL violations are mitigated and the system is in a reliable state, allowing Interchange Transactions to be reestablished at its discretion. Those with the highest transmission priorities shall be reestablished first if possible.

**3. Requirements**

**3.1** The Reliability Coordinator shall be allowed to call a TLR 3b at any time to help mitigate a SOL or IROL violation.

- 3.2** The Reliability Coordinator shall Reallocate Interchange Transactions using Non-firm Point-to-Point Transmission for the next hour to maintain the desired flow using Reallocation in accordance with the following timing specification:
  - 3.2.1** If issued prior to XX: 25, Non-firm Interchange Transactions will be curtailed to meet the desired current hour relief
    - 4.2.1.1** At XX: 25 a Reallocation will be performed to maintain the desired flow at the top of the following hour
  - 3.2.2** If issued after XX: 25, Non firm Interchange Transactions will be curtailed to meet the desired current hour relief and a Reallocation will be performed to maintain the target flow identified for the current hour.
  - 3.2.3** Transactions must be in the IDC by the Approved-tag Submission Deadline for Reallocation.
- 3.3** The IDC shall issue ADJUST Lists to the Generation and Load Balancing Authority Areas and the Purchasing-Selling Entity who submitted the tag. The ADJUST List will include: (recommended to be moved to Attachment 2)
  - 3.3.1** Interchange Transactions using Non-firm Point-to-Point Transmission Service that are to be curtailed or held during current and next hours. (recommended to be moved to Attachment 2)
  - 3.3.2** Interchange Transactions using Firm Point-to-Point Transmission Service that were entered after XX:25 or issuance of TLR 3b (see Case 3 in Appendix F). (recommended to be moved to Attachment 2)
- 3.4** The Sink Balancing Authority shall send the ADJUST Lists back to the IDC as soon as possible to ensure the most accurate calculations for actions subsequent to the TLR 3b being called. (recommend to be moved to Attachment 2)
- 3.5** The Reliability Coordinator will no longer be required to call a TLR Level 3a as soon as the SOL or IROL violation that caused the TLR 3b to be called has been mitigated due to the inherent next hour Reallocation that takes place for the top of the next hour in the TLR Level 3b. (recommend to be moved to Attachment 2)

## Appendices for Transmission Loading Relief Standard

**PLEASE NOTE: items designated for inclusion in the NAESB TLR business practice following completion of the standard revision were deleted from this version of the NERC standard. Please see the mapped document to see which requirements were moved to NAESB and what future changes are expected. Appendices B, D, G, and the sub-priority portions of E-2 have been moved to NAESB, The appendices below (A, C, E, F) will be renumbered in the final standard.**

Appendix A. Transaction Management and Curtailment Process.

Appendix C. Sample NERC Transmission Loading Relief Procedure Log.

Appendix E. How the IDC Handles Reallocation.

Section E1: Summary of IDC Features that Support Transaction Reloading/Reallocation.

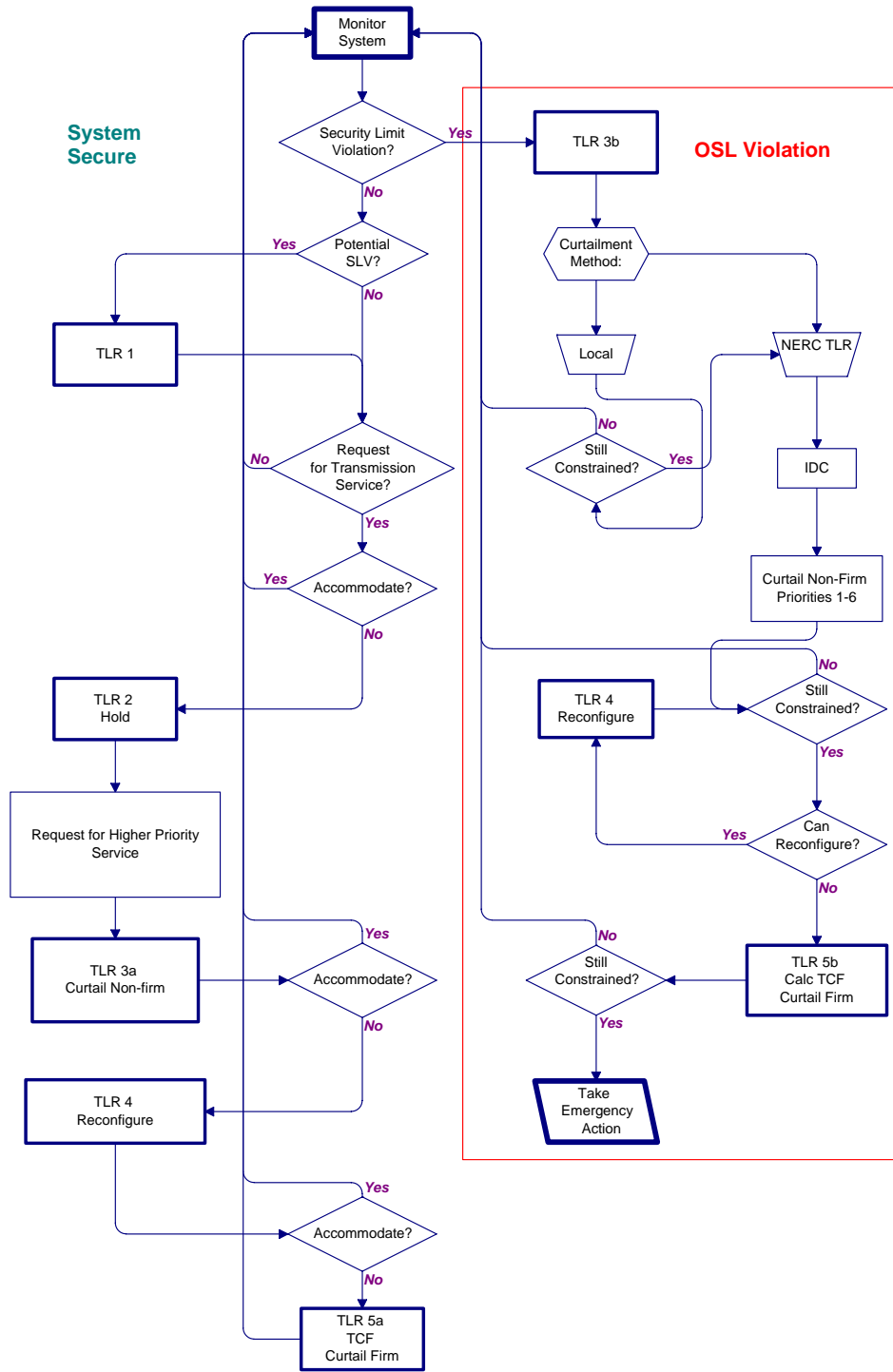
Section E2: Timing Requirements.

Appendix F. Considerations for Interchange Transactions using Firm Point-to-Point Transmission Service.



**Appendix A. Transaction Management and Curtailment Process**

This flowchart depicts an overview of the Transaction Management and Curtailment process. Detailed decisions are not shown.



Appendix C. Sample NERC Transmission Loading Relief Procedure Log

SAVE FILE DIRECTORY:

NERC TRANSMISSION LOADING RELIEF (TLR) PROCEDURE LOG

FILE SAVED AS: .XLS

INCIDENT	DATE	IMPACTED RELIABILITY COORDINATOR	ID NO.
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INITIAL CONDITIONS

Limiting Flowgate (LIMIT)	Rating	Contingent Flowgate (CONT.)	ODF
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<p><b>TLR Levels</b></p> <p>0: TLR Incident Canceled</p> <p>1. Notify Reliability Coordinators of potential problems.</p> <p>2. Halt additional transactions that contribute to the overload</p> <p>3a and 3b: Curtail transactions using Non-firm Transmission Service</p> <p>4. Reconfigure to continue firm transactions if needed.</p> <p>5a and 5b: Curtail Transactions using Firm Transmission Service.</p> <p>6: Implement emergency procedures.</p>	<p><b>Priorities</b></p> <p>NX Next Hour Market Service</p> <p>NS Service over secondary receipt and delivery points</p> <p>NH Hourly Service</p> <p>ND Daily Service</p> <p>NW Weekly Service</p> <p>NM Monthly Service</p> <p>NN Non-firm imports for native load and network customers from non-designated network resources</p> <p>F Firm Service</p>
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TLR ACTIONS

LEVEL	TIME	Priority	TLR 3,4		MW Flow			COMMENTS ABOUT ACTIONS
			No. TX Curtail	TLR 3,4 MW Curtail	Limiting Element		Cont. Element	
					Present	Post Cont.	Present	

### **Appendix E. How the IDC Handles Reallocation**

The IDC algorithms reflect the Reallocation and reloading principles in this Appendix, as well as the reporting requirements, and status display. The IDC will obtain the Tag Submittal Time from the Tag Authority and post the Reloading/Reallocation information to the NERC TLR website.

A summary of IDC features that support the Reallocation process is provided in Attachment E1. Details on the interface and display features are provided in Attachment E2. Refer to Version 1.7.095 NERC Transaction Information Systems Working Group (TISWG) *Electronic Tagging Functional Specification* for details about the E-Tag system.

#### **E1. Summary of IDC Features that Support Transaction Reloading/Reallocation**

The following is a summary of IDC features and E-Tag interface that support Reloading/Reallocation:

##### **Information posted from IDC to NERC TLR website.**

1. Restricted directions (all source/sink combinations that impact a Constrained Facility(ies) with TLR 2 or higher) will be posted to the NERC TLR website and updated as necessary.
2. TLR Constrained Facility status and Transfer Distribution Factors will continue to be posted to NERC TLR website.
3. Lowest priority of Interchange Transactions (marginal “bucket”) to be Reloaded/Reallocated next-hour on each TLR Constrained Facility will be posted on NERC TLR website. This will provide an indication to the market of priority of Interchange Transactions that may be Reloaded/Reallocated the following hours.

##### **IDC Logic, IDC Report, and Timing**

1. The Reliability Coordinator will run the IDC the Reloading/Reallocation report at approximately 00:26. The IDC will prompt the Reliability Coordinator to enter a maximum loading value. The IDC will alarm if the Reliability Coordinator does not enter this value and issue a report by 00:30 or change from TLR 3a Level. The Report will be distributed to Balancing Authorities and Transmission Operators at 00:30. This process repeats every hour as long as the approved tag submission deadline for Reallocation is in effect (or until the TLR level is reduced to 1 or 0).
2. For Interchange Transactions in the restricted directions, tags must be submitted to the IDC by the approved tag submission deadline for Reallocation to be considered for Reallocation next-hour. The time stamp by the Tag Authority is regarded the official tag submission time.
3. Tags submitted to IDC after the approved tag submission deadline for Reallocation will not be allowed to start or increase but will be considered for Reallocation the next hour.
4. Interchange Transactions in restricted directions that are not indicated as “PROCEED” on the Reload/Reallocation Report will not be permitted to start or increase next hour.

### **Reloading/Reallocation Transaction Status**

Reloading/Reallocation status will be determined by the IDC for all Interchange Transactions. The Reloading/Reallocation status of each Interchange Transaction will be listed on IDC reports and NERC TLR website as appropriate. An Interchange Transaction is considered to be in a restricted direction if it is at or above the Curtailment Threshold. Interchange Transactions below the Curtailment Threshold are unrestricted and free to flow subject to all applicable Reliability Standards and tariff rules.

1. **HOLD.** Permission has not been given for Interchange Transaction to start or increase and is waiting for the next Reloading/Reallocation evaluation for which it is a candidate. Interchange Transactions with E-tags submitted to the Tag Authority prior to TLR 2 or higher being declared (pre-tagged) will change to CURTAILED Status upon evaluation that does not permit them to start or increase. Transactions with E-tags submitted to Tag Authority after TLR 2 or higher was declared (post-tagged) will retain HOLD Status until given permission to proceed or E-Tag expires.
2. **CURTAILED.** Transactions for which E-Tags were submitted to Tag Authority prior to TLR 2 or higher being declared (pre-tagged) and ordered to be curtailed totally, curtailed partially, not permitted to start, or not permitted to increase. Interchange Transactions (pre-tagged or post-tagged) that were flowing and ordered to be reduced or totally curtailed. The Balancing Authority will indicate to the IDC through the E-Tag adjustment table the Interchange Transaction's curtailed values.
3. **PROCEED:** Interchange Transaction is flowing or has been permitted to flow as a result of Reloading/Reallocation evaluation. The Balancing Authority will indicate through the E-Tag adjustment table to IDC if Interchange Transaction will reload, start, or increase next-hour per Purchasing-Selling Entity's energy schedule as appropriate.

### **Reallocation/Reloading Priorities**

1. Interchange Transaction candidates are ranked for loading and curtailment by priority as per Section 4, "Principles for Mitigating Constraints On and Off the Contract Path." This is called the "Constrained Path Method," or CPM. (secondary, hourly, daily, ... firm etc). Interchange Transactions are curtailed and loaded pro-rata within priority level per TLR algorithm.
2. Reloading/Reallocation of Interchange Transactions are prioritized first by priority per CPM. E-Tags must be submitted to the IDC by the approved tag submission deadline for Reallocation of the hour during which the Interchange Transaction is scheduled to start or increase to be considered for Reallocation.
3. During Reloading/Reallocation, Interchange Transactions using lower priority Transmission Service will be curtailed pro-rata to allow higher priority transactions to reload, increase, or start. Equal priority Interchange Transactions will not reload, start, or increase by pro-rata Curtailment of other equal priority Interchange Transactions.
4. Reloading of Interchange Transactions using Non-firm Transmission Service with CURTAILED Status will take precedence over starting or increasing of Interchange

Transactions using Non-firm Transmission Service of the same priority with PENDING Statuses.

5. Interchange Transactions using Firm Point-to-Point Transmission Service will be allowed to start as scheduled under TLR 3a as long as their E-Tag was received by the IDC by the approved tag submission deadline for Reallocation of the hour during which the Interchange Transaction is due to start or increase, regardless of whether the E-tag was submitted to the Tag Authority prior to TLR 2 or higher being declared or not. If this is the initial issuance of the TLR 3a, Interchange Transactions using Firm Point-to-Point Transmission Service will be allowed to start as scheduled as long as their E-Tag was received by the IDC by the time the TLR is declared.

**Total Flow Value on a Constrained Facility for Next Hour**

1. The Reliability Coordinator will calculate the change in net flow on a Constrained Facility due to Reallocation for the next hour based on:
  - Present constrained facility loading, present level of Interchange Transactions, and Balancing Authorities NNative Load responsibility (TLR Level 5a) impacting the Constrained Facility,
  - SOLs or IROLs, known interchange impacts and Balancing Authority NNative Load responsibility (TLR Level 5a) on the Constrained Facility the next hour, and
  - Interchange Transactions scheduled to begin the next hour.
2. The Reliability Coordinator will enter a maximum loading value for the constrained facility into the IDC as part of issuing the Reloading/Reallocation report.
3. The Reliability Coordinator is allowed to call for TLR 3a or 5a when approaching a SOL or IROL to allow maximum transactional flow next hour, and to manage flows without violating transmission limits.
4. The simultaneous curtailment and Reallocation for a Constrained Facility is allowed. This reduces the flow over the Constrained Facility while allowing Interchange Transactions using higher priority Transmission Service to start or increase the next hour. This may be used to accommodate change in flow next-hour due to changes other than Point-to-Point Interchange Transactions while respecting the priorities of Interchange Transactions flowing and scheduled to flow the next hour. The intent is to reduce the need for using TLR 3b, which prevents new Interchange Transactions from starting or increasing the next hour.
5. The Reliability Coordinator must allow Interchange Transactions to be reloaded as soon as possible. Reloading must be in an orderly fashion to prevent a SOL or IROL violation from (re)occurring and requiring holding or curtailments in the restricted direction.

## E2. Timing Requirements

### TLR Levels 3a and 5a Issuing/Processing Time Requirement

1. In order for the IDC to be reasonably certain that a TLR Level 3a or 5a re-allocation/reloading report in which all tags submitted by the approved tag submission deadline for Reallocation are included, the report must be generated no earlier than 00:25 to allow the 10-minute approval time for Transactions that start next hour.
2. In order to allow a Reliability Coordinator to declare a TLR Level 3a or 5a at any time during the hour, the TLR declaration and Reallocation/Reloading report distribution will be treated as independent processes by the IDC. That is, a Reliability Coordinator may declare a TLR Level 3a or 5a at any time during the course of an hour. However, if a TLR Level 3a or 5a is declared for the next hour prior to 00:25 (see Figure 5 at right), the Reallocation/Reloading report that is generated will be made available to the issuing Reliability Coordinator only for previewing purposes, and cannot be distributed to the other Reliability Coordinators or the market. Instead, the issuing Reliability Coordinator will be reminded by an IDC alarm at 00:25 to generate a new Reallocation/Reloading report that will include all tags submitted prior to the approved tag submission deadline for Reallocation.
3. A TLR Level 3a or 5a Reallocation/Reloading report must be confirmed by the issuing Reliability Coordinator prior to 00:30 in order to provide a minimum of 30 minutes for the Reliability Coordinators with tags sinking in its Reliability Area to coordinate the Reallocation and Reloading with the Sink Balancing Authorities. This provides only 5 minutes (from 00:25 to 00:30) for the issuing Reliability Coordinator to generate a Reallocation/Reloading report, review it, and approve it.
4. The TLR declaration time will be recorded in the IDC for evaluating transaction sub-priorities for Reallocation/Reloading purposes (see Subpriority Table, in the **IDC Calculations and Reporting** section below).

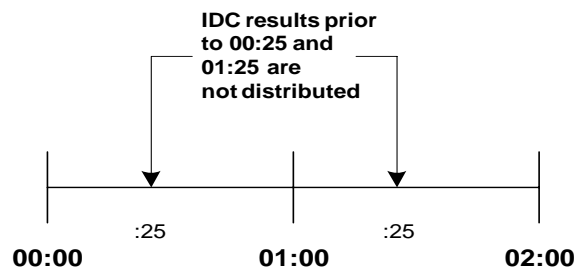


Figure 5 - IDC report may be run prior to 00:25, but results are not distributed.

### Re-Issuing of a TLR Level 2 or Higher

Each hour, the IDC will automatically remind the issuing Reliability Coordinator (via an IDC alarm) of a TLR level 2 or higher declared in the previous hour or earlier about re-issuing the TLR. The purpose of the reminder is to enable the Reliability Coordinator to Reallocate or reload currently halted or curtailed Interchange Transactions next hour. The reminder will be in the form of an alarm to the issuing Reliability Coordinator, and will take place at 00:25 so that, if the Reliability Coordinator re-issues the TLR as a TLR level 3a or 5a, all tags submitted prior to the approved tag submission deadline for Reallocation are available in the IDC.

### IDC Assistance with Next Hour Point-to-Point Transactions

In order to assist a Reliability Coordinator in determining the MW relief required on a Constrained Facility for the next hour for a TLR level 3a or 5a, the IDC will calculate and present the total MW impact of all currently flowing and scheduled Point-to-Point Transactions

for the next hour. In order to assist a Reliability Coordinator in determining the MW relief required on a Constrained Facility for the next hour during a TLR level 5a, the IDC will calculate and present the total MW impact of all currently flowing and scheduled Point-to-Point Transactions for the next hour as well as Balancing Authority with flows due to service to Network Customers and Native Load. The Reliability Coordinator will then be requested to provide the total incremental or decremental MW amount of flow through the Constrained Facility that can be allowed for the next hour. The value entered by the Reliability Coordinator and the IDC-calculated amounts will be used by the IDC to identify the relief/reloading amounts (delta incremental flow value) on the constrained facility. The IDC will determine the Transactions to be reloaded, reallocated, or curtailed to make room for the Transactions using higher priority Transmission Service. The following examples show the calculation performed by IDC to identify the “delta incremental flow:”

**Example 1**

Flow to maintain on Facility	800 MW
Expected flow next hour from Transactions using Point-to-Point Transmission Service	950 MW
Contribution from flow next hour from service to Network customers and Native Load	-100 MW
Expected Net flow next hour on Facility	850 MW
Amount of Transactions using Point-to-Point Transmission Service to hold for Reallocation	850 MW – 800 MW = 50 MW
Amount to enter into IDC for Transactions using Point-to-Point Transmission Service	950 MW – 50 MW = 900 MW

**Example 2**

Flow to maintain on Facility	800 MW
Expected flow next hour from Transactions using Point-to-Point Transmission Service	950 MW
Contribution from flow next hour from service to Network customers and Native Load	50 MW
Expected Net flow next hour on Facility	1000 MW
Amount of Transactions using Point-to-Point Transmission Service to hold for Reallocation	1000 MW – 800 MW = 200 MW
Amount to enter into IDC for Transactions using Point-to-Point Transmission Service	950 MW – 200 MW = 750 MW

**Example 3**

Flow to maintain on Facility	800 MW
Expected flow next hour from Transactions using Point-	950 MW

to-Point Transmission Service	
Contribution from flow next hour from service to Network customers and Native Load	-200 MW
Expected Net flow next hour on Facility	750 MW
Amount of Transactions using Point-to-Point Transmission Service to hold for Reallocation	750 MW – 800 MW = -50 MW None are held

For a TLR levels 3b or 5b the IDC will request the Reliability Coordinator to provide the MW requested relief amount on the Constrained Facility, and will not present the current and next hour MW impact of Point-to-Point transactions. The Reliability Coordinator-entered requested relief amount will be used by the IDC to determine the Interchange Transaction Curtailments and flows due to service to Network Customers and Native Load (TLR Level 5b) in order to reduce the SOL or IROL violation on the Constrained Facility by the requested amount.

***IDC Calculations and Reporting***

At the time the TLR report is processed, the IDC will use all candidate Interchange Transactions for Reallocation that met the approved tag submission deadline for Reallocation plus those Interchange Transactions that were curtailed or halted on the previous TLR action of the same TLR event. The IDC will calculate and present an Interchange Transactions Halt/Curtailment list that will include reload and Reallocation of Interchange Transactions. The Interchange Transactions are prioritized as follows:

1. All Interchange Transactions will be arranged by Transmission Service Priority according to the Constrained Path Method. These priorities range from 1 to 6 for the various non-firm Transmission Service products (TLR levels 3a and 3b). Interchange Transactions using Firm Transmission Service (priority 7) are used only in TLR levels 5a and 5b. Next-Hour Market Service is included at priority 0 (Recommended to be placed in Attachment 2).

Examples of Interchange Transactions using Non-firm Transmission Service sub-priority settings begin in the **Transaction Sub-priority Examples** following sections

2. All Interchange Transactions using Firm Transmission Service will be put in the same priority group, and will be Curtailed/Reallocated pro-rata, independent of their current status (curtailed or halted) or time of submittal with respect to TLR issuance (TLR level 5a). Under a TLR 5a, all Interchange Transactions using Non-firm Transmission Service that is at or above the Curtailment Threshold will have been curtailed and hence sub-prioritizing is not required.

All Interchange Transactions processed in a TLR are assigned one of the following statuses:

- PROCEED:** The Interchange Transaction has started or is allowed to start to the next hour MW schedule amount.
- CURTAILED:** The Interchange Transaction has started and is curtailed due to the TLR, or it had not started but it was submitted prior to the TLR being declared (level 2 or higher).



**HOLD:** The Interchange Transaction had never started and it was submitted after the TLR being declared – the Interchange Transaction is held from starting next hour or the transaction had never started and it was submitted to the IDC after the Approved-Tag Submission Deadline – the Interchange Transaction is to be held from starting next hour and is not included in the Reallocation calculations until following hour.

Upon acceptance of the TLR Transaction Reallocation/reloading report by the issuing Reliability Coordinator, the IDC will generate a report to be sent to NERC that will include the PSE name and Tag ID of each Interchange Transaction in the IDC TLR report. The Interchange Transaction will be ranked according to its assigned status of HOLD, CURTAILED or PROCEED. The reloading/Reallocation report will be made available at NERC's public TLR website, and it is NERC's responsibility to format and publish the report.

### **Tag Reloading for TLR Levels 1 and 0**

When a TLR Level 1 or 0 is issued, the Constrained Facility is no longer under SOL or IROL violation and all Interchange Transactions are allowed to flow. In order to provide the Reliability Coordinators with a view of the Interchange Transactions that were halted or curtailed on previous TLR actions (level 2 or higher) and are now available for reloading, the IDC provides such information in the TLR report.

### **New Tag Alarming**

Those Interchange Transactions that are at or above the Curtailment Threshold and are *not* candidates for Reallocation because the tags for those Transactions were not submitted by the approved tag submission deadline for Reallocation will be flagged as HOLD and must not be permitted to start or increase during the next hour. To alert Reliability Coordinators of those Transactions required to be held, the IDC will generate a report (for viewing within the IDC only) at various times. The report will include a list of all HOLD Transactions. In order not to overwhelm the Reliability Coordinator with alarms, only those who issued the TLR and those whose Transactions sink within their Reliability Area will be alarmed. An alarm will be issued for a given tag only once and will be issued for all TLR levels for which halting new Transactions is required: TLR Level 2, 3a, 3b, 5a and 5b.

### **Tag Adjustment**

The Interchange Transactions with statuses of HOLD, CURTAILED or PROCEED must be adjusted by a Tag Authority or Tag Approval entity. Without the tag adjustments, the IDC will assume that Interchange Transactions were not curtailed/held and are flowing at their specified schedule amounts.

1. Interchange Transactions marked as CURTAILED should be adjusted to a cap equal to, or at the request of the originating PSE, less than the reallocated amount (shown as the MW CAP on the IDC report). This amount may be zero if the Transaction is fully curtailed.
2. Interchange Transaction marked as PROCEED should be adjusted to reload (NULL or to its MW level in accordance with its Energy Profile in the adjusted MW in the E-Tag) if the Interchange Transaction has been previously adjusted; otherwise, if the Interchange Transaction is flowing in full, the Tag Authority need not issue an adjust.
3. Interchange Transactions marked as HOLD should be adjusted to 0 MW.

### **Special Tag Status**

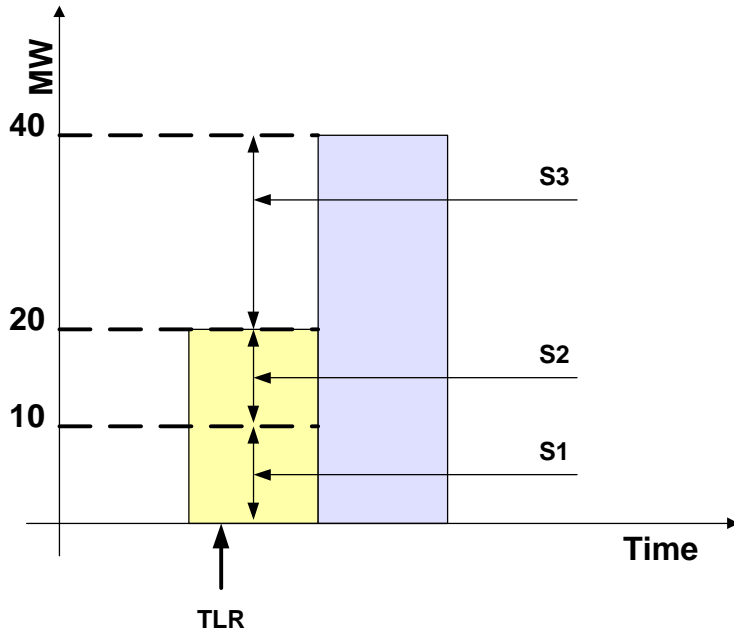
There are cases in which a tag may be marked with a composite state of ATTN\_REQD to indicate that tag Authority/Approval failed to communicate or there is an inconsistency between the validation software of different tag Authority/Approval entities. In this situation, the tag is no longer subject to passive approval and its status change to IMPLEMENT may take longer than 10 minutes. Under these circumstances, the IDC may have a tag that is issued prior to the Tag Submittal Deadline that will not be a candidate for Reallocation. Such tags, when approved by the Tag Authority, will be marked as HOLD and must be halted.

### **Transaction Sub-Priority Examples**

The following describes examples of Interchange Transactions using Non-firm Transmission Service sub-priority setting for an Interchange Transaction under different circumstances of current-hour and next-hour schedules and active MW flowing as modified by tag adjust table in E-Tag.

Example 1 – Transaction curtailed, next-hour Energy Profile is higher

Energy Profile: Current hour	20 MW
Actual flow following curtailment: Current hour	10 MW
Energy Profile: Next hour	40 MW

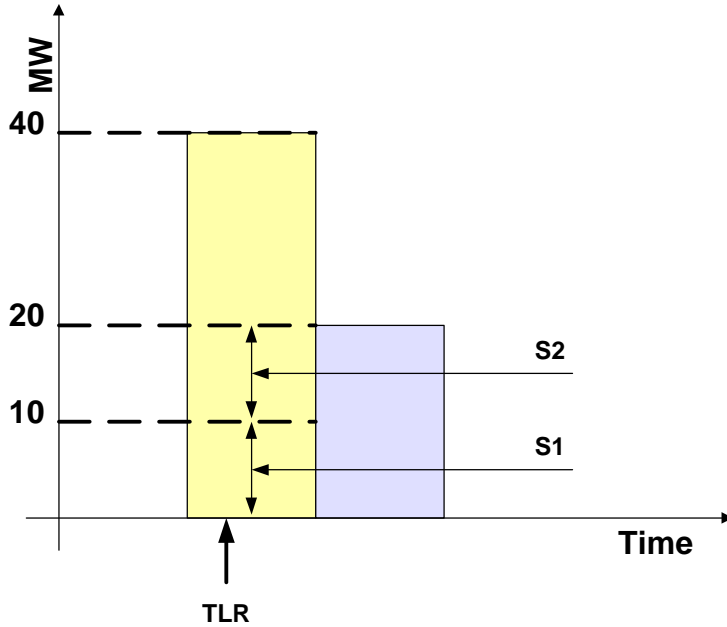


**Sub-priorities for Transaction MW:**

<i>Sub-Priority</i>	<i>MW Value</i>	<i>Explanation</i>
S1	10 MW	Maintain current curtailed flow
S2	+10 MW	Reload to current hour Energy Profile
S3	+20 MW	Load to next hour Energy Profile
S4		

**Example 2 – Transaction curtailed, next-hour Energy Profile is lower**

Energy Profile: Current hour	40 MW
Actual flow following curtailment: Current hour	10 MW
Energy Profile: Next hour	20 MW

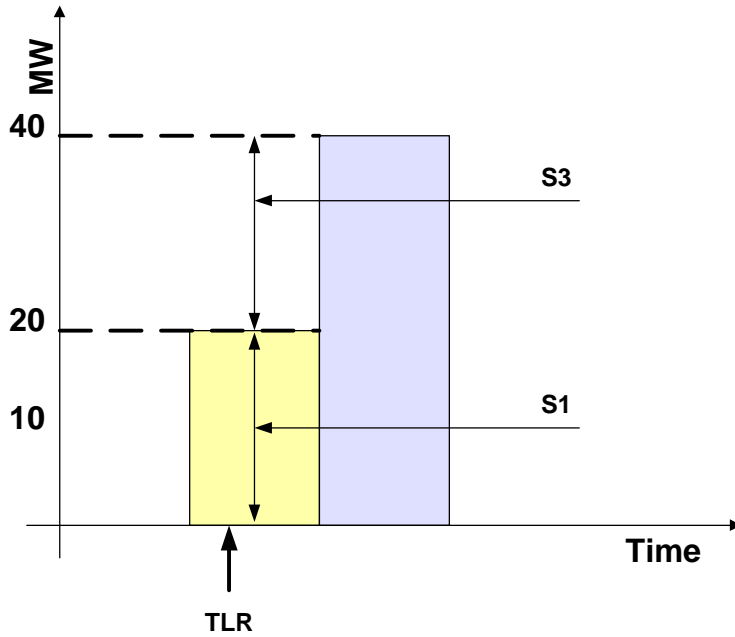


**Sub-priorities for Transaction MW:**

<i>Sub-Priority</i>	<i>MW Value</i>	<i>Explanation</i>
S1	10 MW	Maintain current curtailed flow
S2	+10 MW	Reload to <i>lesser</i> of current and next-hour Energy Profile
S3	+0 MW	Next-hour Energy Profile is 20MW, so no change in MW value
S4		

**Example 3 – Transaction not curtailed, next-hour Energy Profile is higher**

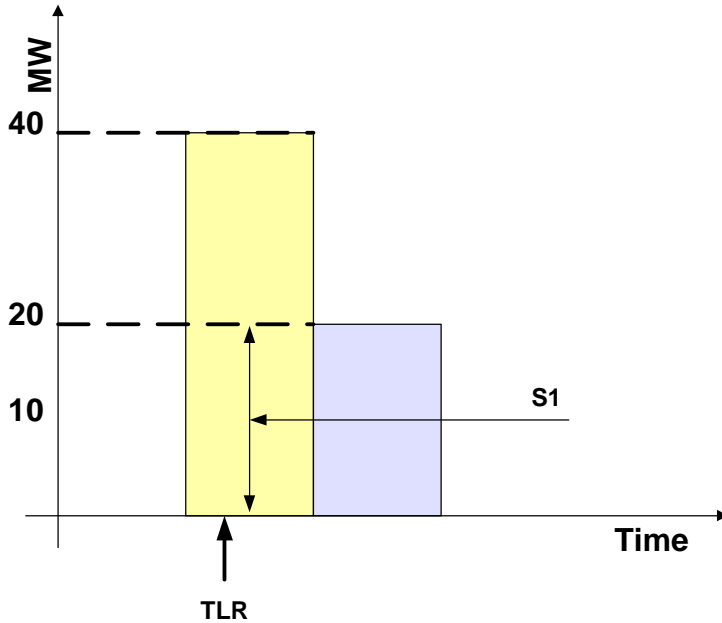
Energy Profile: Current hour	20 MW
Actual flow following curtailment: Current hour	20 MW (no curtailment)
Energy Profile: Next hour	40 MW



<i>Sub-Priority</i>	<i>MW Value</i>	<i>Explanation</i>
S1	20 MW	Maintain current flow (not curtailed)
S2	+0 MW	Reload to <i>lesser</i> of current and next-hour Energy Profile
S3	+20 MW	Next-hour Energy Profile is 40MW
S4		

**Example 4 – Transaction not curtailed, next-hour Energy Profile is lower**

Energy Profile: Current hour	40 MW
Actual flow following curtailment: Current hour	40 MW (no curtailment)
Energy Profile: Next hour	20 MW

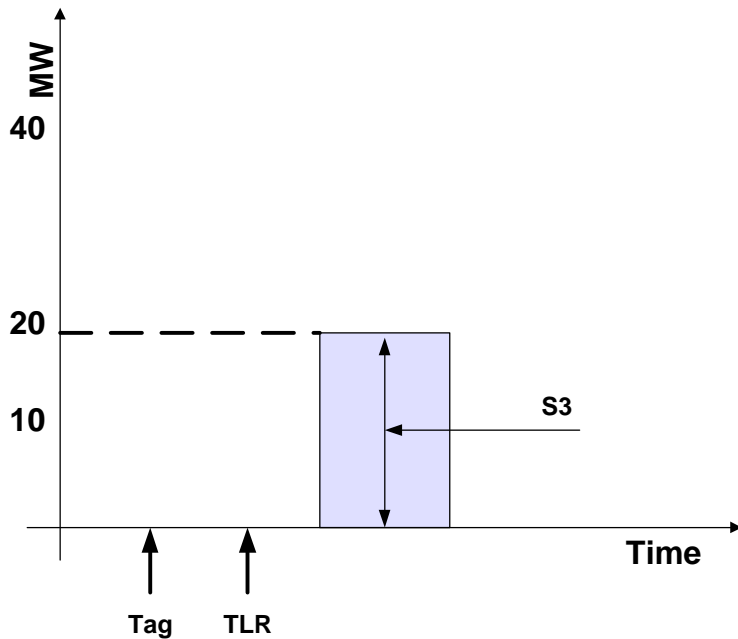


**Sub-priorities for Transaction MW:**

<i>Sub-Priority</i>	<i>MW Value</i>	<i>Explanation</i>
S1	20 MW	Reduce flow to next-hour Energy Profile (20MW)
S2	+0 MW	Reload to <i>lesser</i> of current and next-hour Energy Profile
S3	+0 MW	Next-hour Energy Profile is 20MW
S4		

**Example 5 — TLR Issued before Transaction was scheduled to start**

Energy Profile: Current hour	0 MW
Actual flow following curtailment: Current hour	0 MW (Transaction scheduled to start <i>after</i> TLR initiated)
Energy Profile: Next hour	20 MW



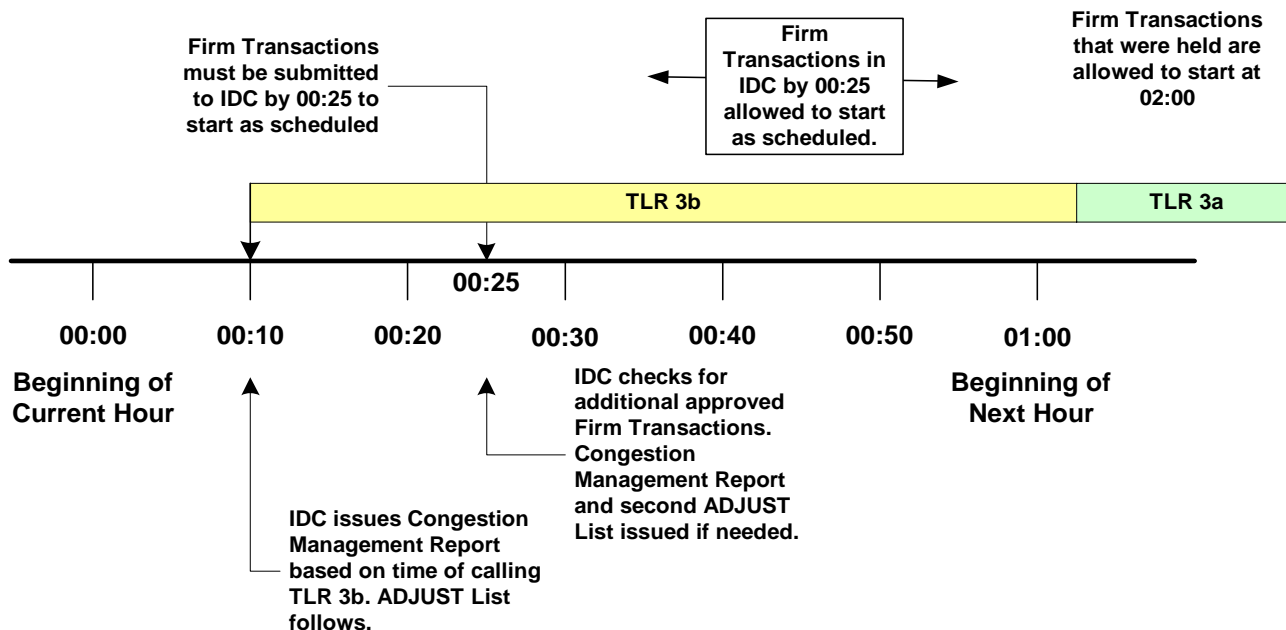
<i>Sub-Priority</i>	<i>MW Value</i>	<i>Explanation</i>
S1	0 MW	Transaction was not allowed to start
S2	+0 MW	Transaction was not allowed to start
S3	+20 MW	Next-hour Energy Profile is 20MW
S4	+0	Tag submitted prior to TLR

**Appendix F. Considerations for Interchange Transactions**

**Using Firm Point-to-Point Transmission Service**

The following cases explain the circumstances under which an Interchange Transaction using Firm Point-to-Point Transmission Service will be allowed to start as scheduled during a TLR 3b:

**Case 1: TLR 3b is called between 00:00 and 00:25 and the Interchange Transaction using Firm Point-to-Point Transmission Service is submitted to IDC by 00:25.**



The IDC will examine the current hour (00) and next hour (01) for all Interchange Transactions.

The IDC will issue an ADJUST List based upon the time the TLR 3b is called. The ADJUST List will include curtailments of Interchange Transactions using Non-firm Point-to-Point Transmission Service as necessary to allow room for those Interchange Transactions using Firm Point-to-Point Transmission Service to start as scheduled.

At 00:25, the IDC will check for additional Interchange Transactions using Firm Point-to-Point Transmission Service that were submitted to the IDC by that time and issue a second ADJUST List if those additional Interchange Transactions are found.

All existing or new Interchange Transactions using Non-firm Point-to-Point Transmission Service that are increasing or expected to start during the current hour or next hour will be placed on HALT or HOLD. There is no Reallocation of lower-priority Interchange Transactions using Non-firm Point-to-Point Transmission Service.

Interchange Transactions using Firm Point-to-Point Transmission Service that were submitted to the IDC by 00:25 will be allowed to start as scheduled.



## **Standard IRO-006-4 — Reliability Coordination — Transmission Loading Relief**

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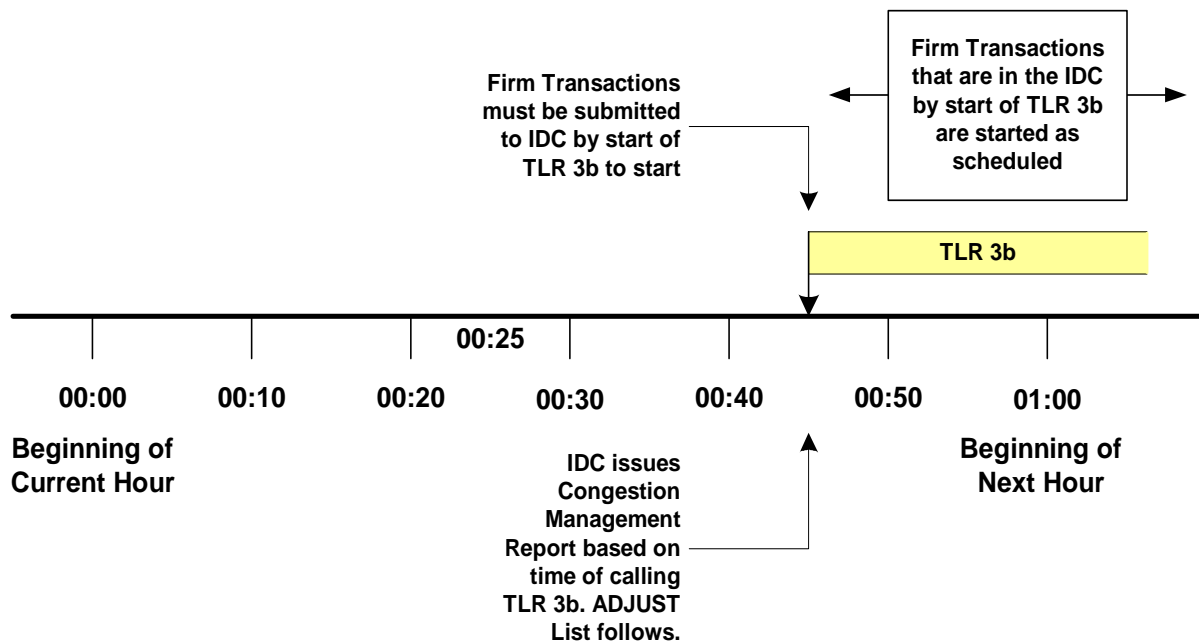
Interchange Transactions using Firm Point-to-Point Transmission Service that were submitted to the IDC after 00:25 will be held.

Once the SOL or IROL violation is mitigated, the Reliability Coordinator shall call a TLR Level 3a (or lower). If a TLR Level 3a is called:

Interchange Transactions using Firm Point-to-Point Transmission Service that were submitted to the IDC by 00:25 will be allowed to start as scheduled at 02:00.

Interchange Transactions using Non-firm Point-to-Point Transmission Service that were held may then be reallocated to start at 02:00.

**Case 2: TLR 3b is called after 00:25 and the Interchange Transaction using Firm Point-to-Point Transmission Service is submitted to the IDC no later than the time at which the TLR 3b is called.**



The IDC will examine the current hour (00) and next hour (01) for all Interchange Transactions.

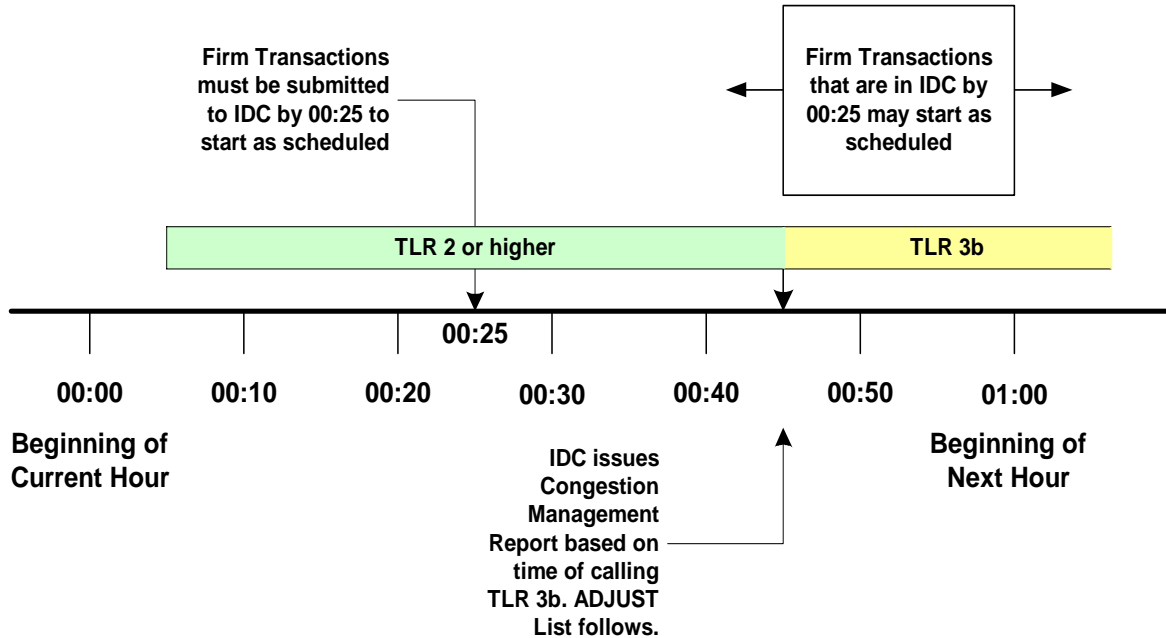
The IDC will issue an ADJUST List at the time the TLR 3b is called. The ADJUST List will include additional curtailments of Interchange Transactions using Non-firm Point-to-Point Transmission Service as necessary to allow room for those Interchange Transactions using Firm Point-to-Point Transmission Service to start at as scheduled.

All existing or new Interchange Transactions using Non-firm Point-to-Point Transmission Service that are increasing or expected to start during the current hour or next hour will be placed on HALT or HOLD. There is no Reallocation of lower-priority Interchange Transactions using Non-firm Point-to-Point Transmission Service.

Interchange Transactions using Firm Point-to-Point Transmission Service that were submitted to the IDC by the time the TLR 3b was called will be allowed to start at as scheduled.

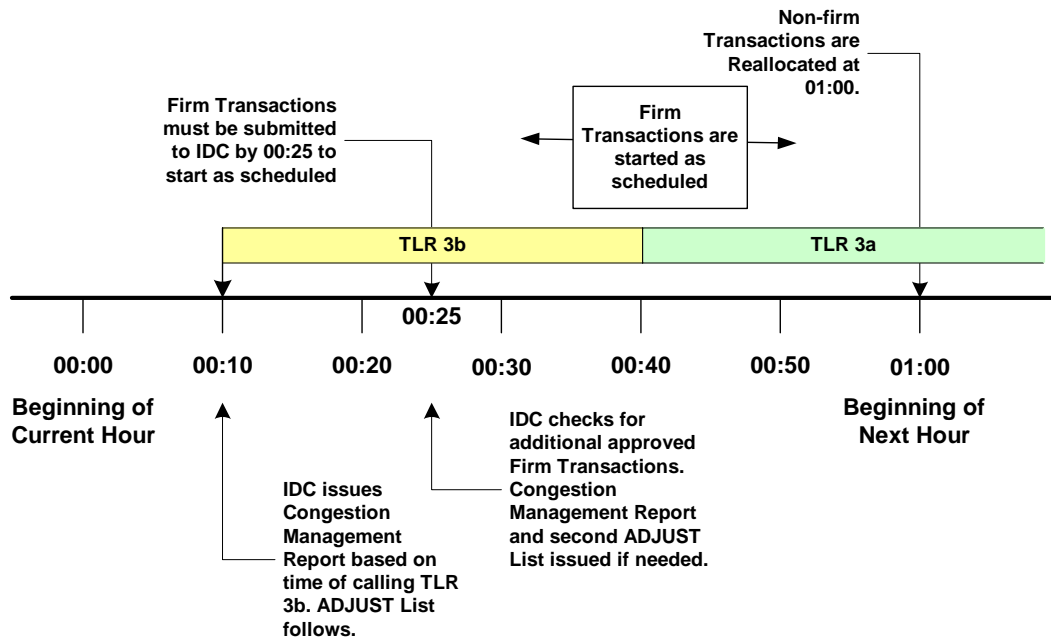
Interchange Transaction using Firm Point-to-Point Transmission Service that were submitted to the IDC after the TLR 3b was called will be held until the next issuance for TLR (either TLR 3b, 3a, or lower level).

Case 3. TLR 2 or higher is in effect, a TLR 3b is called after 00:25, and the Interchange Transaction using Firm Point-to-Point Transmission Service is submitted to the IDC by 00:25.



If a TLR 2 or higher has been issued and 3B is subsequently issued, then only those Interchange Transactions using Firm Point-to-Point Transmission Service that had been submitted to the IDC by 00:25 will be allowed to start as scheduled. All other Interchange Transactions are held.

Case 4. TLR 3b is called before 00:25 and the Interchange Transaction is submitted to the IDC by 00:25. TLR 3a is called at 00:40.

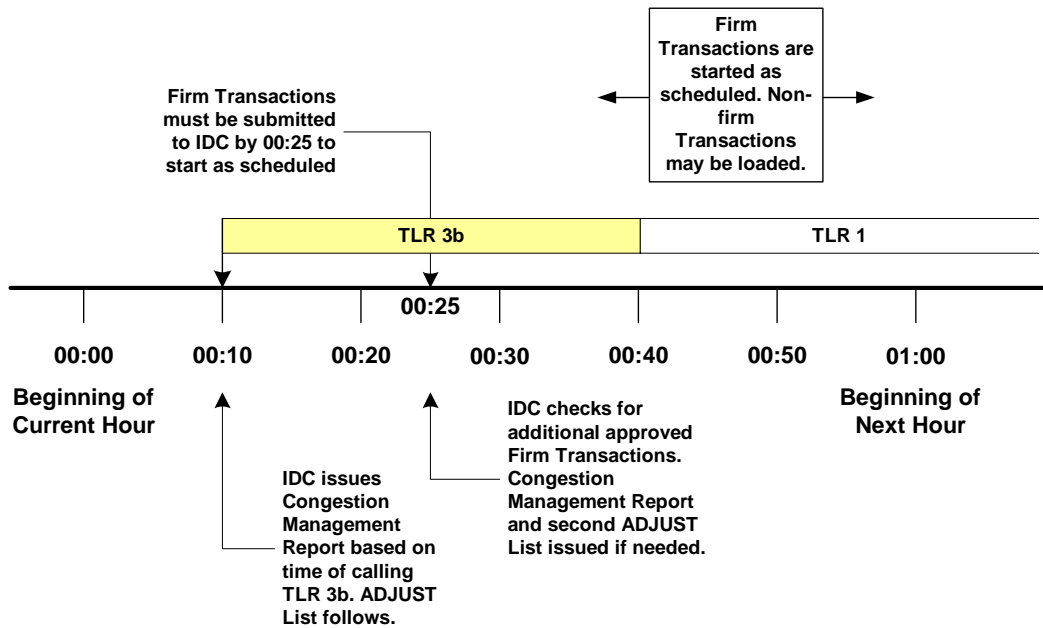


Same as Case 1, but TLR Level 3b ends at 00:40 and becomes TLR Level 3a.

All Interchange Transactions using Firm Point-to-Point Transmission Service will start as scheduled if in by the time the 3A is declared.

All Interchange Transactions using Non-firm Point-to-Point Transmission Service are reallocated at 01:00.

Case 5. TLR 3b is called before 00:25 and the Interchange Transaction is submitted to the IDC by 00:25. TLR 1 is called at 00:40.



Same as Case 1, but TLR Level 3b ends at 00:40 and becomes TLR Level 1.

All Interchange Transactions using Firm Point-to-Point Transmission Service will start as scheduled.

All Interchange Transactions using Non-firm Point-to-Point Transmission Service may be loaded immediately.

## **Exhibit B**

# **Record of Development of Proposed Reliability Standard**



**Reliability Standards**

**Reliability Coordination - Transmission Loading Relief (Project 2006-08)**

[Registered Ballot Body](#) | [Related Files](#) | [Reliability Standards Home Page](#) | [Drafting Team Rosters](#)

**Status**

**IRO-006-4 was approved by a Ballot Pool on September 23 and approved for adoption by the NERC Board of Trustees on October 23, 2007.**


**Purpose/Industry Need**

In August 2004, NERC and NAESB agreed to immediately begin a joint effort to update the Eastern Interconnection TLR Procedure, as reflected in Attachment 1 to reliability standard IRO-006-0, to divide the reliability requirements and business practices, and to incorporate other necessary improvements to the TLR procedure. In December 2004 NERC and NAESB formed the joint TLR Subcommittee to clarify and focus Attachment 1 to NERC reliability standard IRO-006-0 on the TLR requirements that are necessary for reliability, as distinguished from those TLR requirements that are business practices.

Proposed Standard	Supporting Materials	Comment Period	Comments Received	Response to Comments
<p>Announcement</p> <p>TLR Standard IRO-006-4 Posted for a 10-day Recirculation Ballot Window</p> <p>IRO-006-4</p> <p>(Same as 19–22)</p>	<p>White Paper</p> <ol style="list-style-type: none"> <li>1. Implementation Plan</li> <li>2. IRO-006-4 Attachment 1 with "mapping"</li> <li>3. NERC/NAESB System Operator's TLR Reference Manual</li> <li>4. Violation Severity Level Guideline for IRO-006-4 Attachment 1</li> </ol> <p>(Same as 19–22)</p>	<p>09/13/07 - 09/23/07</p> <p>Recirculation Ballot Window</p>		<p>Announcement (31)</p> <p>Final Ballot Results (30)</p>
<p>Announcement</p> <p>TLR Standard IRO-006-4 Posted for a 10-</p>	<p>White Paper</p> <ol style="list-style-type: none"> <li>1. Implementation Plan <a href="#">Clean</a>   <a href="#">Redline</a></li> </ol>	<p>08/20/07 - 08/29/07</p> <p>Ballot Window (closed)</p>		<p>Ballot Summary (29)</p> <p>Consideration of Comments</p>

Proposed Standard	Supporting Materials	Comment Period	Comments Received	Response to Comments
<p>day Ballot Window</p> <p>IRO-006-4 Clean   Redline to last posted</p> <p>Redline to last approval</p> <p>(Same as 19–22)</p>	<p>to last posting</p> <ol style="list-style-type: none"> <li>2. IRO-006-4 Attachment 1 with "mapping"</li> <li>3. NERC/NAESB System Operator's TLR Reference Manual</li> <li>4. Violation Severity Level Guideline for IRO-006-4 Attachment 1</li> </ol> <p>(Same as 23–27)</p>			(28)
<p>Announcement (22)</p> <p>TLR Standard IRO-006-4 Posted for a 30-day Pre-ballot Review July 20 through August 20, 2007</p> <p>IRO-006-4 (20 &amp; 21) Clean   Redline to last posted</p> <p>Redline to last approval (19)</p>	<ol style="list-style-type: none"> <li>1. White Paper</li> <li>2. Implementation Plan (26 &amp; 27) Clean   Redline to last posting</li> <li>3. IRO-006-4 Attachment 1 with "mapping" (25)</li> <li>4. NERC/NAESB System Operator's TLR Reference Manual (24)</li> <li>5. Violation Severity Level Guideline for IRO-006-4 Attachment 1 (23)</li> </ol>	<p>07/20/07 - 08/20/07</p> <p>Pre-ballot Review (closed)</p>		
<p>Announcement (11)</p> <p>TLR Standard IRO-006-4 Posted for a 45-day Comment Period May 1 through June 14, 2007</p> <p>IRO-006-4 (9 &amp; 10) Clean   Redline to last approved</p>	<ol style="list-style-type: none"> <li>1. White Paper (15)</li> <li>2. IRO-006-4 Attachment 1 with "mapping" (13 &amp; 14) Clean   Redline</li> <li>3. Implementation Plan (12)</li> </ol>	<p>05/01/07 - 06/14/07 (closed)</p> <p>Comment Form (16)</p>	<p>Comments (17)</p>	<p>Consideration of Comments (18)</p>



Proposed Standard	Supporting Materials	Comment Period	Comments Received	Response to Comments
Final SAR (7)		Nomination Form (8) Due 01/12/07 (closed)		
Draft SAR Version 1 (3) Proposed changes to IRO-006-0 (2) NERC-NAESB Split Justification (1)		Nomination Form (4) Due 7/24/06 (closed)	Comments (5)	Consideration of Comments (6)
To download a file click on the file using your right mouse button, then save it to your computer in a directory of your choice.				
Documents in the PDF format require use of the Adobe Reader® software. Free <a href="#">Adobe Reader®</a> software allows anyone view and print Adobe <a href="#">Portable Document Format</a> (PDF) files. For more information download the <a href="#">Adobe Reader User Guide</a> .				

**All comments should be forwarded to [sarcomm@nerc.net](mailto:sarcomm@nerc.net).  
Questions? Contact Barbara Bogenrief - [barbara.bogenrief@nerc.net](mailto:barbara.bogenrief@nerc.net) or 609-452-8060.**

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Reliability	e	NEW Joel Bus Prac #	Both	Delete	Discuss
SECTION 1	TLR Procedure	General Requirements Regarding use of Interconnection Procedures			
1.1(new section 1.1)					Added "All Reliability Coordinators shall comply with the request of the Reliability Coordinator who initiated the TLR Procedure, unless the initiating Reliability Coordinator agrees otherwise."
1.2 Should also be incorporated into the reliability standard (new section 1.2)	1.2 This procedure can be used at any Flowgate in any situation as modeled by the IDC.				Added "In addition, a Reliability Coordinator may implement other NERC approved procedures to request relief to mitigate any other transmission constraints as necessary to preserve the reliability of the system."
1.2.1 (new section 1.2)					
	1.2.1.1	Section 2.1			
1.3 (new section 1.3)				deleted ref to tie facilities	Added - Order of TLR Levels and taking emergency action
1.4 (new section 1.4)		Wording & applicability needs to be reviewed in BPS		deleted ref to RCIS because it covers "How"	Emergency: add to reliability 1.4.3,,,"updated by RC at least once per hour or when conditions change."
	1.4.1	Section 1.4			
	1.4.1.1	Section 1.4			
1.4.2 (new section 1.4.1)					
1.4.3 (new section 1.4.2)					
	1.4.3.1 delete but, add a BP requirement that identifies the commercial notification requirements.	Section 1.4 Commercial Notifications			
1.4.4 (new section 1.4.3)	Moved to 1.4 in NAESB BP without specific reference to RCIS				
1.5 (new section 1.5)		Section 1.1			Added - Reference to NAESB BP
		Section 1.3.2	1.5.1 reword for market based solutions (purple notes) & rec. NERC mod IRO-006 req 4		Added - Reference to NAESB BP, & "or its successor" after IDC

1.54					Replace "Curtailment" with "Relief action"
1.6.1 (new section 1.5.1)					
1.6.2 (new section 1.5.2)					
1.6.3 (new section 1.5.3)					
1.6.4 (new section 1.5.4)					
	1.6.5 Need to change use of the word curtailment to redispatchment. IDC can not currently implement this provision.	Section 1.3, 1.3.1			Term Re-dispatch now market-based congestion management; added regulatory-approved market-based congestion management procedures or re-dispatch procedures
	1.6.6				
1.7					
1.8 (new section 1.6)	1.8.4 access	Section 1.5, Access to procedure logs	1.8 with rewording. Reliability requires the log & BP requires access to the log.		
1.9 (new section 1.7)					
1.9.1 (new section 1.7.1)					
	1.9.2 reword to replace MC role	Section 1.6 - place holder for old MC language			Probably delete since disban of MC; added as a place holder
1.9.3 (new section 1.7.2)					
SECTION 2	TLR Level 1	NEW SECTION 2 - Interchange Transaction Priorities			
2.1(new section 2.1)		Section 3.1, 3.2			NEERC defines level of emergency (2.1.1 - 2.9.1). NAESB defines the actions consistent with those emergencies (TLR level) NEED TO: Agree on a different term that defines the condition w/o using TLR so that the levels identified can be used for more than TLRs.
2.1.1 (new section 2.1.1)					
	2.1.2			2.1.2	
2.2 (new section 2.2)		Section 3.2			
2.2.1(new section 2.2.1)					
	2.2.2 & 2.2.3	Section 3.2.2, 3.2.3, 3.2.4			
2.3 (new section 2.3)		Section 3.2.1, 3.2.1.1, 3.2.1.2			NEED TO: Agree on a different term that defines the condition w/o using TLR so that the levels identified can be used for more than TLRs.
2.3.1(new section 2.3.1)					
	2.3.2 Dynamic Sched BP	Question on Section 3.2.5 ????? Sections 3.3, 3.3.1, 3.3.1.1, 3.3.2.2, 3.3.3			
	2.3.2.1	Section 3.3.2, 3.3.2.3			
	2.3.2.2	Section 3.3.2.4			
	2.3.2.3	Section 3.3.2.3.3			
	2.3.2.4	Section 3.3.2.6			
	2.3.2.4.1	Section 3.3.2.6.1			

	2.3.2.5	Section 3.3.3.1			
	2.3.2.6	Section 3.3.2.1, 3.3.2.1.1			
2.4 (new section 2.4)		Section 3.4	Add a New BP - TP or RC must post the transmission thresholds - new procedures		
2.4.1 (new section 2.4.1)					
	2.4.2	Section 3.4.1, 3.4.3			
	2.4.3	Section 3.4.2, 3.4.3			
2.5 (new section 2.5)					
2.5.1 (new section 2.5.1)					
2.5.2 not both		Section 3.4.4, 3.4.4.1, 3.5.1, and question on 3.5.2???? Ref to Appendix F will need to change to whatever IDC ref doc becomes	2.5.2 reword		NEED to re-word to sync with BP version. Review all other Holding steps for either revision or re-wording. 2.2.2, 2.4.2, 2.5.2
2.5.3 (new section 2.5.2)			A BP defining cost recovery may be necessary to add		
2.6 (new section 2.6)					
2.6.1 (new section 2.6.1)					
	2.6.2	Section 3.6, 3.6.1			
	2.6.2.1	Section 3.6.1.1, 3.6.1.1.1			
	2.6.2.2	Section 3.6.1.2	A BP defining cost recovery may be necessary to add		
	2.6.2.3 reword to sound less like reliability req & more like resource allocation requirement.	Section 3.6.1.3, 3.6.1.3.1, 3.6.1.3.2			
2.7 (new section 2.7)					
2.7.1 (new section 2.7.1)					
	2.7.2	Section 3.7, 3.7.1.			
	2.7.2.1	Section 3.7.1.1., 3.7.1.1.1			
	2.7.2.2	Section 3.7.1.2			
	2.7.2.3	Section 3.7.1.3, 3.7.1.3.1, 3.7.1.3.2			
2.8 (new section 2.8)			Add reference to req 4 to specify how to handle this		
2.8.1 (new section 2.8.1)					
2.8.2 (new section 2.8.2)					
2.9 (new section 2.9)					
2.9.1 (new section 2.9.1)					

SECTION 3	Interchange Transaction Curtailment in TLR procedures	INTERCONNECTION-WIDE PROCEDURE FOR CURTAILMENT OF INTERCHANGE TRANSACTIONS			3 & 3.1 Question of where to include? Here or another standa
3.1 Reliability Coordinators shall consider all approved Tags for Interchange Transactions at or above the Curtailment Threshold that have been submitted to the IDC by 00:25 for Reallocation at 01:00 when re-issuing a TLR 3a or 5. AND added Naesb BP reference. (new section 3.1)	3.1	Section 2.1			Remainder of section 3 deleted by NERC.
	3.1.1	Section 2.1, 2.1.1, 2.1.2, 2.1.3, 2.1.4, 2.1.5, 2.1.6, 2.1.7, 2.1.8			
	3.1.2				Restated and elaborated on in section 2.2.
					3.2 & all subs - repeat of 2.3 & 2.4
					3.3 & all subs - repeat of 2.6 & 2.7
SECTION 4	MITIGATING CONSTRAINTS ON & OFF CONTRACT PATH DURING TLR	Reserved for OWL, Market based Congestion Management Solutions			
	4.1	Section 2.2			
	4.1.1	Section 2.2.1, 2.2.1.1			
	4.1.2	Section 2.2.1.2			
	4.2	Section 2.3			
	4.2.1	Section 2.3.1, 2.3.1.1			
	4.2.2	Section 2.3.1.2			
SECTION 5	Parallel Flow Calc Procedure for Reallocation or Curtailing FIRM Transmission Service				

	5.1	Section 3.10			Consider including the reference document per generator method. Revised document uses this reference document.
	5.1.1	Section 3.11.1			References listed for former version.
	5.1.2	Section 3.11.1.1			
	5.1.3	Section 3.11.2.1.2			
	5.1.4	Section 3.11.2.1, 3.11.2.1.1			
	5.1.5 reword	Section 3.11.2.8			
	5.1.6	Section 3.11.2			
	5.2 may need to extract specifics from NERC document - goal of eliminating NERC ref doc (Parallel Flow Calc Ref Doc).	Section 3.11.2.2, 3.11.2.2.1, 3.11.2.2.2, 3.11.2.2.2.3, 3.11.2.2.4, 3.11.2.4, 3.11.2.4.1, 3.11.2.4.2, 3.11.2.5, 3.11.2.6, 3.11.2.7			
<b>SECTION 6</b>	<b>Reallocation (details behind section 3)</b>				
	6.1	Put in an IDC ref doc;			
	6.1.2				
	6.1.3				Includes a clarification/interpretation. How to include parathetical discussion.
	6.1.5				
	6.1.6				May need to reword
	6.1.7				
	6.1.8				
	6.2				
	6.2.1				
	6.2.2				
	6.2.2.1				
	6.2.2.2.				
	6.2.3				
	6.2.4				
	6.2.5				
	6.2.5.1				
	6.2.5.2				
	6.2.5.3 (may be in NAESB 3.3.4)?				
	6.2.5.4				
	6.2.5.5				
	6.2.5.6				
					6.2.5 and all subsets: Needs to be generally reworded & parts moved to Appendix E. ; some in NERC Section 3; approved tag submission deadlines

	6.2.5.7				
	6.2.6				
SECTION 7	Intechange Transaction Curtailments				
7.1			7.1 - 7.8 All lot of repeats that will go away when the documents are rewritten because they are duplicates. At least needs rewording.		
	7.2				
7.3					
	7.4				
	7.5				
	7.6				
	7.7				
	7.8				
	7.9	Put in an IDC ref doc	7.9 & 7.10 and all subsets: Need to be generally reworded & parts moved to Appendix E.		
	7.9.1				
	7.9.2				
	7.10				
	7.11		Reference to BP		
	7.11.1				
	7.11.2		Reference to BP		
APPENDIX A					Andy @ PJM will upddate.
	APPENDIX B	Appendix C			
				APPENDIX C	
	APPENDIX D	Appendix B			
APPENDIX E: Needs to be a stand-alone IDC document (i.e. Implementaion guide).	APPENDIX E: Lines 1208 (Starting with "Solely ...") - 1218 including table	NEW SECTION 2.4 - Sub-priorities during reallocation, new 2.4 through 2.4.4.1			
	APPENDIX F				Now in NERC Implementation Guide
	APPENDIX G	Appendix A			

Feb 2, 2005 NERC/NAESB Joint Task Force - TLR separation of reliability policies & business standards

Reliability	Bus Prac	Both	Delete	Discuss
SECTION 1	TLR Procedure			
1.1	1.2 This procedure can be used at any Flowgate in any situation as modeled by the IDC			
1.2.1	1.2.1.1			
1.3				
1.4				
1.4.1				
1.4.1.1				
1.4.2				
1.4.3				
1.4.4				1.4.3.1 delete but, add a BP requirement that identifies the
1.5				
		1.5.1 reword for market based solutions (purple notes) & rec. NERC mod IRO-006		
1.6.1				
1.6.2				
1.6.3				
1.6.4				
	1.6.5 Need to change use of the word curtailment to redispatchment. IDC can not currently implement this			
	1.6.6			
1.7				
		1.8 with rewording. Reliability requires the log & BP requires access to the log.		
1.9				
1.9.1				
	1.9.2 reword to replace MC role			
1.9.3				
Reliability	Bus Prac	Both	Delete	Discuss
SECTION 2	TLR Level 1			
2.1				NERC defines level of emergency (2.1.1 - 2.9.1). NAESB defines the actions consistent with those emergencies (TLR level)
2.1.1			2.1.2	
2.2				
2.2.1	2.2.2			
	2.2.3			
2.3				
2.3.1				
	2.3.2 Dynamic Sched BP			
	2.3.2.1			
	2.3.2.2			
	2.3.2.3			
	2.3.2.4			
	2.3.2.4.1			
	2.3.2.5			
	2.3.2.6			
2.4		Add a New BP - TP or RC must post the transmission thresholds - new procedures		
2.4.1	2.4.2			
	2.4.3			
2.5				
2.5.1				
		2.5.2 reword		
2.5.3				
2.6		A BP defining cost recovery may be necessary to add		
2.6.1				
	2.6.2			
	2.6.2.1			
	2.6.2.2			



Reliability	Bus Prac	Both	Delete	Discuss
	2.6.2.3 reword to sound less like reliability req & more like resource allocation requirement.			A BP defining cost recovery may be necessary to add
2.7				
2.7.1				
	2.7.2			
	2.7.2.1			
	2.7.2.2			
	2.7.2.3			
2.8				
2.8.1				Add reference to req 4 to specify how to handle this
2.8.2				
2.9				
2.9.1				
<b>SECTION 3</b>	<b>Interchange Transaction Curtailment in TLR procedures</b>			
	3.1			
	3.1.2			
	3.1.2.1			
				3.2 & all subs - repeat of 2.3 & 2.4
				3.3 & all subs - repeat of 2.6 & 2.7
<b>SECTION 4</b>	<b>MITIGATING CONSTRAINTS ON &amp; OFF CONTRACT PATH DURING TLR</b>			
	4.1			
	4.1.1			
	4.1.2			
	4.2			
	4.2.1			
	4.2.2			
<b>SECTION 5</b>	<b>Parallel Flow Calc Procedure for Reallocation or Curtailing FIRM Transmission Service</b>			
	5.1			Consider including the reference document per generator method.
	5.1.1			
Reliability	Bus Prac	Both	Delete	Discuss
	5.1.2			
	5.1.3			
	5.1.4			
	5.1.5 reword			
	5.1.6			
	5.2 may need to extract specifics from NERC document - goal of eliminating NERC ref doc (Parallel Flow Calc Ref Do			
<b>SECTION 6</b>	<b>Reallocation (details behind section 3)</b>			
	6.1			
	6.1.2			
	6.1.3			Includes a clarification/interpretation. How to include parathetical discussion.
	6.1.5			
	6.1.6			May need to reword
	6.1.7			
	6.1.8			
	6.2			
	6.2.1			
	6.2.2			
	6.2.2.1			
	6.2.2.2.			
	6.2.3			
	6.2.4			
	6.2.5			
	6.2.5.1			
	6.2.5.2			
	6.2.5.3			6.2.5 and all subsets: Needs to be generally reworded & parts moved to Appendix E.
	6.2.5.4			
	6.2.5.5			
	6.2.5.6			
	6.2.5.7			
	6.2.6			

<b>Reliability</b>	<b>Bus Prac</b>	<b>Both</b>	<b>Delete</b>	<b>Discuss</b>
SECTION 7	Intechange Transaction Curtailments			
	7.1	7.1 - 7.8 All lot of repeats that will go away when the documents are rewritten because they are duplicates. At least needs rewording.		
	7.2			
	7.3			
	7.4			
	7.5			
	7.6			
	7.7			
	7.8			
	7.9	7.9 & 7.10 and all subsets: Need to be generally reworded & parts moved to Appendix E.		
	7.9.1			
	7.9.2			
	7.10			
	7.11	Reference to BP		
	7.11.1			
	7.11.2	Reference to BP		
APPENDIX A				
	APPENDIX B			
			APPENDIX C	
	APPENDIX D			
APPENDIX E: Needs to be a stand-alone IDC document (i.e. Implementaion guide).	APPENDIX E: Lines 1208 (Starting with "Solely ...") - 1218 including table			
	APPENDIX F			
	APPENDIX G			

## Attachment 1-IRO-006-0

### Transmission Loading Relief Procedure — Eastern Interconnection

#### Purpose

This standard defines procedures for relieving overloads on transmission facilities modeled in the IDC. This process is defined in the requirements below and is depicted in Appendix A.

#### Requirements

##### 1. Roles and Responsibilities of Reliability Coordinators

- 1.1. Initiation only by Reliability Coordinator.** A Reliability Coordinator shall be the only entity authorized to initiate the TLR Procedure and shall do so at 1) the Reliability Coordinator's own request, or 2) upon the request of a Transmission Operator. All Reliability Coordinators shall comply with the request of the Reliability Coordinator who initiated the TLR Procedure, unless the initiating Reliability Coordinator agrees otherwise.
- 1.2. Mitigating transmission constraints.** A Reliability Coordinator may utilize the TLR Procedure to mitigate potential or actual System Operating Limit (SOL) violations or Interconnection Reliability Operating Limit (IROL) violations on any transmission facility modeled in the Interchange Distribution Calculator (IDC). In addition, a Reliability Coordinator may implement other NERC-approved procedures to request relief to mitigate any other transmission constraints as necessary to preserve the reliability of the system.
- 1.3. Order of TLR Levels and taking emergency action.** The Reliability Coordinator shall not be required to follow the TLR Levels in their numerical order. Furthermore, if a Reliability Coordinator deems that a transmission loading condition could jeopardize bulk system reliability, the Reliability Coordinator shall have the authority to enter TLR Level 6 directly, and immediately direct the Balancing Authorities or Transmission Operators to take such actions as re-dispatch generation, or reconfigure transmission, or reduce load to mitigate the critical condition to return the system to a secure state.
- 1.4. Notification of TLR Procedure implementation.** The Reliability Coordinator initiating the use of the TLR Procedure shall notify other Reliability Coordinators and Balancing Authorities and Transmission Operators, and must post the initiation and progress of the TLR event on the appropriate NERC web page(s).
  - 1.4.1. Notifying Transmission Operators and Balancing Authorities.** The Reliability Coordinator shall notify Transmission Operators and Balancing Authorities in its Reliability Area when entering and leaving any TLR level.
  - 1.4.2. Notifying Balancing Authorities.** The Reliability Coordinator for the sink Balancing Authority shall be responsible for directing the sink Balancing Authority to provide relief as specified by the Reliability Coordinator implementing the TLR Procedure.

**1.4.3. Updates.** At least once each hour, or when conditions change, the Reliability Coordinator implementing the TLR Procedure shall update all other Reliability Coordinators (via the RCIS). Transmission Operators and Balancing Authorities who have had Interchange Transactions impacted by the TLR will be updated by their Reliability Coordinator.

**1.5. Use of the IDC for Interchange Transaction Management.** The Reliability Coordinator shall implement this procedure, in accordance with NAESB-approved business practices, using the IDC, except as limited below.

**1.5.1. Interchange Transactions not in the IDC.** Reliability Coordinators shall also treat known Interchange Transactions that may not appear in the IDC in accordance with the procedures in this document, and in accordance with NAESB-approved business practices.

**1.5.2. Transmission elements not in IDC.** When a Reliability Coordinator is faced with an overload on a transmission element that is not modeled in the IDC, the Reliability Coordinator shall use the best information available to provide relief in order to operate the system in a reliable manner. The Reliability Coordinator shall use its best efforts to ensure that Interchange Transactions with a Transfer Distribution Factor less than the Curtailment Threshold on the transmission element not modeled in the IDC are not curtailed.

**1.5.3. Questionable IDC results.** Any Reliability Coordinator (or Transmission Operator through its Reliability Coordinator) who believes the relief request list from the IDC for a particular TLR event is incorrect shall use its best efforts to communicate those adjustments necessary to bring the relief request list into conformance with the principles of this Procedure to the initiating Reliability Coordinator. Causes of questionable IDC results may include:

**1.5.3.1.** Missing Interchange Transactions that are known to contribute to the Constraint.

**1.5.3.2** Significant change in transmission system topology

**1.5.3.3** TDF matrix error.

**1.5.3.4** Impacts of questionable IDC results may include:

**1.5.3.5** Relief that would have no effect on, or aggravate the constraint.

If other Reliability Coordinators are involved in the TLR event, all impacted Reliability Coordinators shall be in agreement before any adjustments to the relief request list are made.

**1.5.4. Relief that would cause a constraint elsewhere.** A Reliability Coordinator shall be allowed to exempt an Interchange Transaction from curtailment if that Reliability Coordinator is aware that the Interchange Transaction curtailment directed by the IDC would cause a constraint to occur elsewhere. This exemption shall only be allowed after the Reliability Coordinator has consulted with the Reliability Coordinator who initiated the relief request.

- 1.6. Logging.** The Reliability Coordinator shall complete the NERC Transmission Loading Relief Procedure Log whenever it invokes TLR Level 2 or above, and send a copy of the log to NERC within two business days of the TLR event for posting on the NERC web site.
- 1.7. TLR Event Review.** The Reliability Coordinator may be required, at the request of the Operating Reliability Subcommittee to provide a TLR event report in accordance with TLR review processes established by NERC.
  - 1.7.1. Providing information.** Transmission Operators and Balancing Authorities within the Reliability Coordinator's Area, and all other Reliability Coordinators, including Transmission Operators and Balancing Authorities within their respective Reliability Areas, shall provide information, as requested by the initiating Reliability Coordinator, in accordance with TLR review processes established by NERC.
  - 1.7.2. Operating Reliability Subcommittee reviews.** The Operating Reliability Subcommittee shall conduct reviews to ensure proper implementation and for "lessons learned".

## 2. **Transmission Loading Relief (TLR) Levels and Approved Tag Submission Deadline for Reallocation**

### **Introduction**

This requirement describes the various levels of the TLR Procedure. The levels are not meant to imply a required sequence — the Reliability Coordinator can vary the sequence based on system conditions. . This requirement also states the Approved Tag Submission Deadline for Reallocation during TLR levels 3a and 5a.

### **2.1. TLR Level 1 – Notify Reliability Coordinators of potential SOL or IROL Violations.**

**2.1.1.** The Reliability Coordinator shall use the following circumstances to establish the need for TLR Level 1:

**2.1.1.1** The transmission system is secure.

**2.1.1.2.** The Reliability Coordinator foresees a transmission or generation contingency or other operating problem within its Reliability Area that could cause one or more transmission facilities to approach or exceed their SOL or IROL.

### **2.2. TLR Level 2 – Hold transfers at present level to prevent SOL or IROL Violations**

**2.2.1.** The Reliability Coordinator shall use the following circumstances to establish the need for entering TLR Level 2:

**2.2.1.1** The transmission system is secure,

**2.2.1.2** One or more transmission facilities are expected to approach, or are approaching, or are at their SOL or IROL

**NAESB Business Practice Reference** — Additional implementation requirements contained in NAESB TLR Business Practice, Section 3.2

### **2.3 TLR Level 3a – Reallocation of Transmission Service by curtailing Interchange Transactions using Non-firm Point-to-Point Transmission Service to allow Interchange Transactions using higher priority Transmission Service.**

**2.3.1** The Reliability Coordinator shall use the following circumstances to establish the need for entering TLR Level 3a:

- 2.3.1.1. The transmission system is secure
- 2.3.1.2. One or more transmission facilities are expected to approach, or are approaching, or are at their SOL or IROL
- 2.3.1.3. Transactions using Non-firm Point-to-Point Transmission Service are flowing that are at or above the Curtailment Threshold on those facilities.
- 2.3.1.4. The Transmission Provider has previously approved a higher priority Point-to-Point Transmission Service reservation over which a Transmission Customer wishes to begin an Interchange Transaction.

**NAESB Business Practice Reference** — Additional implementation requirements contained in NAESB TLR Business Practice, Section 3.3

#### **2.4 TLR Level 3b – Curtail Interchange Transactions using Non-Firm Transmission Service Arrangements to mitigate a SOL or IROL Violation**

- 2.4.1 The Reliability Coordinator shall use the following circumstances to establish the need for entering TLR Level 3b:
  - 2.4.1.1. One or more transmission facilities are operating above their SOL or IROL, or
  - 2.4.1.2. Such operation is imminent and it is expected that facilities will exceed their reliability limit unless corrective action is taken, or
  - 2.4.1.3. One or more Transmission Facilities will exceed their SOL or IROL upon the removal from service of a generating unit or another transmission facility
  - 2.4.1.4. Transactions using Non-firm Point-to-Point Transmission Service are flowing that are at or above the threshold on those facilities.

**NAESB Business Practice Reference** — Additional implementation requirements contained in NAESB TLR Business Practice, Section 3.4

#### **2.5 TLR Level 4 – Reconfigure Transmission**

- 2.5.1 The Reliability Coordinator shall use the following circumstances to establish the need for entering TLR Level 4:
  - 2.5.1.1. One or more Transmission Facilities are above their SOL or IROL, or
  - 2.5.1.2. Such operation is imminent and it is expected that facilities will exceed their reliability limit unless corrective action is taken
- 2.5.2 **Reconfiguration procedures.** Following the curtailment of all Interchange Transactions using Non-firm Point-to-Point Transmission

Service that are at or above the threshold in Level 3b that impact the Constrained Facilities, if a SOL or IROL violation is imminent or occurring, the Reliability Coordinator(s) shall request that the affected Transmission Operators reconfigure transmission on their system, or arrange for reconfiguration on other transmission systems, to mitigate the constraint.

**NAESB Business Practice Reference** — Additional implementation requirements contained in NAESB TLR Business Practice, Section 3.5

**2.6 TLR Level 5a – Reallocation of Transmission Service by curtailing Interchange Transactions using Firm Point-to-Point Transmission Service on a pro rata basis to allow additional Interchange Transactions using Firm Point-to-Point Transmission Service.**

**2.6.1** The Reliability Coordinator shall use the following circumstances to establish the need for entering TLR Level 5a:

- 2.6.1.1.** The transmission system is secure
- 2.6.1.2.** One or more transmission facilities are at their SOL or IROL
- 2.6.1.3.** All Interchange Transactions using Non-firm Point-to-Point Transmission Service that are at or above the threshold have been curtailed.
- 2.6.1.4.** The Transmission Provider has been requested to begin an Interchange Transaction using previously arranged Firm Transmission Service that would result in a SOL or IROL violation.
- 2.6.1.5.** No further transmission reconfiguration is possible or effective.

**NAESB Business Practice Reference** — Additional implementation requirements contained in NAESB TLR Business Practice, Section 3.6

**2.7 TLR Level 5b – Curtail Interchange Transactions using Firm Point-to-Point Transmission Service to mitigate a SOL or IROL violation.**

**2.7.1** The Reliability Coordinator shall use following circumstances to establish the need for entering TLR Level 5b:



- 2.7.1.1. One or more Transmission Facilities are operating above their SOL or IROL, or
- 2.7.1.2. Such operation is imminent, or
- 2.7.1.3 One or more Transmission Facilities will exceed their SOL or IROL upon the removal from service of a generating unit or another transmission facility.
- 2.7.1.4. All Interchange Transactions using Non-firm Point-to-Point Transmission Service that are at or above the threshold have been curtailed.
- 2.7.1.5. No further transmission reconfiguration is possible or effective.

**NAESB Business Practice Reference** — Additional implementation requirements contained in NAESB TLR Business Practice, Section 3.7

## 2.8 TLR Level 6 – Emergency Procedures

2.8.1 The Reliability Coordinator shall use following circumstances to establish the need for entering TLR Level 6:

- 2.8.1.1. One or more Transmission Facilities are above their SOL or IROL.
- 2.8.1.2. One or more Transmission Facilities will exceed their SOL or IROL upon the removal from service of a generating unit or another transmission facility.

2.8.2 **Implementing emergency procedures.** If the Reliability Coordinator deems that transmission loading is critical to bulk system reliability, the Reliability Coordinator shall immediately direct the Balancing Authorities and Transmission Operators in its Reliability Area to re-dispatch generation, or reconfigure transmission, or reduce load to mitigate the critical condition until Interchange Transactions can be reduced utilizing the TLR Procedures or other procedures to return the system to a secure state. All Balancing Authorities and Transmission Operators shall comply with all requests from their Reliability Coordinator.

## 2.9 TLR Level 0 – TLR concluded

2.9.1 **Interchange Transaction restoration and notification procedures.** The Reliability Coordinator initiating the TLR Procedure shall notify all Reliability Coordinators within the Interconnection via the RCIS when the SOL or IROL violations are mitigated and the system is in a “normal” state, allowing Interchange Transactions to be re-established at its discretion. Those with the highest transmission priorities shall be re-established first if possible.

### 3 Approved Tag Submission Deadlines

- 3.2 TLR Level 3a and 5a (Reallocation).** Reliability Coordinators shall consider all approved Tags for Interchange Transactions at or above the threshold that have been submitted to the IDC by 00:25 for Reallocation at 01:00 when re-issuing a TLR 3a or 5a.
- 3.3 TLR Level 3b .**The Reliability Coordinator shall reallocate Interchange Transactions using Non-firm Point-to-Point Transmission Service for the next hour to maintain the desired flow using reallocation in accordance with the following timing specifications.
- 3.3.1** If issued Prior to XX: 25 Non firm Interchange Transactions will be curtailed to meet the desired current hour relief.
- 3.3.1.1** At XX: 25 a reallocation will be performed to maintain the desired flow at the top of the following hour.
- 3.3.2** If issued After XX: 25 Non firm Interchange Transactions will be curtailed to meet the desired current hour relief AND a reallocation will be performed to maintain the target flow identified for the current hour.
- 3.3.3** Transactions must be in the IDC by the Approved-tag Submission Deadline for Reallocation.

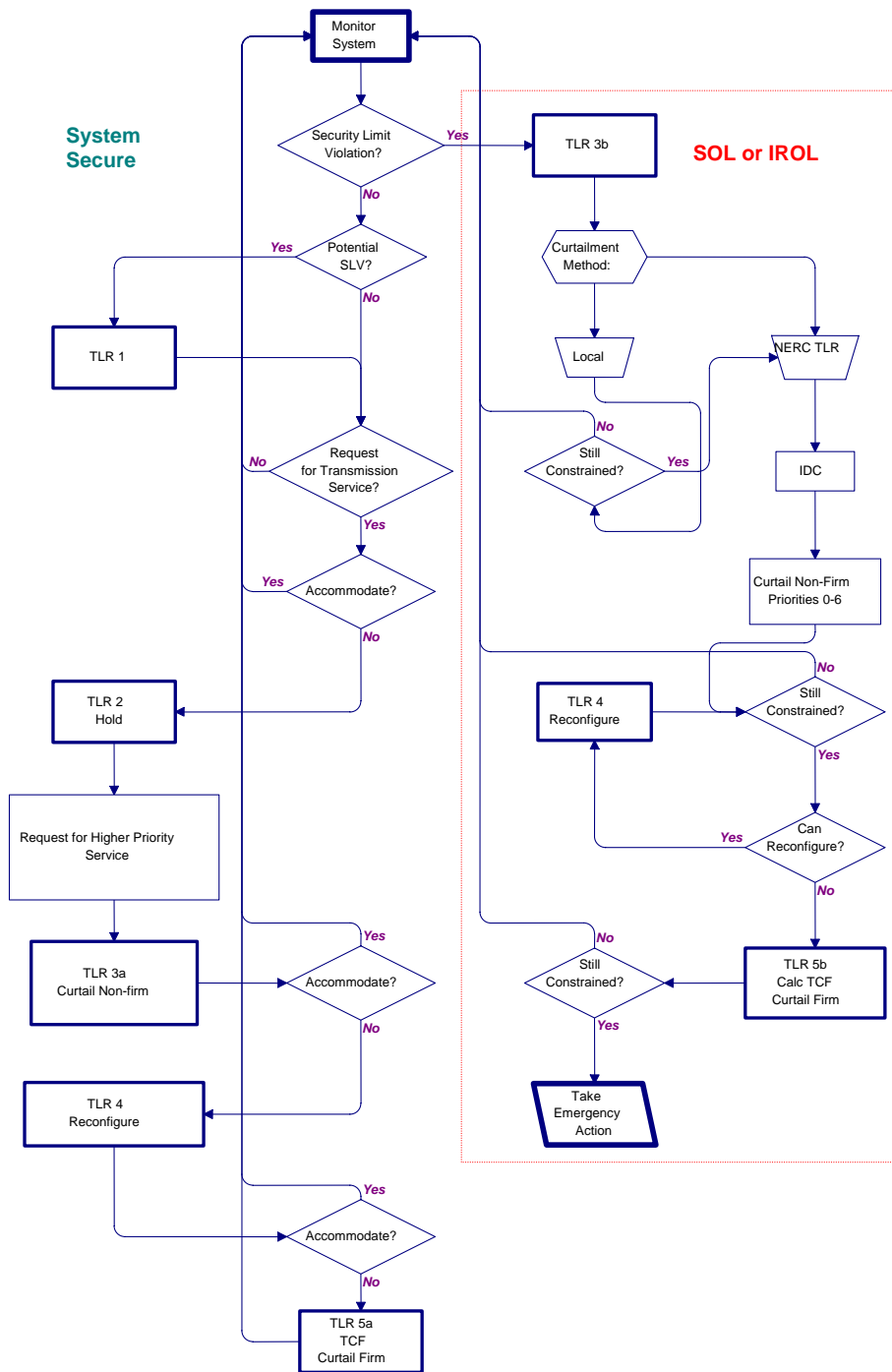
**NAESB Business Practice Reference** — Transaction priority information is contained in NAESB TLR Business Practice, Section 2

- 3.4 TLR Level 5b.** The Reliability Coordinator shall reallocate Interchange Transactions using Firm Point-to-Point Transmission Service for the next hour to maintain the desired flow using reallocation in accordance with the following timing specifications
- 3.4.1** If issued Prior to XX: 25 Firm Interchange Transactions will be curtailed to meet the desired current hour relief
- 3.4.1.1.** At XX: 25 a reallocation will be performed to maintain the desired flow at the top of the following hour
- 3.4.2** If issued After XX: 25 Firm Interchange Transactions will be curtailed to meet the desired current hour relief AND a reallocation will be performed to maintain the target flow identified for the current hour.
- 3.4.3** Transactions must be in the IDC by the Approved-tag Submission Deadline for Reallocation.

**NAESB Business Practice Reference** — Transaction priority information is contained in NAESB TLR Business Practice, Section 2

### Appendix A. Transaction Management and Curtailment Process

This flowchart depicts an overview of the Transaction Management and Curtailment process.



## **Appendix B. IRO-006-0**

### **Interchange Distribution Calculator (IDC) Reference Documentation**

#### **Introduction**

The Interchange Distribution Calculator (IDC) Reference Documentation documents the implementation of the NAESB business practices and the NERC reliability standards associated with the Eastern Interconnection Transmission Loading Relief (TLR) congestion management process. The IDC Reference Documentation explains how the IDC manages the interchange transaction reallocation process, and provides several examples of the timing associated with interchange transaction curtailments under various TLR levels.

#### **Index**

- 1. Section A: How the IDC Handles Reallocation**
- 2. Section B: Communication and Timing Requirements to Support Reallocation**
- 3. Section C: IDC Features that Support Transaction Reloading/Reallocation**
  - 3.1. Information posted from IDC to NERC TLR site.
  - 3.2. IDC Logic, IDC Report, and Timing
  - 3.3. Reloading/Reallocation Transaction Status
  - 3.4. Reallocation/Reloading Priorities
  - 3.5. Total Flow Value on a Constrained Facility for Next Hour
- 4. Section D: Timing Requirements**
  - 4.1. TLR Levels 3a and 5a Issuing/Processing Time Requirement
  - 4.2. Re-Issuing of a TLR Level 2 or Higher
  - 4.3. IDC Assistance with Next Hour Point-to--Point Transactions
  - 4.4. IDC Calculations and Reporting
  - 4.5. Assignment of Interchange Transaction Status
  - 4.6. Tag Reloading for TLR Levels 1 and 0
  - 4.7. New Tag Alarming
  - 4.8. Tag Adjustment
  - 4.9. Special Tag Status
  - 4.10. Transaction Sub-Priority Examples
- 5. Section E: Interchange Transaction Curtailments During TLR Level 3b**
  - 5.1. Section F: Considerations for Interchange Transactions Using Firm Point-to-Point Transmission Service
  - 5.2. Section G: IDC Treatment of TLR Level 6

### **Section A: How the IDC Handles Reallocation**

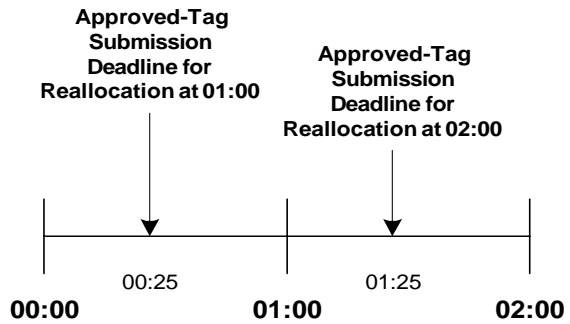
The IDC algorithms reflect the reallocation and reloading principles presented in this Reference Documentation, as well as the reporting requirements, and status display. The IDC will obtain the tag submittal time from the tag authority, and post the reloading/reallocation information to the NERC TLR site.

Section C (IDC Features that Support Transaction Reloading/Reallocation) provides a summary of IDC features that support the reallocation process, and Section D (Timing Requirements) provides the details on the interface and display features. Refer to Version 1.7.095 NERC Transaction Information Systems Working Group (TISWG) [Electronic Tagging Functional Specification](#) for details about the E-Tag system.

**Section B: Communication and Timing Requirements to Support Reallocation**

The following timeline shall be utilized to support reallocation decisions during TLR Levels 3a or 5a. See Figures 2 and 3 for a depiction of the reallocation time line.

1. **Time Convention.** In this section, the beginning of the current hour shall be referenced as 00:00. The beginning of the next hour shall be referenced as 01:00. The end of the next hour shall be referenced as 02:00. See Figure 1.



**Figure 1 - Timeline showing Approved-tag Submission Deadline for Reallocation**

2. **Approved tag submission deadline for reallocation.** The reliability coordinators shall consider all approved tags for interchange transactions at or above the curtailment threshold that have been submitted to the IDC by 00:25 for reallocation at 01:00. See Figure 1. However, interchange transactions using firm point-to-point transmission service will be allowed to start as scheduled.

- a. Reliability coordinators shall consider all approved tags submitted to the IDC beyond these deadlines for reallocation at 02:00 (for both firm and non-firm point-to-point transmission service). However, these interchange transactions will not be allowed to start or increase at 01:00.
- b. The approved tag submission deadline for reallocation shall cease to be in effect as soon as the TLR level is reduced to 1 or 0.

3. **Off-hour Transactions.** Interchange transactions with a start time other than *xx:00* shall be considered for reallocation at *xx+1:00*. For example, an interchange transaction with a start time of 01:05 and whose tag was submitted at 00:15 will be considered for reallocation at 02:00.

4. **Tag Evaluation Period.** Balancing authorities and transmission providers shall evaluate all tags submitted for reallocation and shall communicate approval or rejection by 00:25.

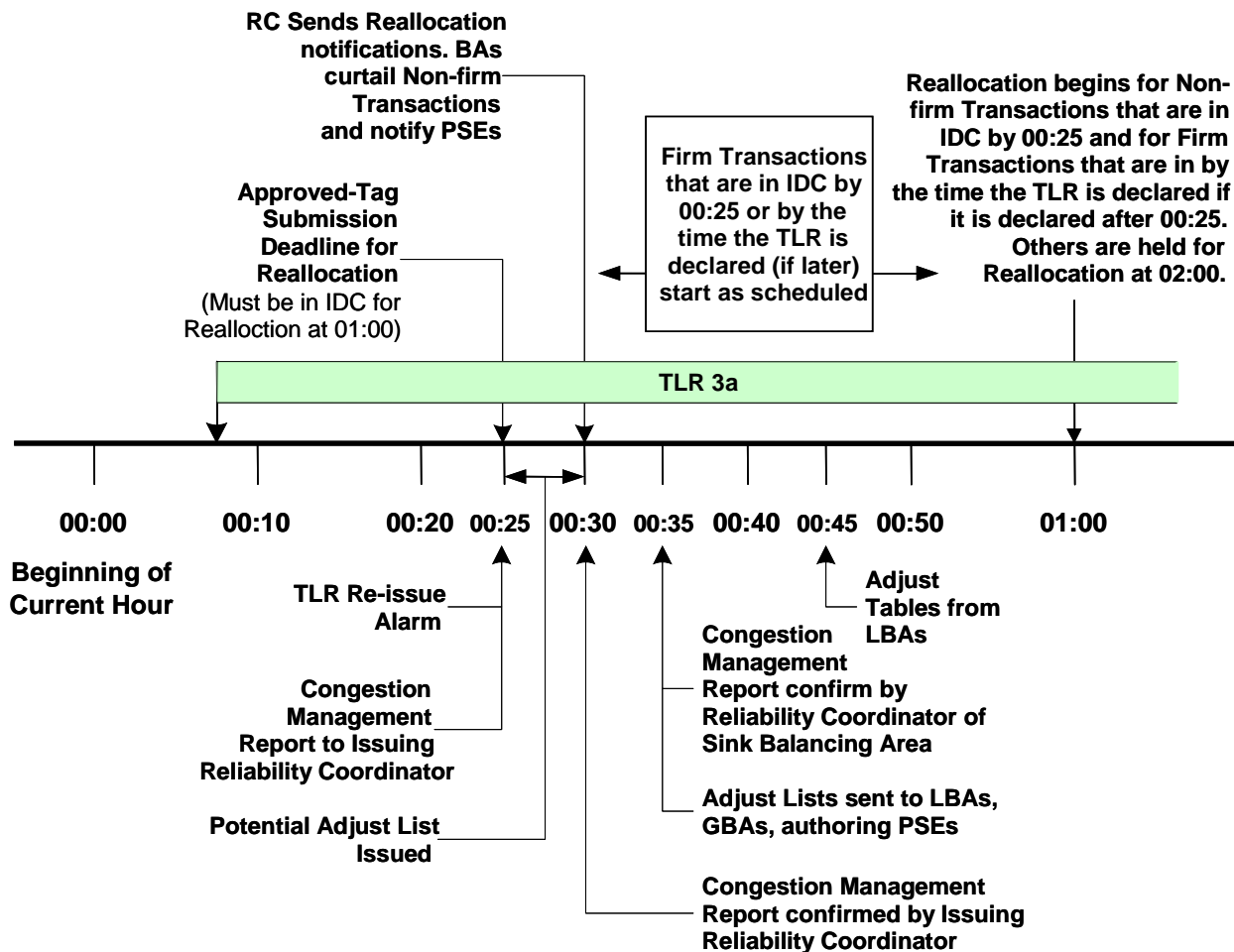
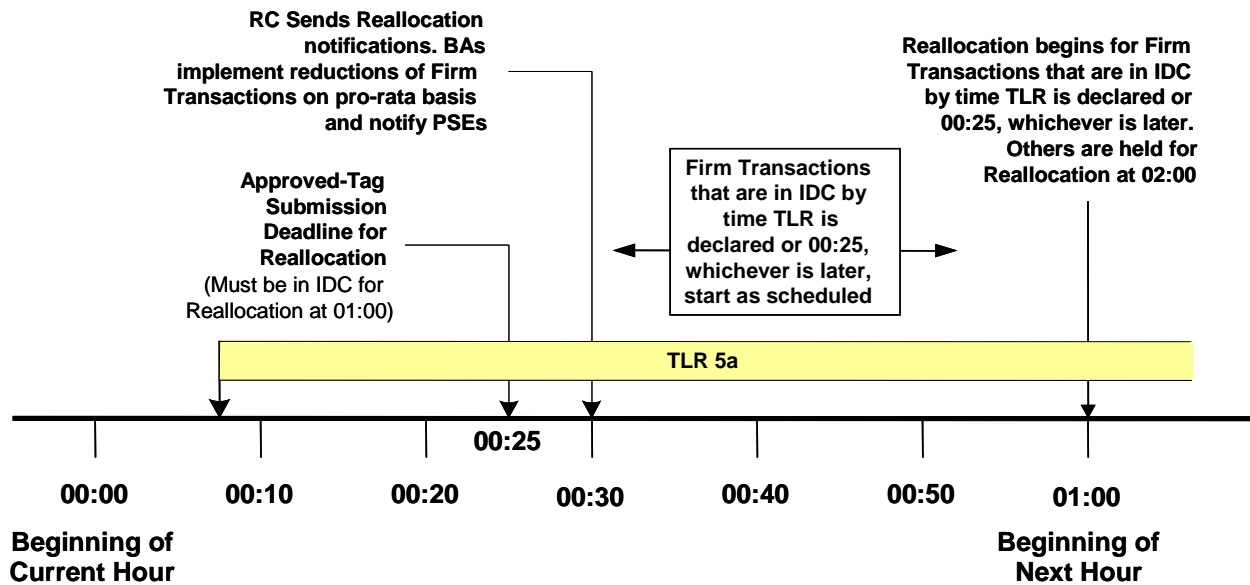


Figure 2 — Reallocation Timing for TLR 3a Called at 00:08

5. **Collective Scheduling Assessment Period.** At 00:25, the initiating reliability coordinator (the one who called and still has a TLR 3a or 5a in effect) shall run the IDC to obtain a three-part list of interchange transactions including their transaction status:
- a. Interchange transactions that may start, increase, or reload shall have a status of PROCEED, and
  - b. Interchange transactions that must be curtailed or interchange transactions whose tags were submitted prior to the TLR 2 or higher being declared but were not permitted to start or increase shall have a status of CURTAILED, and
  - c. Interchange transactions that are entered into the IDC after 00:25 shall have a status of HOLD and be considered for reallocation at 02:00. Also, interchange transactions using non-firm point-to-point transmission service submitted after TLR 2 or higher was declared (“post-tagged”) but have not been allowed to start shall retain the HOLD status until given permission to PROCEED or e-tag expires. (Note: TLR Level 2 does not hold interchange transactions using firm point-to-point transmission service).



**Figure 3 — Reallocation timing for TLR 5a called at 00:08.**

- d. The initiating reliability coordinator shall communicate the list of interchange transactions to the appropriate sink reliability coordinators via the IDC, who shall in turn communicate the list to the sink balancing authorities at 00:30 for appropriate actions to implement interchange transactions (CURTAIL, PROCEED or HOLD). The IDC will prompt the initiating reliability coordinator to input the necessary information (i.e., maximum flowgate loading and curtailment requirement) into the IDC by 00:25.
- e. Subsequent required reports before 01:00 shall allow the reliability coordinators to include those interchange transactions whose tags were submitted to the IDC after the approved tag submission time for reallocation and were given the HOLD status (not permitted to PROCEED). Transactions at or above the curtailment threshold that are not indicated as PROCEED on reload/reallocation report shall not be permitted to start or increase the next hour.

**Discussion:** Note that TLR 2 does not initiate the approved tag submission deadline for reallocation, but a TLR3a or 5a does. It is, however, important to recognize the time when a TLR 2 is called, where applicable, to determine the status of a held transaction – “CURTAILED” if tagged before the TLR was called but “HOLD” if tagged after the TLR was called.

- f. In running the IDC, the reliability coordinator shall have an option to specify the maximum loading of the constrained facility by all interchange transactions using point-to-point transmission service.

**Discussion:** This allows the reliability coordinator to take into consideration SOLs or IROLs and changes in interchange transactions using other than point-to-point transmission service taken under the open access transmission tariff. This option is needed to avoid loading the constrained facility to its limit with known



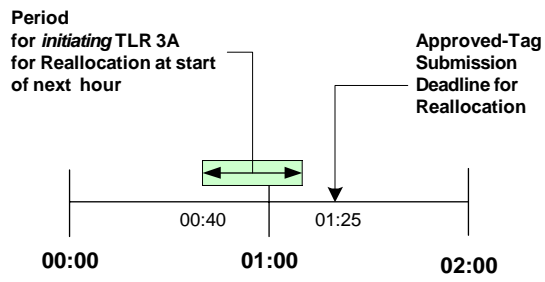
interchange transactions while other factors push the facility into a SOL or IROL violation and hence triggering the declaration of a TLR 3b or 5b.

- g. Notification of interchange transaction status shall be provided from the IDC to the reliability coordinators via an IDC report. The reliability coordinators shall communicate this information to the balancing authorities and transmission operators.

**6. Customer Preferences on Timing to Call TLR 3a or 5a.** Reliability coordinators shall leave a TLR 2 and call a TLR 3a as soon as possible (but no later than 30 minutes) to initiate the approved tag submission deadline and start reallocating interchange transactions. Nevertheless, recognizing the approved tag submission deadline for reallocation, from a transmission customer perspective, it is preferable that the reliability coordinator calls a TLR 3a within a certain time period to allow for tag preparation and submission. See Figure 4.

**Discussion:** A reliability coordinator calls a TLR 2 or 3a whenever it deems necessary to indicate that a transmission facility is approaching its SOL or IROL. It is envisioned, though not required, that a TLR 2 or 3a is preceded by a period of a TLR 1 declaration, hence transmission customers should normally have advance notice of a potential constraint. For example, a TLR 3a initiated during the period 01:00 to 01:25 would allow the purchasing-selling entity to submit a tag for entry into the IDC by the approved tag submission deadline for reallocation at 02:00. See Figure 4. However, the preferred time period to declare a TLR 3a or 5a would be between 00:40 (when tags for next hour market have been submitted) and 01:15. This will allow the transmission customers a range of 15 to 35 minutes to prepare and submit tags. (Note: In this situation, the reliability coordinator would need to reissue the TLR 3a at 01:00.)

It must be emphasized that the preferred time period is not a requirement, and should not in any way impede a reliability coordinator's ability to declare a TLR 3a, 3b, 4, 5a, or 5b whenever the need arises.



**Figure 4. "Ideal" time for issuing TLR 3a for Reallocation at 02:00.**

## Section C: IDC Features that Support Transaction Reloading/Reallocation

Following is a summary of IDC features and E-Tag interface that support reloading/reallocation:

### *Information posted from IDC to NERC TLR site.*

1. Restricted directions (all source/sink combinations that impact a constrained facility(ies) with TLR 2 or higher) will be posted to the NERC TLR site and updated as necessary.
2. TLR constrained facility status and transfer distribution factors (TDFs) will continue to be posted to NERC TLR site.
3. Lowest priority of interchange transactions (marginal “bucket”) to be reloaded/reallocated next-hour on each TLR constrained facility will be posted on NERC TLR site. This will provide an indication to the market of priority of interchange transactions that may be reloaded/reallocated the following hours.

### *IDC Logic, IDC Report, and Timing*

1. The reliability coordinator will run the IDC the reloading/reallocation report at approximately 00:26. The IDC will prompt the reliability coordinator to enter a maximum loading value. The IDC will alarm if the reliability coordinator doesn't enter this value and issue a report by 00:30 or change from TLR 3a Level. The report will be distributed to balancing authorities and transmission operators at 00:30. This process repeats every hour as long as the approved tag submission deadline for reallocation is in effect (or until the TLR level is reduced to 1 or 0).
2. For interchange transactions in the restricted directions, tags must be submitted to the IDC by the approved tag submission deadline for reallocation to be considered for reallocation next-hour. The time stamp by the tag authority is regarded the official tag submission time.
3. Tags submitted to IDC after the approved tag submission deadline for reallocation will not be allowed to start or increase but will be considered for reallocation the next hour.
4. Interchange transactions in restricted directions that are not indicated as “PROCEED” on the reload/reallocation report will not be permitted to start or increase next hour.

### *Reloading/Reallocation Transaction Status*

Reloading/Reallocation status will be determined by the IDC for all interchange transactions. The reloading/reallocation status of each interchange transaction will be listed on IDC reports and NERC TLR site as appropriate. An interchange transaction is considered to be in a restricted direction if it is at or above the curtailment threshold. Interchange transactions below the curtailment threshold are unrestricted and free to flow subject to all applicable reliability standards, business practices, and transmission tariff rules.

1. **HOLD.** Permission has not been given for the interchange transaction to start or increase, and it is waiting for the next reloading/reallocation evaluation for which it is a candidate. Interchange transactions with E-tags submitted to the tag authority prior to

TLR 2 or higher being declared (pre-tagged) will change to *CURTAILED* Status upon evaluation that does not permit them to start or increase. Interchange transactions, with E-tags submitted to the tag authority after TLR 2 or higher was declared (post-tagged), will retain *HOLD* Status until given permission to proceed or the E-Tag expires.

2. **CURTAILED.** Interchange transactions for which E-Tags were submitted to tag authority prior to TLR 2 or higher being declared (pre-tagged) and ordered to be curtailed totally, curtailed partially, not permitted to start, or not permitted to increase. Interchange transactions (pre-tagged or post-tagged) that were flowing and ordered to be reduced or totally curtailed. The balancing authority will indicate to the IDC through the E-Tag adjustment table the interchange transaction's curtailed values.
3. **PROCEED:** Interchange transaction is flowing or has been permitted to flow as a result of Reloading/Reallocation evaluation. The balancing authority will indicate through the E-Tag adjustment table to IDC if the interchange transaction will reload, start, or increase next-hour per PSE's energy schedule as appropriate.

### ***Reallocation/Reloading Priorities***

1. Interchange transaction candidates are ranked for loading and curtailment by priority. This is called the "Constrained Path Method," or CPM. (secondary, hourly, daily, ... firm etc). Interchange transactions are curtailed and loaded pro-rata within priority level per TLR algorithm.
2. Reloading/Reallocation of interchange transactions are prioritized first by priority per CPM. E-Tags must be submitted to the IDC by the approved tag submission deadline for reallocation of the hour during which the interchange transaction is scheduled to start or increase to be considered for reallocation.
3. During reloading/reallocation, interchange transactions using lower priority transmission service will be curtailed pro-rata to allow higher priority transactions to reload, increase, or start. Equal priority interchange transactions will not reload, start, or increase by pro-rata curtailment of other equal priority interchange transactions.
4. Reloading of interchange transactions using non-firm transmission service with *CURTAILED* Status will take precedence over starting or increasing of interchange transactions using non-firm transmission service of the same priority with *PENDING* Status.
5. Interchange transactions using firm point-to-point transmission service will be allowed to start as scheduled under TLR 3a as long as their E-Tag was received by the IDC by the approved tag submission deadline for reallocation of the hour during which the interchange transaction is due to start or increase, regardless of whether the E-tag was submitted to the tag authority prior to TLR 2 or higher being declared or not. If this is the initial issuance of the TLR 3a, interchange transactions using firm point-to-point transmission service will be allowed to start as scheduled as long as their E-Tag was received by the IDC by the time the TLR is declared.

### ***Total Flow Value on a Constrained Facility for Next Hour***

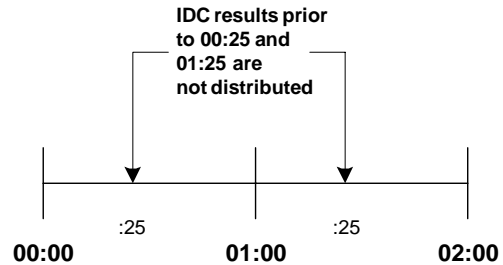
1. The reliability coordinator will calculate the change in net flow on a constrained facility due to reallocation for the next hour based on:
  - 1.1. Present constrained facility loading, present level of interchange transactions, and balancing authorities NNL responsibility (TLR Level 5a) impacting the constrained facility,
  - 1.2. SOLs or IROLs, known interchange impacts and balancing authority NNL responsibility (TLR Level 5a) on the constrained facility the next hour, and
  - 1.3. Interchange transactions scheduled to begin the next hour.
2. The reliability coordinator will enter a maximum loading value for the constrained facility into the IDC as part of issuing the reloading/reallocation report.
3. The reliability coordinator is allowed to call for TLR 3a or 5a when approaching a SOL or IROL to allow maximum transactional flow next hour, and to manage flows without violating transmission limits.
4. The simultaneous curtailment and reallocation for a constrained facility is allowed. This reduces the flow over the constrained facility while allowing interchange transactions using higher priority transmission service to start or increase the next hour. This may be used to accommodate change in flow next-hour due to changes other than point-to-point interchange transactions while respecting the priorities of interchange transactions flowing and scheduled to flow the next hour. The intent is to reduce the need for using TLR 3b, which prevents new interchange transactions from starting or increasing the next hour.
5. The reliability coordinator must allow interchange transactions to be reloaded as soon as possible. Reloading must be in an orderly fashion to prevent a SOL or IROL violation from (re)occurring and requiring holding or curtailments in the restricted direction.

## Section D: Timing Requirements

### *TLR Levels 3a and 5a Issuing/Processing Time Requirement*

1. In order for the IDC to be reasonably certain that a TLR Level 3a or 5a re-allocation/reloading report in which all tags submitted by the approved-Tag submission deadline for reallocation are included, the report must be generated no earlier than 00:25 to allow the 10-minute approval time for interchange transactions that start next hour.

2. In order to allow a reliability coordinator to declare a TLR Level 3a or 5a any time during the hour, the TLR declaration and re-allocation/reloading report distribution will be treated as independent processes by IDC. That is, a reliability coordinator may declare a TLR Level 3a or 5a at any time during the course of an hour. However, if a TLR Level 3a or 5a is declared for the next hour prior to 00:25 (see Figure 5 at right), the re-allocation/reloading report that is generated will be made available to the issuing



**Figure 5 - IDC report may be run prior to 00:25, but results are not distributed.**

reliability coordinator only for previewing purposes, and can not be distributed to the other reliability coordinators or the market. Instead, the issuing reliability coordinator will be reminded by an IDC alarm at 00:25 to generate a new re-allocation/reloading report that will include all tags submitted prior to the approved tag submission deadline for reallocation.

3. A TLR Level 3a or 5a re-allocation/reloading report must be confirmed by the issuing reliability coordinator prior to 00:30 in order to provide a minimum of 30 minutes for the reliability coordinators with tags sinking in its reliability area to coordinate the re-allocation and reloading with the sink balancing authorities. This provides only 5 minutes (from 00:25 to 00:30) for the issuing reliability coordinator to generate a re-allocation/reloading report, review it, and approve it.
4. The TLR declaration time will be recorded in the IDC for evaluating transaction sub-priorities for re-allocation/reloading purposes (see Sub-priority Table, in the **IDC Calculations and Reporting** section below).

### *Re-Issuing of a TLR Level 2 or Higher*

Each hour, the IDC will automatically remind the issuing reliability coordinator (via an IDC alarm) of a TLR level 2 or higher declared in the previous hour or earlier about re-issuing the TLR. The purpose of the reminder is to enable the reliability coordinator to reallocate or reload currently halted or curtailed interchange transactions next hour. The reminder will be in the form of an alarm to the issuing reliability coordinator, and will take place at 00:25 so that, if the reliability coordinator re-issues the TLR as a TLR level 3a or 5a, all tags submitted prior to the approved tag submission deadline for reallocation are available in the IDC.

### *IDC Assistance with Next Hour Point-to-Point Transactions*

In order to assist a reliability coordinator in determining the MW relief required on a constrained facility for the next hour for a TLR level 3a or 5a, the IDC will calculate and present the total

MW impact of all currently flowing and scheduled point-to-point interchange transactions for the next hour. In order to assist a reliability coordinator in determining the MW relief required on a constrained facility for the next hour during a TLR level 5a, the IDC will calculate and present the total MW impact of all currently flowing and scheduled point-to-point interchange transactions for the next hour as well as balancing authorities with flows due to service to network customers and native load. The reliability coordinator will then be requested to provide the total incremental or decremental MW amount of flow through the constrained facility that can be allowed for the next hour. The value entered by the reliability coordinator and the IDC-calculated amounts will be used by the IDC to identify the relief/reloading amounts (delta incremental flow value) on the constrained facility. The IDC will determine the interchange transactions to be reloaded, reallocated, or curtailed to make room for the interchange transactions using higher priority transmission service. The following examples show the calculation performed by IDC to identify the delta incremental flow:

Example 1

Flow to maintain on constrained facility	800 MW
Expected flow next hour from interchange transactions using point-to-point transmission service	950 MW
Contribution to flow next hour from service to network customers and native load	-100 MW
Expected net flow next hour on constrained facility	850 MW
Amount of interchange transactions using point-to-point transmission service to hold for reallocation	$850 \text{ MW} - 800 \text{ MW} = 50 \text{ MW}$
Amount to enter into IDC for interchange transactions using point-to-point transmission service	$950 \text{ MW} - 50 \text{ MW} = 900 \text{ MW}$

Example 2

Flow to maintain on constrained facility	800 MW
Expected flow next hour from interchange transactions using point-to-point transmission service	950 MW
Contribution to flow next hour from service to network customers and native load	50 MW
Expected net flow next hour on constrained facility	1000 MW
Amount of interchange transactions using point-to-point transmission service to hold for reallocation	$1000 \text{ MW} - 800 \text{ MW} = 200 \text{ MW}$
Amount to enter into IDC for interchange transactions using point-to-point transmission service	$950 \text{ MW} - 200 \text{ MW} = 750 \text{ MW}$

Example 3

Flow to maintain on constrained facility	800 MW
Expected flow next hour from interchange transactions using point-to-point transmission service	950 MW

Contribution to flow next hour from service to network customers and native load	-200 MW
Expected net flow next hour on constrained facility	750 MW
Amount of interchange transactions using point-to-point transmission service to hold for reallocation	750 MW – 800 MW = -50 MW None are held

For a TLR levels 3b or 5b the IDC will request the reliability coordinator to provide the MW requested relief amount on the constrained facility, and will not present the current and next hour MW impact of point-to-point interchange transactions. The reliability coordinator-entered requested relief amount will be used by IDC to determine the interchange transaction curtailments and flows due to service to network customers and native load (TLR Level 5b) in order to reduce the SOL or IROL violation on the constrained facility by the requested amount.

### ***IDC Calculations and Reporting***

At the time the TLR report is processed, the IDC will use all candidate interchange transactions for reallocation that met the approved tag submission deadline for reallocation plus those interchange transactions that were curtailed or halted on the previous TLR action of the same TLR event. The IDC will calculate and present an interchange transactions halt/curtailment list that will include reload and reallocation of interchange transactions. The interchange transactions are prioritized as follows:

1. All interchange transactions will be arranged by transmission service priority according to the constrained path method. These priorities range from 1 to 6 for the various non-firm transmission service products (TLR levels 3a and 3b). interchange transactions using firm transmission service (priority 7) are used only in TLR levels 5a and 5b. Next-hour market service is included at priority 0 (zero)
2. In a TLR Level 3a the interchange transactions using non-firm transmission service in a given priority will be further divided into four sub-priorities, based on current schedule, current active schedule (identified by the submittal of a tag ADJUST message), next-hour schedule, and tag status. Solely for the purpose of identifying which interchange transactions to be loaded under a TLR 3a, various MW levels of an interchange transaction may be in different sub-priorities. The sub-priorities are shown in the table on the following page, and examples of interchange transactions using non-firm transmission service sub-priority settings are shown in the ***Transaction Sub-priority Examples*** section below.



<i>Sub-Priority</i>	<i>Purpose</i>	<i>Explanation and Conditions</i>
S1	To allow a flowing interchange transaction to maintain or reduce its current MW amount in accordance with its energy profile.	The MW amount is the lowest between currently flowing MW amount and the next-hour schedule. The currently flowing MW amount is determined by the e-tag ENERGY PROFILE and ADJUST tables. If the calculated amount is negative, zero is used instead.
S2	To allow a flowing interchange transaction that has been curtailed or halted by TLR to reload to the <i>lesser</i> of its current-hour MW amount or next-hour schedule in accordance with its energy profile.	The interchange transaction MW amount used is determined through the e-tag ENERGY PROFILE and ADJUST tables. If the calculated amount is negative, zero is used instead.
S3	To allow a flowing interchange transaction to increase from its current-hour schedule to its next-hour schedule in accordance with its energy profile.	The MW amount used in this sub-priority is determined by the e-tag ENERGY PROFILE table. If the calculated amount is negative, zero is used instead.
S4	To allow an interchange transaction that had never started and was submitted to the tag authority after the TLR (level 2 or higher) has been declared to begin flowing (i.e., the interchange transaction never had an active MW and was submitted to the IDC <i>after</i> the first TLR Action of the TLR event had been declared.)	The interchange transaction would not be allowed to start until all other interchange transactions submitted prior to the TLR with the same priority have been (re)loaded. The MW amount used in this sub-priority is the next-hour schedule determined by the e-tag ENERGY PROFILE table.

- All interchange transactions using firm transmission service will be put in the same priority group, and will be curtailed/reallocated pro-rata, independent of their current status (curtailed or halted) or time of submittal with respect to TLR issuance (TLR level 5a). Under a TLR 5a, all interchange transactions using non-firm transmission service that are at or above the curtailment threshold will have been curtailed and hence sub-prioritizing is not required.

#### ***Assignment of Interchange Transaction Status***

All interchange transactions processed in a TLR are assigned one of the following statuses:

**PROCEED:** The interchange transaction has started or is allowed to start to the next hour MW schedule amount.

- CURTAILED:** The interchange transaction has started and is curtailed due to the TLR, or it had not started but it was submitted prior to the TLR being declared (level 2 or higher).
- HOLD:** The interchange transaction had never started and it was submitted after the TLR being declared – the interchange transaction is held from starting next hour, or the interchange transaction had never started and it was submitted to the IDC after the approved tag submission deadline – the interchange transaction is to be held from starting next hour and is not included in the reallocation calculations until following hour.

Upon acceptance of the TLR interchange transaction reallocation/reloading report by the issuing reliability coordinator, the IDC will generate a report to be sent to NERC that will include the PSE name and Tag ID of each interchange transaction in the IDC TLR report. The interchange transaction will be ranked according to its assigned status of HOLD, CURTAILED or PROCEED. The reloading/reallocation report will be made available at NERC's public TLR site, and it is NERC's responsibility to format and publish the report.

### ***Tag Reloading for TLR Levels 1 and 0***

When a TLR Level 1 or 0 is issued, the constrained facility is no longer under SOL or IROL violation, and all interchange transactions are allowed to flow. In order to provide the reliability coordinators with a view of the interchange transactions that were halted or curtailed on previous TLR actions (level 2 or higher), and are now available for reloading, the IDC provides such information in the TLR report.

### ***New Tag Alarming***

Those interchange transactions that are at or above the curtailment threshold and are *not* candidates for reallocation because the tags for those interchange transactions were not submitted by the approved tag submission deadline for reallocation will be flagged as HOLD and must not be permitted to start or increase during the next hour. To alert reliability coordinators of those interchange transactions required to be held, the IDC will generate a report (for viewing within the IDC only) at various times. The report will include a list of all HOLD interchange transactions. In order not to overwhelm the reliability coordinator with alarms, only those who issued the TLR and those whose interchange transactions sink within their reliability area will be alarmed. An alarm will be issued for a given tag only once and will be issued for all TLR levels for which halting of new interchange transactions is required: TLR Levels 2, 3a, 3b, 5a and 5b.

### ***Tag Adjustment***

The interchange transactions with statuses of HOLD, CURTAILED or PROCEED must be adjusted by a tag authority or tag approval entity. Without the tag adjustments, the IDC will assume that interchange transactions were not curtailed/held and are flowing at their specified schedule amounts.

1. Interchange transactions marked as CURTAILED should be adjusted to a cap equal to, or at the request of the originating PSE, less than the reallocated amount (shown as the MW CAP on the IDC report). This amount may be zero if the interchange transaction is fully curtailed.

2. Interchange transactions marked as PROCEED should be adjusted to reload (NULL or to its MW level in accordance with its energy profile in the adjusted MW in the tag) if the interchange transaction has been previously adjusted; otherwise, if the interchange transaction is flowing in full, the tag authority need not issue an adjust.
3. Interchange transactions marked as HOLD should be adjusted to 0 MW.

### ***Special Tag Status***

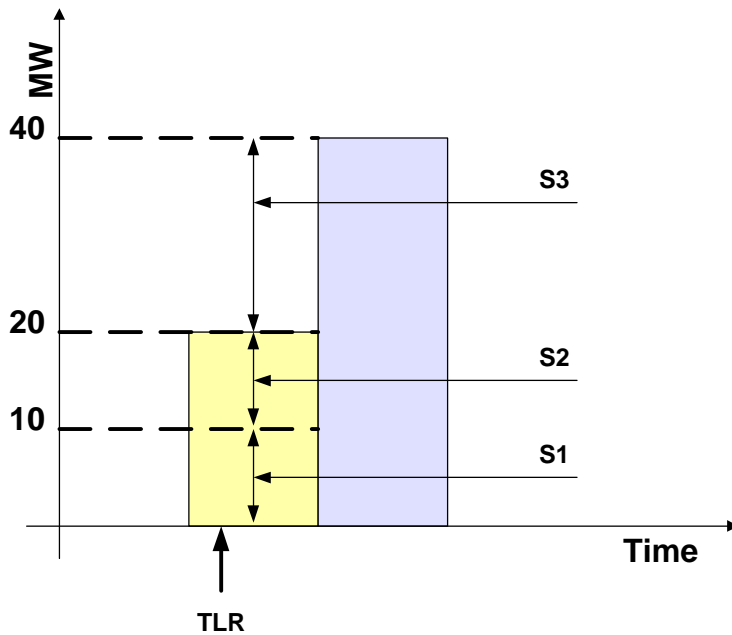
There are cases in which a tag may be marked with a composite state of ATTN\_REQD to indicate that tag authority/approval failed to communicate or there is an inconsistency between the validation software of different tag authority/approval entities. In this situation, the tag is no longer subject to passive approval and its status change to IMPLEMENT may take longer than 10 minutes. Under these circumstances, the IDC may have a tag that is issued prior to the tag submittal deadline that will not be a candidate for reallocation. Such tags, when approved by the tag authority, will be marked as HOLD and must be halted.

### ***Transaction Sub-Priority Examples***

The following describes examples of interchange transactions using non-firm transmission service sub-priority setting for an interchange transaction under different circumstances of current-hour and next-hour schedules and active MW flowing as modified by tag adjust table in e-tag.

Example 1 – Interchange transaction curtailed, next-hour energy profile is higher

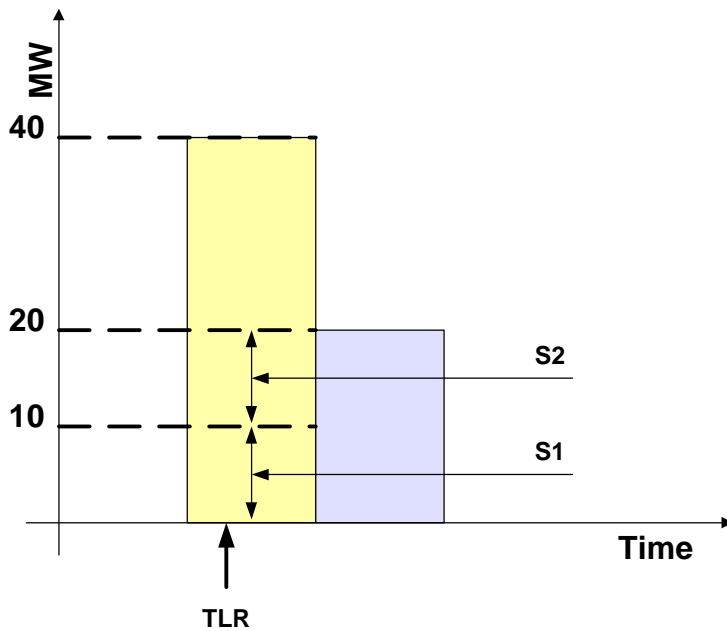
Energy profile: current hour	20 MW
Actual flow following curtailment: current hour	10 MW
Energy profile: next hour	40 MW



<i>Sub-priorities for Interchange Transaction (MW)</i>		
<i>Sub-Priority</i>	<i>MW Value</i>	<i>Explanation</i>
S1	10 MW	Maintain current curtailed flow
S2	+10 MW	Reload to current hour energy profile
S3	+20 MW	Load to next hour energy profile
S4		

Example 2 – Transaction curtailed, next-hour energy profile is lower

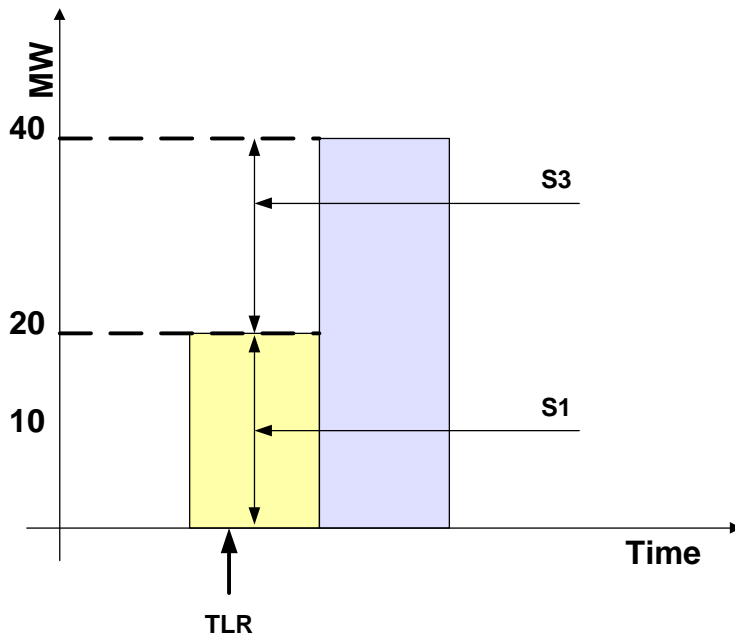
Energy profile: current hour	40 MW
Actual flow following curtailment: current hour	10 MW
Energy profile: next hour	20 MW



<i>Sub-priorities for Interchange Transaction (MW)</i>		
<i>Sub-Priority</i>	<i>MW Value</i>	<i>Explanation</i>
S1	10 MW	Maintain current curtailed flow
S2	+10 MW	Reload to <i>lesser</i> of current and next-hour energy profile
S3	+0 MW	Next-hour energy profile is 20MW, so no change in MW value
S4		

Example 3 – Transaction not curtailed, next-hour energy profile is higher

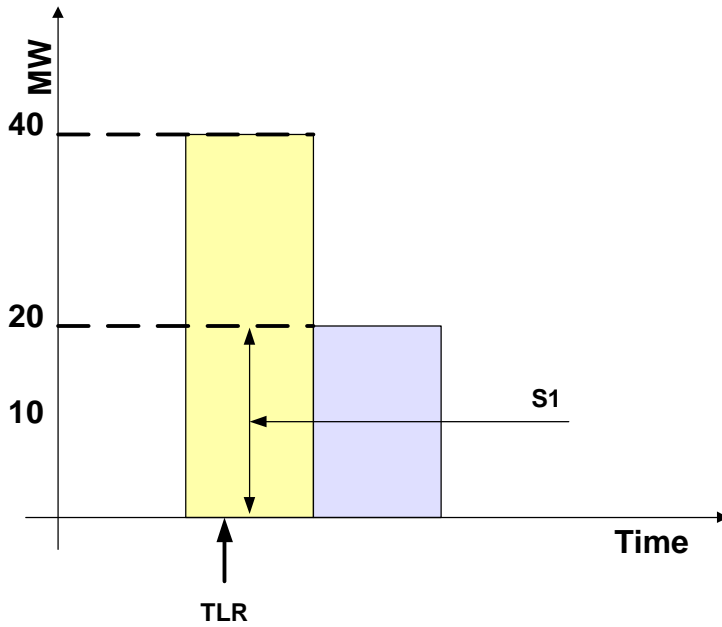
Energy profile: current hour	20 MW
Actual flow following curtailment: current hour	20 MW (no curtailment)
Energy profile: next hour	40 MW



<i>Sub-priorities for Interchange Transaction (MW)</i>		
<i>Sub-Priority</i>	<i>MW Value</i>	<i>Explanation</i>
S1	20 MW	Maintain current flow (not curtailed)
S2	+0 MW	Reload to <i>lesser</i> of current and next-hour energy profile
S3	+20 MW	Next-hour energy profile is 40MW
S4		

Example 4 – Transaction not curtailed, next-hour energy profile is lower

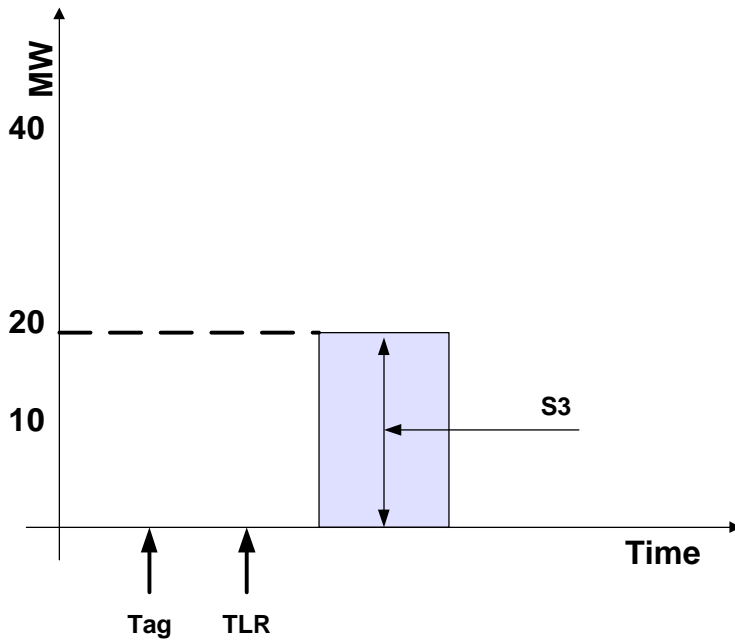
Energy profile: current hour	40 MW
Actual flow following curtailment: current hour	40 MW (no curtailment)
Energy profile: next hour	20 MW



<i>Sub-priorities for Interchange Transaction (MW)</i>		
<i>Sub-Priority</i>	<i>MW Value</i>	<i>Explanation</i>
S1	20 MW	Reduce flow to next-hour energy profile (20MW)
S2	+0 MW	Reload to <i>lesser</i> of current and next-hour energy profile
S3	+0 MW	Next-hour energy profile is 20MW
S4		

Example 5 – TLR Issued before Interchange Transaction was scheduled to start

Energy profile: current hour	0 MW
Actual flow following curtailment: current hour	0 MW (interchange transaction scheduled to start <i>after</i> TLR initiated)
Energy profile: next hour	20 MW



<i>Sub-priorities for Interchange Transaction (MW)</i>		
<i>Sub-Priority</i>	<i>MW Value</i>	<i>Explanation</i>
S1	0 MW	Interchange transaction was not allowed to start
S2	+0 MW	Interchange transaction was not allowed to start
S3	+20 MW	Next-hour energy profile is 20MW
S4	+0	Tag submitted prior to TLR



### **Section E: Interchange Transaction Curtailments During TLR Level 3b**

This section provides the details for implementing TLR Level 3b, which curtail interchange transactions using non-firm point-to-point transmission service to assist the reliability coordinator to recover from SOL or IROL violations.

The IDC shall issue ADJUST Lists to the generation and load balancing authorities and the purchasing-selling entity who submitted the tag. The ADJUST List will include:

1. Interchange transactions using non-firm point-to-point transmission service that are to be curtailed, halted, or held during current and next hours.
2. Interchange transactions using firm point-to-point transmission service that were entered after 00:25 or issuance of TLR 3b (see Case 3 in Section F: Considerations for Interchange Transactions Using Firm Point-to-Point Transmission Service).

The sink balancing authority shall send the ADJUST lists back to the IDC as soon as possible to ensure the most accurate calculations for actions subsequent to the TLR 3b being called.

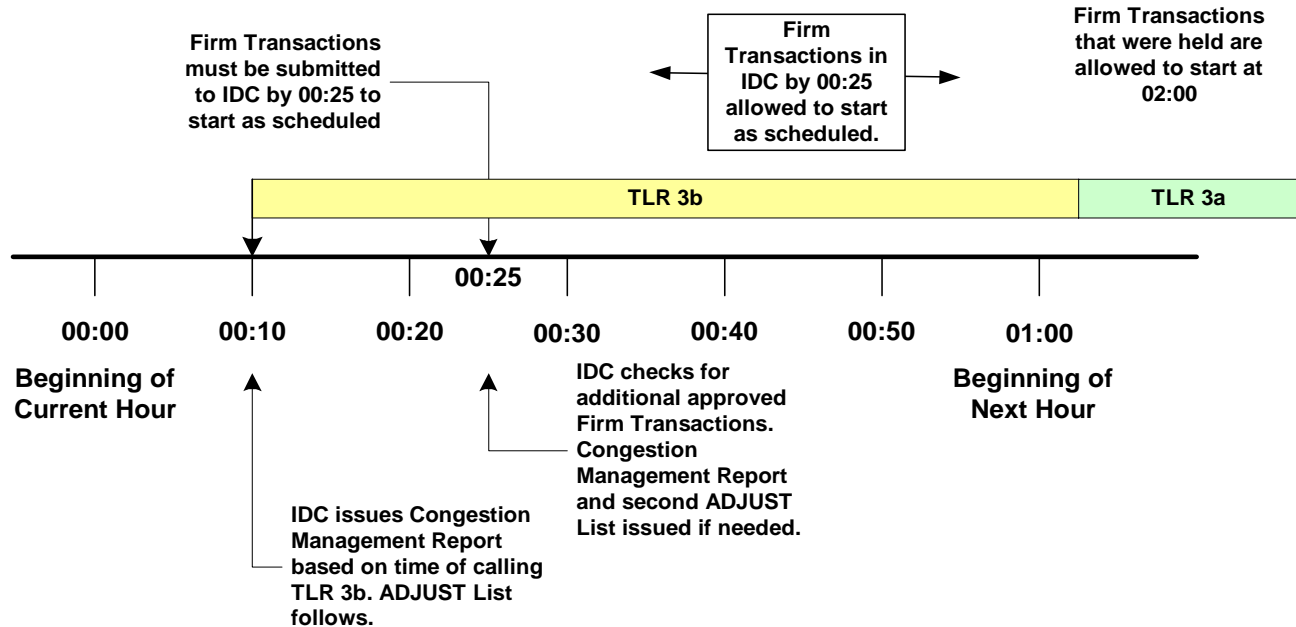
The reliability coordinator shall be allowed to call a TLR Level 3a as soon as the SOL or IROL violation, which caused the TLR 3b to be called, has been mitigated.

1. If the TLR Level 3a is called before the hour 01, then a reallocation shall be computed for the start of that hour.
2. Interchange transactions must be in the IDC by the approved tag submission deadline for reallocation (see Section D: Timing Requirements).

## Section F: Considerations for Interchange Transactions Using Firm Point-to-Point Transmission Service

The following cases explain the circumstances under which an interchange transaction using firm point-to-point transmission service will be allowed to start as scheduled during a TLR 3b:

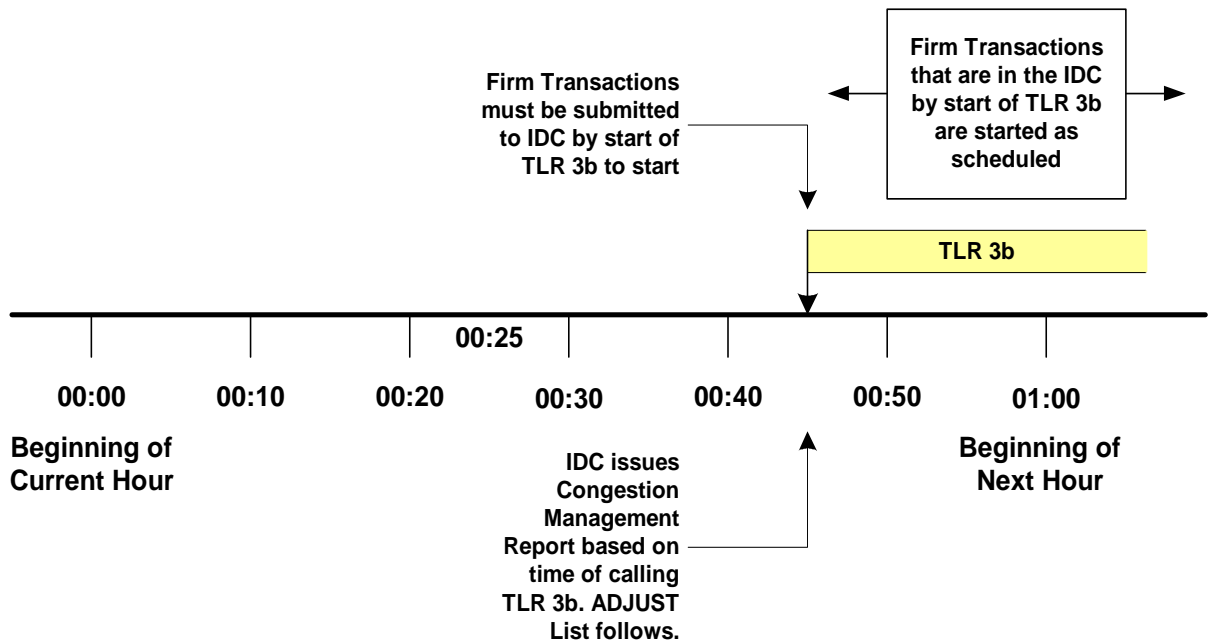
Case 1: TLR 3b is called between 00:00 and 00:25 and the Interchange Transaction using Firm Point-to-Point Transmission Service is submitted to IDC by 00:25.



1. The IDC will examine the current hour (00) and next hour (01) for all Interchange Transactions.
2. The IDC will issue an ADJUST List based upon the time the TLR 3b is called. The ADJUST List will include curtailments of Interchange Transactions using Non-firm Point-to-Point Transmission Service as necessary to allow room for those Interchange Transactions using Firm Point-to-Point Transmission Service to start as scheduled.
3. At 00:25, the IDC will check for additional Interchange Transactions using Firm Point-to-Point Transmission Service that were submitted to the IDC by that time and issue a second ADJUST List if those additional Interchange Transactions are found. At 00:25, a reallocation will be performed to maintain the desired flow at the top of the following hour.
4. Interchange Transactions using Firm Point-to-Point Transmission Service that were submitted to the IDC by 00:25 will be allowed to start as scheduled.
5. Interchange Transactions using Firm Point-to-Point Transmission Service that were submitted to the IDC after 00:25 will be held.
6. Once the SOL or IROL violation is mitigated, the Reliability Coordinator shall call a TLR Level 3a (or lower). If a TLR Level 3a is called:
  - a. Interchange Transactions using Firm Point-to-Point Transmission Service that were submitted to the IDC by 00:25 will be allowed to start as scheduled at 02:00.

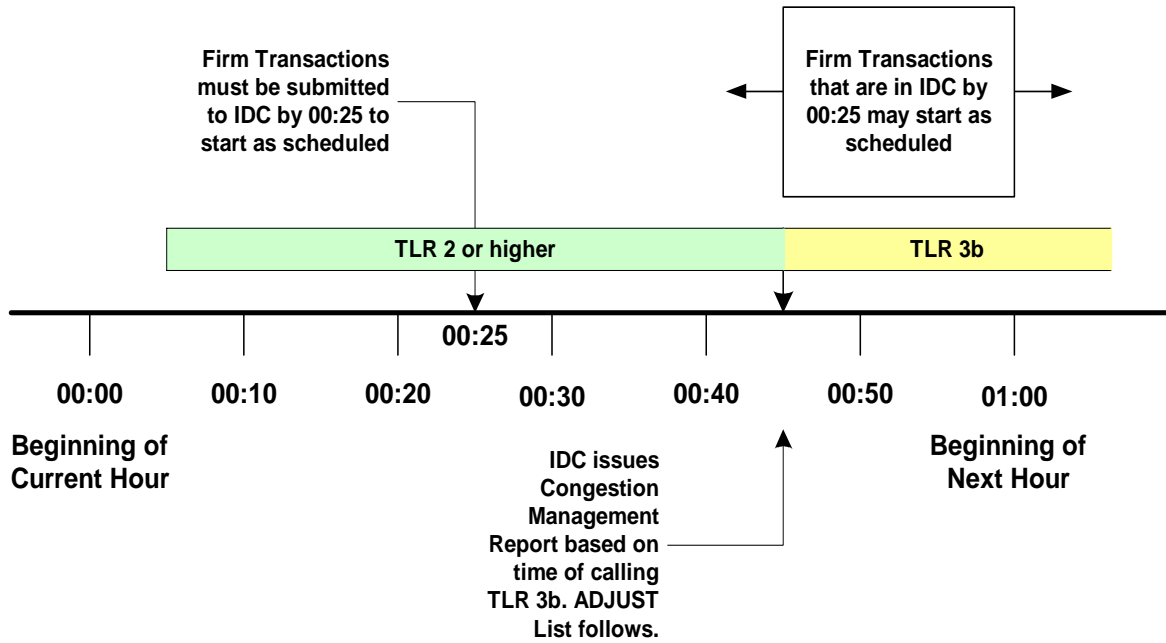
- b. Interchange Transactions using Non-firm Point-to-Point Transmission Service that were held may then be reallocated to start at 02:00.

Case 2: TLR 3b is called after 00:25 and the Interchange Transaction using Firm Point-to-Point Transmission Service is submitted to the IDC no later than the time at which the TLR 3b is called.



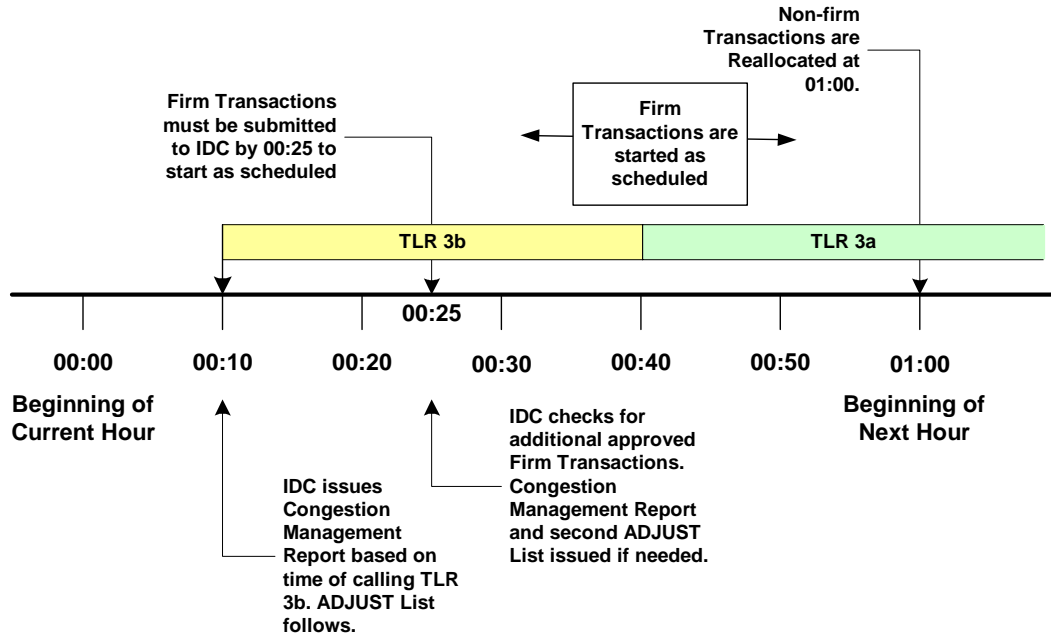
1. The IDC will examine the current hour (00) and next hour (01) for all Interchange Transactions.
2. The IDC will issue an ADJUST List at the time the TLR 3b is called. The ADJUST List will include additional curtailments of Interchange Transactions using Non-firm Point-to-Point Transmission Service as necessary to allow room for those Interchange Transactions using Firm Point-to-Point Transmission Service to start at as scheduled.
3. After 00:25, non-firm interchange transactions will be curtailed to meet the desired current hour relief and a reallocation will be performed to maintain the target flow identified for the current hour.
4. Interchange Transactions using Firm Point-to-Point Transmission Service that were submitted to the IDC by the time the TLR 3b was called will be allowed to start at as scheduled.
5. Interchange Transaction using Firm Point-to-Point Transmission Service that were submitted to the IDC after the TLR 3b was called will be held until the next issuance for TLR (either TLR 3b, 3a, or lower level).

Case 3. TLR 2 or higher is in effect, a TLR 3b is called after 00:25, and the Interchange Transaction using Firm Point-to-Point Transmission Service is submitted to the IDC by 00:25.



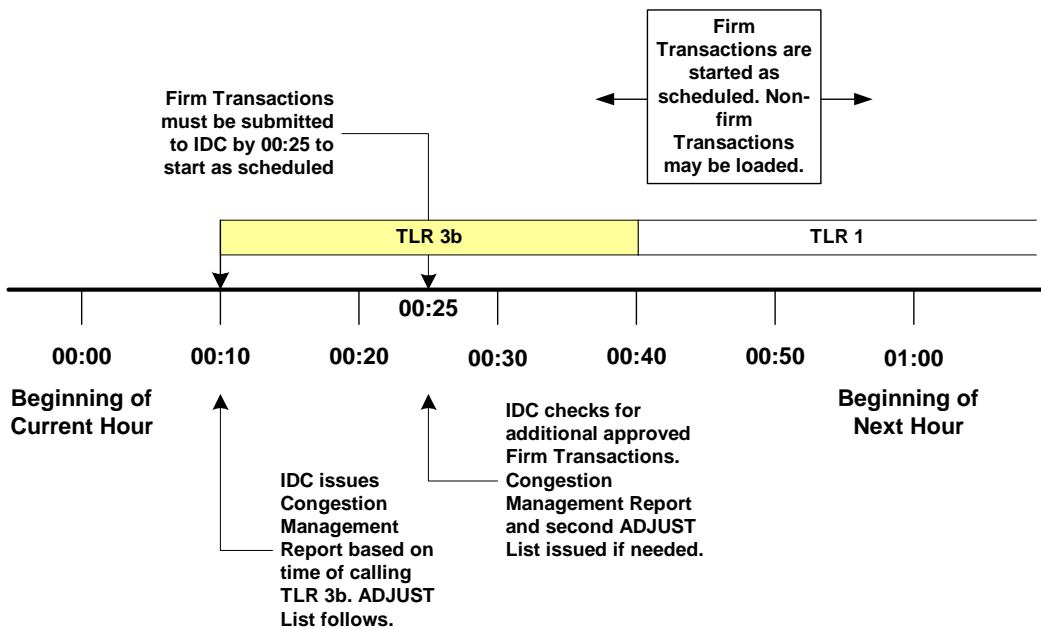
If a TLR 2 or higher has been issued and 3B is subsequently issued, then only those Interchange Transactions using Firm Point-to-Point Transmission Service that had been submitted to the IDC by 00:25 will be allowed to start as scheduled. All other Interchange Transactions are held.

Case 4. TLR 3b is called before 00:25 and the Interchange Transaction is submitted to the IDC by 00:25. TLR 3a is called at 00:40.



1. Same as Case 1, but TLR Level 3b ends at 00:40 and becomes TLR Level 3a.
2. All Interchange Transactions using Firm Point-to-Point Transmission Service will start as scheduled if in by the time the 3A is declared.
3. All Interchange Transactions using Non-firm Point-to-Point Transmission Service are reallocated at 01:00.

Case 5. TLR 3b is called before 00:25 and the Interchange Transaction is submitted to the IDC by 00:25. TLR 1 is called at 00:40.



1. Same as Case 1, but TLR Level 3b ends at 00:40 and becomes TLR Level 1.
2. All Interchange Transactions using Firm Point-to-Point Transmission Service will start as scheduled.
3. All Interchange Transactions using Non-firm Point-to-Point Transmission Service may be loaded immediately.

## **Section G: IDC Treatment of TLR Level 6**

In order for all reliability coordinators to understand how the IDC handles the issuance of a TLR Level 6 this section describes the IDC functionality that currently exists and options that the reliability coordinator has when declaring this critical TLR Level. This will help ensure the correct action is taken for the given event.

When a reliability coordinator issues a TLR Level 6 on a flowgate in the IDC, the application will search the non-firm and firm tags that are in the IDC database for those that affect the flowgate greater than or equal to 5%. It will create two sets of tags from this list for the reliability coordinator to curtail:

1. If the tag has an active MW amount in the current hour it will be curtailed to zero MW.
2. If the tag is planned to start the next hour it will not be allowed to start and will be curtailed to zero for the next hour.

Once this report is created and displayed as the congestion management report, the reliability coordinator will then have three options to move forward with the TLR Level 6:

1. Confirm the curtailment list that contains the non-firm and firm complete curtailments for the current and next hour.
  - 1.1. This will alert the other reliability coordinators that a TLR Level 6 has been declared and that there are curtailments that need to be acknowledged for implementation.
  - 1.2. Once the sinking reliability coordinators acknowledge the curtailments the IDC will send a reliability cap of zero to the balancing authorities on the tags for curtailment implementation.
2. Exclude some or all of the tag curtailments from the congestion management report before declaring a TLR Level 6.
  - 2.1. This can be done by the issuing reliability coordinator using the “Re-issue/Exclude” option in the congestion management report.
  - 2.2. This will give the issuing reliability coordinator the option of selecting those transactions they wish to exclude from the TLR issuance.
  - 2.3. Once the appropriate tags are selected the reliability coordinator will re-issue the TLR and the list of excluded tags will appear on the congestion management report, but will not be in the curtailed state. The reliability coordinator will then have to confirm the TLR to send the TLR Level 6 notification to the other reliability coordinators.
  - 2.4. Any tags that were not chosen for exclusion will be sent out to the other reliability coordinators for acknowledgement and curtailment.
  - 2.5. This option allows the reliability coordinator to declare a TLR Level 6 without implementing tag curtailments.



- 3.** Disregard some or all of the tag curtailments from the congestion management report while acknowledging the curtailments of a TLR Level 6:
  - 3.1.** The sinking reliability coordinator can only do this for each tag curtailment after they receive a TLR Level 6 congestion management report from the issuing reliability coordinator.
  - 3.2.** The sinking reliability coordinator will select the “Disregard” option for the tags they wish not to curtail. This is done in the acknowledgement screen.
  - 3.3.** When the “Disregard” option is chosen and the “Acknowledgement” button selected the IDC will update the congestion management report to identify to all reliability coordinators that the sinking reliability coordinator has disregarded the curtailment and does not plan on implementing it.
  - 3.4.** This will prompt the issuing reliability coordinator to initiate a conversation with the sinking reliability coordinator for further clarification on why the suggested curtailment will not take place.

When completed, email to: [gerry.cauley@nerc.net](mailto:gerry.cauley@nerc.net)

## Standard Authorization Request Form

Title of Proposed Standard	<b>Reliability Coordination – Transmission Loading Relief IRO-006-0</b>
Request Date	07/14/05

<b>SAR Requestor Information</b>	<b>SAR Type</b> (Put an 'x' in front of one of these selections)
Name Roger Harszy - Chairman Operating Reliability Subcommittee	<input type="checkbox"/> New Standard
Primary Contact Roger Harszy	<input checked="" type="checkbox"/> Revision to existing Standard
Telephone (317) 249-5400	<input type="checkbox"/> Withdrawal of existing Standard
Fax (317) 249-5910	
E-mail rharszy@midwestiso.org	<input type="checkbox"/> Urgent Action

### **Purpose/Industry Need** (Provide one or two sentences)

In August 2004, NERC and NAESB agreed to immediately begin a joint effort to update the Eastern Interconnection TLR Procedure, as reflected in Attachment 1 to reliability standard IRO-006-0, to divide the reliability requirements and business practices, and to incorporate other necessary improvements to the TLR procedure. In December 2004 NERC and NAESB formed the joint TLR Subcommittee to clarify and focus Attachment 1 to NERC reliability standard IRO-006-0 on the TLR requirements that are necessary for reliability, as distinguished from those TLR requirements that are business practices.

## Reliability Functions

The Standard will Apply to the Following Functions (Check box for each one that applies by double clicking the grey boxes.)		
<input checked="" type="checkbox"/>	Reliability Authority	Ensures the reliability of the bulk transmission system within its Reliability Authority area. This is the highest reliability authority.
<input checked="" type="checkbox"/>	Balancing Authority	Integrates resource plans ahead of time, and maintains load-interchange-resource balance within its metered boundary and supports system frequency in real time
<input type="checkbox"/>	Interchange Authority	Authorizes valid and balanced Interchange Schedules
<input type="checkbox"/>	Planning Authority	Plans the bulk electric system
<input type="checkbox"/>	Resource Planner	Develops a long-term (>1year) plan for the resource adequacy of specific loads within a Planning Authority area.
<input type="checkbox"/>	Transmission Planner	Develops a long-term (>1 year) plan for the reliability of transmission systems within its portion of the Planning Authority area.
<input checked="" type="checkbox"/>	Transmission Service Provider	Provides transmission services to qualified market participants under applicable transmission service agreements
<input checked="" type="checkbox"/>	Transmission Owner	Owns transmission facilities
<input checked="" type="checkbox"/>	Transmission Operator	Operates and maintains the transmission facilities, and executes switching orders
<input type="checkbox"/>	Distribution Provider	Provides and operates the “wires” between the transmission system and the customer
<input checked="" type="checkbox"/>	Generator Owner	Owns and maintains generation unit(s)
<input checked="" type="checkbox"/>	Generator Operator	Operates generation unit(s) and performs the functions of supplying energy and Interconnected Operations Services
<input checked="" type="checkbox"/>	Purchasing-Selling Entity	The function of purchasing or selling energy, capacity and all necessary Interconnected Operations Services as required
<input checked="" type="checkbox"/>	Market Operator	Integrates energy, capacity, balancing, and transmission resources to achieve an economic, reliability-constrained dispatch.
<input checked="" type="checkbox"/>	Load-Serving Entity	Secures energy and transmission (and related generation services) to serve the end user

## Reliability and Market Interface Principles

<b>Applicable Reliability Principles</b> (Check boxes for all that apply by double clicking the grey boxes.)	
<input checked="" type="checkbox"/>	1. Interconnected bulk electric systems shall be planned and operated in a coordinated manner to perform reliably under normal and abnormal conditions as defined in the NERC Standards.
<input type="checkbox"/>	2. The frequency and voltage of interconnected bulk electric systems shall be controlled within defined limits through the balancing of real and reactive power supply and demand.
<input checked="" type="checkbox"/>	3. Information necessary for the planning and operation of interconnected bulk electric systems shall be made available to those entities responsible for planning and operating the systems reliably.
<input checked="" type="checkbox"/>	4. Plans for emergency operation and system restoration of interconnected bulk electric systems shall be developed, coordinated, maintained and implemented.
<input checked="" type="checkbox"/>	5. Facilities for communication, monitoring and control shall be provided, used and maintained for the reliability of interconnected bulk electric systems.
<input type="checkbox"/>	6. Personnel responsible for planning and operating interconnected bulk electric systems shall be trained, qualified and have the responsibility and authority to implement actions.
<input checked="" type="checkbox"/>	7. The security of the interconnected bulk electric systems shall be assessed, monitored and maintained on a wide area basis.
<b>Does the proposed Standard comply with all of the following Market Interface Principles?</b> (Select 'yes' or 'no' from the drop-down box by double clicking the grey area.)	
1. The planning and operation of bulk electric systems shall recognize that reliability is an essential requirement of a robust North American economy. Yes	
2. An Organization Standard shall not give any market participant an unfair competitive advantage. Yes	
3. An Organization Standard shall neither mandate nor prohibit any specific market structure. Yes	
4. An Organization Standard shall not preclude market solutions to achieving compliance with that Standard. Yes	
5. An Organization Standard shall not require the public disclosure of commercially sensitive information. All market participants shall have equal opportunity to access commercially non-sensitive information that is required for compliance with reliability standards. Yes	

**Detailed Description** (Provide enough detail so that an independent entity familiar with the industry could draft, modify, or withdraw a Standard based on this description.)

NERC and NAESB formed the joint TLR Subcommittee with the charge to review Attachment 1 (Transmission Loading Relief Procedure — Eastern Interconnection) of IRO-006-0 (Reliability Coordination — Transmission Loading Relief), and to identify each reliability requirement and business practice embedded within the the TLR procedure. The joint NERC/NAESB TLR Subcommittee completed its charge on June 1, 2005, when the subcommittee approved a revised Attachment 1 to IRO-006-0 and a revision to the NAESB TLR business practices. The revised TLR reliability standards, (i.e. Attachment 1), are attached to this Standards Authorization Request.

During the course of the TLR subcommittee's effort to separate Attachment 1 into reliability standards under NERC's purview and business practices under NAESB's purview, the subcommittee developed a matrix, which identified the disposition of each paragraph in the existing Attachment 1. That matrix is also attached to this Standards Authorization Request.

This reliability standards development effort will begin by assessing for completeness and accuracy the revised Attachment 1 developed by the TLR Subcommittee using the subcommittee's matrix as a guide.. The end state of this standard development effort is a revised Attachment 1 to reliability standard IRO-006-0.

***Related Standards***

Standard No.	Explanation
IRO-006-0	Attachment 1 (TLR Procedure) to be replaced by a similar document addressing only the reliability elements of the TLR Procedure.
IRO-006-0	The urgent action revision to Attachment 1 that addressed the holding of dynamic schedules during TLR Level 1-4 will be incorporated into the NAESB TLR business practices.

***Related SARs***

SAR ID	Explanation


***Regional Differences***

<b>Region</b>	<b>Explanation</b>
ECAR	
ERCOT	
FRCC	
MAAC	
MAIN	
MAPP	
NPCC	
SERC	
SPP	
WECC	

***Related NERC Operating Policies or Planning Standards***

<b>ID</b>	<b>Explanation</b>

**IRO-006 — General Update with NAESB — SAR Drafting Team Nomination Form**

Please return this form to [sarcomm@nerc.com](mailto:sarcomm@nerc.com) by **July 24, 2006**. For questions, please contact Richard Schneider at 609-452-8060 or [Richard.schneider@nerc.net](mailto:Richard.schneider@nerc.net).

Please note this drafting team will likely meet initially in early August 2006 to review and respond to comments on the SAR posted, concurrently with this posting, on the NERC Web site. Subsequently, the team will determine and make recommendations for the next actions necessary for standard development. The complete meeting schedule has not been determined yet. It is expected the teams will meet several times in 2006 including face-to-face meetings, as well as meetings facilitated through various remote meeting technologies. **All candidates should be prepared to participate actively at these meetings.**

Name:	
Organization:	
Address:	
Office Telephone:	
E-mail:	
<p><b>Please briefly describe your experience and qualifications to serve on the General IRO-006, General Update with NAESB SAR Drafting Team. Candidates should have expertise in one or more of the following areas: transmission operations, reliability coordination, TLR procedures including the Interchange Distribution Calculator (IDC). Previous experience developing or applying NERC or IEEE standards is beneficial, but not a requirement.</b></p>	
<p><b>I represent the following NERC Reliability Region(s) (check all that apply):</b></p>	<p><b>I represent the following Industry Segment (check one):</b></p>
<input type="checkbox"/> ERCOT	<input type="checkbox"/> 1 — Transmission Owners
<input type="checkbox"/> FRCC	<input type="checkbox"/> 2 — RTOs, ISOs, Regional Reliability Councils
<input type="checkbox"/> MRO	<input type="checkbox"/> 3 — Load-serving Entities
<input type="checkbox"/> NPCC	<input type="checkbox"/> 4 — Transmission-dependent Utilities
<input type="checkbox"/> RFC	<input type="checkbox"/> 5 — Electric Generators
<input type="checkbox"/> SERC	<input type="checkbox"/> 6 — Electricity Brokers, Aggregators, and Marketers
<input type="checkbox"/> SPP	<input type="checkbox"/> 7 — Large Electricity End Users
<input type="checkbox"/> WECC	<input type="checkbox"/> 8 — Small Electricity End Users

<input type="checkbox"/> NA – Not Applicable	<input type="checkbox"/> 9 — Federal, State, and Provincial Regulatory or other Government Entities																
<p><b>Which of the following Function(s)<sup>1</sup> do you have expertise or responsibilities:</b></p> <table border="0"> <tr> <td><input type="checkbox"/> Reliability Authority</td> <td><input type="checkbox"/> Transmission Service Provider</td> </tr> <tr> <td><input type="checkbox"/> Balancing Authority</td> <td><input type="checkbox"/> Transmission Owner</td> </tr> <tr> <td><input type="checkbox"/> Interchange Authority</td> <td><input type="checkbox"/> Load Serving Entity</td> </tr> <tr> <td><input type="checkbox"/> Planning Authority</td> <td><input type="checkbox"/> Distribution Provider</td> </tr> <tr> <td><input type="checkbox"/> Transmission Operator</td> <td><input type="checkbox"/> Purchasing-selling Entity</td> </tr> <tr> <td><input type="checkbox"/> Generator Operator</td> <td><input type="checkbox"/> Generator Owner</td> </tr> <tr> <td><input type="checkbox"/> Transmission Planner</td> <td><input type="checkbox"/> Resource Planner</td> </tr> <tr> <td></td> <td><input type="checkbox"/> Market Operator</td> </tr> </table>		<input type="checkbox"/> Reliability Authority	<input type="checkbox"/> Transmission Service Provider	<input type="checkbox"/> Balancing Authority	<input type="checkbox"/> Transmission Owner	<input type="checkbox"/> Interchange Authority	<input type="checkbox"/> Load Serving Entity	<input type="checkbox"/> Planning Authority	<input type="checkbox"/> Distribution Provider	<input type="checkbox"/> Transmission Operator	<input type="checkbox"/> Purchasing-selling Entity	<input type="checkbox"/> Generator Operator	<input type="checkbox"/> Generator Owner	<input type="checkbox"/> Transmission Planner	<input type="checkbox"/> Resource Planner		<input type="checkbox"/> Market Operator
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<input type="checkbox"/> Generator Operator	<input type="checkbox"/> Generator Owner																
<input type="checkbox"/> Transmission Planner	<input type="checkbox"/> Resource Planner																
	<input type="checkbox"/> Market Operator																
<p><b>Provide the names and contact information for two references who could attest to your technical qualifications and your ability to work well in a group.</b></p> <table border="0"> <tr> <td>Name:</td> <td>Office</td> </tr> <tr> <td></td> <td>Telephone:</td> </tr> <tr> <td>Organization:</td> <td>E-mail:</td> </tr> </table> <table border="0"> <tr> <td>Name:</td> <td>Office</td> </tr> <tr> <td></td> <td>Telephone:</td> </tr> <tr> <td>Organization:</td> <td>E-mail:</td> </tr> </table>		Name:	Office		Telephone:	Organization:	E-mail:	Name:	Office		Telephone:	Organization:	E-mail:				
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Organization:	E-mail:																

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<sup>1</sup> These functions are defined in the NERC Functional Model, which is downloadable from the NERC Web site.



**Comment Form — Proposed Reliability Coordination — Transmission Loading Relief  
IRO-006-1**

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This form is to be used to submit comments on the proposed Draft 1 of the Proposed Reliability Coordination- Transmission Loading Relief SAR. Comments must be submitted by **September 2, 2005**. You may submit the completed form by emailing it to: [sarcomm@nerc.com](mailto:sarcomm@nerc.com) with the words “Reliability Coordination- Transmission Loading Relief SAR” in the subject line. If you have questions please contact Mark Ladrow at [mark.ladrow@nerc.net](mailto:mark.ladrow@nerc.net) or by telephone at 609-452-8060.

**ALL DATA ON THIS FORM WILL BE TRANSFERRED AUTOMATICALLY TO A DATABASE AND IT IS THEREFORE IMPORTANT TO ADHERE TO THE FOLLOWING REQUIREMENTS:**

- DO:**
- Do enter text only, with no formatting or styles added.
  - Do use punctuation and capitalization as needed (except quotations).
  - Do use more than one form if responses do not fit in the spaces provided.
  - Do submit any formatted text or markups in a separate WORD file.

- DO NOT:**
- Do not insert tabs or paragraph returns in any data field.
  - Do not use numbering or bullets in any data field.
  - Do not use quotation marks in any data field.
  - Do not submit a response in an unprotected copy of this form.

<b>Individual Commenter Information</b>	
(Complete this page for comments from one organization or individual.)	
Name:	
Organization:	
Telephone:	
Email:	
NERC Region	Registered Ballot Body Segment
<input type="checkbox"/> ERCOT	<input type="checkbox"/> 1 - Transmission Owners
<input type="checkbox"/> ECAR	<input type="checkbox"/> 2 - RTOs, ISOs, Regional Reliability Councils
<input type="checkbox"/> FRCC	<input type="checkbox"/> 3 - Load-serving Entities
<input type="checkbox"/> MAAC	<input type="checkbox"/> 4 - Transmission-dependent Utilities
<input type="checkbox"/> MAIN	<input type="checkbox"/> 5 - Electric Generators
<input type="checkbox"/> MAPP	<input type="checkbox"/> 6 - Electricity Brokers, Aggregators, and Marketers
<input type="checkbox"/> NPCC	<input type="checkbox"/> 7 - Large Electricity End Users
<input type="checkbox"/> SERC	<input type="checkbox"/> 8 - Small Electricity End Users
<input type="checkbox"/> SPP	<input type="checkbox"/> 9 - Federal, State, Provincial Regulatory or other Government Entities
<input type="checkbox"/> WECC	
<input type="checkbox"/> NA - Not Applicable	

**Comment Form — Proposed Reliability Coordination — Transmission Loading Relief  
IRO-006-1**

Group Comments (Complete this page if comments are from a group.)

**Group Name:** Operating Reliability Working Group (ORWG)

**Lead Contact:** Robert Rhodes

**Contact Organization:** Southwest Power Pool

**Contact Segment:** 2

**Contact Telephone:** 501-614-3241

**Contact Email:** rrrhodes@spp.org

<b>Additional Member Name</b>	<b>Additional Member Organization</b>	<b>Region*</b>	<b>Segment*</b>
Dan Boezio	AEP	SPP	1
Bob Cochran	SPS	SPP	1
Mike Crouch	WFEC	SPP	1
Todd Fridley	KCP&L	SPP	1
Mike Gammon	KCP&L	SPP	1
Serhly Kotsan	Boston Pacific		
Robert Rhodes	SPP	SPP	2

\*If more than one Region or Segment applies, indicate the best fit for the purpose of these comments.  
Regional acronyms and segment numbers are shown on prior page.

**Comment Form — Proposed Reliability Coordination — Transmission Loading Relief  
IRO-006-1**

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**Background Information:**

In August 2004, NERC and NAESB agreed to immediately begin a joint effort to update the Eastern Interconnection TLR Procedure, as reflected in Attachment 1 to reliability standard IRO-006-0, to divide the reliability requirements and business practices, and to incorporate other necessary improvements to the TLR procedure. In December 2004 NERC and NAESB formed the joint TLR Subcommittee to clarify and focus Attachment 1 to NERC reliability standard IRO-006-0 on the TLR requirements that are necessary for reliability, as distinguished from those TLR requirements that are business practices.

The subject SAR is required to revise Attachment 1 (Transmission Loading Relief Procedure — Eastern Interconnection) of IRO-006-0 (Reliability Coordination — Transmission Loading Relief) in accordance with the final work products of the NERC/NAESB TLR Subcommittee. NERC representatives to the TLR Subcommittee included members of the IDC Working Group, the Distribution Factors Working Group, the Reliability Coordinator Working Group, the Operating Reliability Subcommittee, the Operating Committee, and NERC staff.

**Please review the SAR, as well as the additional information related to the SAR, posted on the NERC website and complete this Comment Form to provide feedback to the requestor on the proposed standards.**

**Comment Form — Proposed Reliability Coordination — Transmission Loading Relief  
IRO-006-1**

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**1. Do you believe there is a reliability need for this proposed standard change? If not, please explain in the comment area.**

Yes

No

Comments:

**2. Do you believe the TLR Subcommittee appropriately divided the elements of TLR business practices vs. TLR reliability requirements? If not, please explain in the comment area.**

Yes

No

Comments: We feel that the division between business practices and reliability standards may not have gone far enough. The reliability standards should focus on establishing the criteria for initiation of different TLR levels and the required timeframes for relief. Business practices should focus on how the curtailments are executed to achieve the relief levels in the timeframes required by the reliability standard.

**3. Do you believe there are still elements of TLR business practices that remain in the proposed TLR reliability requirements? If not, please explain in the comment area.**

Yes

No

Comments: Everything in the proposed Attachment 1 - IRO-006-0 from Section 3 to the end of Attachment 1, including Appendices A and B, should be removed from the reliability standard and incorporated into the TLR Business Practices document. This material gets into the internal workings of the tool itself rather than dealing with the overall guiding principle of providing, and maintaining, relief within a specific timeframe.

**4. Do you believe there are still elements of TLR reliability requirements that remain in the proposed TLR business practices? If not, please explain in the comment area.**

Yes

No

Comments: Sections 3.2.1, 3.2.1.1 and 3.2.1.2 should be moved to the reliability standard since they deal more with how and why a Level 2 TLR is initiated than with the internal workings of the IDC.

**5. Do you have any other comments on these proposed changes?**

Yes

No

Comments: Section 1.5.1 of Attachment 1 refers to treatment of Interchange Transactions not in the IDC in accordance with NAESB business practices, but we could not find any reference to this treatment in the TLR business practices.

**Comment Form — Proposed Reliability Coordination — Transmission Loading Relief  
IRO-006-1**

---

This form is to be used to submit comments on the proposed Draft 1 of the Proposed Reliability Coordination- Transmission Loading Relief SAR. Comments must be submitted by **September 2, 2005**. You may submit the completed form by emailing it to: [sarcomm@nerc.com](mailto:sarcomm@nerc.com) with the words “Reliability Coordination- Transmission Loading Relief SAR” in the subject line. If you have questions please contact Mark Ladrow at [mark.ladrow@nerc.net](mailto:mark.ladrow@nerc.net) or by telephone at 609-452-8060.

**ALL DATA ON THIS FORM WILL BE TRANSFERRED AUTOMATICALLY TO A DATABASE AND IT IS THEREFORE IMPORTANT TO ADHERE TO THE FOLLOWING REQUIREMENTS:**

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  - Do not** use quotation marks in any data field.
  - Do not** submit a response in an unprotected copy of this form.

<b>Individual Commenter Information</b>	
<b>(Complete this page for comments from one organization or individual.)</b>	
Name:	Dan Rochester
Organization:	Independent Electricity System Operator (IESO), Ontario
Telephone:	(905) 855-6363
Email:	Dan.Rochester@ieso.ca
<b>NERC Region</b>	<b>Registered Ballot Body Segment</b>
<input type="checkbox"/> <b>ERCOT</b>	<input type="checkbox"/> 1 - Transmission Owners
<input type="checkbox"/> <b>ECAR</b>	<input checked="" type="checkbox"/> 2 - RTOs, ISOs, Regional Reliability Councils
<input type="checkbox"/> <b>FRCC</b>	<input type="checkbox"/> 3 - Load-serving Entities
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<input type="checkbox"/> <b>MAIN</b>	<input type="checkbox"/> 5 - Electric Generators
<input type="checkbox"/> <b>MAPP</b>	<input type="checkbox"/> 6 - Electricity Brokers, Aggregators, and Marketers
<input checked="" type="checkbox"/> <b>NPCC</b>	<input type="checkbox"/> 7 - Large Electricity End Users
<input type="checkbox"/> <b>SERC</b>	<input type="checkbox"/> 8 - Small Electricity End Users
<input type="checkbox"/> <b>SPP</b>	<input type="checkbox"/> 9 - Federal, State, Provincial Regulatory or other Government Entities
<input type="checkbox"/> <b>WECC</b>	
<input type="checkbox"/> <b>NA - Not Applicable</b>	

**Comment Form — Proposed Reliability Coordination — Transmission Loading Relief  
IRO-006-1**

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Group Comments (Complete this page if comments are from a group.)

**Group Name:**

**Lead Contact:**

**Contact Organization:**

**Contact Segment:**

**Contact Telephone:**

**Contact Email:**

<b>Additional Member Name</b>	<b>Additional Member Organization</b>	<b>Region*</b>	<b>Segment*</b>

\*If more than one Region or Segment applies, indicate the best fit for the purpose of these comments.  
Regional acronyms and segment numbers are shown on prior page.

**Comment Form — Proposed Reliability Coordination — Transmission Loading Relief  
IRO-006-1**

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**Background Information:**

In August 2004, NERC and NAESB agreed to immediately begin a joint effort to update the Eastern Interconnection TLR Procedure, as reflected in Attachment 1 to reliability standard IRO-006-0, to divide the reliability requirements and business practices, and to incorporate other necessary improvements to the TLR procedure. In December 2004 NERC and NAESB formed the joint TLR Subcommittee to clarify and focus Attachment 1 to NERC reliability standard IRO-006-0 on the TLR requirements that are necessary for reliability, as distinguished from those TLR requirements that are business practices.

The subject SAR is required to revise Attachment 1 (Transmission Loading Relief Procedure — Eastern Interconnection) of IRO-006-0 (Reliability Coordination — Transmission Loading Relief) in accordance with the final work products of the NERC/NAESB TLR Subcommittee. NERC representatives to the TLR Subcommittee included members of the IDC Working Group, the Distribution Factors Working Group, the Reliability Coordinator Working Group, the Operating Reliability Subcommittee, the Operating Committee, and NERC staff.

**Please review the SAR, as well as the additional information related to the SAR, posted on the NERC website and complete this Comment Form to provide feedback to the requestor on the proposed standards.**



**Comment Form — Proposed Reliability Coordination — Transmission Loading Relief  
IRO-006-1**

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- 1. Do you believe there is a reliability need for this proposed standard change? If not, please explain in the comment area.**

Yes

No

Comments: We do not feel there is a reliability need for the proposed standard "change". We would contend that the change provides confusion to a very important reliability process. In order to understand the process the standard and the business practice are necessary.

- 2. Do you believe the TLR Subcommittee appropriately divided the elements of TLR business practices vs. TLR reliability requirements? If not, please explain in the comment area.**

Yes

No

Comments: The reliability and business practices within the TLR process are integrated to such an extent that the details need to remain contained within a single document for clarity. Concerns regarding the ability to effectively manage the model and the process with the current proposed split need to be addressed. The ability to follow developing market issues must also be retained. Steps 1.4.1, 1.4.1.1, 1.5, 1.5.1, 1.6, 1.7, 2.1.2, 2.2.2, 2.4.2, 2.5.2, 3.2.1.2, 3.3.1.2, 7.1, are reliability related and should remain in the standard. The dynamic schedule part of 1.6.6 was added to the Standard in June of this year with approval of 100% of the ballot body. It should remain as part of this standard.

- 3. Do you believe there are still elements of TLR business practices that remain in the proposed TLR reliability requirements? If not, please explain in the comment area.**

Yes

No

Comments:

- 4. Do you believe there are still elements of TLR reliability requirements that remain in the proposed TLR business practices? If not, please explain in the comment area.**

Yes

No

Comments: See comments in question 2.

- 5. Do you have any other comments on these proposed changes?**

Yes

**Comment Form — Proposed Reliability Coordination — Transmission Loading Relief  
IRO-006-1**

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No

Comments: The IESO does not fully support the modifications proposed in this SAR. The proposed change provides confusion to a very important reliability process. Also the proposed standard references a NAESB standard which is inconsistent with the NERC Standards Process Manual which says "All mandatory requirements of a reliability standard shall be within an element of the standard. Supporting documents to aid in the implementation of a standard may be referenced by the standard but are not part of the standard itself." There are mandatory parts of the proposed standard in the NAESB business practice that are necessary for the successful implementation of this reliability standard. With the two documents being modified by separate entities there is a good chance that the documents will not be coordinated and kept in synchronization when changes are made. As acknowledged by the TLR Subcommittee that worked to create this proposed split, the business practices and reliability aspects of TLR are very intertwined. In effect, the information in both the proposed NERC and NAESB standard must be simultaneously available to the Operators in the Control Room, in order for them to operate the system reliably. While the effort to create this initial split in the TLR standards has been completed, consideration should be given as to how this split will be maintained, if going forward, before it is adopted by the industry. Operator training issues, as well as the ownership and funding of the IDC tool should be considered in this evaluation before such a significant step is taken on a standard that is fundamental to the reliability of the Eastern Interconnection. This is an important process that requires a complete understanding of the impact of separating the business practice from the reliability concepts. It is not clear that the current proposed document split will retain the integrity of the TLR process. The potential negative impact of degrading the RC's ability to manage loop flow dictates that any change in documentation and responsibility must proceed carefully.

**Comment Form — Proposed Reliability Coordination — Transmission Loading Relief  
IRO-006-1**

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This form is to be used to submit comments on the proposed Draft 1 of the Proposed Reliability Coordination- Transmission Loading Relief SAR. Comments must be submitted by **September 2, 2005**. You may submit the completed form by emailing it to: [sarcomm@nerc.com](mailto:sarcomm@nerc.com) with the words “Reliability Coordination- Transmission Loading Relief SAR” in the subject line. If you have questions please contact Mark Ladrow at [mark.ladrow@nerc.net](mailto:mark.ladrow@nerc.net) or by telephone at 609-452-8060.

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<b>Individual Commenter Information</b>		
(Complete this page for comments from one organization or individual.)		
Name:		
Organization:		
Telephone:		
Email:		
NERC Region		Registered Ballot Body Segment
<input type="checkbox"/> ERCOT	<input type="checkbox"/>	1 - Transmission Owners
<input type="checkbox"/> ECAR	<input type="checkbox"/>	2 - RTOs, ISOs, Regional Reliability Councils
<input type="checkbox"/> FRCC	<input type="checkbox"/>	3 - Load-serving Entities
<input type="checkbox"/> MAAC	<input type="checkbox"/>	4 - Transmission-dependent Utilities
<input type="checkbox"/> MAIN	<input type="checkbox"/>	5 - Electric Generators
<input type="checkbox"/> MAPP	<input checked="" type="checkbox"/>	6 - Electricity Brokers, Aggregators, and Marketers
<input type="checkbox"/> NPCC	<input type="checkbox"/>	7 - Large Electricity End Users
<input checked="" type="checkbox"/> SERC	<input type="checkbox"/>	8 - Small Electricity End Users
<input type="checkbox"/> SPP	<input type="checkbox"/>	9 - Federal, State, Provincial Regulatory or other Government Entities
<input type="checkbox"/> WECC		
<input type="checkbox"/> NA - Not Applicable		

**Comment Form — Proposed Reliability Coordination — Transmission Loading Relief  
IRO-006-1**

Group Comments (Complete this page if comments are from a group.)

**Group Name:** Southern Company Generation

**Lead Contact:** Roman Carter

**Contact Organization:** Regulatory Affairs

**Contact Segment:** 6

**Contact Telephone:** 205.257.6027

**Contact Email:** jrcarter@southernco.com

<b>Additional Member Name</b>	<b>Additional Member Organization</b>	<b>Region*</b>	<b>Segment*</b>
Joel Dison	Southern Company Generation	SERC	6
Clifford Shepard	Southern Company Generation	SERC	6
Lucius Burris	SouthernCompanyGeneration	SERC	6
Steve Lowe	Southern Company Generation	SERC	6

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**Comment Form — Proposed Reliability Coordination — Transmission Loading Relief  
IRO-006-1**

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**Background Information:**

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**Comment Form — Proposed Reliability Coordination — Transmission Loading Relief  
IRO-006-1**

---

**1. Do you believe there is a reliability need for this proposed standard change? If not, please explain in the comment area.**

Yes

No

Comments:

**2. Do you believe the TLR Subcommittee appropriately divided the elements of TLR business practices vs. TLR reliability requirements? If not, please explain in the comment area.**

Yes

No

Comments:

**3. Do you believe there are still elements of TLR business practices that remain in the proposed TLR reliability requirements? If not, please explain in the comment area.**

Yes

No

Comments:

**4. Do you believe there are still elements of TLR reliability requirements that remain in the proposed TLR business practices? If not, please explain in the comment area.**

Yes

No

Comments:

**5. Do you have any other comments on these proposed changes?**

Yes

No

Comments: As NAESB and NERC standards are approved and implemented which require close coordination between the two organizations, the need for a common "Operations Manual" may become necessary for System Operators.

**Comment Form — Proposed Reliability Coordination — Transmission Loading Relief  
IRO-006-1**

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This Operations Manual should provide real time standard requirements applicable to the System Operators on NERC and NAESB standards related to their daily decision-making authority. This SAR for TLR is a potential standard that would fit the type of requirements that should be contained in the Manual.

As future changes to the requirements of standards contained in the Manual occur within either NERC or NAESB, coordination between the two organizations will be very important to ensure changes to the complementary standard within the other organization is implemented.

**Comment Form — Proposed Reliability Coordination — Transmission Loading Relief  
IRO-006-1**

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(Complete this page for comments from one organization or individual.)		
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Email:		
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<input type="checkbox"/> MAAC	<input type="checkbox"/>	4 - Transmission-dependent Utilities
<input type="checkbox"/> MAIN	<input type="checkbox"/>	5 - Electric Generators
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<input type="checkbox"/> SPP	<input type="checkbox"/>	9 - Federal, State, Provincial Regulatory or other Government Entities
<input type="checkbox"/> WECC		
<input type="checkbox"/> NA - Not Applicable		



**Comment Form — Proposed Reliability Coordination — Transmission Loading Relief  
IRO-006-1**

Group Comments (Complete this page if comments are from a group.)

**Group Name:** CP9 Reliability Standards Working Group

**Lead Contact:** Guy Zito

**Contact Organization:** Northeast Power Coordinating Council

**Contact Segment:** 2

**Contact Telephone:** 212-840-1070

**Contact Email:** gzito@npcc.org

<b>Additional Member Name</b>	<b>Additional Member Organization</b>	<b>Region*</b>	<b>Segment*</b>
Kathleen Goodman	ISO New England	NPCC	2
Khaqan Khan	The IEMO, Ontario	NPCC	2
Vinod (Bob) Kotecha	ConEd	NPCC	1

\*If more than one Region or Segment applies, indicate the best fit for the purpose of these comments. Regional acronyms and segment numbers are shown on prior page.

**Comment Form — Proposed Reliability Coordination — Transmission Loading Relief  
IRO-006-1**

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**Background Information:**

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**Comment Form — Proposed Reliability Coordination — Transmission Loading Relief  
IRO-006-1**

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**1. Do you believe there is a reliability need for this proposed standard change? If not, please explain in the comment area.**

Yes

No

Comments: This proposed standard change was not initiated due to reliability needs. NPCC Participating members believe that the change is in conflict to very important reliability rules. In order to understand the process the standard and the business practice are necessary.

**2. Do you believe the TLR Subcommittee appropriately divided the elements of TLR business practices vs. TLR reliability requirements? If not, please explain in the comment area.**

Yes

No

Comments:

- Section 2.6 and 2.7 in the original standard defined step-by-step actions the Operator is to take under TLR Levels 5a and 5b. These actions have been removed and currently reside in the proposed NAESB standard. It is not appropriate for a business practice standard to define actions to be taken by a Reliability Coordinator in real-time operations to resolve a reliability issue.

The need for a TLR is in response to a problem with reliability on the system. The Operator must be presented with all the information that is contained in both the proposed NERC and NAESB standards in order to issue that TLR. If the operator does not know what transactions are available in any given category, they do not know what TLR level is needed to resolve the situation. NPCC participating members do not agree with the assertion that the information contained in the NAESB standard does not impact reliability.

Some aspects of the original IRO-006 are 'business practices,' and that the completed effort generally meets the original intent of splitting the business practice and reliability components. However, seeing the resulting split, it is clear that these business practices have a direct impact on reliability and they should be maintained within one single standard to prevent confusion and conflicts. Also, since the fundamental practice for defining the priorities and treatment of transactions under each TLR level is consistent with the FERC pro-forma tariff, there is minimal subjectivity involved in the business practices that are included in the original NERC standard.

Steps 1.4.1, 1.4.1.1, 1.5, 1.5.1, 1.6, 1.7, 2.1.2, 2.2.2, 2.4.2, 2.5.2, 3.2.1.2, 3.3.1.2, 7.1, are reliability related and should remain in the standard. The dynamic schedule part of 1.6.6 was added to the Standard in June of this year with 100% of the ballot body approval, it should remain as part of this standard.

**Comment Form — Proposed Reliability Coordination — Transmission Loading Relief  
IRO-006-1**

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**3. Do you believe there are still elements of TLR business practices that remain in the proposed TLR reliability requirements? If not, please explain in the comment area.**

Yes

No

Comments: See response to question 2.

**4. Do you believe there are still elements of TLR reliability requirements that remain in the proposed TLR business practices? If not, please explain in the comment area.**

Yes

No

Comments: See response to question 2.

**5. Do you have any other comments on these proposed changes?**

Yes

No

Comments:

This is an important process that requires a complete understanding of the impact of separating the business practice from the reliability concepts. It is not clear that the current proposed document split will retain the integrity of the TLR process. The potential negative impact of degrading the RC's ability to manage loop flow dictates that any change in documentation and responsibility must proceed carefully. NPCC participating Members believe the proposed change provides confusion to a very important reliability process. There are mandatory parts of the proposed standard in the NAESB business practice that are necessary for the successful implementation of this reliability standard. With the two documents being modified by separate entities there is a good chance that the documents will not be coordinated and kept in synchronization when changes are made.

Recommend restoring the reference to RCIS tool in 1.4. That reference was eliminated when the old 1.4.1 was removed.

- The old 1.5.1 was removed. There's a general statement added to 1.2 that says "In addition, a Reliability Coordinator may implement other NERC-approved procedures to request relief to mitigate

**Comment Form — Proposed Reliability Coordination — Transmission Loading Relief  
IRO-006-1**

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any other transmission constraints as necessary to preserve the reliability of the system.” But, that phrase does not seem to capture the same intent as the previous 1.5.1 wording.

- Section 1.5.3 the numbering on this section is very confusing. Suggest the following:

1.5.3.1. Causes of questionable IDC results may include: (1) Missing Interchange transactions that are known to contribute to the Constraint, (2) Significant change in transmission system topology, or (3) TDF matrix error.

1.5.3.2 Impacts of questionable IDC results may include: (1) relief that would have no effect on, or aggravate the constraint or (2) that would initiate a constraint elsewhere.

1.5.3.3. If other Reliability Coordinators are involved in the TLR event, all impacted Reliability Coordinators shall be in agreement before any adjustments to the relief request list are made.

- Title of Section 2 should be changed to be only “Transmission Loading Relief (TLR) Levels.”

- Section 3 is missing section 3.1.

- Suggest that Section 3.2 include a reference to the fact that transactions submitted after the XX:25 deadline will put on HOLD.

- Are Section 3.3.3 and Section 3.4.3 referring back to the deadline defined in 3.2? If so, that section should be referenced.

- Text in 3.3.1.1 and 3.3.2 are referring to the same process for reallocation and should use the same terminology. Suggest 3.3.1.1 text be changed to “At XX:25 a reallocation will be performed for the following hour to maintain the target flow identified for the current hour”.

- Text in 3.4.1.1 and 3.4.2 are referring to the same process for reallocation and should use the same terminology. Suggest 3.4.1.1 text be changed to “At XX:25 a reallocation will be performed for the following hour to maintain the target flow identified for the current hour”.

- The section notation of Appendix B should be modified. The Section numbering shown in the index is not how the headings are titled in the Sections. Also, Section F and Section G should not be 5.1 and 5.2; they should be at the highest index level.

General Comment: There have been changes to the congestion management process over the last few years that involve the use of Market information by the IDC. Any new standards addressing the TLR process and the IDC, whether in NERC or NAESB, should consider addressing the current

**Comment Form — Proposed Reliability Coordination — Transmission Loading Relief  
IRO-006-1**

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information available to the IDC and include some mention of that information in that standard development. In addition, Operator training issues, as well as the ownership and funding of the IDC tool should be considered in this evaluation before such a significant step is taken on a standard that is fundamental to the reliability of the Eastern Interconnection.

General Comment: One other practical concern that has not been addressed is the ownership, impact and funding of the IDC tool that automates the 'business practices' of implementing a TLR for the Operator. The split of the original NERC IRO-006 should not be adopted until this issue is addressed and resolved.

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<b>Individual Commenter Information</b>	
(Complete this page for comments from one organization or individual.)	
Name:	Scott R. Cunningham
Organization:	Ohio Valley Electric Corporation
Telephone:	740-289-7225
Email:	scunning@ovec.com
NERC Region	Registered Ballot Body Segment
<input type="checkbox"/> ERCOT	<input type="checkbox"/> 1 - Transmission Owners
<input checked="" type="checkbox"/> ECAR	<input checked="" type="checkbox"/> 2 - RTOs, ISOs, Regional Reliability Councils
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<input type="checkbox"/> WECC	
<input type="checkbox"/> NA - Not Applicable	

**Comment Form — Proposed Reliability Coordination — Transmission Loading Relief  
IRO-006-1**

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Group Comments (Complete this page if comments are from a group.)

**Group Name:**

**Lead Contact:**

**Contact Organization:**

**Contact Segment:**

**Contact Telephone:**

**Contact Email:**

Additional Member Name	Additional Member Organization	Region*	Segment*

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**Comment Form — Proposed Reliability Coordination — Transmission Loading Relief  
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**Comment Form — Proposed Reliability Coordination — Transmission Loading Relief  
IRO-006-1**

---

**1. Do you believe there is a reliability need for this proposed standard change? If not, please explain in the comment area.**

Yes

No

Comments:

**2. Do you believe the TLR Subcommittee appropriately divided the elements of TLR business practices vs. TLR reliability requirements? If not, please explain in the comment area.**

Yes

No

Comments:

**3. Do you believe there are still elements of TLR business practices that remain in the proposed TLR reliability requirements? If not, please explain in the comment area.**

Yes

No

Comments: At times, RTO ramp limitations are invoked when TLR curtailments occur. This issue is not covered in the standard, but seems to be related to a business practice, rather than a reliability issue. Perhaps the ramp limitation should be waived or adjusted if the limitation is caused by the curtailments that occur with the TLR.

**4. Do you believe there are still elements of TLR reliability requirements that remain in the proposed TLR business practices? If not, please explain in the comment area.**

Yes

No

Comments:

**5. Do you have any other comments on these proposed changes?**

Yes

No

**Comment Form — Proposed Reliability Coordination — Transmission Loading Relief  
IRO-006-1**

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Comments: The use of proxy flowgates is not mentioned at all in the proposed standard. The use of proxy flowgates should not be allowed, except in very unusual circumstances. If use of a proxy flowgate is necessary, such use should be justified and approval from all affected parties should be obtained.

**Comment Form — Proposed Reliability Coordination — Transmission Loading Relief  
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<input type="checkbox"/> NA - Not Applicable	

**Comment Form — Proposed Reliability Coordination — Transmission Loading Relief  
IRO-006-1**

Group Comments (Complete this page if comments are from a group.)

**Group Name:** Public Service Commission of South Carolina  
**Lead Contact:** Phil Riley  
**Contact Organization:** Public Service Commission of South Carolina  
**Contact Segment:** 9  
**Contact Telephone:** 803-896-5154  
**Contact Email:** philip.riley@psc.sc.gov

Additional Member Name	Additional Member Organization	Region*	Segment*
John E. Howard	Public Service Commission of SC	SERC	9
David A. Wright	Public Service Commission of SC	SERC	9
Randy Mitchell	Public Service Commission of SC	SERC	9
Elizabeth B. Fleming	Public Service Commission of SC	SERC	9
G. O'Neal Hamilton	Public Service Commission of SC	SERC	9
Mignon L. Clyburn	Public Service Commission of SC	SERC	9
C. Robert Moseley	Public Service Commission of SC	SERC	9

\*If more than one Region or Segment applies, indicate the best fit for the purpose of these comments.  
 Regional acronyms and segment numbers are shown on prior page.

**Comment Form — Proposed Reliability Coordination — Transmission Loading Relief  
IRO-006-1**

---

**Background Information:**

In August 2004, NERC and NAESB agreed to immediately begin a joint effort to update the Eastern Interconnection TLR Procedure, as reflected in Attachment 1 to reliability standard IRO-006-0, to divide the reliability requirements and business practices, and to incorporate other necessary improvements to the TLR procedure. In December 2004 NERC and NAESB formed the joint TLR Subcommittee to clarify and focus Attachment 1 to NERC reliability standard IRO-006-0 on the TLR requirements that are necessary for reliability, as distinguished from those TLR requirements that are business practices.

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**Comment Form — Proposed Reliability Coordination — Transmission Loading Relief  
IRO-006-1**

---

**1. Do you believe there is a reliability need for this proposed standard change? If not, please explain in the comment area.**

Yes

No

Comments:

**2. Do you believe the TLR Subcommittee appropriately divided the elements of TLR business practices vs. TLR reliability requirements? If not, please explain in the comment area.**

Yes

No

Comments:

**3. Do you believe there are still elements of TLR business practices that remain in the proposed TLR reliability requirements? If not, please explain in the comment area.**

Yes

No

Comments:

**4. Do you believe there are still elements of TLR reliability requirements that remain in the proposed TLR business practices? If not, please explain in the comment area.**

Yes

No

Comments:

**5. Do you have any other comments on these proposed changes?**

Yes

No

Comments:

**Comment Form — Proposed Reliability Coordination — Transmission Loading Relief  
IRO-006-1**

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<b>Individual Commenter Information</b>	
(Complete this page for comments from one organization or individual.)	
Name:	
Organization:	
Telephone:	
Email:	
NERC Region	Registered Ballot Body Segment
<input type="checkbox"/> ERCOT	<input type="checkbox"/> 1 - Transmission Owners
<input type="checkbox"/> ECAR	<input type="checkbox"/> 2 - RTOs, ISOs, Regional Reliability Councils
<input type="checkbox"/> FRCC	<input type="checkbox"/> 3 - Load-serving Entities
<input type="checkbox"/> MAAC	<input type="checkbox"/> 4 - Transmission-dependent Utilities
<input type="checkbox"/> MAIN	<input type="checkbox"/> 5 - Electric Generators
<input type="checkbox"/> MAPP	<input type="checkbox"/> 6 - Electricity Brokers, Aggregators, and Marketers
<input type="checkbox"/> NPCC	<input type="checkbox"/> 7 - Large Electricity End Users
<input type="checkbox"/> SERC	<input type="checkbox"/> 8 - Small Electricity End Users
<input type="checkbox"/> SPP	<input type="checkbox"/> 9 - Federal, State, Provincial Regulatory or other Government Entities
<input type="checkbox"/> WECC	
<input type="checkbox"/> NA - Not Applicable	



**Comment Form — Proposed Reliability Coordination — Transmission Loading Relief  
IRO-006-1**

Group Comments (Complete this page if comments are from a group.)

**Group Name:** Midwest Reliability Organization  
**Lead Contact:** Alan Boesch  
**Contact Organization:** Midwest Reliability Organization  
**Contact Segment:** 2  
**Contact Telephone:** 402-845-5210  
**Contact Email:** agboesc@nppd.com

Additional Member Name	Additional Member Organization	Region*	Segment*
Terry Bilke	MISO	MRO	2
Robert Coish	MHEB	MRO	2
Dennis Florom	LES	MRO	2
Todd Gosnell	OPPD	MRO	2
Wayne Guttormson	SPC	MRO	2
Jim Maenner	WPS	MRO	2
Tom Mielnik	MEC	MRO	2
Darrick Moe	WAPA	MRO	2
Ken Goldsmith	ALT	MRO	2
Joe Knight	MRO	MRO	2
The 31 Additional MRO Member	Companies not named above	MRO	2

\*If more than one Region or Segment applies, indicate the best fit for the purpose of these comments. Regional acronyms and segment numbers are shown on prior page.

**Comment Form — Proposed Reliability Coordination — Transmission Loading Relief  
IRO-006-1**

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**Background Information:**

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**Comment Form — Proposed Reliability Coordination — Transmission Loading Relief  
IRO-006-1**

---

- 1. Do you believe there is a reliability need for this proposed standard change? If not, please explain in the comment area.**

Yes

No

Comments: The MRO does not believe there is a reliability need for the proposed standard change. We would contend that the change provides confusion to a very important reliability process. In order to understand the process the standard and the business practice are necessary.

- 2. Do you believe the TLR Subcommittee appropriately divided the elements of TLR business practices vs. TLR reliability requirements? If not, please explain in the comment area.**

Yes

No

Comments: Steps 1.4.1, 1.4.1.1, 1.5, 1.5.1, 1.6, 1.7, 2.1.2, 2.2.2, 2.4.2, 2.5.2, 3.2.1.2, 3.3.1.2, 7.1, are reliability related and should remain in the standard. The dynamic schedule part of 1.6.6 was added to the Standard in June of this year with 100% of the ballot body approval, it should remain as part of this standard.

- 3. Do you believe there are still elements of TLR business practices that remain in the proposed TLR reliability requirements? If not, please explain in the comment area.**

Yes

No

Comments:

- 4. Do you believe there are still elements of TLR reliability requirements that remain in the proposed TLR business practices? If not, please explain in the comment area.**

Yes

No

Comments: See comments in question 2.

- 5. Do you have any other comments on these proposed changes?**

Yes

No

**Comment Form — Proposed Reliability Coordination — Transmission Loading Relief  
IRO-006-1**

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Comments: It was very difficult to review the changes to the standard without a redline copy. In order to perform our review we made a redline of the original standard. The MRO does not support this modification. The proposed change provides confusion to a very important reliability process. Also the proposed standard references a NAESB standard which is inconsistent with the NERC Standards Process Manual which says "All mandatory requirements of a reliability standard shall be within an element of the standard. Supporting documents to aid in the implementation of a standard may be referenced by the standard but are not part of the standard itself." There are mandatory parts of the proposed standard in the NAESB business practice and are necessary for the successful implementation of this reliability standard. With the two documents being modified by separate entities there is a good chance that the documents will not be coordinated and kept in synchronization when changes are made.

**Comment Form — Proposed Reliability Coordination — Transmission Loading Relief  
IRO-006-1**

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<b>Individual Commenter Information</b>	
(Complete this page for comments from one organization or individual.)	
Name:	Raj Rana - Coordinator
Organization:	AEP
Telephone:	614-716-2359
Email:	raj_rana@AEP.com
NERC Region	Registered Ballot Body Segment
<input checked="" type="checkbox"/> <b>ERCOT</b>	<input checked="" type="checkbox"/> 1 - Transmission Owners
<input checked="" type="checkbox"/> <b>ECAR</b>	<input type="checkbox"/> 2 - RTOs, ISOs, Regional Reliability Councils
<input type="checkbox"/> <b>FRCC</b>	<input checked="" type="checkbox"/> 3 - Load-serving Entities
<input type="checkbox"/> <b>MAAC</b>	<input type="checkbox"/> 4 - Transmission-dependent Utilities
<input type="checkbox"/> <b>MAIN</b>	<input checked="" type="checkbox"/> 5 - Electric Generators
<input type="checkbox"/> <b>MAPP</b>	<input type="checkbox"/> 6 - Electricity Brokers, Aggregators, and Marketers
<input type="checkbox"/> <b>NPCC</b>	<input type="checkbox"/> 7 - Large Electricity End Users
<input type="checkbox"/> <b>SERC</b>	<input type="checkbox"/> 8 - Small Electricity End Users
<input checked="" type="checkbox"/> <b>SPP</b>	<input type="checkbox"/> 9 - Federal, State, Provincial Regulatory or other Government Entities
<input type="checkbox"/> <b>WECC</b>	
<input type="checkbox"/> <b>NA - Not Applicable</b>	

**Comment Form — Proposed Reliability Coordination — Transmission Loading Relief  
IRO-006-1**

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Group Comments (Complete this page if comments are from a group.)

**Group Name:**

**Lead Contact:**

**Contact Organization:**

**Contact Segment:**

**Contact Telephone:**

**Contact Email:**

<b>Additional Member Name</b>	<b>Additional Member Organization</b>	<b>Region*</b>	<b>Segment*</b>

\*If more than one Region or Segment applies, indicate the best fit for the purpose of these comments.  
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**Comment Form — Proposed Reliability Coordination — Transmission Loading Relief  
IRO-006-1**

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**Comment Form — Proposed Reliability Coordination — Transmission Loading Relief  
IRO-006-1**

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- 1. Do you believe there is a reliability need for this proposed standard change? If not, please explain in the comment area.**

Yes

No

Comments: We support the NERC/NAESB initiative to split the TLR document in order to extract the business practice aspects. However, there is no reliability need for this proposed standard change. The reliability need in terms of managing power flow relief in a pre-defined time period in order to maintain security of the system did not change. However, this draft does not provide reliability performance specifications, such as X MW or % of relief in Y minutes. The NERC portion of this standard should specify what is needed to maintain the system security in the interconnected environment, while the NAESB portion should specify the road map as to how to do it.

- 2. Do you believe the TLR Subcommittee appropriately divided the elements of TLR business practices vs. TLR reliability requirements? If not, please explain in the comment area.**

Yes

No

Comments: The two documents are overlapping. Same statements in both documents.

- 3. Do you believe there are still elements of TLR business practices that remain in the proposed TLR reliability requirements? If not, please explain in the comment area.**

Yes

No

Comments: We believe that items like firm/non-firm transactions types, TLR levels etc. should be taken out of the reliability portion of this standard. These items should be included in the NAESB portion. The reliability portion should only address the needed relief amount on constrained facilities and the time under which the relief should be provided in order to maintain security of the interconnected network.

- 4. Do you believe there are still elements of TLR reliability requirements that remain in the proposed TLR business practices? If not, please explain in the comment area.**

Yes

No

Comments: No comments. The TLR business practices document is not available.

- 5. Do you have any other comments on these proposed changes?**



**Comment Form — Proposed Reliability Coordination — Transmission Loading Relief  
IRO-006-1**

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Yes

No

Comments: Use of proxy flowgates by the reliability coordinators must be prohibited. This practice must be explicitly addressed in this standard because, the use of proxy flowgates not only will result in mis-allocation of corrective actions, but at worst could even result in actions being taken that actually increase flows on the limiting element, instead of decreasing them.

**Comment Form — Proposed Reliability Coordination — Transmission Loading Relief  
IRO-006-1**

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(Complete this page for comments from one organization or individual.)	
Name:	
Organization:	
Telephone:	
Email:	
NERC Region	Registered Ballot Body Segment
<input type="checkbox"/> ERCOT	<input type="checkbox"/> 1 - Transmission Owners
<input type="checkbox"/> ECAR	<input type="checkbox"/> 2 - RTOs, ISOs, Regional Reliability Councils
<input type="checkbox"/> FRCC	<input type="checkbox"/> 3 - Load-serving Entities
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<input type="checkbox"/> WECC	
<input type="checkbox"/> NA - Not Applicable	

**Comment Form — Proposed Reliability Coordination — Transmission Loading Relief  
IRO-006-1**

Group Comments (Complete this page if comments are from a group.)

**Group Name:** Joint Interchange Scheduling Working Group  
**Lead Contact:** Bert Gumm  
**Contact Organization:** NAESB/NERC  
**Contact Segment:** 1  
**Contact Telephone:** 208-388-5147  
**Contact Email:** rgumm@idahopower.com

<b>Additional Member Name</b>	<b>Additional Member Organization</b>	<b>Region*</b>	<b>Segment*</b>
Troy Simpson	Bonneville Power Administration	WECC	1
Marilyn Franz	Sierra Pacific Power Company	WECC	1
Jim Hansen	Seattle City Light	WECC	1
Bert Gumm	Idaho Power Company	WECC	1
Kathee Downing	PacifiCorp	WECC	1
Jim Eckelcamp	Progress Energy	SERC	6
Bob Harshbarger	Puget Sound Energy	WECC	1
Paul Sorenson	OATI	N/A	
Bob Schwermann	Sacramento Municipal Utilities D	WECC	1
Bonita Smulski	Bonneville Power Admin	WECC	1
Taryn McPherson	Bonneville Power Admin	WECC	1
Salah Kitali	Bonneville Power Admin	WECC	1
Joel Mickey	ERCOT	ERCOT	2
Andrew Burke	PacifiCorp	WECC	1

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**Comment Form — Proposed Reliability Coordination — Transmission Loading Relief  
IRO-006-1**

---

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**Comment Form — Proposed Reliability Coordination — Transmission Loading Relief  
IRO-006-1**

---

**1. Do you believe there is a reliability need for this proposed standard change? If not, please explain in the comment area.**

Yes

No

Comments:

**2. Do you believe the TLR Subcommittee appropriately divided the elements of TLR business practices vs. TLR reliability requirements? If not, please explain in the comment area.**

Yes

No

Comments:

**3. Do you believe there are still elements of TLR business practices that remain in the proposed TLR reliability requirements? If not, please explain in the comment area.**

Yes

No

Comments:

**4. Do you believe there are still elements of TLR reliability requirements that remain in the proposed TLR business practices? If not, please explain in the comment area.**

Yes

No

Comments:

**5. Do you have any other comments on these proposed changes?**

Yes

No

Comments: 1. We request that the scope of this SAR be expanded to include resolving the reloading of curtailed transactions above their reliability limit by an entity other than the initiating entity or above any pre-existing reliability or market profiles. 2. We also request that the scope of the SAR be expanded to include standards for when curtailments may be denied and when

**Comment Form — Proposed Reliability Coordination — Transmission Loading Relief  
IRO-006-1**

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curtailments may be issued. 1 - There have been several instances where a curtailment has been issued and then been automatically or manually reloaded above the reliability limit. The automatic reload problem created by the IDC has been resolved by CO-148, automatic reload by other back office applications has not been corrected, nor have manual adjustments. There are several options available for correcting this problem. This should be addressed by specifying requirements and performance measures in the TLR standard and may also be addressed through NAESB business practices and modifications to the e-Tag specification. Also, any pre-existing curtailment levels are lost. JISWG recommends that the entity who has issued the curtailment be the only entity able to authorize the reload. When the reload occurs the energy profile should be limited to the next lowest reliability limit or market adjustment profile. 2- Under normal circumstances, a curtailment (issued for reliability reasons) should not be denied. However, there are some limited circumstances where a curtailment should be denied. For example, if a curtailment comes in and the generator cannot meet the ramp requirements, then the curtailment could be denied and would be reissued for the next scheduling interval. This ensures that the tags reflect actual conditions. In other cases, curtailments are sometimes issued when PSE's cannot make their market level adjustments prior to cutoff. The TLR standard should address those specific reasons for denying a curtailment. Reliability is compromised when curtailments are denied for non-reliability reasons. Reliability may also be compromised when curtailments are issued for non-reliability reasons. If scope of the SAR is adjusted, JISWG volunteers to assist the drafting team with providing specific language for the TLR standard addressing these issues.

**Comment Form — Proposed Reliability Coordination — Transmission Loading Relief  
IRO-006-1**

---

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Organization:		
Telephone:		
Email:		
NERC Region		Registered Ballot Body Segment
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<input type="checkbox"/> WECC	<input type="checkbox"/>	
<input type="checkbox"/> NA - Not Applicable	<input type="checkbox"/>	

**Comment Form — Proposed Reliability Coordination — Transmission Loading Relief  
IRO-006-1**

Group Comments (Complete this page if comments are from a group.)

**Group Name:** Entergy Services - Transmission  
**Lead Contact:** Ed Davis  
**Contact Organization:** Entergy Services - Transmission  
**Contact Segment:** 1  
**Contact Telephone:** 504-310-5884  
**Contact Email:** edavis@entergy.com

Additional Member Name	Additional Member Organization	Region*	Segment*
Rick Riley	Entergy Services		1
Jay Zimmerman	Entergy Services		1
George Bartlett	Entergy Services		1
James Case	Entergy Services		1
Bill Aycock	Entergy Services		1
Melinda Montgomery	Entergy Services		1
Narinder Saini	Entergy Services		1
Maurice Casadaban	Entergy Services		1

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**Comment Form — Proposed Reliability Coordination — Transmission Loading Relief  
IRO-006-1**

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**Comment Form — Proposed Reliability Coordination — Transmission Loading Relief  
IRO-006-1**

---

- 1. Do you believe there is a reliability need for this proposed standard change? If not, please explain in the comment area.**

Yes

No

Comments:

The interplay between the business practices and reliability practices associated with TLR is so intimate that the two should not be divided into two standards practices. It would be best for the industry that one TLR standard be developed by the two organizations.

- 2. Do you believe the TLR Subcommittee appropriately divided the elements of TLR business practices vs. TLR reliability requirements? If not, please explain in the comment area.**

Yes

No

Comments:

A complete response to this question is inappropriate at this time.

It appears that IRO-006 will be divided into 3 major documents: NERC TLR reliability standards, NAESB business practices, and the IDC Reference Documentation. The answer to this question will require a detailed comparison of all three documents with respect to the existing IRO-006. We do not have the NAESB document in front of us in order to make that detailed comparison. In addition, it does not appear that a detailed comparison of the three documents has been requested since the SAR request states in the last paragraph that the development effort will begin by assessing for completeness and accuracy the revised Attachment 1.

- 3. Do you believe there are still elements of TLR business practices that remain in the proposed TLR reliability requirements? If not, please explain in the comment area.**

Yes

No

Comments:

The NERC TLR reliability standard part of this documentation appears to be all reliability related. However, the IDC Reference Document appears to have significant business practice elements contained in it.

- 4. Do you believe there are still elements of TLR reliability requirements that remain in the proposed TLR business practices? If not, please explain in the comment area.**

Yes

**Comment Form — Proposed Reliability Coordination — Transmission Loading Relief  
IRO-006-1**

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No

Comments:

We can not answer this question since we do not have the NAESB proposed TLR business practices in this package.

**5. Do you have any other comments on these proposed changes?**

Yes

No

Comments:

The SAR contains the statement that the urgent action revision to Attachment 1 addressing dynamic schedules will be incorporated into the NAESB business practices. We suggest starting with IRO-006-1, rather than with IRO-006-0.

Please delete all references to IRO-006-0 (and IRO-006-1) in headers, footers, titles, etc. This new document will result in a new version of IRO--006. This current draft is not version 0 or 1.

Please delete all references to adoption by the NERC Board of Trustees, Effective Date, and all dates because the document we are viewing has not been adopted by the BOT and does not have an Effective Date.

Please provide a redline version showing the draft changes to IRO-006-1. This redline would make review and comment much easier for commentors.

We appreciate the development of the matrix and would probably find it useful for keeping track of the disposition of each requirement in the original IRO-006. However, in its current form we do not understand which columns relate to which documents and the row designations are not clearly understood.

**Comment Form — Proposed Reliability Coordination — Transmission Loading Relief  
IRO-006-1**

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This form is to be used to submit comments on the proposed Draft 1 of the Proposed Reliability Coordination- Transmission Loading Relief SAR. Comments must be submitted by **September 2, 2005**. You may submit the completed form by emailing it to: [sarcomm@nerc.com](mailto:sarcomm@nerc.com) with the words “Reliability Coordination- Transmission Loading Relief SAR” in the subject line. If you have questions please contact Mark Ladrow at [mark.ladrow@nerc.net](mailto:mark.ladrow@nerc.net) or by telephone at 609-452-8060.

**ALL DATA ON THIS FORM WILL BE TRANSFERRED AUTOMATICALLY TO A DATABASE AND IT IS THEREFORE IMPORTANT TO ADHERE TO THE FOLLOWING REQUIREMENTS:**

- DO:**
- Do enter text only, with no formatting or styles added.
  - Do use punctuation and capitalization as needed (except quotations).
  - Do use more than one form if responses do not fit in the spaces provided.
  - Do submit any formatted text or markups in a separate WORD file.

- DO NOT:**
- Do not insert tabs or paragraph returns in any data field.
  - Do not use numbering or bullets in any data field.
  - Do not use quotation marks in any data field.
  - Do not submit a response in an unprotected copy of this form.

<b>Individual Commenter Information</b>	
(Complete this page for comments from one organization or individual.)	
Name:	Cheryl Mendrala
Organization:	ISO New England
Telephone:	413 535-4184
Email:	cmendrala@iso-ne.com
<b>NERC Region</b>	<b>Registered Ballot Body Segment</b>
<input type="checkbox"/> ERCOT	<input type="checkbox"/> 1 - Transmission Owners
<input type="checkbox"/> ECAR	<input checked="" type="checkbox"/> 2 - RTOs, ISOs, Regional Reliability Councils
<input type="checkbox"/> FRCC	<input type="checkbox"/> 3 - Load-serving Entities
<input type="checkbox"/> MAAC	<input type="checkbox"/> 4 - Transmission-dependent Utilities
<input type="checkbox"/> MAIN	<input type="checkbox"/> 5 - Electric Generators
<input type="checkbox"/> MAPP	<input type="checkbox"/> 6 - Electricity Brokers, Aggregators, and Marketers
<input checked="" type="checkbox"/> NPCC	<input type="checkbox"/> 7 - Large Electricity End Users
<input type="checkbox"/> SERC	<input type="checkbox"/> 8 - Small Electricity End Users
<input type="checkbox"/> SPP	<input type="checkbox"/> 9 - Federal, State, Provincial Regulatory or other Government Entities
<input type="checkbox"/> WECC	
<input type="checkbox"/> NA - Not Applicable	

**Comment Form — Proposed Reliability Coordination — Transmission Loading Relief  
IRO-006-1**

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Group Comments (Complete this page if comments are from a group.)

**Group Name:**

**Lead Contact:**

**Contact Organization:**

**Contact Segment:**

**Contact Telephone:**

**Contact Email:**

<b>Additional Member Name</b>	<b>Additional Member Organization</b>	<b>Region*</b>	<b>Segment*</b>

\*If more than one Region or Segment applies, indicate the best fit for the purpose of these comments.  
Regional acronyms and segment numbers are shown on prior page.

**Comment Form — Proposed Reliability Coordination — Transmission Loading Relief  
IRO-006-1**

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**Background Information:**

In August 2004, NERC and NAESB agreed to immediately begin a joint effort to update the Eastern Interconnection TLR Procedure, as reflected in Attachment 1 to reliability standard IRO-006-0, to divide the reliability requirements and business practices, and to incorporate other necessary improvements to the TLR procedure. In December 2004 NERC and NAESB formed the joint TLR Subcommittee to clarify and focus Attachment 1 to NERC reliability standard IRO-006-0 on the TLR requirements that are necessary for reliability, as distinguished from those TLR requirements that are business practices.

The subject SAR is required to revise Attachment 1 (Transmission Loading Relief Procedure — Eastern Interconnection) of IRO-006-0 (Reliability Coordination — Transmission Loading Relief) in accordance with the final work products of the NERC/NAESB TLR Subcommittee. NERC representatives to the TLR Subcommittee included members of the IDC Working Group, the Distribution Factors Working Group, the Reliability Coordinator Working Group, the Operating Reliability Subcommittee, the Operating Committee, and NERC staff.

**Please review the SAR, as well as the additional information related to the SAR, posted on the NERC website and complete this Comment Form to provide feedback to the requestor on the proposed standards.**

**Comment Form — Proposed Reliability Coordination — Transmission Loading Relief  
IRO-006-1**

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- 1. Do you believe there is a reliability need for this proposed standard change? If not, please explain in the comment area.**

Yes

No

Comments: This proposed standard change was not initiated due to reliability needs.

- 2. Do you believe the TLR Subcommittee appropriately divided the elements of TLR business practices vs. TLR reliability requirements? If not, please explain in the comment area.**

Yes

No

Comments:

- Section 2.6 and 2.7 in the original standard defined step-by-step actions the Operator is to take under TLR Levels 5a and 5b. These actions have been removed and currently reside in the proposed NAESB standard. It is not appropriate for a business practice standard to define actions to be taken by a Reliability Coordinator in real-time operations to resolve a reliability issue.

The need for a TLR is in response to a problem with reliability on the system. There is no doubt that the Operator must be presented with all the information that is contained in both the proposed NERC and NAESB standards in order to issue that TLR. If the operator does not know what transactions are available in any given category, they do not know what TLR level is needed to resolve the situation. Therefore, we cannot agree with the assertion that the information contained in the NAESB standard does not impact reliability.

We agree that some aspects of the original IRO-006 are 'business practices,' and agree that the completed effort generally meets the original intent of splitting the business practice and reliability components. However, seeing the resulting split, it is clear that these business practices have a direct impact on reliability and we believe they should be maintained within one single standard to prevent confusion and conflicts. Also, since the fundamental practice for defining the priorities and treatment of transactions under each TLR level is consistent with the FERC pro-forma tariff, there is minimal subjectivity involved in the business practices that are included in the original NERC standard.

- 3. Do you believe there are still elements of TLR business practices that remain in the proposed TLR reliability requirements? If not, please explain in the comment area.**

Yes

No

**Comment Form — Proposed Reliability Coordination — Transmission Loading Relief  
IRO-006-1**

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Comments: See response to question 2.

**4. Do you believe there are still elements of TLR reliability requirements that remain in the proposed TLR business practices? If not, please explain in the comment area.**

Yes

No

Comments: See response to question 2.

**5. Do you have any other comments on these proposed changes?**

Yes

No

Comments:

- Recommend restoring the reference to RCIS tool in 1.4. That reference was eliminated when the old 1.4.1 was removed.

- The old 1.5.1 was removed. There's a general statement added to 1.2 that says "In addition, a Reliability Coordinator may implement other NERC-approved procedures to request relief to mitigate any other transmission constraints as necessary to preserve the reliability of the system." But, that phrase does not seem to capture the same intent as the previous 1.5.1 wording.

- Section 1.5.3 the numbering on this section is very confusing. Suggest the following:

1.5.3.1. Causes of questionable IDC results may include: (1) Missing Interchange transactions that are known to contribute to the Constraint, (2) Significant change in transmission system topology, or (3) TDF matrix error.

1.5.3.2 Impacts of questionable IDC results may include: (1) relief that would have no effect on, or aggravate the constraint or (2) that would initiate a constraint elsewhere.

1.5.3.3. If other Reliability Coordinators are involved in the TLR event, all impacted Reliability Coordinators shall be in agreement before any adjustments to the relief request list are made.

- Title of Section 2 should be changed to be only "Transmission Loading Relief (TLR) Levels."

- Section 3 is missing section 3.1.



**Comment Form — Proposed Reliability Coordination — Transmission Loading Relief  
IRO-006-1**

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- Suggest that Section 3.2 include a reference to the fact that transactions submitted after the XX:25 deadline will put on HOLD.
  
- Are Section 3.3.3 and Section 3.4.3 referring back to the deadline defined in 3.2? If so, that section should be referenced.
  
- Text in 3.3.1.1 and 3.3.2 are referring to the same process for reallocation and should use the same terminology. Suggest 3.3.1.1 text be changed to “At XX:25 a reallocation will be performed for the following hour to maintain the target flow identified for the current hour”.
  
- Text in 3.4.1.1 and 3.4.2 are referring to the same process for reallocation and should use the same terminology. Suggest 3.4.1.1 text be changed to “At XX:25 a reallocation will be performed for the following hour to maintain the target flow identified for the current hour”.
  
- The section notation of Appendix B should be modified. The Section numbering shown in the index is not how the headings are titled in the Sections. Also, Section F and Section G should not be 5.1 and 5.2; they should be at the highest index level.

General Comment: There have been changes to the congestion management process over the last few years that involve the use of Market information by the IDC. Any new standards addressing the TLR process and the IDC, whether in NERC or NAESB, should consider addressing the current information available to the IDC and include some mention of that information in that standard development.

General Comment: One other practical concern that has not been addressed is the ownership, impact and funding of the IDC tool that automates the ‘business practices’ of implementing a TLR for the Operator. The split of the original NERC IRO-006 should not be adopted until this issue is addressed and resolved.

**Comment Form — Proposed Reliability Coordination — Transmission Loading Relief  
IRO-006-1**

---

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<b>Individual Commenter Information</b>		
(Complete this page for comments from one organization or individual.)		
Name:		
Organization:		
Telephone:		
Email:		
NERC Region		Registered Ballot Body Segment
<input type="checkbox"/> ERCOT	<input type="checkbox"/>	1 - Transmission Owners
<input type="checkbox"/> ECAR	<input type="checkbox"/>	2 - RTOs, ISOs, Regional Reliability Councils
<input type="checkbox"/> FRCC	<input type="checkbox"/>	3 - Load-serving Entities
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<input type="checkbox"/> WECC	<input type="checkbox"/>	
<input type="checkbox"/> NA - Not Applicable	<input type="checkbox"/>	

**Comment Form — Proposed Reliability Coordination — Transmission Loading Relief  
IRO-006-1**

Group Comments (Complete this page if comments are from a group.)

**Group Name:** Southern Company - Transmission  
**Lead Contact:** Jim Busbin  
**Contact Organization:** Southern Company Services  
**Contact Segment:** 1  
**Contact Telephone:** 205-257-6357  
**Contact Email:** jybusbin@southernco.com

Additional Member Name	Additional Member Organization	Region*	Segment*
Marc Butts	Southern Company Services	SERC	1
Jim Viikinsalo	Southern Company Services	SERC	1

\*If more than one Region or Segment applies, indicate the best fit for the purpose of these comments.  
 Regional acronyms and segment numbers are shown on prior page.

**Comment Form — Proposed Reliability Coordination — Transmission Loading Relief  
IRO-006-1**

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**Please review the SAR, as well as the additional information related to the SAR, posted on the NERC website and complete this Comment Form to provide feedback to the requestor on the proposed standards.**

**Comment Form — Proposed Reliability Coordination — Transmission Loading Relief  
IRO-006-1**

---

**1. Do you believe there is a reliability need for this proposed standard change? If not, please explain in the comment area.**

Yes

No

Comments: N/A

**2. Do you believe the TLR Subcommittee appropriately divided the elements of TLR business practices vs. TLR reliability requirements? If not, please explain in the comment area.**

Yes

No

Comments: N/A

**3. Do you believe there are still elements of TLR business practices that remain in the proposed TLR reliability requirements? If not, please explain in the comment area.**

Yes

No

Comments: N/A

**4. Do you believe there are still elements of TLR reliability requirements that remain in the proposed TLR business practices? If not, please explain in the comment area.**

Yes

No

Comments: N/A

**5. Do you have any other comments on these proposed changes?**

Yes

No

Comments: My only concern with the splitting of reliability requirements and business practices is how they will be managed and/or coordinated in the future. I'm not sure what value is added to the reliability of the grid by now having our grid operators manage their respective systems with a NERC manual in one hand and a NAESB manual in the other. Right now the two documents are in synch with one another; however, as we move forward in time, what will be the process for conflict resolution between the two?



## **Background:**

The TLR – General Update SAR drafting team thanks all commenters who submitted comments on the first draft of the SAR and associated proposed revisions to IRO-006. The SAR was posted from August 4 through September 2, 2005. The drafting team asked stakeholders to provide feedback on the SAR and standard through a special SAR Comment Form. There were 12 sets of comments, including comments representing the views of 65 different people from 36 different entities in seven of the eight NERC Regions.

When the first SAR was posted for comment, the requestor had envisioned publishing a NERC standard and an associated NAESB business practice. Many stakeholders indicated that this would be very challenging for use in real-time operations. In response to stakeholder concerns, NAESB and NERC developed and approved the NERC-NAESB Procedure for Joint Development and Coordination. This procedure guides joint development of standards and business practices when the reliability and business practice components are intricately entwined within a proposed standard. This procedure was approved for implementation by the Standards Committee, NERC Board of Trustees and the NAESB Board and is being used to make modifications to IRO-006.

Based on stakeholder comments and changes that have taken place in the industry since the initial posting of the SAR, the drafting team made the following significant changes to the SAR:

- Modified the desired product so that instead of publishing the NERC Reliability Standard as a separate product, will produce a single document with NAESB that includes both the NERC reliability requirements and the NAESB business practices relative to the TLR Procedure. This should satisfy commenters who indicated that having two different documents would be a detriment to reliability. (As envisioned, the NERC/NAESB split would be balloted as soon as possible.)
- Expanded the scope of the SAR to include consideration of **all** the modifications to the standard proposed by FERC and stakeholders as identified on the ‘Standard Review Form’ attached to the revised SAR. This expansion in scope should satisfy the need to improve the overall quality of this standard. The existing standard includes some material that is more appropriate in a technical reference, and some parts of the standard don’t meet the quality criteria established for ERO standards. The expansion in scope brings this SAR into conformance with the *Reliability Standards Development Plan: 2007–2009*.
- Expanded the scope of the SAR to include consideration of modifications previously addressed in the SAR to Modify IRO-006 for Market Information. This should satisfy stakeholders who suggested that having multiple SARs for the same project is not desirable.

With the above conforming changes, the drafting team is recommending that the SAR move forward to standard drafting.

In this ‘Consideration of Comments’ document, stakeholder comments have been organized so that it is easier to see the summary of changes in response to each question posed by the requestor. All comments received on the can be viewed in their original format at:

<http://www.nerc.com/~filez/standards/Reliability-Coordination-Transmission-Loading-Relief.html>

If you feel that your comment has been overlooked, please let us know immediately. Our goal is to give every comment serious consideration in this process! If you feel there has been an error or omission, you

**Consideration of Comments on Draft 1 of SAR for General Update to IRO-006 Reliability Coordination — Transmission Loading Relief**

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can contact the Vice President and Director of Standards, Gerry Cauley at 609-452-8060 or at [gerry.cauley@nerc.net](mailto:gerry.cauley@nerc.net). In addition, there is a NERC Reliability Standards Appeals Process.<sup>1</sup>

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<sup>1</sup> The appeals process is in the Reliability Standards Development Procedure Manual: <http://www.nerc.com/standards/newstandardsprocess.html>



**Consideration of Comments on Draft 1 of SAR for General Update to IRO-006 Reliability Coordination — Transmission Loading Relief**

Commenter	Organization	Industry Segment								
		1	2	3	4	5	6	7	8	9
Dan Boezio (G1)	AEP	x								
Raj Rana	AEP	x		x		x				
Ken Goldsmith (G5)	ALT									
Serhly Kotsan (G1)	Boston Pacific									
Bonita Smulski (G6)	BPA	x								
Salah Kitali (G6)	BPA	x								
Taryn McPherson (G6)	BPA	x								
Troy Simpson (G6)	BPA	x								
Vinod Kotecha (G3)	ConEd	x								
Bill Aycock (G7)	Entergy	x								
Ed Davis (G7)	Entergy	x								
George Bartlett (G7)	Entergy	x								
James Case (G7)	Entergy	x								
Jay Zimmerman (G7)	Entergy	x								
Maurice Casadaban (G7)	Entergy	x								
Melinda Montgomery (G7)	Entergy	x								
Narinder Saini (G7)	Entergy	x								
Rick Riley (G7)	Entergy	x								
Joel Mickey (G6)	ERCOT		x							
Bert Gumm (G6)	Idaho Power	x								
Dan Rochester	IESO		x							
Khaqan Khan (G3)	IESO		x							
Cheryl Mendrala	ISO New England		x							
Kathleen Goodman (G3)	ISO New England		x							
Mike Gammon (G1)	KCP&L	x								
Todd Fridley (G1)	KCP&L	x								
Dennis Florom (G5)	LES	x								

**Consideration of Comments on Draft 1 of SAR for General Update to IRO-006 Reliability Coordination — Transmission Loading Relief**

Tom Mielnik (G5)	MEC											
Robert Coish (G5)	MHEB	x		x	x	x						
Terry Bilke (G5)	MISO		x									
Joe Knight (G5)	MRO		x									
Guy Zito (G3)	NPCC		x									
Alan Boesch (G5)	NPPD											
Paul Sorenson (G6)	OATI											
Scott Cunningham	Ohio Valley Electric Corp		x	x	x	x	x	x	x	x		
Todd Gosnell (G5)	OPPD											
Andrew Burke (G6)	PacifiCorp	x										
Kathee Downing (G6)	PacifiCorp	x										
Jim Eckelcamp (G6)	Progress Energy						x					
C. Robert Moseley (G4)	PSC of South Carolina											x
David Wright (G4)	PSC of South Carolina											x
Elizabeth Fleming (G4)	PSC of South Carolina											x
G. O'Neal Hamilton (G4)	PSC of South Carolina											x
John Howard (G4)	PSC of South Carolina											x
Mignon Clyburn (G4)	PSC of South Carolina											x
Phil Riley (G4)	PSC of South Carolina											x
Randy Mitchell (G4)	PSC of South Carolina											x
Bob Harshbarger (G6)	Puget Sound Energy	x										
Jim Hansen (G6)	Seattle City Light	x										
Marilyn Franz (G6)	Sierra Pacific Power Co	x										
Bob Schwermann (G6)	SMUD	x										
Clifford Shephard (G2)	Southern Company Generation						x					
Joel Dison (G2)	Southern Company Generation						x					
Lucius Burris (G2)	Southern Company Generation						x					
Roman Carter (G2)	Southern Company Generation						x					
Steve Lowe (G2)	Southern Company Generation						x					

**Consideration of Comments on Draft 1 of SAR for General Update to IRO-006 Reliability Coordination — Transmission Loading Relief**

Jim Busbin (G8)	Southern Company Services	x																
Jim Viikinsalo (G8)	Southern Company Services	x																
Marc Butts (G8)	Southern Company Services	x																
Wayne Guttormson (G5)	SPC																	
Robert Rhodes (G1)	SPP		x															
Bob Cochran (G1)	SPS	x																
Darrick Moe (G5)	WAPA																	
Mike Crouch (G1)	WFEC	x																
Jim Maenner (G5)	WPS																	

- G1 – SPP Operating Reliability Working Group
- G2 – Southern Company Generation
- G3 – NPCC CP9 Reliability Standards Working Group
- G4 – Public Service Commission of South Carolina
- G5 – Midwest Reliability Organization
- G6 – Joint Interchange Scheduling Working Group NERC/NAESB
- G7 – Entergy
- G8 – Southern Company Services

**Index to questions, comments and responses:**

1. Do you believe there is a reliability need for this proposed standard change? If not, please explain in the comment area..... 7
2. Do you believe the TLR Subcommittee appropriately divided the elements of TLR business practices vs. TLR reliability requirements? If not, please explain in the comment area. .... 10
3. Do you believe there are still elements of TLR business practices that remain in the proposed TLR reliability requirements? If not, please explain in the comment area. .... 14
4. Do you believe there are still elements of TLR reliability requirements that remain in the proposed TLR business practices? If not, please explain in the comment area. .... 17
5. Do you have any other comments on these proposed changes? ..... 19

**Consideration of Comments on Draft 1 of SAR for General Update to IRO-006 Reliability Coordination — Transmission Loading Relief**

**1. Do you believe there is a reliability need for this proposed standard change? If not, please explain in the comment area.**

**Summary Consideration:** While there was no overwhelming consensus on this issue, most commenters indicated there is a reliability-related need for the proposed standard change. Of the commenters who disagreed with the change, some felt that the change was not 'initiated' due to a reliability need and some felt that splitting the standard between NERC and NAESB would lead to confusion.

The original intent of the SAR was to publish both a NERC version of the standard and a NAESB version of the associated business practice. The SAR was revised to indicate that there will be one document published jointly by NERC and NAESB. This should satisfy commenters who indicated that having two documents would be confusing and a detriment to reliability.

Commenter	Yes	No	Comment
CP9 Reliability Standards Working Group Guy Zito Kathleen Goodman Khaqan Khan Vinod (Bob) Kotecha		X	This proposed standard change was not initiated due to reliability needs. NPCC Participating members believe that the change is in conflict to very important reliability rules. In order to understand the process the standard and the business practice are necessary.
Response: The proposed change was initiated to clearly distinguish reliability-related requirements from business practice requirements.			
The revised SAR indicates that there will be joint collaboration and joint publication of the resulting standard. The joint collaboration ensures during development issues can be addressed jointly so that the resulting business practice and reliability standards work together. Using this process the result is that the jointly published standard will include the business practice requirements and the reliability requirements without need for separate documents.			
ISO NE Cheryl Mendrala		X	This proposed standard change was not initiated due to reliability needs
Response: The proposed change was initiated to clearly distinguish reliability-related requirements from business practice requirements.			
The revised SAR indicates that there will be joint collaboration and joint publication of the resulting standard. The joint collaboration ensures during development issues can be addressed jointly so that the resulting business practice and reliability standards work together. Using this process the result is that the jointly published standard will include the business practice requirements and the reliability requirements without need for separate documents.			
Entergy Services, Transmission Ed Davis Rick Riley Jay Zimmerman George Bartlett James Case Bill Aycock Melinda Montgomery Narinder Saini Maurice Casadaban		X	The interplay between the business practices and reliability practices associated with TLR is so intimate that the two should not be divided into two standards practices. It would be best for the industry that one TLR standard be developed by the two organizations.
Response: Agreed. Since the first draft of this SAR was posted, the NERC NAESB Template Procedure for Joint Standards Development and Coordination was developed to ensure proper coordination for standards where there is no easy separation of business and reliability.			
The revised SAR indicates that there will be joint collaboration and joint publication of the resulting standard. The joint collaboration ensures during development issues can be addressed jointly so that the resulting business practice and reliability standards work together. Using this process the result is that the jointly published standard will include the business practice requirements and the reliability requirements without need for separate documents.			
AEP Raj Rana		X	We support the NERC/NAESB initiative to split the TLR document in order to extract the business practice aspects. However, there is no reliability need for this proposed standard change. The reliability need in terms by managing power flow relief in a pre-defined time period in order to maintain security of the system did not change. However, this draft does not provide

**Consideration of Comments on Draft 1 of SAR for General Update to IRO-006 Reliability Coordination — Transmission Loading Relief**

			reliability performance specifications, such as X MW or % of relief in Y minutes. The NERC portion of this standard should specify what is needed to maintain the system security in the interconnected environment, while the NAESB portion should specify the road map as to how to do it.
<p>Response: The proposed change was initially initiated to clearly distinguish reliability-related requirements from business practice requirements. Since then, other stakeholders and FERC have identified the need for several additional changes to the standard beyond the NERC/NAESB coordinated split of the requirements. The revised SAR has an expanded scope to address all of these proposed changes. Please see the revised SAR.</p>			
Midwest Reliability Organization Alan Boesch Terry Bilke Robert Coish Dennis Florom Todd Gosnell Wayne Guttormson Jim Maenner Tom Mielnik Darrick Moe Ken Goldsmith Joe Knight		X	The MRO does not believe there is a reliability need for the proposed standard change. We would contend that the change provides confusion to a very important reliability process. In order to understand the process the standard and the business practice are necessary.
<p>Response: The proposed change was initiated to clearly distinguish reliability-related requirements from business practice requirements. The revised SAR indicates that there will be joint collaboration and joint publication of the resulting standard. The joint collaboration ensures during development issues can be addressed jointly so that the resulting business practice and reliability standards work together. Using this process the result is that the jointly published standard will include the business practices and the reliability standards without need for separate documents.</p>			
IESO, Ontario Dan Rochester		X	We do not feel there is a reliability need for the proposed standard "change". We would contend that the change provides confusion to a very important reliability process. In order to understand the process the standard and the business practice are necessary.
<p>Response: The proposed change was initiated to clearly distinguish reliability-related requirements from business practice requirements. The revised SAR indicates that there will be joint collaboration and joint publication of the resulting standard. The joint collaboration ensures during development issues can be addressed jointly so that the resulting business practice and reliability standards work together. Using this process the result is that the jointly published standard will include the business practices and the reliability standards without need for separate documents.</p>			
Public Service Commission of South Carolina Phil Riley John E. Howard David A. Wright Randy Mitchell Elizabeth B. Fleming G. O'Neal Hamilton Mignon L. Clyburn C. Robert Moseley	X		
Ohio Valley Electric Corp. Scott R. Cunningham	X		
Joint Interchange Scheduling Working Group Bert Gumm Troy Simpson Marilyn Franz Jim Hansen Kathee Downing Jim Eckelcamp	X		

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Bob Harshbarger Paul Sorenson Bob Schwermann Bonita Smulski Taryn McPherson Salah Kitali Joel Mickey Andrew Burke			
Southern Company – Transmission Jim Busbin Marc Butts Jim Viikinsalo	X		N/A
Operating Reliability Working Group (ORWG) Robert Rhodes Dan Boezio Bob Cochran Mike Crouch Todd Fridley Mike Gammon Serhly Kotsan Robert Rhodes	X		
Southern Company Generation Roman Carter Joel Dison Clifford Shepard Lucius Burris Steve Lowe	X		

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**2. Do you believe the TLR Subcommittee appropriately divided the elements of TLR business practices vs. TLR reliability requirements? If not, please explain in the comment area.**

**Summary Consideration:** The comments do indicate some support, but not a clear consensus in support of the proposed division of TLR business practices versus TLR reliability requirements. In reviewing the comments, the drafting team notes that several of the comments imply that certain steps in Attachment 1 were proposed to be assigned as business practices, but those steps were not proposed as business practices in the first draft of the SAR.

The modifications made to the SAR should improve this consensus as many of the negative comments indicated that subdividing the requirements into two separate documents would be confusing and under the revised SAR NERC and NAESB will jointly publish a document that includes both the Business Practice requirements and the reliability requirements in a single document.

Committer	Yes	No	Comment
IESO, Ontario Dan Rochester		X	<p>The reliability and business practices within the TLR process are integrated to such an extent that the details need to remain contained within a single document for clarity. Concerns regarding the ability to effectively manage the model and the process with the current proposed split need to be addressed. The ability to follow developing market issues must also be retained. Steps 1.4.1, 1.4.1.1, 1.5, 1.5.1, 1.6, 1.7, 2.1.2, 2.2.2, 2.4.2, 2.5.2, 3.2.1.2, 3.3.1.2, 7.1, are reliability related and should remain in the standard.</p> <p>The dynamic schedule part of 1.6.6 was added to the Standard in June of this year with approval of 100% of the ballot body. It should remain as part of this standard.</p>
<p><b>Response:</b> In determining how to subdivide the requirements, this is the approach taken by the TLR Task Force: A procedure includes steps that are performed to achieve expected results. It is only one method to achieve those results. If a Reliability Coordinator has options to address congestion and those options are prioritized in order of economic preference then the RC is making choices that would be appropriate under a business practice. In support of this approach, the drafting team believes that the following steps in the TLR Procedure should be assigned to a NAESB Business practice: 1.5.1, 2.2.2, 2.4.2, and 2.5.2.            Note that the other steps in the process that you've identified, 1.4.1, 1.4.1.1, 1.5, 1.6, 1.7, 2.1.2, 3.2.1.2, 3.3.1.2, and 7.1 are retained as reliability-steps in the revised SAR.            There were no changes to 1.6.6 as part of the approval of IRO-006-02.</p>			
CP9 Reliability Standards Working Group Guy Zito Kathleen Goodman Khaqan Khan Vinod (Bob) Kotecha		X	<p>- Section 2.6 and 2.7 in the original standard defined step-by-step actions the Operator is to take under TLR Levels 5a and 5b. These actions have been removed and currently reside in the proposed NAESB standard. It is not appropriate for a business practice standard to define actions to be taken by a Reliability Coordinator in real-time operations to resolve a reliability issue.</p> <p>The need for a TLR is in response to a problem with reliability on the system. The Operator must be presented with all the information that is contained in both the proposed NERC and NAESB standards in order to issue that TLR. If the operator does not know what transactions are available in any given category, they do not know what TLR level is needed to resolve the situation. NPCC participating members do not agree with the assertion that the information contained in the NAESB standard does not impact reliability.</p> <p>Some aspects of the original IRO-006 are 'business practices,' and that the completed effort generally meets the original intent of splitting the business practice and reliability components. However, seeing the resulting split, it is clear that these business practices have a direct impact on reliability and they should be maintained within one single standard to prevent confusion and conflicts. Also, since the fundamental practice for defining the priorities and treatment of transactions under each TLR level is consistent with the FERC pro-forma tariff, there is minimal subjectivity involved in the business practices that are included in the original NERC standard.</p> <p>Steps 1.4.1, 1.4.1.1, 1.5, 1.5.1, 1.6, 1.7, 2.1.2, 2.2.2, 2.4.2, 2.5.2, 3.2.1.2,</p>



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			<p>3.3.1.2, 7.1, are reliability related and should remain in the standard. The dynamic schedule part of 1.6.6 was added to the Standard in June of this year with 100% of the ballot body approval, it should remain as part of this standard.</p>
<p>/Response: In determining how to subdivide the requirements, this is the approach taken by the TLR Task Force: A procedure includes steps that are performed to achieve expected results. It is only one method to achieve those results. If a Reliability Coordinator has options to address congestion and those options are prioritized in order of economic preference then the RC is making choices that would be appropriate under a business practice. In support of this approach, the drafting team believes that the following steps in the TLR Procedure should be assigned to a NAESB Business practice: 1.5.1, 2.2.2, 2.4.2, and 2.5.2.</p>			
<p>The revised SAR indicates that there will be joint collaboration and joint publication of the resulting standard. The joint collaboration ensures during development issues can be addressed jointly so that the resulting business practice and reliability standards work together. Using this process the result is that the jointly published standard will include the business practices and the reliability standards without need for separate documents.</p>			
<p>Operating Reliability Working Group (ORWG) Robert Rhodes Dan Boezio Bob Cochran Mike Crouch Todd Fridley Mike Gammon Serhly Kotsan Robert Rhodes</p>		<p>X</p>	<p>We feel that the division between business practices and reliability standards may not have gone far enough. The reliability standards should focus on establishing the criteria for initiation of different TLR levels and the required timeframes for relief. Business practices should focus on how the curtailments are executed to achieve the relief levels in the timeframes required by the reliability standard.</p>
<p>Response: In determining how to subdivide the requirements, this is the approach taken by the TLR Task Force: A procedure includes steps that are performed to achieve expected results. It is only one method to achieve those results. If a Reliability Coordinator has options to address congestion and those options are prioritized in order of economic preference then the RC is making choices that would be appropriate under a business practice.</p>			
<p>The revised SAR indicates that there will be joint collaboration and joint publication of the resulting standard. The joint collaboration ensures during development issues can be addressed jointly so that the resulting business practice and reliability standards work together. Using this process the result is that the jointly published standard will include the business practices and the reliability standards without need for separate documents.</p>			
<p>ISO NE Cheryl Mendrala</p>		<p>X</p>	<p>- Section 2.6 and 2.7 in the original standard defined step-by-step actions the Operator is to take under TLR Levels 5a and 5b. These actions have been removed and currently reside in the proposed NAESB standard. It is not appropriate for a business practice standard to define actions to be taken by a Reliability Coordinator in real-time operations to resolve a reliability issue.</p> <p>The need for a TLR is in response to a problem with reliability on the system. There is no doubt that the Operator must be presented with all the information that is contained in both the proposed NERC and NAESB standards in order to issue that TLR. If the operator does not know what transactions are available in any given category, they do not know what TLR level is needed to resolve the situation. Therefore, we cannot agree with the assertion that the information contained in the NAESB standard does not impact reliability.</p> <p>We agree that some aspects of the original IRO-006 are ‘business practices,’ and agree that the completed effort generally meets the original intent of splitting the business practice and reliability components. However, seeing the resulting split, it is clear that these business practices have a direct impact on reliability and we believe they should be maintained within one single standard to prevent confusion and conflicts. Also, since the fundamental practice for defining the priorities and treatment of transactions under each TLR level is consistent with the FERC pro-forma tariff, there is minimal subjectivity involved in the business practices that are included in the original NERC standard.</p>
<p>Response:</p>			

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The revised SAR indicates that there will be joint collaboration and joint publication of the resulting standard. The joint collaboration ensures during development issues can be addressed jointly so that the resulting business practice and reliability standards work together. Using this process the result is that the jointly published standard will include the business practices and the reliability standards without need for separate documents.

Note that in the revised SAR, all of the 'step-by-step' actions identified for TLR Levels 5a and 5b appear in the combined document.

In determining how to subdivide the requirements, this is the approach taken by the TLR Task Force: A procedure includes steps that are performed to achieve expected results. It is only one method to achieve those results. If a Reliability Coordinator has options to address congestion and those options are prioritized in order of economic preference then the RC is making choices that would be appropriate under a business practice.

Entergy Services, Transmission Ed Davis Rick Riley Jay Zimmerman George Bartlett James Case Bill Aycock Melinda Montgomery Narinder Saini Maurice Casadaban		X	A complete response to this question is inappropriate at this time. It appears that IRO-006 will be divided into 3 major documents: NERC TLR reliability standards, NAESB business practices, and the IDC Reference Documentation. The answer to this question will require a detailed comparison of all three documents with respect to the existing IRO-006. We do not have the NAESB document in front of us in order to make that detailed comparison. In addition, it does not appear that a detailed comparison of the three documents has been requested since the SAR request states in the last paragraph that the development effort will begin by assessing for completeness and accuracy the revised Attachment 1.
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**Response:**  
In the future, the drafting team will make sure all documents needed for review are posted. The revised SAR indicates that there will be joint collaboration and joint publication of the resulting standard. The joint collaboration ensures during development issues can be addressed jointly so that the resulting business practice and reliability standards work together. Using this process the result is that the jointly published standard will include the business practices and the reliability standards without need for separate documents.

AEP Raj Rana		X	The two documents are overlapping. Same statements in both documents.
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**Response:** Agreed – this duplication will be eliminated as indicated in the revised SAR. The revised SAR indicates that there will be joint collaboration and joint publication of the resulting standard. The joint collaboration ensures during development issues can be addressed jointly so that the resulting business practice and reliability standards work together. Using this process the result is that the jointly published standard will include the business practices and the reliability standards without need for separate documents.

Midwest Reliability Organization Alan Boesch Terry Bilke Robert Coish Dennis Florom Todd Gosnell Wayne Guttormson Jim Maenner Tom Mielnik Darrick Moe Ken Goldsmith Joe Knight The 31 Additional MRO Members		X	Steps 1.4.1, 1.4.1.1, 1.5, 1.5.1, 1.6, 1.7, 2.1.2, 2.2.2, 2.4.2, 2.5.2, 3.2.1.2, 3.3.1.2, 7.1, are reliability related and should remain in the standard. The dynamic schedule part of 1.6.6 was added to the Standard in June of this year with 100% of the ballot body approval, it should remain as part of this standard.
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**Response:** In determining how to subdivide the requirements, this is the approach taken by the TLR Task Force: A procedure includes steps that are performed to achieve expected results. It is only one method to achieve those results. If a Reliability Coordinator has options to address congestion and those options are prioritized in order of economic preference then the RC is making choices that would be appropriate under a business practice. In support of this approach, the drafting team believes that the following steps in the TLR Procedure should be assigned to a NAESB Business practice: 1.5.1, 2.2.2, 2.4.2, and 2.5.2.  
Note that the other steps in the process that you've identified, 1.4.1, 1.4.1.1, 1.5, 1.6, 1.7, 2.1.2, 3.2.1.2, 3.3.1.2, and

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7.1 are retained as reliability-steps in the revised SAR.

There were no changes to 1.6.6 as part of the approval of IRO-006-02.

Southern Company – Transmission Jim Busbin Marc Butts Jim Viikinsalo	X		N/A
Joint Interchange Scheduling Working Group Bert Gumm Troy Simpson Marilyn Franz Jim Hansen Kathee Downing Jim Eckelcamp Bob Harshbarger Paul Sorenson Bob Schwermann Bonita Smulski Taryn McPherson Salah Kitali Joel Mickey Andrew Burke	X		
Public Service Commission of South Carolina Phil Riley John E. Howard David A. Wright Randy Mitchell Elizabeth B. Fleming G. O'Neal Hamilton Mignon L. Clyburn C. Robert Moseley	X		
Ohio Valley Electric Corp. Scott R. Cunningham	X		
Southern Company Generation Roman Carter Joel Dison Clifford Shepard Lucius Burris Steve Lowe	X		

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**3. Do you believe there are still elements of TLR business practices that remain in the proposed TLR reliability requirements? If not, please explain in the comment area.**

**Summary Consideration:** Most commenters indicated that the TLR business practices have been removed from the TLR reliability requirements. Some commenters were not able to locate the NAESB Business Practice and could not easily answer this question. In the future, the drafting team will ensure that all documents needed to answer the questions on the comment forms are posted with the comment form.

Commenter	Yes	No	Comment
Ohio Valley Electric Corp. Scott R. Cunningham	X		At times, RTO ramp limitations are invoked when TLR curtailments occur. This issue is not covered in the standard, but seems to be related to a business practice, rather than a reliability issue. Perhaps the ramp limitation should be waived or adjusted if the limitation is caused by the curtailments that occur with the TLR.
Response: This is a change that could be addressed with the technical revisions to improve the standard in phase 2 of the proposed revisions.			
Operating Reliability Working Group (ORWG) Robert Rhodes Dan Boezio Bob Cochran Mike Crouch Todd Fridley Mike Gammon Serhly Kotsan Robert Rhodes	X		Everything in the proposed Attachment 1 - IRO-006-0 from Section 3 to the end of Attachment 1, including Appendices A and B, should be removed from the reliability standard and incorporated into the TLR Business Practices document. This material gets into the internal workings of the tool itself rather than dealing with the overall guiding principle of providing, and maintaining, relief within a specific timeframe.
Response: The drafting team agrees that many parts of Attachment 1 should be placed into either the Business Practices document or in a Technical Reference. The revised SAR indicates that there will be joint collaboration and joint publication of the resulting standard. The joint collaboration ensures during development issues can be addressed jointly so that the resulting business practice and reliability standards work together. Using this process the result is that the jointly published standard will include the business practices and the reliability standards without need for separate documents. Appendix A may be a reference document for both the reliability standard and the business practice – Appendix B is expected to be included in the NAESB business practices.			
Entergy Services, Transmission Ed Davis Rick Riley Jay Zimmerman George Bartlett James Case Bill Aycock Melinda Montgomery Narinder Saini Maurice Casadaban	X		The NERC TLR reliability standard part of this documentation appears to be all reliability related. However, the IDC Reference Document appears to have significant business practice elements contained in it.
Response: Agreed. The revised SAR indicates that most of the content in the IDC Reference Document (Appendix E) should be translated into a reference document.			
AEP Raj Rana	X		We believe that items like firm/non-firm transactions types, TLR levels etc. should be taken out of the reliability portion of this standard. These items should be included in the NAESB portion. The reliability portion should only address the needed relief amount on constrained facilities and the time under which the relief should be provided in order to maintain security of the interconnected network.
Response: In determining how to subdivide the requirements, this is the approach taken by the TLR Task Force: A procedure includes steps that are performed to achieve expected results. It is only one method to achieve those			

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<p>results. If a Reliability Coordinator has options to address congestion and those options are prioritized in order of economic preference then the RC is making choices that would be appropriate under a business practice. The Attachment 1 steps of the procedure have been identified by the TLR Taskforce as having both Reliability and business practices within them. As the resulting standard will be published jointly all items are expected to be retained and the distinction of the items as reliability or as business practices will be identified.</p>			
ISO NE Cheryl Mendrala		X	See response to question 2.
<p>Response: See response to comments on question 2.</p>			
CP9 Reliability Standards Working Group Guy Zito Kathleen Goodman Khaqan Khan Vinod (Bob) Kotecha		X	See response to question 2.
<p>Response: See response to comments on question 2.</p>			
Southern Company – Transmission Jim Busbin Marc Butts Jim Viikinsalo		X	N/A
Joint Interchange Scheduling Working Group Bert Gumm Troy Simpson Marilyn Franz Jim Hansen Kathee Downing Jim Eckelcamp Bob Harshbarger Paul Sorenson Bob Schwermann Bonita Smulski Taryn McPherson Salah Kitali Joel Mickey Andrew Burke		X	
Midwest Reliability Organization Alan Boesch Terry Bilke Robert Coish Dennis Florum Todd Gosnell Wayne Guttormson Jim Maenner Tom Mielnik Darrick Moe Ken Goldsmith Joe Knight The 31 Additional MRO Members		X	
Public Service Commission of South Carolina Phil Riley John E. Howard David A. Wright Randy Mitchell Elizabeth B. Fleming G. O'Neal Hamilton		X	

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Mignon L. Clyburn C. Robert Moseley			
IESO, Ontario Dan Rochester		X	
Southern Company Generation Roman Carter Joel Dison Clifford Shepard Lucius Burris Steve Lowe		X	

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**4. Do you believe there are still elements of TLR reliability requirements that remain in the proposed TLR business practices? If not, please explain in the comment area.**

**Summary Consideration:** Most commenters indicated that there aren't TLR reliability requirements in the proposed TLR business practices. Some commenters were not able to locate the NAESB Business Practice and could not easily answer this question. In the future, the drafting team will ensure that all documents needed to answer the questions on the comment forms are posted with the comment form.

Commenter	Yes	No	Comment
AEP Raj Rana			No comments. The TLR business practices document is not available.
<a href="#">Response: In the future, the drafting team will make sure all relevant documents are posted.</a>			
Operating Reliability Working Group (ORWG) Robert Rhodes Dan Boezio Bob Cochran Mike Crouch Todd Fridley Mike Gammon Serhly Kotsan Robert Rhodes	X		Sections 3.2.1, 3.2.1.1 and 3.2.1.2 should be moved to the reliability standard since they deal more with how and why a Level 2 TLR is initiated than with the internal workings of the IDC.
<a href="#">Response:</a> In determining how to subdivide the requirements, this is the approach taken by the TLR Task Force: A procedure includes steps that are performed to achieve expected results. It is only one method to achieve those results. If a Reliability Coordinator has options to address congestion and those options are prioritized in order of economic preference then the RC is making choices that would be appropriate under a business practice.			
<a href="#">Note that in the revised SAR, 3.2.1.2 is included in the reliability related steps of the procedure.</a>			
ISO NE Cheryl Mendrala	X		See response to question 2.
<a href="#">Response: See response to comments on question 2.</a>			
CP9 Reliability Standards Working Group Guy Zito Kathleen Goodman Khaqan Khan Vinod (Bob) Kotecha	X		See response to question 2.
<a href="#">Response: See response to comments on question 2.</a>			
Midwest Reliability Organization Alan Boesch Terry Bilke Robert Coish Dennis Florom Todd Gosnell Wayne Guttormson Jim Maenner Tom Mielnik Darrick Moe Ken Goldsmith Joe Knight The 31 Additional MRO Members	X		See comments in question 2.
<a href="#">Response: See response to comments on question 2</a>			
IESO, Ontario		X	See comments in question 2.

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Dan Rochester			
<a href="#">Response: See response to comments on question 2.</a>			
Entergy Services, Transmission Ed Davis Rick Riley Jay Zimmerman George Bartlett James Case Bill Aycock Melinda Montgomery Narinder Saini Maurice Casadaban		X	We can not answer this question since we do not have the NAESB proposal TLR business practices in this package.
<a href="#">Response: In the future, the drafting team will make sure all relevant documents are posted.</a>			
Southern Company – Transmission Jim Busbin Marc Butts Jim Viikinsalo		X	N/A
Joint Interchange Scheduling Working Group Bert Gumm Troy Simpson Marilyn Franz Jim Hansen Kathee Downing Jim Eckelcamp Bob Harshbarger Paul Sorenson Bob Schwermann Bonita Smulski Taryn McPherson Salah Kitali Joel Mickey Andrew Burke		X	
Public Service Commission of South Carolina Phil Riley John E. Howard David A. Wright Randy Mitchell Elizabeth B. Fleming G. O'Neal Hamilton Mignon L. Clyburn C. Robert Moseley		X	
Ohio Valley Electric Corp. Scott R. Cunningham		X	
Southern Company Generation Roman Carter Joel Dison Clifford Shepard Lucius Burris Steve Lowe		X	



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**5. Do you have any other comments on these proposed changes?**

**Summary Consideration:**

The NERC-NAESB Procedure for Joint Development and Coordination was established after the first posting of this SAR, to guide joint development of standards and business practices when the reliability and business practice components are intricately entwined within a proposed standard. This procedure has been approved for implementation by the Standards Committee, NERC Board of Trustees and the NAESB Board and is applicable to the revisions of IRO-006. The revisions made to IRO-006 will be jointly published by NERC and NAESB in a single document, thus eliminating the need for a real-time system operator to have two documents that must be merged together to provide the needed information.

Several commenters suggested modifications to some of the requirement in the standard and/or to some of the steps in the TLR process. The drafting team modified its SAR to clearly indicate that the revisions to IRO-006 will be addressed in phases – with assigning the steps in Attachment 1 of IRO-006 between NERC/NAESB as the first phase – and addressing technical revisions that require field testing, changes to the IDC, and other modifications already identified as needed to improve the overall quality of the standard being addressed following the NERC/NAESB split. Stakeholder suggestions for technical modifications that were made in response to this question have been added to the laundry list of items under the IRO-006 'To Do List'.

Commenter	Yes	No	Comment
Southern Company – Transmission Jim Busbin Marc Butts Jim Viikinsalo	X		My only concern with the splitting of reliability requirements and business practices is how they will be managed and/or coordinated in the future. I'm not sure what value is added to the reliability of the grid by now having our grid operators manage their respective systems with a NERC manual in one hand and a NAESB manual in the other. Right now the two documents are in synch with one another; however, as we move forward in time, what will be the process for conflict resolution between the two?
<p><b>Response:</b>  <a href="#">Note that following the first posting of this SAR, NERC and NAESB jointly developed and adopted a procedure to ensure that when a reliability standard and business practice are 'entwined', the development (and revision) would be coordinated between the two organizations.</a>  <a href="#">The revised SAR indicates that there will be joint collaboration and joint publication of the resulting standard. The joint collaboration ensures during development issues can be addressed jointly so that the resulting business practice and reliability standards work together. Using this process the result is that the jointly published standard will include the business practices and the reliability standards without need for separate documents.</a></p>			
Operating Reliability Working Group (ORWG) Robert Rhodes Dan Boezio Bob Cochran Mike Crouch Todd Fridley Mike Gammon Serhly Kotsan Robert Rhodes	X		Section 1.5.1 of Attachment 1 refers to treatment of Interchange Transactions not in the IDC in accordance with NAESB business practices, but we could not find any reference to this treatment in the TLR business practices.
<p><b>Response:</b> <a href="#">This is in Sections 1.1, 1.2, 1.2.11 of NAESB Transmission Loading Relief Business Practice and is shown in the proposed revisions to Attachment 1.</a></p>			

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<p>ISO NE Cheryl Mendrala</p>	<p>X</p>	<p>Recommend restoring the reference to RCIS tool in 1.4. That reference was eliminated when the old 1.4.1 was removed.</p> <ul style="list-style-type: none"> <li>- The old 1.5.1 was removed. There's a general statement added to 1.2 that says "In addition, a Reliability Coordinator may implement other NERC-approved procedures to request relief to mitigate any other transmission constraints as necessary to preserve the reliability of the system." But, that phrase does not seem to capture the same intent as the previous 1.5.1 wording.</li> <li>- Section 1.5.3 the numbering on this section is very confusing. Suggest the following: <ul style="list-style-type: none"> <li>1.5.3.1. Causes of questionable IDC results may include: (1) Missing Interchange transactions that are known to contribute to the Constraint, (2) Significant change in transmission system topology, or (3) TDF matrix error.</li> <li>1.5.3.2 Impacts of questionable IDC results may include: (1) relief that would have no effect on, or aggravate the constraint or (2) that would initiate a constraint elsewhere.</li> <li>1.5.3.3. If other Reliability Coordinators are involved in the TLR event, all impacted Reliability Coordinators shall be in agreement before any adjustments to the relief request list are made.</li> </ul> </li> <li>- Title of Section 2 should be changed to be only "Transmission Loading Relief (TLR) Levels."</li> <li>- Section 3 is missing section 3.1.</li> <li>- Suggest that Section 3.2 include a reference to the fact that transactions submitted after the XX:25 deadline will put on HOLD.</li> <li>- Are Section 3.3.3 and Section 3.4.3 referring back to the deadline defined in 3.2? If so, that section should be referenced.</li> <li>- Text in 3.3.1.1 and 3.3.2 are referring to the same process for reallocation and should use the same terminology. Suggest 3.3.1.1 text be changed to "At XX:25 a reallocation will be performed for the following hour to maintain the target flow identified for the current hour".</li> <li>- Text in 3.4.1.1 and 3.4.2 are referring to the same process for reallocation and should use the same terminology. Suggest 3.4.1.1 text be changed to "At XX:25 a reallocation will be performed for the following hour to maintain the target flow identified for the current hour".</li> <li>- The section notation of Appendix B should be modified. The Section numbering shown in the index is not how the headings are titled in the Sections. Also, Section F and Section G should not be 5.1 and 5.2; they should be at the highest index level.</li> </ul> <p>General Comment: There have been changes to the congestion management process over the last few years that involve the use of Market information by the IDC. Any new standards addressing the TLR process and the IDC, whether in NERC or NAESB, should consider addressing the current information available to the IDC and include some mention of that information in that standard development.</p> <p>General Comment: One other practical concern that has not been addressed is the ownership, impact and funding of the IDC tool that automates the 'business practices' of implementing a TLR for the Operator. The split of the original NERC IRO-006 should not be adopted until this issue is addressed and resolved.</p>
<p>As noted in the revised SAR, the standard will be revised in phases – the first phase will be limited to the 'NERC/NAESB/ split' – but following that split, the standard drafting team will be focusing on the laundry list of technical improvements to the standard that have already been identified in the SAR – and will add your list to those that will be considered.</p> <p>The reference was moved to NAESB BP 1.4 and changed to refer to generic tool instead of RCIS specifically. This approach limits the number of changes that need to be made to standards when the tool or committee name changes.</p>		

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<p>Section 3.1 does appear in the revised proposed changes to Attachment 1.</p> <p>Going forward the changes will be managed from the joint standards development process and there is no anticipated change in the funding or contract agreements to modify the software.</p> <p>The standard drafting team will determine the best way to format and number the steps in the procedure jointly.</p>		
<p>Entergy Services, Transmission Ed Davis Rick Riley Jay Zimmerman George Bartlett James Case Bill Aycock Melinda Montgomery Narinder Saini Maurice Casadaban</p>	<p>X</p>	<p>The SAR contains the statement that the urgent action revision to Attachment 1 addressing dynamic schedules will be incorporated into the NAESB business practices. We suggest starting with IRO-006-1, rather than with IRO-006-0.</p> <p>Please delete all references to IRO-006-0 (and IRO-006-1) in headers, footers, titles, etc. This new document will result in a new version of IRO-006. This current draft is not version 0 or 1.</p> <p>Please delete all references to adoption by the NERC Board of Trustees, Effective Date, and all dates because the document we are viewing has not been adopted by the BOT and does not have an Effective Date.</p> <p>Please provide a redline version showing the draft changes to IRO-006-1. This redline would make review and comment much easier for commenters.</p> <p>We appreciate the development of the matrix and would probably find it useful for keeping track of the disposition of each requirement in the original IRO-006. However, in its current form we do not understand which columns relate to which documents and the row designations are not clearly understood.</p>
<p>Response: The standard drafting team will make its revisions to the latest approved version of the standard – which is now IRO-006-03. Headers, footers, etc will be corrected when the draft standard is posted for review and comment. The SAR was revised to identify the scope of changes that will be made, without trying to make all those changes since that is really the work of the standard drafting team – there is no red line to the standard as the proposed changes to the standard will be refined by the standard drafting team. The matrix was confusing and will not be carried forward.</p>		
<p>Joint Interchange Scheduling Working Group Bert Gumm Troy Simpson Marilyn Franz Jim Hansen Kathee Downing Jim Eckelcamp Bob Harshbarger Paul Sorenson Bob Schwermann Bonita Smulski Taryn McPherson Salah Kitali Joel Mickey Andrew Burke</p>	<p>X</p>	<p>1. We request that the scope of this SAR be expanded to include resolving the reloading of curtailed transactions above their reliability limit by an entity other than the initiating entity or above any pre-existing reliability or market profiles. 2. We also request that the scope of the SAR be expanded to include standards for when curtailments may be denied and when curtailments may be issued. 1 - There have been several instances where a curtailment has been issued and then been automatically or manually reloaded above the reliability limit. The automatic reload problem created by the IDC has been resolved by CO-148, automatic reload by other back office applications has not been corrected, nor have manual adjustments. There are several options available for correcting this problem. This should be addressed by specifying requirements and performance measures in the TLR standard and may also be addressed through NAESB business practices and modifications to the e-Tag specification. Also, any pre-existing curtailment levels are lost. JISWG recommends that the entity who has issued the curtailment be the only entity able to authorize the reload. When the reload occurs the energy profile should be limited to the next lowest reliability limit or market adjustment profile. 2- Under normal circumstances, a curtailment (issued for reliability reasons) should not be denied. However, there are some limited circumstances where a curtailment should be denied. For example, if a curtailment comes in and the generator cannot meet the ramp requirements, then the curtailment could be denied and would be reissued for the next scheduling interval. This ensures that the tags reflect actual conditions. In other cases, curtailments are sometimes issued when PSE's cannot make their market level adjustments prior to cutoff. The TLR standard should address those specific reasons for denying a curtailment. Reliability is compromised when curtailments are denied for non-reliability reasons. Reliability may also be compromised when curtailments are issued for non-reliability reasons. If scope of the SAR is adjusted, JISWG volunteers to assist the drafting team with providing specific language for the TLR standard addressing these issues.</p>
<p>Response: As noted in the revised SAR, the standard will be revised in phases – the first phase will be limited to the 'NERC/NAESB/ split' – but following that split, the standard drafting team will be focusing on the laundry list of</p>		

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<p>technical improvements to the standard that have already been identified in the SAR – and will add your list to those that will be considered.</p>		
<p>AEP Raj Rana</p>	<p>X</p>	<p>Use of proxy flowgates by the reliability coordinators must be prohibited. This practice must be explicitly addressed in this standard because, the use of proxy flowgates not only will result in mis-allocation of corrective actions, but at worst could even result in actions being taken that actually increase flows on the limiting element, instead of decreasing them.</p>
<p>Response: As noted in the revised SAR, the standard will be revised in phases – the first phase will be limited to the 'NERC/NAESB/ split' – but following that split, the standard drafting team will be focusing on the laundry list of technical improvements to the standard that have already been identified in the SAR – and will add your list to those that will be considered.</p>		
<p>Midwest Reliability Organization Alan Boesch Terry Bilke Robert Coish Dennis Florom Todd Gosnell Wayne Guttormson Jim Maenner Tom Mielnik Darrick Moe Ken Goldsmith Joe Knight The 31 Additional MRO Members</p>	<p>X</p>	<p>It was very difficult to review the changes to the standard without a redline copy. In order to perform our review we made a redline of the original standard. The MRO does not support this modification. The proposed change provides confusion to a very important reliability process. Also the proposed standard references a NAESB standard which is inconsistent with the NERC Standards Process Manual which says "All mandatory requirements of a reliability standard shall be within an element of the standard. Supporting documents to aid in the implementation of a standard may be referenced by the standard but are not part of the standard itself." There are mandatory parts of the proposed standard in the NAESB business practice and are necessary for the successful implementation of this reliability standard. With the two documents being modified by separate entities there is a good chance that the documents will not be coordinated and kept in synchronization when changes are made.</p>
<p>Response: The NERC NAESB Template Procedure for Joint Standards Development and Coordination was developed to ensure proper coordination for standards where there is no easy separation of business and reliability. The approach includes joint collaboration and joint publication of the resulting standard. There will be one jointly published document which covers both the business practice steps and the reliability steps of the Attachment in IRO-006.</p>		
<p>Ohio Valley Electric Corp. Scott R. Cunningham</p>	<p>X</p>	<p>The use of proxy flowgates is not mentioned at all in the proposed standard. The use of proxy flowgates should not be allowed, except in very unusual circumstances. If use of a proxy flowgate is necessary, such use should be justified and approval from all affected parties should be obtained.</p>
<p>Response: As noted in the revised SAR, the standard will be revised in phases – the first phase will be limited to the 'NERC/NAESB/ split' – but following that split, the standard drafting team will be focusing on the laundry list of technical improvements to the standard that have already been identified in the SAR – and will add your list to those that will be considered.</p>		
<p>IESO, Ontario Dan Rochester</p>	<p>X</p>	<p>The IESO does not fully support the modifications proposed in this SAR. The proposed change provides confusion to a very important reliability process. Also the proposed standard references a NAESB standard which is inconsistent with the NERC Standards Process Manual which says "All mandatory requirements of a reliability standard shall be within an element of the standard. Supporting documents to aid in the implementation of a standard may be referenced by the standard but are not part of the standard itself." There are mandatory parts of the proposed standard in the NAESB business practice that are necessary for the successful implementation of this reliability standard. With the two documents being modified by separate entities there is a good chance that the documents will not be coordinated and kept in synchronization when changes are made.  As acknowledged by the TLR Subcommittee that worked to create this proposed split, the business practices and reliability aspects of TLR are very intertwined. In effect, the information in both the proposed NERC and NAESB standard must be simultaneously available to the Operators in the Control Room, in order for them to operate the system reliably. While the effort to create this initial split in the TLR standards has been completed,</p>

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		<p>consideration should be given as to how this split will be maintained, if going forward, before it is adopted by the industry.</p> <p>Operator training issues, as well as the ownership and funding of the IDC tool should be considered in this evaluation before such a significant step is taken on a standard that is fundamental to the reliability of the Eastern Interconnection. This is an important process that requires a complete understanding of the impact of separating the business practice from the reliability concepts. It is not clear that the current proposed document split will retain the integrity of the TLR process. The potential negative impact of degrading the RC's ability to manage loop flow dictates that any change in documentation and responsibility must proceed carefully.</p>
<p><b>Response:</b> The NERC NAESB Template Procedure for Joint Standards Development and Coordination was developed to ensure proper coordination for standards where there is no easy separation of business practices and reliability requirements. The approach includes joint collaboration and joint publication of the resulting standard. The joint collaboration ensures during development issues can be addressed jointly so that the resulting business practice and reliability standards work together. Using this process the result is that the jointly published standard includes the business practices and the reliability standards without need for separate documents.</p> <p>The IDC is the tool that specifies how the Business Practice and the Reliability adjustments are made. The RC specifies how much relief is required and the tool combines the logic based on business practice rules to identify how much relief in each transaction should be distributed. NERC will work jointly to provide training when needed by using the committees and then by providing the necessary materials so the industry can train their staff on</p>		
<p>Southern Company Generation Roman Carter Joel Dison Clifford Shepard Lucius Burris Steve Lowe</p>	X	<p>As NAESB and NERC standards are approved and implemented which require close coordination between the two organizations, the need for a common "Operations Manual" may become necessary for System Operators.</p>
<p><b>Response:</b> The NERC NAESB Template Procedure for Joint Standards Development and Coordination was developed to ensure proper coordination for standards where there is no easy separation of business practices and reliability requirements. The approach includes joint collaboration and joint publication of the resulting standard. The joint collaboration ensures during development issues can be addressed jointly so that the resulting business practice and reliability standards work together. Using this process the result is that the jointly published standard includes the business practices and the reliability standards without need for separate documents.</p>		
<p>CP9 Reliability Standards Working Group Guy Zito Kathleen Goodman Khaqan Khan Vinod (Bob) Kotecha</p>	X	<p>This is an important process that requires a complete understanding of the impact of separating the business practice from the reliability concepts. It is not clear that the current proposed document split will retain the integrity of the TLR process. The potential negative impact of degrading the RC's ability to manage loop flow dictates that any change in documentation and responsibility must proceed carefully. NPCC participating Members believe the proposed change provides confusion to a very important reliability process. There are mandatory parts of the proposed standard in the NAESB business practice that are necessary for the successful implementation of this reliability standard. With the two documents being modified by separate entities there is a good chance that the documents will not be coordinated and kept in synchronization when changes are made.</p> <p>Recommend restoring the reference to RCIS tool in 1.4. That reference was eliminated when the old 1.4.1 was removed.</p> <p>- The old 1.5.1 was removed. There's a general statement added to 1.2 that says "In addition, a Reliability Coordinator may implement other NERC-approved procedures to request relief to mitigate any other transmission constraints as necessary to preserve the reliability of the system." But, that phrase does not seem to capture the same intent as the previous 1.5.1 wording.</p>

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		<p>- Section 1.5.3 the numbering on this section is very confusing. Suggest the following:</p> <p>1.5.3.1. Causes of questionable IDC results may include: (1) Missing Interchange transactions that are known to contribute to the Constraint, (2) Significant change in transmission system topology, or (3) TDF matrix error.</p> <p>1.5.3.2 Impacts of questionable IDC results may include: (1) relief that would have no effect on, or aggravate the constraint or (2) that would initiate a constraint elsewhere.</p> <p>1.5.3.3. If other Reliability Coordinators are involved in the TLR event, all impacted Reliability Coordinators shall be in agreement before any adjustments to the relief request list are made.</p> <p>- Title of Section 2 should be changed to be only "Transmission Loading Relief (TLR) Levels."</p> <p>- Section 3 is missing section 3.1.</p> <p>- Suggest that Section 3.2 include a reference to the fact that transactions submitted after the XX:25 deadline will put on HOLD.</p> <p>- Are Section 3.3.3 and Section 3.4.3 referring back to the deadline defined in 3.2? If so, that section should be referenced.</p> <p>- Text in 3.3.1.1 and 3.3.2 are referring to the same process for reallocation and should use the same terminology. Suggest 3.3.1.1 text be changed to "At XX:25 a reallocation will be performed for the following hour to maintain the target flow identified for the current hour".</p> <p>- Text in 3.4.1.1 and 3.4.2 are referring to the same process for reallocation and should use the same terminology. Suggest 3.4.1.1 text be changed to "At XX:25 a reallocation will be performed for the following hour to maintain the target flow identified for the current hour".</p> <p>- The section notation of Appendix B should be modified. The Section numbering shown in the index is not how the headings are titled in the Sections. Also, Section F and Section G should not be 5.1 and 5.2; they should be at the highest index level.</p> <p>General Comment: There have been changes to the congestion management process over the last few years that involve the use of Market information by the IDC. Any new standards addressing the TLR process and the IDC, whether in NERC or NAESB, should consider addressing the current information available to the IDC and include some mention of that information in that standard development. In addition, Operator training issues, as well as the ownership and funding of the IDC tool should be considered in this evaluation before such a significant step is taken on a standard that is fundamental to the reliability of the Eastern Interconnection.</p> <p>General Comment: One other practical concern that has not been addressed is the ownership, impact and funding of the IDC tool that automates the 'business practices' of implementing a TLR for the Operator. The split of the original NERC IRO-006 should not be adopted until this issue is addressed and resolved.</p>
<p>Response: As noted in the revised SAR, the standard will be revised in phases – the first phase will be limited to the 'NERC/NAESB/ split' – but following that split, the standard drafting team will be focusing on the laundry list of technical improvements to the standard that have already been identified in the SAR – and will add your list to those that will be considered.</p> <p>The reference was moved to NAESB BP 1.4 and changed to refer to generic tool instead of RCIS specifically. This approach limits the number of changes that need to be made to standards when the tool or committee name changes.</p> <p>Section 3.1 does appear in the revised proposed changes to Attachment 1.</p> <p>Going forward the changes will be managed from the joint standards development process and there is no anticipated change in the funding or contract agreements to modify the software.</p> <p>The standard drafting team will determine the best way to format and number the steps in the procedure jointly.</p>		

**Consideration of Comments on Draft 1 of SAR for General Update to IRO-006 Reliability  
Coordination — Transmission Loading Relief**

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Public Service Commission of South Carolina Phil Riley John E. Howard David A. Wright Randy Mitchell Elizabeth B. Fleming G. O'Neal Hamilton Mignon L. Clyburn C. Robert Moseley		X	
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## Standard Authorization Request Form

Title of Proposed Standard	<b>Revisions to IRO-06 Reliability Coordination - General Update</b>	
Request Date	07/14/05	Revised: 11/20/06

<b>SAR Requestor Information</b>	<b>SAR Type</b> (Put an 'x' in front of one of these selections)
Name David Zwergel	<input type="checkbox"/> New Standard
Primary Contact David Zwergel	<input checked="" type="checkbox"/> Revision to existing Standard
Telephone (317) 249-5452	<input type="checkbox"/> Withdrawal of existing Standard
Fax (317) 249-5910	
E-mail dzwergel@midwestiso.org	<input type="checkbox"/> Urgent Action



**Purpose/Industry Need** (Provide one or two sentences)

The purpose of this standard is to ensure that overloads on critical transmission system limits are relieved within 30 minutes.

The purpose of revising this standard is to:

1. Provide an adequate level of reliability for the North American bulk power systems — ensure the standard is complete and the requirements are set at an appropriate level to ensure reliability.
2. Ensure it is enforceable as a mandatory reliability standard with financial penalties — the applicability to bulk power system owners, operators, and users, and as appropriate particular classes of facilities, is clearly defined; the purpose, requirements, and measures are results-focused and unambiguous; the consequences of violating the requirements are clear.
3. Incorporate other general issues needed to elevate the quality of the standard and to bring the format of the standard into compliance with the ERO Rules of Procedure as described in the standards development work plan (see attached Standard Review Form and Standard Review Guidelines).

IRO-006 was developed as a Version 0 standard and although it has been updated to address some specific technical concerns, the SARs associated with the changes made to the standard limited modifications to just those modifications that were immediately needed. As the electric reliability organization begins enforcing compliance with reliability standards under Section 215 of the Federal Power Act in the United States and applicable statutes and regulations in Canada, the industry needs a set of clear, measurable, and enforceable reliability standards. The Version 0 standards, while a good foundation, were translated from historical operating and planning policies and guides that were appropriate in an era of voluntary compliance. The Version 0 standards and recent updates were put in place as a temporary starting point to stand up the electric reliability organization and begin enforcement of mandatory standards. However, it is important to update the standards in a timely manner, incorporating improvements to make the standards more suitable for enforcement and to capture prior recommendations that were deferred during the Version 0 translation.

## Reliability Functions

The Standard will Apply to the Following Functions (Check box for each one that applies by double clicking the grey boxes.)		
<input checked="" type="checkbox"/>	Reliability Authority	Ensures the reliability of the bulk transmission system within its Reliability Authority area. This is the highest reliability authority.
<input checked="" type="checkbox"/>	Balancing Authority	Integrates resource plans ahead of time, and maintains load-interchange-resource balance within its metered boundary and supports system frequency in real time
<input type="checkbox"/>	Interchange Authority	Authorizes valid and balanced Interchange Schedules
<input type="checkbox"/>	Planning Authority	Plans the bulk electric system
<input type="checkbox"/>	Resource Planner	Develops a long-term (>1year) plan for the resource adequacy of specific loads within a Planning Authority area.
<input type="checkbox"/>	Transmission Planner	Develops a long-term (>1 year) plan for the reliability of transmission systems within its portion of the Planning Authority area.
<input checked="" type="checkbox"/>	Transmission Service Provider	Provides transmission services to qualified market participants under applicable transmission service agreements
<input checked="" type="checkbox"/>	Transmission Owner	Owns transmission facilities
<input checked="" type="checkbox"/>	Transmission Operator	Operates and maintains the transmission facilities, and executes switching orders
<input type="checkbox"/>	Distribution Provider	Provides and operates the “wires” between the transmission system and the customer
<input checked="" type="checkbox"/>	Generator Owner	Owns and maintains generation unit(s)
<input checked="" type="checkbox"/>	Generator Operator	Operates generation unit(s) and performs the functions of supplying energy and Interconnected Operations Services
<input checked="" type="checkbox"/>	Purchasing-Selling Entity	The function of purchasing or selling energy, capacity and all necessary Interconnected Operations Services as required
<input checked="" type="checkbox"/>	Market Operator	Integrates energy, capacity, balancing, and transmission resources to achieve an economic, reliability-constrained dispatch.
<input checked="" type="checkbox"/>	Load-Serving Entity	Secures energy and transmission (and related generation services) to serve the end user

## Reliability and Market Interface Principles

<b>Applicable Reliability Principles</b> (Check boxes for all that apply by double clicking the grey boxes.)	
<input checked="" type="checkbox"/>	1. Interconnected bulk electric systems shall be planned and operated in a coordinated manner to perform reliably under normal and abnormal conditions as defined in the NERC Standards.
<input type="checkbox"/>	2. The frequency and voltage of interconnected bulk electric systems shall be controlled within defined limits through the balancing of real and reactive power supply and demand.
<input checked="" type="checkbox"/>	3. Information necessary for the planning and operation of interconnected bulk electric systems shall be made available to those entities responsible for planning and operating the systems reliably.
<input checked="" type="checkbox"/>	4. Plans for emergency operation and system restoration of interconnected bulk electric systems shall be developed, coordinated, maintained and implemented.
<input checked="" type="checkbox"/>	5. Facilities for communication, monitoring and control shall be provided, used and maintained for the reliability of interconnected bulk electric systems.
<input type="checkbox"/>	6. Personnel responsible for planning and operating interconnected bulk electric systems shall be trained, qualified and have the responsibility and authority to implement actions.
<input checked="" type="checkbox"/>	7. The security of the interconnected bulk electric systems shall be assessed, monitored and maintained on a wide area basis.
<b>Does the proposed Standard comply with all of the following Market Interface Principles?</b> (Select 'yes' or 'no' from the drop-down box by double clicking the grey area.)	
1. The planning and operation of bulk electric systems shall recognize that reliability is an essential requirement of a robust North American economy. Yes	
2. An Organization Standard shall not give any market participant an unfair competitive advantage. Yes	
3. An Organization Standard shall neither mandate nor prohibit any specific market structure. Yes	
4. An Organization Standard shall not preclude market solutions to achieving compliance with that Standard. Yes	
5. An Organization Standard shall not require the public disclosure of commercially sensitive information. All market participants shall have equal opportunity to access commercially non-sensitive information that is required for compliance with reliability standards. Yes	

**Detailed Description** (Provide enough detail so that an independent entity familiar with the industry could draft, modify, or withdraw a Standard based on this description.)

Revisions to this standard fall into three categories:

- A coordinated effort with NAESB to clarify and refine the steps in the Transmission Loading Relief Procedure for the Eastern Interconnection to identify which steps are needed to support reliability and which steps are needed to support a business practice. This should be accomplished as soon as possible and should not wait for other technical changes to the standard.
- A second set of modifications to this standard involves further consideration of a change to the market flow calculation specified in MISO, PJM and SPP regional differences E.1 and E.2 in Standard IRO-006-03 to address a reliability issue when MISO, PJM and SPP are unable to meet their relief obligations during TLR. The proposed modification would change the market flow threshold for MISO, PJM and SPP from 0% to 3%. Based on stakeholder comments, (submitted with the SAR to Modify IRO-006 for Market Information), this change needs to be field tested to verify that it would not have any unforeseen adverse consequences. This change would replace the SPP Urgent Action Regional Difference to IRO-006.
- A third set of modifications includes the changes needed to elevate the overall quality of the standard, and to address the additional technical issues that have been posed with this standard by stakeholders and FERC (see attached Standard Review Form and Reliability Standard Review Guidelines).

The development may include other improvements to the standards deemed appropriate by the drafting team, with the consensus of stakeholders, consistent with establishing high quality, enforceable and technically sufficient bulk power system reliability standards.

***Related Standards***

Standard No.	Explanation

***Related SARs***

SAR ID	Explanation


***Regional Differences***

<b>Region</b>	<b>Explanation</b>
ECAR	
ERCOT	
FRCC	
MAAC	
MAIN	
MAPP	
NPCC	
SERC	
SPP	
WECC	

***Related NERC Operating Policies or Planning Standards***

<b>ID</b>	<b>Explanation</b>

Standard Review Form		
Project 2006-08 Transmission Loading Relief		
Standard #	IRO-006-3	Comments
<b>Title</b>	Reliability Coordination – Transmission Loading Relief	Okay
<b>Purpose</b>		1 <sup>st</sup> sentence is scope of job, not purpose – poor wording on 30 minute item. No benefit or value proposition.
<b>Applicability</b>		TO not in Requirements.
<b>Requirements</b>	<i>Conditions</i>	Okay
	<i>Who?</i>	While others are handled within text, PJM/MISO is cited as regional difference but not handled within text. Added SPP regional difference but nothing in text.
	<i>Shall do what?</i>	R1 – need something about overloads or similar wording R2 – uses interregional & sub-regional; check capitalization
	<i>Result or Outcome</i>	Missing
<b>Measures</b>		Single generic statement.
<b>To Do List</b>	<p>FERC NOPR</p> <ul style="list-style-type: none"> <li>o Include a clear warning that TLR procedure is an inappropriate and ineffective tool to mitigate actual IROL violations;</li> <li>o Identify in a Requirement the available alternatives to use of the TLR procedure to mitigate an IROL violation; and</li> <li>o Include Measures and Levels of Non-Compliance that address each Requirement.</li> <li>o (see report for comments on regional differences)</li> </ul> <p>FERC staff report</p> <ul style="list-style-type: none"> <li>o R2 doesn't address blackout item that TLR shouldn't be used for SOL violation</li> </ul> <p>V0 Industry Comments</p> <ul style="list-style-type: none"> <li>o Usage of TLR log questioned</li> <li>o Some inconsistencies with current usage</li> </ul> <p>VRF Comments</p> <ul style="list-style-type: none"> <li>o R2.1, .2 &amp; .3 – not a requirement, just a suggested instruction</li> <li>o R6 – redundant</li> </ul> <p>TLR SAR Comments</p> <ul style="list-style-type: none"> <li>o Provide reliability performance specifications, such as X MW or % of relief in Y minutes</li> <li>o Address consideration of ramp limits during TLR</li> <li>o Section 3.2 - include a reference to the fact that transactions submitted after the XX:25 deadline will put on HOLD</li> <li>o 3.3.1.1 and 3.3.2 are referring to the same process for reallocation and should use the same terminology</li> <li>o 3.4.1.1 and 3.4.2 are referring to the same process for reallocation and should use the same terminology</li> </ul>	

	<ul style="list-style-type: none"><li>○ Consider addressing the current information available to the IDC and include some mention of that information in that standard development (NERC or NAESB)</li><li>○ Resolve the reloading of curtailed transactions above their reliability limit by an entity other than the initiating entity or above any pre-existing reliability or market profiles</li><li>○ Provide criteria to identify when curtailments may be denied and when curtailments may be issued</li><li>○ Include a requirement that prohibits the Reliability Coordinator's use of proxy flowgates</li></ul>
<b>Misc. Items</b>	Several compliance items missing. Inconsistency in handling ERCOT & western vs. eastern TLR procedure (attachment vs. web link).

## **Standard Review Guidelines**

### **Applicability**

Does this reliability standard clearly identify the functional classes of entities responsible for complying with the reliability standard, with any specific additions or exceptions noted?

Does this reliability standard identify the geographic applicability of the standard, such as the entire North American bulk power system, an interconnection, or within a regional entity area? If no geographic limitations are identified, the default is that the standard applies throughout North America.

Does this reliability standard identify any limitations on the applicability of the standard based on electric facility characteristics, such as generators with a nameplate rating of 20 MW or greater, or transmission facilities energized at 200 kV or greater or some other criteria? If no functional entity limitations are identified, the default is that the standard applies to all identified functional entities.

### **Purpose**

Does this reliability standard have a clear statement of purpose that describes how the standard contributes to the reliability of the bulk power system? Each purpose statement should include a value statement.

### **Performance Requirements**

Does this reliability standard state one or more performance requirements, which if achieved by the applicable entities, will provide for a reliable bulk power system, consistent with good utility practices and the public interest?

Does each requirement identify who shall do what under what conditions and to what outcome?

### **Measurability**

Is each performance requirement stated so as to be objectively measurable by a third party with knowledge or expertise in the area addressed by that requirement?

Does each performance requirement have one or more associated measures used to objectively evaluate compliance with the requirement?

If performance results can be practically measured quantitatively, are metrics provided within the requirement to indicate satisfactory performance?

### **Technical Basis in Engineering and Operations**

Is this reliability standard based upon sound engineering and operating judgment, analysis, or experience, as determined by expert practitioners in that particular field?

### **Completeness**

Is this reliability standard complete and self-contained? Does the standard depend on external information to determine the required level of performance?

### **Consequences for Noncompliance**

In combination with guidelines for penalties and sanctions, as well as other ERO and regional entity compliance documents, are the consequences of violating a standard clearly known to the responsible entities?

### **Clear Language**



Is the reliability standard stated using clear and unambiguous language? Can responsible entities, using reasonable judgment and in keeping with good utility practices, arrive at a consistent interpretation of the required performance?

**Practicality**

Does this reliability standard establish requirements that can be practically implemented by the assigned responsible entities within the specified effective date and thereafter?

**Capability Requirements versus Performance Requirements**

In general, requirements for entities to have ‘capabilities’ (this would include facilities for communication, agreements with other entities, etc.) should be located in the standards for certification. The certification requirements should indicate that entities have a responsibility to ‘maintain’ their capabilities.

**Consistent Terminology**

To the extent possible, does this reliability standard use a set of standard terms and definitions that are approved through the NERC reliability standards development process?

If the standard uses terms that are included in the NERC Glossary of Terms Used in Reliability Standards, then the term must be capitalized when it is used in the standard. New terms should not be added unless they have a ‘unique’ definition when used in a NERC reliability standard. Common terms that could be found in a college dictionary should not be defined and added to the NERC Glossary.

Are the verbs on the ‘verb list’ from the DT Guidelines? If not – do new verbs need to be added to the guidelines or could you use one of the verbs from the verb list?

**Violation Risk Factors (Risk Factor)**

**High Risk Requirement**

A requirement that, if violated, could directly cause or contribute to bulk electric system instability, separation, or a cascading sequence of failures, or could place the bulk electric system at an unacceptable risk of instability, separation, or cascading failures;

or a requirement in a planning time frame that, if violated, could, under emergency, abnormal, or restorative conditions anticipated by the preparations, directly cause or contribute to bulk electric system instability, separation, or a cascading sequence of failures, or could place the bulk electric system at an unacceptable risk of instability, separation, or cascading failures, or could hinder restoration to a normal condition.

**Medium Risk Requirement**

A requirement that, if violated, could directly affect the electrical state or the capability of the bulk electric system, or the ability to effectively monitor and control the bulk electric system. However, violation of a medium risk requirement is unlikely to lead to bulk electric system instability, separation, or cascading failures;

or a requirement in a planning time frame that, if violated, could, under emergency, abnormal, or restorative conditions anticipated by the preparations, directly and adversely affect the electrical state or capability of the bulk electric system, or the ability to effectively monitor, control, or restore the bulk electric system. However, violation of a medium risk requirement is unlikely, under emergency, abnormal, or restoration conditions anticipated by the preparations, to lead to bulk electric system instability, separation, or cascading failures, nor to hinder restoration to a normal condition.

### Lower Risk Requirement

A requirement that, if violated, would not be expected to adversely affect the electrical state or capability of the bulk electric system, or the ability to effectively monitor and control the bulk electric system. A requirement that is administrative in nature;

or a requirement in a planning time frame that, if violated, would not, under the emergency, abnormal, or restorative conditions anticipated by the preparations, be expected to adversely affect the electrical state or capability of the bulk electric system, or the ability to effectively monitor, control, or restore the bulk electric system. A planning requirement that is administrative in nature.

### Mitigation Time Horizon

The drafting team should also indicate the time horizon available for mitigating a violation to the requirement using the following definitions:

- **Long-term Planning** — a planning horizon of one year or longer.
- **Operations Planning** — operating and resource plans from day-ahead up to and including seasonal.
- **Same-day Operations** — routine actions required within the timeframe of a day, but not real-time.
- **Real-time Operations** — actions required within one hour or less to preserve the reliability of the bulk electric system.
- **Operations Assessment** — follow-up evaluations and reporting of real time operations.

### Violation Severity Levels

The drafting team should indicate a set of violation severity levels that can be applied for the requirements within a standard. ('Violation severity levels' replace existing 'levels of non-compliance.')

The violation severity levels may be applied for each requirement or combined to cover multiple requirements, as long as it is clear which requirements are included.

**The violation severity levels should be based on the following definitions:**

- **Lower: mostly compliant with minor exceptions** — The responsible entity is mostly compliant with and meets the intent of the requirement but is deficient with respect to one or more minor details. Equivalent score: 95% to 99% compliant.
- **Moderate: mostly compliant with significant exceptions** — The responsible entity is mostly compliant with and meets the intent of the requirement but is deficient with respect to one or more significant elements. Equivalent score: 85% to 94% compliant.
- **High: marginal performance or results** — The responsible entity has only partially achieved the reliability objective of the requirement and is missing one or more significant elements. Equivalent score: 70% to 84% compliant.
- **Severe: poor performance or results** — The responsible entity has failed to meet the reliability objective of the requirement. Equivalent score: less than 70% compliant.

### Compliance Monitor

Replace, 'Regional Reliability Organization' with 'Electric Reliability Organization'

**Bulk Electric System**

Replace, ‘Bulk Electric System’ with ‘bulk power system’

**Fill-in-the-blank Requirements**

Do not include any ‘fill-in-the-blank’ requirements. These are requirements that assign one entity responsibility for developing some performance measures without requiring that the performance measures be included in the body of a standard – then require another entity to comply with those requirements.

Every reliability objective can be met, at least at a threshold level, by a North American standard. If we need regions to develop regional standards, such as in under-frequency load shedding, we can always write a uniform North American standard for the applicable functional entities as a means of encouraging development of the regional standards.

**Requirements for Regional Reliability Organization**

Do not write any requirements for the Regional Reliability Organization. Any requirements currently assigned to the RRO should be re-assigned to the applicable functional entity.

**Effective Dates**

Must be 1<sup>st</sup> day of 1<sup>st</sup> quarter after entities are expected to be compliant – must include time to file with regulatory authorities.

**Associated Documents**

If there are standards that are referenced within a standard, list the full name and number of the standard under the section called, ‘Associated Documents’.

**IRO-006 — General Update — Standard Drafting Team Nomination Form**

Please return this form to [sarcomm@nerc.com](mailto:sarcomm@nerc.com) by **January 12, 2007**. For questions, please contact Richard Schneider at 609-452-8060 or [Richard.schneider@nerc.net](mailto:Richard.schneider@nerc.net).

The complete meeting schedule has not been determined yet. It is expected the teams will meet several times in 2007 including face-to-face meetings, as well as meetings facilitated through various remote meeting technologies. **All candidates should be prepared to participate actively at these meetings.**

Name:	
Organization:	
Address:	
Office Telephone:	
E-mail:	
<p><b>Please briefly describe your experience and qualifications to serve on the IRO-006, General Update Standard Drafting Team. Candidates should have expertise in one or more of the following areas: transmission operations, reliability coordination, TLR procedures including the Interchange Distribution Calculator (IDC). Previous experience developing or applying NERC or IEEE standards is beneficial, but not a requirement.</b></p>	
<p><b>I represent the following NERC Reliability Region(s) (check all that apply):</b></p>	<p><b>I represent the following Industry Segment (check one):</b></p>
<input type="checkbox"/> ERCOT	<input type="checkbox"/> 1 — Transmission Owners
<input type="checkbox"/> FRCC	<input type="checkbox"/> 2 — RTOs and ISOs
<input type="checkbox"/> MRO	<input type="checkbox"/> 3 — Load-serving Entities
<input type="checkbox"/> NPCC	<input type="checkbox"/> 4 — Transmission-dependent Utilities
<input type="checkbox"/> RFC	<input type="checkbox"/> 5 — Electric Generators
<input type="checkbox"/> SERC	<input type="checkbox"/> 6 — Electricity Brokers, Aggregators, and Marketers
<input type="checkbox"/> SPP	<input type="checkbox"/> 7 — Large Electricity End Users
<input type="checkbox"/> WECC	<input type="checkbox"/> 8 — Small Electricity End Users
<input type="checkbox"/> NA – Not Applicable	<input type="checkbox"/> 9 — Federal, State, and Provincial Regulatory or other Government Entities
	<input type="checkbox"/> 10 – Regional Reliability Organizations and Regional Entities

**Which of the following Function(s) do you have expertise or responsibilities:**

- |  |  |
|--|--|
| <input type="checkbox"/> Reliability Coordinator           | <input type="checkbox"/> Transmission Service Provider |
| <input type="checkbox"/> Balancing Authority               | <input type="checkbox"/> Transmission Owner            |
| <input type="checkbox"/> Interchange Authority             | <input type="checkbox"/> Load Serving Entity           |
| <input type="checkbox"/> Planning Authority or Coordinator | <input type="checkbox"/> Distribution Provider         |
| <input type="checkbox"/> Transmission Operator             | <input type="checkbox"/> Purchasing-selling Entity     |
| <input type="checkbox"/> Generator Operator                | <input type="checkbox"/> Generator Owner               |
| <input type="checkbox"/> Transmission Planner              | <input type="checkbox"/> Resource Planner              |
| <input type="checkbox"/> Compliance Monitor                | <input type="checkbox"/> Market Operator               |

**Provide the names and contact information for two references who could attest to your technical qualifications and your ability to work well in a group.**

Name: \_\_\_\_\_ Office \_\_\_\_\_  
Telephone: \_\_\_\_\_

Organization: \_\_\_\_\_ E-mail: \_\_\_\_\_

Name: \_\_\_\_\_ Office \_\_\_\_\_  
Telephone: \_\_\_\_\_

Organization: \_\_\_\_\_ E-mail: \_\_\_\_\_

### **Standard Development Roadmap**

*This section is maintained by the drafting team during the development of the standard and will be removed when the standard becomes effective.*

#### **Development Steps Completed:**

1. SC authorized moving the SAR forward to standard drafting (December 5, 2006).
2. SC appointed the SDT (February 9, 2007).

#### **Proposed Action Plan and Description of Current Draft:**

This 45-day posting of IRO-006-4 and its associated implementation plan identifies the split of IRO-006 between NERC and NAESB so that the business practices are moved into a NAESB business practice and the reliability requirements are retained in the revised IRO-006.

#### **Future Development Plan:**

<b>Anticipated Actions</b>	<b>Anticipated Date</b>
1. Post response to comments submitted on initial draft of IRO-006-4	June 21, 2007
2. Request Standards Committee to authorize proceeding to ballot.	June 22, 2007
3. Post for 30-day pre-ballot period.	June 25–July 15, 2007; reduced to 20 days if possible.
4. Conduct first ballot.	July 16–25, 2007
5. Post response to comments on first ballot	July 26, 2007
6. Conduct second ballot	Waived if possible
7. Post for 30-day period prior to board adoption.	Waived if possible
8. Board adoption date.	August 1, 2007

**Definitions of Terms Used in Standard**

*This section includes all newly defined or revised terms used in the proposed standard. Terms already defined in the Reliability Standards Glossary of Terms are not repeated here. New or revised definitions listed below become approved when the proposed standard is approved. When the standard becomes effective, these defined terms will be removed from the individual standard and added to the Glossary.*

**There are no new or revised definitions proposed in this standard revision.**

## A. Introduction

1. **Title:** Reliability Coordination — Transmission Loading Relief (TLR)
2. **Number:** IRO-006-4
3. **Purpose:** The purpose of this standard is to provide a method to prevent and or manage congestion on the bulk electric system.
4. **Applicability:**
  - 4.1. Reliability Coordinators.
  - 4.2. Balancing Authorities.
5. **Proposed Effective Date:** First day of first quarter after BOT adoption.

## B. Requirements

- R1.** A Reliability Coordinator experiencing a potential or actual SOL or IROL violation within its Reliability Coordinator Area shall, with its authority and at its discretion, select one or more procedures to provide transmission loading relief. These procedures can be a “local” (regional, interregional, or sub-regional) transmission loading relief procedure or one of the following Interconnection-wide procedures: [*Violation Risk Factor: Medium*] [*Time Horizon: Real-time Operations*]
- This requirement simply states; the RC has the authority to act, the RC should know at what limits he/she needs to act, the RC has pre-identified regional, interregional and sub-regional TLR procedures.
- R1.1.** The Interconnection-wide Transmission Loading Relief (TLR) procedure for use in the Eastern Interconnection provided in Attachment 1-IRO-006-4. The TLR procedure alone is an inappropriate and ineffective tool to mitigate an IROL violation. Other acceptable and more effective procedures to mitigate actual IROL violations include: reconfiguration, redispatch, or load shedding.
- Comment: see FERC Order 693 paragraph 964 regarding recommendation for using tools other than TLR to mitigate an actual IROL.
- R1.2.** The Interconnection-wide transmission loading relief procedure for use in the Western Interconnection is the “WSCC Unscheduled Flow Mitigation Plan,” provided at:  
[http://www.wecc.biz/documents/library/UFAS/UFAS\\_mitigation\\_plan\\_rev\\_2001-clean\\_8-8-03.pdf](http://www.wecc.biz/documents/library/UFAS/UFAS_mitigation_plan_rev_2001-clean_8-8-03.pdf).
- R1.3.** The Interconnection-wide transmission loading relief procedure for use in ERCOT is provided as Section 7 of the ERCOT Protocols, posted at:  
<http://www.ercot.com/mktrules/protocols/current.html>
- Note: the URL has changed.
- R2.** The Reliability Coordinator shall only use local transmission loading relief or congestion management procedures to which the Transmission Operator experiencing the potential or actual SOL or IROL violation is a party. [*Violation Risk Factor: Low*] [*Time Horizon: Operations Planning*]



- R3.** A Reliability Coordinator may implement a local transmission loading relief or congestion management procedure simultaneously with an Interconnection-wide procedure. However, each Reliability Coordinator shall follow the curtailments as directed by the Interconnection-wide procedure. A Reliability Coordinator desiring to use a local procedure as a substitute for curtailments as directed by the Interconnection-wide procedure shall obtain prior approval by the ERO. [*Violation Risk Factor: Low*] [*Time Horizon: Operations Planning*]
- R4.** When Interconnection-wide procedures are implemented to curtail Interchange Transactions that cross an Interconnection boundary, each Reliability Coordinator shall comply with the provisions of the Interconnection-wide procedure. [*Violation Risk Factor: Medium*] [*Time Horizon: Real-time Operations*]
- R5.** During the implementation of relief procedures, and up to the point that emergency action is necessary, Reliability Coordinators and Balancing Authorities shall comply with applicable Interchange scheduling standards. [*Violation Risk Factor: Medium*] [*Time Horizon: Real-time Operations*]

Comment: R5 will be reviewed during Phase 3 of the TLR drafting team work. See white paper for explanation of the three phases of changes to this standard.

### **C. Measures**

- M1.** Each Reliability Coordinator shall be capable of providing evidence (such as logs) that demonstrate when Eastern Interconnection, WECC, or ERCOT Interconnection-wide transmission loading relief procedures are implemented, the implementation follows the respective established procedure as specified in this standard (R1, R1.1, R1.2 and R1.3).
- M2.** Each Reliability Coordinator shall be capable of providing evidence (such as written documentation) that the Transmission Operator experiencing the potential or existing SOL or IROL violations is a party to the local transmission loading relief or congestion management procedures when these procedures have been implemented (R2).
- M3.** Each Reliability Coordinator shall be capable of providing evidence (such as NERC meeting minutes) that the local procedure has received prior approval by the ERO when such procedure is used as a substitute for curtailment as directed by the Interconnection-wide procedure (R3).
- M4.** Each Reliability Coordinator shall be capable of providing evidence (such as logs) that the responding Reliability Coordinator complied with the provisions of the Interconnection-wide procedure as requested by the initiating Reliability Coordinator when requested to curtail an Interchange Transaction that crosses an Interconnection boundary (R4).
- M5.** Each Reliability Coordinator and Balancing Authority shall be capable of providing evidence (such as Interchange Transaction Tags, operator logs, voice recordings or transcripts of voice recordings, electronic communications, computer printouts) that they have complied with applicable Interchange scheduling standards INT-001, INT-003, and INT-004 during the implementation of relief procedures, up to the point emergency action is necessary (R5).

## D. Compliance

### 1. Compliance Monitoring Process

The Regional Entity shall have responsibility for compliance monitoring.

#### 1.1. Compliance Monitoring Responsibility

Regional Entity.

#### 1.2. Compliance Monitoring Period and Reset Time Frame

Compliance Monitoring Period: One calendar year.

Reset Period: One month without a violation.

#### 1.3. Data Retention

The Reliability Coordinator shall maintain data for eighteen months for M1, M4, and M5.

The Reliability Coordinator shall maintain data for the duration the Transmission Operator is party to the procedure in effect plus one calendar year thereafter for M2.

The Reliability Coordinator shall maintain data for the approved duration of the procedure in effect plus one calendar year thereafter for M3.

#### 1.4. Additional Compliance Information

Each Reliability Coordinator and Balancing Authority shall demonstrate compliance through self-certification submitted to its Compliance Monitor annually and reporting by exception. The Compliance Monitor may also use scheduled on-site reviews every three years, and investigations upon complaint, to assess performance.

Each Reliability Coordinator and Balancing Authority shall have the following available for its Compliance Monitor to inspect during a scheduled, on-site review or within 5 days of a request as part of an investigation upon complaint:

**1.4.1** Operations logs, voice recordings or transcripts of voice recordings or other documentation providing the evidence of its compliance to all the requirements for all Interconnection-wide TLR procedures that it has implemented during the review period.

**1.4.2** TLR reports.

### 2. Violation Severity Levels

**2.1. Lower. There shall be a lower violation severity level if any of the following conditions exist:**

**2.1.1** For each TLR in the Eastern Interconnection, the Reliability Coordinator violates one (1) requirement of the applicable Interconnection-wide procedure (R1)

**2.1.2** The Reliability Coordinators or Balancing Authorities did not comply with applicable Interchange scheduling standards during the implementation of the relief procedures, up to the point emergency action is necessary (R5).

**2.2. Moderate.**

**2.2.1** For each TLR in the Eastern Interconnection, the Reliability Coordinator violates two (2) to three (3) requirements of the applicable Interconnection-wide procedure (R1).

**2.3. High. There shall be a high violation severity level if any of the following conditions exist:**

**2.3.1** For each TLR in the Eastern Interconnection, the applicable Reliability Coordinator violates four (4) to five (5) requirements of the applicable Interconnection-wide procedure (R1).

**2.3.2** When requested to curtail an Interchange Transaction that crosses an Interconnection boundary utilizing an Interconnection-wide procedure, the responding Reliability Coordinator did not comply with the provisions of the Interconnection-wide procedure as requested by the initiating Reliability Coordinator (R4).

**2.4. Severe. There shall be a severe violation severity level if any of the following conditions exist:**

**2.4.1** For each TLR in the Eastern Interconnection, the Reliability Coordinator violates six (6) or more of the requirements of the applicable Interconnection-wide procedure (R1).

**2.4.2** A Reliability Coordinator implemented local transmission loading relief or congestion management procedures to relieve congestion but the Transmission Operator experiencing the congestion was not a party to those procedures (R2).

**2.4.3** A Reliability Coordinator implemented local transmission loading relief or congestion management procedures as a substitute for curtailment as directed by the Interconnection-wide procedure but the local procedure had not received prior approval by the ERO (R3).

**2.4.4** While attempting to mitigate an existing IROL violation in the Eastern Interconnection, the Reliability Coordinator applied TLR as the sole remedy for an existing IROL violation.

**2.4.5** While attempting to mitigate an existing constraint in the Western Interconnection using the “WSCC Unscheduled Flow Mitigation Plan”, the Reliability Coordinator did not follow the procedure correctly.

**2.4.6** While attempting to mitigate an existing constraint in ERCOT using Section 7 of the ERCOT Protocols, the Reliability Coordinator did not follow the procedure correctly.

## E. Regional Differences

1. [PJM/MISO Enhanced Congestion Management](#) (Curtailment/Reload/Reallocation) Waiver approved March 25, 2004. To be retired upon completion of the field test, and in the interim the Regional Difference will be contained in both the NERC and NAESB standards.

This section on Regional Differences is highlighted for transfer to NAESB following completion of the MISO/PJM/SPP field test as described in the white paper.

2. Southwest Power Pool (SPP) Regional Difference – Enhanced Congestion Management (Curtailment/Reload/Reallocation). The SPP regional difference, which is equivalent to the PJM/MISO waiver, shall apply within the SPP region as follows:

This regional difference impacts actions on behalf of those SPP Balancing Authorities that are participating in the SPP market. This regional difference does not impact those Balancing Authorities for which SPP will continue to act as the Reliability Coordinator but that are not participating in the SPP market.

SPP shall calculate the impacts of SPP market flow on all facilities included in SPP's Coordinated Flowgate List. SPP shall conduct sensitivity studies to determine which external flowgates (outside SPP's footprint) are significantly impacted by the market flows of SPP's control zones (currently the balancing areas that exist today in the IDC). SPP shall perform studies to determine which external flowgates SPP will monitor and help control. An external flowgate selected by one of the studies will be considered a Coordinated Flowgate (CF).

In its calculation, SPP shall consider market flow impacts as the impacts of energy dispatched by the SPP market and self-dispatched energy serving load in the market footprint, but not tagged. SPP shall use a method equivalent to the PJM/MISO Market Flow Calculation methodology identified in the PJM/MISO waiver. Impacts of tagged transactions representing delivery of energy not dispatched by the SPP market and energy dispatched by the market but delivered outside the footprint will not be included in market flow.

SPP shall separate the market flow impacts for current hour and next hour into their appropriate priorities and shall provide those market flow impacts to the IDC. The market flows will be represented in the IDC and made available for curtailment under the appropriate TLR Levels. The market flow impacts will not be represented by conventional interchange transaction tags.

The SPP method will impact the following sections of the TLR Procedure:

**Network and Native Load (NNL) Calculations** — The SPP regional difference modifies Attachment 1-IRO-006-1 Section 5 “Parallel Flow Calculation Procedure for Reallocating or Curtailing Firm Transmission Service” within the SPP region.

Section 5 of Attachment 1-IRO-006-1 requires that the “Per Generator Method without Counter Flow” methodology be utilized to calculate the portion of parallel flows on any Constrained Facility due to Network Integration (NI) transmission service and service to Native Load (NL) of each balancing authority.

SPP shall use a “Market Flow Calculation” methodology to calculate the portion of parallel flows on all facilities included in the RTO’s “Coordinated Flowgate List” due to NI service or service to NL of each balancing authority.

The Market Flow Calculation differs from the Per Generator Method in the following ways:

- The contribution from all market area generators will be taken into account.
- In the Per Generator Method, only generators having a GLDF greater than 5% are included in the calculation. Additionally, generators are included only when the sum of the maximum generating capacity at a bus is greater than 20 MW. The market flow calculations will use all positively impacting flows down to 0% with no threshold. Counter flows will not be included in the market flow calculation.
- The contribution of all market area generators is based on the present output level of each individual unit.
- The contribution of the market area load is based on the present demand at each individual bus.

By expanding on the Per Generator Method, the market flow calculation evolves into a methodology very similar to the “Per Generator Method” method, while providing increased Interchange Distribution Calculator (IDC) granularity. Counter flows are also calculated and tracked in order to account for and recognize that the either the positive market flows may be reduced or counter flows may be increased to provide appropriate relief on a flowgate.

These NNL values will be provided to the IDC to be included and represented with the calculated NNL values of other Balancing Authorities for the purposes of identifying and obtaining required NNL relief across a flowgate in congestion under a TLR Level 5A/5B.

**Pro Rata Curtailment of Non-Firm Market Flow Impacts** — The SPP regional difference modifies Attachment 1-IRO-006-1 Appendix B “Transaction Curtailment Formula” within the SPP region.

Appendix B “Transaction Curtailment Formula” details the formula used to apply a weighted impact to each non-firm tagged Interchange Transaction (Priorities 1 thru 6) for the purposes of Curtailment by the IDC. For the purpose of Curtailment, the non-firm market flow impacts (Priorities 2 and 6) submitted to the IDC by SPP should be curtailed pro-rata as is done for Interchange Transaction using firm transmission service. This is because several of the values needed to assign a weighted impact using the process listed in Appendix B will not be available:

- Distribution Factor (no tag to calculate this value from)
- Impact on Interface value (cannot be calculated without Distribution Factor)
- Impact Weighting Factor (cannot be calculated without Distribution Factor)
- Weighted Maximum Interface Reduction (cannot be calculated without Distribution Factor)

- Interface Reduction (cannot be calculated without Distribution Factor)
- Transaction Reduction (cannot be calculated without Distribution Factor)

While the non-firm market flow impacts submitted to the IDC are to be curtailed pro rata, the impacting non-firm tagged Interchange Transactions could still use the existing processes to assign the weighted impact value.

**Assignment of Sub-Priorities** — The SPP regional difference modifies Attachment 1-IRO-006-1 Appendix E “How the IDC Handles Reallocation”, Section E2 “Timing Requirements”, within the SPP region.

Under the header “IDC Calculations and Reporting” in Section E2 of Appendix E to Attachment 1-IRO-006-1, the following requirement exists: “In a TLR Level 3a the Interchange Transactions using Non-firm Transmission Service in a given priority will be further divided into four sub-priorities, based on current schedule, current active schedule (identified by the submittal of a tag ADJUST message), next-hour schedule, and tag status. Solely for the purpose of identifying which Interchange Transactions to be loaded under a TLR 3a, various MW levels of an Interchange Transaction may be in different sub-priorities. The sub-priorities are shown in the following table:

Priority	Purpose	Explanation and Conditions
S1	To allow a flowing Interchange Transaction to maintain or reduce its current MW amount in accordance with its energy profile.	The MW amount is the lowest between currently flowing MW amount and the next-hour schedule. The currently flowing MW amount is determined by the e-tag ENERGY PROFILE and ADJUST tables. If the calculated amount is negative, zero is used instead.
S2	To allow a flowing Interchange Transaction that has been curtailed or halted by TLR to reload to the lesser of its current-hour MW amount or next-hour schedule in accordance with its energy profile.	The Interchange Transaction MW amount used is determined through the e-tag ENERGY PROFILE and ADJUST tables. If the calculated amount is negative, zero is used instead.
S3	To allow a flowing Transaction to increase from its current-hour schedule to its next-hour schedule in accordance with its energy profile.	The MW amounts used in this sub-priority is determined by the e-tag ENERGY PROFILE table. If the calculated amount is negative, zero is used instead.
S4	To allow a Transaction that had never started and was submitted to the Tag Authority after the TLR (level 2 or higher) has been declared	The Transaction would not be allowed to start until all other Interchange Transactions submitted prior to the TLR with the same

	to begin flowing (i.e., the Interchange Transaction never had an active MW and was submitted to the IDC after the first TLR Action of the TLR Event had been declared.)	priority have been (re)loaded. The MW amount used is the sub-priority is the next-hour schedule determined by the e-tag ENERGY PROFILE table.
--	---	---

SPP shall use a “Market Flow Calculation” methodology to calculate the amount of energy flowing across all facilities included in the RTO’s “Coordinated Flowgate List” that is associated with the operation of the SPP market. This energy is identified as “market flow.”

These market flow impacts for current hour and next hour will be separated into their appropriate priorities and provided to the IDC by SPP. The market flows will then be represented and made available for curtailment under the appropriate TLR Levels.

Even though these market flow impacts (separated into appropriate priorities) will not be represented by conventional “tags,” the impacts and their desired levels will still be provided to the IDC for current hour and next hour. Therefore, for the purposes of reallocation, a sub-priority (S1 thru S4) should be assigned to these market flow impacts by the NERC IDC as follows, using comparable logic as would be used if the impacts were in fact tagged transactions.

Priority	Purpose	Explanation and Conditions
S1	To allow existing market flow to maintain or reduce its current MW amount.	The currently flowing MW amount is the amount of market flow existing after the RTO has recognized the constraint for which TLR has been called. If the calculated amount is negative, zero is used instead.
S2	To allow market flow that has been curtailed or halted by TLR to reload to its desired amount for the current-hour.	This is the difference between the current hour unconstrained market flow and the current market flow. If the current-hour unconstrained market flow is not available, the IDC will use the most recent market flow since the TLR was first issued or, if not available, the market flow at the time the TLR was first issued.
S3	To allow a market flow to increase to its next-hour desired amount.	This is the difference between the next hour and current hour unconstrained market flow.

To be retired upon completion of the field test, and in the interim the Regional Difference will be contained in both the NERC and NAESB standards.

## F. Associated Documents

### Version History

Version	Date	Action	Change Tracking
0	April 1, 2005	Effective Date	New
0	August 8, 2005	Removed “Proposed” from Effective Date	Errata
1	August 8, 2005	Revised Attachment 1	Revision
3	February 26, 2007	Revised Purpose and Attachment 1 related to NERC NAESB split of the TLR procedure	Revision



## A. Introduction

1. **Title:** Reliability Coordination — Transmission Loading Relief (TLR)
2. **Number:** IRO-006-34
- ~~3. **Purpose:** Regardless of the process it uses, the Reliability Coordinator must direct its Balancing Authorities and Transmission Operators to return the transmission system to within its Interconnection Reliability Operating Limits as soon as possible, but no longer than 30 minutes. The Reliability Coordinator needs to direct Balancing Authorities and Transmission Operators to execute actions such as reconfiguration, redispatch, or load shedding until relief requested by the TLR process is achieved.~~
3. **Purpose:** The purpose of this standard is to provide a method to prevent and or manage congestion on the bulk electric system.
4. **Applicability:**
  - 4.1. Reliability Coordinators.
  - ~~4.2. Transmission Operators.~~
  - 4.2. Balancing Authorities.
- ~~5. **Proposed Effective Date:** First day of first quarter after BOT adoption.  
E.2 effective upon BOT adoption.~~
- ~~5. **Changes to TLR 3b and 4 for IRO-006-2 to be announced.**~~

## B. Requirements

~~R1. A Reliability Coordinator shall take appropriate actions in accordance with established policies, procedures, authority, and expectations to relieve transmission loading.~~

R1. A Reliability Coordinator experiencing a potential or actual SOL or IROL violation within its Reliability Coordinator Area shall, with its authority and at its discretion, select ~~from either one or more procedures to provide transmission loading relief. These procedures can be~~ a “local” (~~Regional, Interregional, or subregional, interregional, or sub-regional~~) transmission loading relief procedure or ~~one of the following~~ Interconnection-wide procedure:s: [Violation Risk Factor: Medium] [Time Horizon: Real-time Operations]

This requirement simply states; the RC has the authority to act, the RC should know at what limits he/she needs to act, the RC has pre-identified regional, interregional and sub-regional TLR procedures.

R1.1. The Interconnection-wide Transmission Loading Relief (TLR) procedure for use in the Eastern Interconnection ~~is~~ provided in Attachment 1-IRO-006-0.4. The TLR procedure alone is an inappropriate and ineffective tool to mitigate an IROL violation. Other acceptable and more effective procedures to mitigate actual IROL violations include: reconfiguration, redispatch, or load shedding.

Comment: see FERC Order 693 paragraph 964 regarding recommendation for using tools other than TLR to mitigate an actual IROL.

R1.2. The ~~equivalent~~ Interconnection-wide transmission loading relief procedure for use in the Western Interconnection is the “WSCC Unscheduled Flow

Mitigation Plan,” provided at:

[http://www.wecc.biz/documents/library/UFAS/UFA\\_S\\_mitigation\\_plan\\_rev\\_2001-clean\\_8-8-03.pdf](http://www.wecc.biz/documents/library/UFAS/UFA_S_mitigation_plan_rev_2001-clean_8-8-03.pdf).

Note: the URL has changed.

- R1.3.** The Interconnection-wide transmission loading relief procedure for use in ERCOT is provided as Section 7 of the ERCOT Protocols, posted at: [http://www.ercot.com/mktrules/protocols/library/2007/02/February\\_1\\_2007\\_Protocols.pdfcurrent.html](http://www.ercot.com/mktrules/protocols/library/2007/02/February_1_2007_Protocols.pdfcurrent.html).
- R2.** The Reliability Coordinator ~~may~~shall only use local transmission loading relief or congestion management procedures, ~~provided to which~~ the Transmission Operator experiencing the potential or actual SOL or IROL violation is a party ~~to those procedures.~~ *[Violation Risk Factor: Low] [Time Horizon: Operations Planning]*
- R3.** A Reliability Coordinator may implement a local transmission loading relief or congestion management procedure simultaneously with an Interconnection-wide procedure. However, ~~the~~each Reliability Coordinator shall follow the curtailments as directed by the Interconnection-wide procedure. A Reliability Coordinator desiring to use a local procedure as a substitute for curtailments as directed by the Interconnection-wide procedure shall ~~have such use approved~~obtain prior approval by the ~~NERC Operating Committee.~~ERO. *[Violation Risk Factor: Low] [Time Horizon: Operations Planning]*
- ~~**R5.** When implemented, all Reliability Coordinators shall comply with the provisions of the Interconnection-wide procedure including, for example, action by Reliability Coordinators in other Interconnections to curtail an Interchange Transaction that crosses an Interconnection boundary.~~
- R4.** When Interconnection-wide procedures are implemented to curtail Interchange Transactions that cross an Interconnection boundary, each Reliability Coordinator shall comply with the provisions of the Interconnection-wide procedure. *[Violation Risk Factor: Medium] [Time Horizon: Real-time Operations]*
- R5.** During the implementation of relief procedures, and up to the point that emergency action is necessary, Reliability Coordinators and Balancing Authorities shall comply with applicable Interchange scheduling standards. *[Violation Risk Factor: Medium] [Time Horizon: Real-time Operations]*

Comment: R5 will be reviewed during Phase 3 of the TLR drafting team work. See white paper for explanation of the three phases of changes to this standard.

## C. Measures

- ~~**M1.** If required, an investigation will be conducted to determine whether appropriate actions were taken in accordance with established policies, procedures, authority, and expectations to relieve transmission loading, including notifying appropriate Reliability Coordinators and operating entities to curtail Interchange Transactions.~~
- M1.** Each Reliability Coordinator shall be capable of providing evidence (such as logs) that demonstrate when Eastern Interconnection, WECC, or ERCOT Interconnection-wide transmission loading relief procedures are implemented, the implementation follows

the respective established procedure as specified in this standard (R1, R1.1, R1.2 and R1.3).

- M2. Each Reliability Coordinator shall be capable of providing evidence (such as written documentation) that the Transmission Operator experiencing the potential or existing SOL or IROL violations is a party to the local transmission loading relief or congestion management procedures when these procedures have been implemented (R2).
- M3. Each Reliability Coordinator shall be capable of providing evidence (such as NERC meeting minutes) that the local procedure has received prior approval by the ERO when such procedure is used as a substitute for curtailment as directed by the Interconnection-wide procedure (R3).
- M4. Each Reliability Coordinator shall be capable of providing evidence (such as logs) that the responding Reliability Coordinator complied with the provisions of the Interconnection-wide procedure as requested by the initiating Reliability Coordinator when requested to curtail an Interchange Transaction that crosses an Interconnection boundary (R4).
- M5. Each Reliability Coordinator and Balancing Authority shall be capable of providing evidence (such as Interchange Transaction Tags, operator logs, voice recordings or transcripts of voice recordings, electronic communications, computer printouts) that they have complied with applicable Interchange scheduling standards INT-001, INT-003, and INT-004 during the implementation of relief procedures, up to the point emergency action is necessary (R5).

## D. Compliance

### 1. Compliance Monitoring Process

~~The Regional Reliability Organization or NERC may initiate an investigation if there is a complaint that an entity has not implemented relief procedures in accordance with these requirements.~~

The Regional Entity shall have responsibility for compliance monitoring.

#### 1.1. Compliance Monitoring Responsibility

~~Not specified.~~

Regional Entity.

#### 1.2. Compliance Monitoring Period and Reset Time Frame

Compliance Monitoring Period: One calendar year.

Reset Period: One month without a violation.

#### 1.3. Data Retention

~~One~~The Reliability Coordinator shall maintain data for eighteen months for M1, M4, and M5.

The Reliability Coordinator shall maintain data for the duration the Transmission Operator is party to the procedure in effect plus one calendar year thereafter for M2.

The Reliability Coordinator shall maintain data for the approved duration of the procedure in effect plus one calendar year thereafter for M3.

**1.4. Additional Compliance Information**

~~Not specified.~~

~~2. Levels of Non-Compliance~~

~~2.1. Level 1: N/A.~~

~~2.2. Level 2: N/A.~~

~~2.3. Level 3: N/A.~~

~~3. Level 4: The Reliability Coordinator did not implement loading relief procedures in accordance with the standard.~~

Each Reliability Coordinator and Balancing Authority shall demonstrate compliance through self-certification submitted to its Compliance Monitor annually and reporting by exception. The Compliance Monitor may also use scheduled on-site reviews every three years, and investigations upon complaint, to assess performance.

Each Reliability Coordinator and Balancing Authority shall have the following available for its Compliance Monitor to inspect during a scheduled, on-site review or within 5 days of a request as part of an investigation upon complaint:

**1.4.1** Operations logs, voice recordings or transcripts of voice recordings or other documentation providing the evidence of its compliance to all the requirements for all Interconnection-wide TLR procedures that it has implemented during the review period.

**1.4.2** TLR reports.

**2. Violation Severity Levels**

**2.1. Lower. There shall be a lower violation severity level if any of the following conditions exist:**

**2.1.1** For each TLR in the Eastern Interconnection, the Reliability Coordinator violates one (1) requirement of the applicable Interconnection-wide procedure (R1)

**2.1.2** The Reliability Coordinators or Balancing Authorities did not comply with applicable Interchange scheduling standards during the implementation of the relief procedures, up to the point emergency action is necessary (R5).

**2.2. Moderate. There shall be a moderate violation severity level if any of the following conditions exist:**

**2.2.1** For each TLR in the Eastern Interconnection, the Reliability Coordinator violates two (2) to three (3) requirements of the applicable Interconnection-wide procedure (R1).

**2.3. High. There shall be a high violation severity level if any of the following conditions exist:**

**2.3.1** For each TLR in the Eastern Interconnection, the applicable Reliability Coordinator violates four (4) to five (5) requirements of the applicable Interconnection-wide procedure (R1).

**2.3.2** When requested to curtail an Interchange Transaction that crosses an Interconnection boundary utilizing an Interconnection-wide procedure, the responding Reliability Coordinator did not comply with the provisions of the Interconnection-wide procedure as requested by the initiating Reliability Coordinator (R4).

**2.4. Severe. There shall be a severe violation severity level if any of the following conditions exist:**

- 2.4.1 For each TLR in the Eastern Interconnection, the Reliability Coordinator violates six (6) or more of the requirements of the applicable Interconnection-wide procedure (R1).
- 2.4.2 A Reliability Coordinator implemented local transmission loading relief or congestion management procedures to relieve congestion but the Transmission Operator experiencing the congestion was not a party to those procedures (R2).
- 2.4.3 A Reliability Coordinator implemented local transmission loading relief or congestion management procedures as a substitute for curtailment as directed by the Interconnection-wide procedure but the local procedure had not received prior approval by the ERO (R3).
- 2.4.4 While attempting to mitigate an existing IROL violation in the Eastern Interconnection, the Reliability Coordinator applied TLR as the sole remedy for an existing IROL violation.
- 2.4.5 While attempting to mitigate an existing constraint in the Western Interconnection using the “WSCC Unscheduled Flow Mitigation Plan”, the Reliability Coordinator did not follow the procedure correctly.
- 2.4.6 While attempting to mitigate an existing constraint in ERCOT using Section 7 of the ERCOT Protocols, the Reliability Coordinator did not follow the procedure correctly.

## E. Regional Differences

1. [PJM/MISO Enhanced Congestion Management](#) (Curtailment/Reload/Reallocation) Waiver approved March 25, 2004. To be retired upon completion of the field test, and in the interim the Regional Difference will be contained in both the NERC and NAESB standards.

This section on Regional Differences is highlighted for transfer to NAESB following completion of the MISO/PJM/SPP field test as described in the white paper.

2. Southwest Power Pool (SPP) Regional Difference – Enhanced Congestion Management (Curtailment/Reload/Reallocation). The SPP regional difference, which is equivalent to the PJM/MISO waiver, shall apply within the SPP region as follows:

This regional difference impacts actions on behalf of those SPP Balancing Authorities that are participating in the SPP market. This regional difference does not impact those Balancing Authorities for which SPP will continue to act as the Reliability Coordinator but that are not participating in the SPP market.

SPP shall calculate the impacts of SPP market flow on all facilities included in SPP's Coordinated Flowgate List. SPP shall conduct sensitivity studies to determine which external flowgates (outside SPP's footprint) are significantly impacted by the market flows of SPP's control zones (currently the balancing areas that exist today in the IDC). SPP shall perform studies to determine which external flowgates SPP will monitor and help control. An external flowgate selected by one of the studies will be considered a Coordinated Flowgate (CF).

In its calculation, SPP shall consider market flow impacts as the impacts of energy dispatched by the SPP market and self-dispatched energy serving load in the market footprint, but not tagged. SPP shall use a method equivalent to the PJM/MISO Market Flow Calculation methodology identified in the PJM/MISO waiver. Impacts of tagged transactions representing delivery of energy not dispatched by the SPP market and energy dispatched by the market but delivered outside the footprint will not be included in market flow.

SPP shall separate the market flow impacts for current hour and next hour into their appropriate priorities and shall provide those market flow impacts to the IDC. The market flows will be represented in the IDC and made available for curtailment under the appropriate TLR Levels. The market flow impacts will not be represented by conventional interchange transaction tags.

The SPP method will impact the following sections of the TLR Procedure:

**Network and Native Load (NNL) Calculations** — The SPP regional difference modifies Attachment 1-IRO-006-1 Section 5 “Parallel Flow Calculation Procedure for Reallocating or Curtailing Firm Transmission Service” within the SPP region.

Section 5 of Attachment 1-IRO-006-1 requires that the “Per Generator Method without Counter Flow” methodology be utilized to calculate the portion of parallel flows on any Constrained Facility due to Network Integration (NI) transmission service and service to Native Load (NL) of each balancing authority.

SPP shall use a “Market Flow Calculation” methodology to calculate the portion of parallel flows on all facilities included in the RTO’s “Coordinated Flowgate List” due to NI service or service to NL of each balancing authority.

The Market Flow Calculation differs from the Per Generator Method in the following ways:

- 5.- The contribution from all market area generators will be taken into account.
- 6.- In the Per Generator Method, only generators having a GLDF greater than 5% are included in the calculation. Additionally, generators are included only when the sum of the maximum generating capacity at a bus is greater than 20 MW. The market flow calculations will use all positively impacting flows down to 0% with no threshold. Counter flows will not be included in the market flow calculation.
- 7.- The contribution of all market area generators is based on the present output level of each individual unit.
- 8.- The contribution of the market area load is based on the present demand at each individual bus.

By expanding on the Per Generator Method, the market flow calculation evolves into a methodology very similar to the “Per Generator Method” method, while providing increased Interchange Distribution Calculator (IDC) granularity. Counter flows are also calculated and tracked in order to account for and recognize that the either the positive market flows may be reduced or counter flows may be increased to provide appropriate relief on a flowgate.

These NNL values will be provided to the IDC to be included and represented with the calculated NNL values of other Balancing Authorities for the purposes of identifying and obtaining required NNL relief across a flowgate in congestion under a TLR Level 5A/5B.

**Pro Rata Curtailment of Non-Firm Market Flow Impacts** — The SPP regional difference modifies Attachment 1-IRO-006-1 Appendix B “Transaction Curtailment Formula” within the SPP region.

Appendix B “Transaction Curtailment Formula” details the formula used to apply a weighted impact to each non-firm tagged Interchange Transaction (Priorities 1 thru 6) for the purposes of Curtailment by the IDC. For the purpose of Curtailment, the non-firm market flow impacts (Priorities 2 and 6) submitted to the IDC by SPP should be curtailed pro-rata as is done for Interchange Transaction using firm transmission service. This is because several of the values needed to assign a weighted impact using the process listed in Appendix B will not be available:

- 6.- Distribution Factor (no tag to calculate this value from)
- 7.- Impact on Interface value (cannot be calculated without Distribution Factor)
- 8.- Impact Weighting Factor (cannot be calculated without Distribution Factor)
- 9.- Weighted Maximum Interface Reduction (cannot be calculated without Distribution Factor)



~~10.-~~ Interface Reduction (cannot be calculated without Distribution Factor)

~~11.-~~ Transaction Reduction (cannot be calculated without Distribution Factor)

While the non-firm market flow impacts submitted to the IDC are to be curtailed pro rata, the impacting non-firm tagged Interchange Transactions could still use the existing processes to assign the weighted impact value.

**Assignment of Sub-Priorities** — The SPP regional difference modifies Attachment 1-IRO-006-1 Appendix E “How the IDC Handles Reallocation”, Section E2 “Timing Requirements”, within the SPP region.

Under the header “IDC Calculations and Reporting” in Section E2 of Appendix E to Attachment 1-IRO-006-1, the following requirement exists: “In a TLR Level 3a the Interchange Transactions using Non-firm Transmission Service in a given priority will be further divided into four sub-priorities, based on current schedule, current active schedule (identified by the submittal of a tag ADJUST message), next-hour schedule, and tag status. Solely for the purpose of identifying which Interchange Transactions to be loaded under a TLR 3a, various MW levels of an Interchange Transaction may be in different sub-priorities. The sub-priorities are shown in the following table:

Priority	Purpose	Explanation and Conditions
S1	To allow a flowing Interchange Transaction to maintain or reduce its current MW amount in accordance with its energy profile.	The MW amount is the lowest between currently flowing MW amount and the next-hour schedule. The currently flowing MW amount is determined by the e-tag ENERGY PROFILE and ADJUST tables. If the calculated amount is negative, zero is used instead.
S2	To allow a flowing Interchange Transaction that has been curtailed or halted by TLR to reload to the lesser of its current-hour MW amount or next-hour schedule in accordance with its energy profile.	The Interchange Transaction MW amount used is determined through the e-tag ENERGY PROFILE and ADJUST tables. If the calculated amount is negative, zero is used instead.
S3	To allow a flowing Transaction to increase from its current-hour schedule to its next-hour schedule in accordance with its energy profile.	The MW amounts used in this sub-priority is determined by the e-tag ENERGY PROFILE table. If the calculated amount is negative, zero is used instead.
S4	To allow a Transaction that had never started and was submitted to the Tag Authority after the TLR (level 2 or higher) has been declared	The Transaction would not be allowed to start until all other Interchange Transactions submitted prior to the TLR with the same

	to begin flowing (i.e., the Interchange Transaction never had an active MW and was submitted to the IDC after the first TLR Action of the TLR Event had been declared.)	priority have been (re)loaded. The MW amount used is the sub-priority is the next-hour schedule determined by the e-tag ENERGY PROFILE table.
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SPP shall use a “Market Flow Calculation” methodology to calculate the amount of energy flowing across all facilities included in the RTO’s “Coordinated Flowgate List” that is associated with the operation of the SPP market. This energy is identified as “market flow.”

These market flow impacts for current hour and next hour will be separated into their appropriate priorities and provided to the IDC by SPP. The market flows will then be represented and made available for curtailment under the appropriate TLR Levels.

Even though these market flow impacts (separated into appropriate priorities) will not be represented by conventional “tags,” the impacts and their desired levels will still be provided to the IDC for current hour and next hour. Therefore, for the purposes of reallocation, a sub-priority (S1 thru S4) should be assigned to these market flow impacts by the NERC IDC as follows, using comparable logic as would be used if the impacts were in fact tagged transactions.

Priority	Purpose	Explanation and Conditions
S1	To allow existing market flow to maintain or reduce its current MW amount.	The currently flowing MW amount is the amount of market flow existing after the RTO has recognized the constraint for which TLR has been called. If the calculated amount is negative, zero is used instead.
S2	To allow market flow that has been curtailed or halted by TLR to reload to its desired amount for the current-hour.	This is the difference between the current hour unconstrained market flow and the current market flow. If the current-hour unconstrained market flow is not available, the IDC will use the most recent market flow since the TLR was first issued or, if not available, the market flow at the time the TLR was first issued.
S3	To allow a market flow to increase to its next-hour desired amount.	This is the difference between the next hour and current hour unconstrained market flow.

To be retired upon completion of the field test, and in the interim the Regional Difference will be contained in both the NERC and NAESB standards.

**F. Associated Documents**

**Version History**

Version	Date	Action	Change Tracking
0	April 1, 2005	Effective Date	New
0	August 8, 2005	Removed “Proposed” from Effective Date	Errata
1	August 8, 2005	Revised Attachment 1	Revision

**Attachment 1-IRO-006**

**Transmission Loading Relief Procedure — Eastern Interconnection**

**Purpose**

This standard defines procedures for curtailment and reloading of Interchange Transactions to relieve overloads on transmission facilities modeled in the Interchange Distribution Calculator. This process is defined in the requirements below, and is depicted in Appendix A. Examples of curtailment calculations using these procedures are contained in Appendix B.

**Applicability**

This standard only applies to the Eastern Interconnection.

**1. — Transmission Loading Relief (TLR) Procedure**

- 1.1. — Initiation only by Reliability Coordinator.** A Reliability Coordinator shall be the only entity authorized to initiate the TLR Procedure and shall do so at 1) the Reliability Coordinator's own request, or 2) upon the request of a Transmission Operator.
- 1.2. — Mitigating transmission constraints.** A Reliability Coordinator may utilize the TLR Procedure to mitigate potential or actual System Operating Limit (SOL) violations or Interconnection Reliability Operating Limit (IROL) violations on any transmission facility modeled in the IDC.
  - 1.2.1. — Requesting relief on tie facilities.** Any Transmission Operator who operates the tie facility shall be allowed to request relief from its Reliability Coordinator.
    - 1.2.1.1. — Interchange Transaction priority on tie facilities.** The priority of the Interchange Transaction(s) to be curtailed shall be determined by the Transmission Service reserved on the Transmission Service Provider's system who requested the relief.
- 1.3. — Order of TLR Levels and taking emergency action.** The Reliability Coordinator shall not be required to follow the TLR Levels in their numerical order (Section 2, "TLR Levels"). Furthermore, if a Reliability Coordinator deems that a transmission loading condition could jeopardize Bulk Electric System reliability, the Reliability Coordinator shall have the authority to enter TLR Level 6 directly, and immediately direct the Balancing Authorities or Transmission Operators to take such actions as redispatching generation, or reconfiguring transmission, or reducing load to mitigate the critical condition until Interchange Transactions can be reduced utilizing the TLR Procedure or other methods to return the system to a secure state.
- 1.4. — Notification of TLR Procedure implementation.** The Reliability Coordinator initiating the use of the TLR Procedure shall notify other Reliability Coordinators and Balancing Authorities and Transmission Operators, and must post the initiation and progress of the TLR event on the appropriate NERC web page(s).

- ~~1.4.1.—Notifying other Reliability Coordinators.~~ The Reliability Coordinator initiating the TLR Procedure shall inform all other Reliability Coordinators via the Reliability Coordinator Information System (RCIS) that the TLR Procedure has been implemented.
- ~~1.4.1.1.—Actions expected.~~ The Reliability Coordinator initiating the TLR Procedure shall indicate the actions expected to be taken by other Reliability Coordinators.
- ~~1.4.2.—Notifying Transmission Operators and Balancing Authorities.~~ The Reliability Coordinator shall notify Transmission Operators and Balancing Authorities in its Reliability Area when entering and leaving any TLR level.
- ~~1.4.3.—Notifying Balancing Authorities.~~ The Reliability Coordinator for the sink Balancing Authority shall be responsible for directing the Sink Balancing Authority to curtail the Interchange Transactions as specified by the Reliability Coordinator implementing the TLR Procedure.
- ~~1.4.3.1.—Notification order.~~ Within a Transmission Service Priority level, the Sink Balancing Authorities whose Interchange Transactions have the largest impact on the Constrained Facilities shall be notified first if practicable.
- ~~1.4.4.—Updates.~~ At least once each hour, or when conditions change, the Reliability Coordinator implementing the TLR Procedure shall update all other Reliability Coordinators (via the RCIS). Transmission Operators and Balancing Authorities who have had Interchange Transactions impacted by the TLR will be updated by their Reliability Coordinator.
- ~~1.5.—Obligations.~~ All Reliability Coordinators shall comply with the request of the Reliability Coordinator who initiated the TLR Procedure, unless the initiating Reliability Coordinator agrees otherwise.
- ~~1.5.1.—Use of TLR Procedure with “local” procedures.~~ A Reliability Coordinator shall be allowed to implement a local transmission loading relief or congestion management procedure simultaneously with an Interconnection wide procedure. However, the Reliability Coordinator shall be obligated to follow the curtailments as directed by the Interconnection wide procedure. If the Reliability Coordinator desires to use a local procedure as a substitute for Curtailments as directed by the Interconnection wide procedure, it may do so only if such use is approved by the NERC Operating Committee.
- ~~1.6.—Consideration of Interchange Transactions.~~ The administration of the TLR Procedure shall be guided by information obtained from the IDC.
- ~~1.6.1.—Interchange Transactions not in the IDC.~~ Reliability Coordinators shall also treat known Interchange Transactions that may not appear in the IDC in accordance with the procedures in this document.

~~1.6.2.—Transmission elements not in IDC.~~ When a Reliability Coordinator is faced with an overload on a transmission element that is not modeled in the IDC, the Reliability Coordinator shall use the best information available to curtail Interchange Transactions in order to operate the system in a reliable manner. The Reliability Coordinator shall use its best efforts to ensure that Interchange Transactions with a Transfer Distribution Factor of less than the Curtailment Threshold on the transmission element not modeled in the IDC are not curtailed.

~~1.6.3.—Questionable IDC results.~~ Any Reliability Coordinator (or Transmission Operator through its Reliability Coordinator) who believes the curtailment list from the IDC for a particular TLR event is incorrect shall use its best efforts to communicate those adjustments necessary to bring the curtailment list into conformance with the principles of this Procedure to the initiating Reliability Coordinator. Causes of questionable IDC results may include:

- ~~Missing Interchange Transactions that are known to contribute to the Constraint.~~
- ~~Significant change in transmission system topology.~~
- ~~TDF matrix error.~~

~~Impacts of questionable IDC results may include:~~

- ~~Curtailment that would have no effect on, or aggravate the constraint.~~
- ~~Curtailment that would initiate a constraint elsewhere.~~

~~If other Reliability Coordinators are involved in the TLR event, all impacted Reliability Coordinators shall be in agreement before any adjustments to the Curtailment list are made.~~

~~1.6.4.—Curtailment that would cause a constraint elsewhere.~~ A Reliability Coordinator shall be allowed to exempt an Interchange Transaction from Curtailment if that Reliability Coordinator is aware that the Interchange Transaction Curtailment directed by the IDC would cause a constraint to occur elsewhere. This exemption shall only be allowed after the Reliability Coordinator has consulted with the Reliability Coordinator who initiated the Curtailment.

~~1.6.5.—Redispatch options.~~ The Reliability Coordinator shall ensure that Interchange Transactions that are linked to redispatch options are protected from Curtailment in accordance with the redispatch provisions.

~~1.6.6.—Reallocation.~~ The Reliability Coordinator shall consider for Reallocation any Transactions of higher priority that meet the approved tag submission deadline during a TLR Level 3A. The Reliability Coordinator shall consider for Reallocation any Transaction using Firm Transmission Service that has met the approved tag submission deadline during a TLR Level 5A. Note Reallocations for Dynamic Schedules are as follows: If an

~~Interchange Transaction is identified as a Dynamic Schedule and the transmission service is considered firm according to the constrained path method, then it will not be held by the IDC during TLR level 4 or lower. Adjustments to Dynamic Schedules in accordance with INT-004 R5 will not be held under TLR level 4 or lower.~~

- ~~1.7 — **IDC updates.** Any Interchange Transaction adjustments or curtailments that result from using this Procedure must be entered into the IDC.~~
- ~~1.8 — **Logging.** The Reliability Coordinator shall complete the NERC Transmission Loading Relief Procedure Log whenever it invokes TLR Level 2 or above, and send a copy of the log via email to NERC within two business days of the TLR event for posting on the NERC website.~~
- ~~1.9 — **TLR Event Review.** The Reliability Coordinator shall report the TLR event to the NERC Market Committee and Operating Reliability Subcommittee in accordance with TLR review processes established by NERC as required.~~
- ~~1.9.1. — **Providing information.** Transmission Operators and Balancing Authorities within the Reliability Coordinator's Area, and all other Reliability Coordinators, including Transmission Operators and Balancing Authorities within their respective Reliability Areas, shall provide information, as requested by the initiating Reliability Coordinator, in accordance with TLR review processes established by NERC.~~
- ~~1.9.2. — **Market Committee reviews.** The Market Committee may conduct reviews of certain TLR events based on the size and number of Interchange Transactions that are affected, the frequency that the TLR Procedure is called for a particular Constrained Facility, or other factors.~~
- ~~1.9.3. — **Operating Reliability Subcommittee reviews.** The Operating Reliability Subcommittee shall conduct reviews to ensure proper implementation and for "lessons learned."~~

## ~~2. Transmission Loading Relief (TLR) Levels~~

### ~~Introduction~~

~~This section describes the various levels of the TLR Procedure. The description of each level begins with the circumstances that define the TLR Level, followed by the procedures to be followed.~~

~~The decision that a Reliability Coordinator makes in selecting a particular TLR Level often depends on the transmission loading condition and whether the Interchange Transaction is using Non-firm Point-to-Point Transmission Service or Firm Point-to-Point Transmission Service. There are further considerations that depend on whether the Constrained Facility is on or off the Contract Path. It is important to note that an Interchange Transaction using Firm Point-to-Point Transmission Service on all Contract Path links is considered a “firm” Interchange Transaction even if the Constrained Facility is off the Contract Path.~~

### ~~2.1. TLR Level 1 — Notify Reliability Coordinators of potential SOL or IROL Violations~~

~~2.1.1. The Reliability Coordinator shall use the following circumstances to establish the need for TLR Level 1:~~

- ~~• The transmission system is secure.~~
- ~~• The Reliability Coordinator foresees a transmission or generation contingency or other operating problem within its Reliability Area that could cause one or more transmission facilities to approach or exceed their SOL or IROL.~~

~~2.1.2. **Notification procedures.** The Reliability Coordinator shall notify all Reliability Coordinators via the Reliability Coordinator Information System (RCIS) as soon as the condition is foreseen. All affected Reliability Coordinators shall check to ensure that Interchange Transactions are posted in the IDC.~~

### ~~2.2. TLR Level 2 — Hold transfers at present level to prevent SOL or IROL Violations~~

~~2.2.1. The Reliability Coordinator shall use the following circumstances to establish the need for entering TLR Level 2:~~

- ~~• The transmission system is secure.~~
- ~~• One or more transmission facilities are expected to approach, or are approaching, or are at their SOL or IROL.~~

~~2.2.2. **Holding procedures.** The Reliability Coordinator shall be allowed to hold the implementation of any additional Interchange Transactions that are at or above the Curtailment Threshold. However, the Reliability Coordinator should allow additional Interchange Transactions that flow across the Constrained Facility if their flow reduces the loading on the Constrained~~



~~Facility or has a Transfer Distribution Factor less than the Curtailment Threshold. All Interchange Transactions using Firm Point-to-Point Transmission Service shall be allowed to start.~~

~~2.2.3. TLR Level 2 is a transient state, which requires a quick decision to proceed to higher TLR Levels (3 and above) to allow Interchange Transactions to be implemented according to their transmission reservation priority. The time for being in TLR Level 2 should be no more than 30 minutes, with the understanding that there may be circumstances where this time may be exceeded. If the time in TLR Level 2 exceeds 30 minutes, the Reliability Coordinator shall document this action on the TLR Log.~~

~~2.3. TLR Level 3a — Reallocation of Transmission Service by curtailing Interchange Transactions using Non-firm Point-to-Point Transmission Service to allow Interchange Transactions using higher priority Transmission Service~~

~~2.3.1. The Reliability Coordinator shall use the following circumstances to establish the need for entering TLR Level 3a:~~

- ~~• The transmission system is secure.~~
- ~~• One or more transmission facilities are expected to approach, or are approaching, or are at their SOL or IROL.~~
- ~~• Transactions using Non-firm Point-to-Point Transmission Service are flowing that are at or above the Curtailment Threshold on those facilities.~~
- ~~• The Transmission Provider has previously approved a higher priority Point-to-Point Transmission Service reservation over which a Transmission Customer wishes to begin an Interchange Transaction.~~

~~2.3.2. Reallocation procedures to allow Interchange Transactions using higher priority Point-to-Point Transmission Service to start. The Reliability Coordinator with the constraint shall give preference to those Interchange Transactions using Firm Point-to-Point Transmission Service, followed by those using higher priority Non-firm Point-to-Point Transmission Service as specified in Section 3. “Interchange Transaction Curtailment Order.” Interchange Transactions that have been held or curtailed as prescribed in this Section shall be reallocated (reloaded) according to their Transmission Service priorities when operating conditions permit as specified in Section 6. “Interchange Transaction Reallocation During TLR Level 3a and 5a.”~~

~~2.3.2.1. The Reliability Coordinator shall displace Interchange Transactions with lower priority Transmission Service using Interchange Transactions having higher priority Non-firm or Firm Transmission Service.~~

~~2.3.2.2.~~— The Reliability Coordinator shall not curtail Interchange Transactions using Non-firm Transmission Service to allow the start or increase of another Interchange Transaction having the same priority Non-firm Transmission Service.

~~2.3.2.3.~~— If there are insufficient Interchange Transactions using Non-firm Point-to-Point Transmission Service that can be curtailed to allow for Interchange Transactions using Firm Point-to-Point Transmission Service to begin, the Reliability Coordinator shall proceed to TLR Level 5a.

~~2.3.2.4.~~— The Reliability Coordinator shall reload curtailed Interchange Transactions prior to allowing the start of new or increased Interchange Transactions.

~~2.3.2.4.1.~~— Interchange Transactions whose tags were submitted prior to the TLR Level 2 or Level 3a being called, but were subsequently held from starting, are considered to have been curtailed and thus would be reloaded the same time as the curtailed Interchange Transactions.

~~2.3.2.5.~~— The Reliability Coordinator shall fill available transmission capability by reloading or starting eligible Transactions on a pro-rata basis.

~~2.3.2.6.~~— The Reliability Coordinator shall consider transactions whose tags meet the approved tag submission deadline for Reallocation for the upcoming hour. Tags submitted after this deadline shall be considered for Reallocation the following hour.

~~2.4.~~— **TLR Level 3b — Curtail Interchange Transactions using Non-Firm Transmission Service Arrangements to mitigate a SOL or IROL Violation**

~~2.4.1.~~— The Reliability Coordinator shall use the following circumstances to establish the need for entering TLR Level 3b:

- ~~•~~— One or more transmission facilities are operating above their SOL or IROL, or
- ~~•~~— Such operation is imminent and it is expected that facilities will exceed their reliability limit unless corrective action is taken, or
- ~~•~~— One or more Transmission Facilities will exceed their SOL or IROL upon the removal from service of a generating unit or another transmission facility.
- ~~•~~— Transactions using Non-firm Point-to-Point Transmission Service are flowing that are at or above the Curtailment Threshold on those facilities.

~~2.4.2.~~— **Curtailment procedures to mitigate an SOL or IROL.** The Reliability Coordinator shall curtail Interchange Transactions using Non-firm Point-to-Point Transmission Service that are at or above the Curtailment

~~Threshold as specified in Section 3, “Interchange Transaction Curtailment Order” in the current hour to mitigate an SOL or IROL as well as reallocating, in accordance with Section 6 of this document, to a determined flow for the top of the next hour.~~

~~The Reliability Coordinator shall allow Interchange Transactions using Firm Point to Point Transmission Service to start if they are submitted to the IDC within specific time limits as explained in Section 7 “Interchange Transaction Curtailments during TLR Level 3b.”~~

## ~~2.5. — TLR Level 4 — Reconfigure Transmission~~

~~2.5.1. — The Reliability Coordinator shall use the following circumstances to establish the need for entering TLR Level 4:~~

- ~~• One or more Transmission Facilities are above their SOL or IROL, or~~
- ~~• Such operation is imminent and it is expected that facilities will exceed their reliability limit unless corrective action is taken.~~

~~2.5.2. — **Holding new Interchange Transactions.** The Reliability Coordinator shall hold all new Interchange Transactions using Non-firm Point to Point Transmission Service that are at or above the Curtailment Threshold during the period of the SOL or IROL Violation. The Reliability Coordinator shall allow Interchange Transactions using Firm Point to Point Transmission Service to start if they are submitted to the IDC by 25 minutes past the hour or the time at which the TLR Level 4 is called, whichever is later. See Appendix E, Section E2 — Timing Requirements.~~

~~2.5.3. — **Reconfiguration procedures.** The issuance of a TLR Level 4 shall result in the curtailment, in the current hour and the next hour, of all Interchange Transactions using Non-firm Point to Point Transmission Service that are at or above the Curtailment Threshold that impact the Constrained Facilities. If a SOL or IROL violation is imminent or occurring, the Reliability Coordinator(s) shall request that the affected Transmission Operators reconfigure transmission on their system, or arrange for reconfiguration on other transmission systems, to mitigate the constraint. Specific details are explained in Section 4, “Principles for Mitigating Constraints On and Off the Contract Path”.~~

## ~~2.6. — TLR Level 5a — Reallocation of Transmission Service by curtailing Interchange Transactions using Firm Point to Point Transmission Service on a pro-rata basis to allow additional Interchange Transactions using Firm Point to Point Transmission Service~~

~~2.6.1. — The Reliability Coordinator shall use the following circumstances to establish the need for entering TLR Level 5a:~~

- ~~• The transmission system is secure.~~
- ~~• One or more transmission facilities are at their SOL or IROL.~~

- ~~All Interchange Transactions using Non-firm Point-to-Point Transmission Service that are at or above the Curtailment Threshold have been curtailed.~~
- ~~The Transmission Provider has been requested to begin an Interchange Transaction using previously arranged Firm Transmission Service that would result in a SOL or IROL violation.~~
- ~~No further transmission reconfiguration is possible or effective.~~

~~2.6.2. Reallocation procedures to allow new Interchange Transactions using Firm Point-to-Point Transmission Service to start. The Reliability Coordinator shall use the following three-step process for Reallocation of Interchange Transactions using Firm Point-to-Point Transmission Service:~~

~~2.6.2.1. Step 1 — Identify available redispatch options. The Reliability Coordinator shall assist the Transmission Operator(s) in identifying those known redispatch options that are available to the Transmission Customer that will mitigate the loading on the Constrained Facilities. If such redispatch options are deemed insufficient to mitigate loading on the Constrained Facilities, the Reliability Coordinator shall proceed to implement these options while proceeding to Steps 2 and 3 below.~~

~~2.6.2.2. Step 2 — The Reliability Coordinator shall calculate the percent of the overload on the Constrained Facility caused by both Firm Point-to-Point Transmission Service (at or above the Curtailment Threshold) and the Transmission Provider's Network Integration Transmission Service and Native Load, as required by the Transmission Provider's filed tariff. This is described in Section 5, "Parallel Flow Calculation Procedure for Reallocating or Curtailing Firm Transmission Service."~~

~~2.6.2.3. Step 3 — Curtail Interchange Transactions using Firm Transmission Service. The Reliability Coordinator shall curtail or reallocate on a pro-rata basis (based on the MW level of the MW total to all such Interchange Transactions), those Interchange Transactions as calculated in Section 7.2.2 over the Constrained Facilities. (See also Section 6, "Interchange Transaction Reallocation during TLR 3a and 5a.") The Reliability Coordinator shall assist the Transmission Provider in curtailing Transmission Service to Network Integration Transmission Service customers and Native Load if such curtailments are required by the Transmission Provider's tariff. Available redispatch options will continue to be implemented.~~

~~2.7. TLR Level 5b — Curtail Interchange Transactions using Firm Point-to-Point Transmission Service to mitigate an SOL or IROL violation~~

~~2.7.1. The Reliability Coordinator shall use following circumstances to establish the need for entering TLR Level 5b:~~

- ~~• One or more Transmission Facilities are operating above their SOL or IROL, or~~
- ~~• Such operation is imminent, or~~
- ~~• One or more Transmission Facilities will exceed their SOL or IROL upon the removal from service of a generating unit or another transmission facility.~~
- ~~• All Interchange Transactions using Non-firm Point-to-Point Transmission Service that are at or above the Curtailment Threshold have been curtailed.~~
- ~~• No further transmission reconfiguration is possible or effective.~~

~~2.7.2. The Reliability Coordinator shall use the following three-step process for curtailment of Interchange Transactions using Firm Point-to-Point Transmission Service:~~

~~2.7.2.1. Step 1 — Identify available redispatch options. The Reliability Coordinator shall assist the Transmission Operator(s) in identifying those known redispatch options that are available to the Transmission Customer that will mitigate the loading on the Constrained Facilities. If such redispatch options are deemed insufficient to mitigate loading on the Constrained Facilities, the Reliability Coordinator shall proceed to implement these options while proceeding to Steps 2 and 3 below.~~

~~2.7.2.2. Step 2 — The Reliability Coordinator shall calculate the percent of the overload on the Constrained Facility caused by both Firm Point-to-Point Transmission Service (at or above the Curtailment Threshold) and the Transmission Provider's Network Integration Transmission Service and Native Load, as required by the Transmission Provider's filed tariff. This is described in Section 5, "Parallel Flow Calculation Procedure for Reallocating or Curtailing Firm Transmission Service."~~

~~2.7.2.3. Step 3 — Curtailment of Interchange Transactions using Firm Transmission Service. At this point, the Reliability Coordinator shall begin the process of curtailing Interchange Transactions as calculated in Section 2.7.2.2 over the Constrained Facilities using Firm Point-to-Point Transmission Service until the SOL or IROL violation has been mitigated. The Reliability Coordinator shall assist the Transmission Provider in curtailing Transmission Service to Network Integration Transmission Service customers and Native Load if such curtailments are required by the Transmission Providers' tariff. Available redispatch options will continue to be implemented.~~

~~2.8. — TLR Level 6 — Emergency Procedures~~

~~2.8.1. — The Reliability Coordinator shall use following circumstances to establish the need for entering TLR Level 6:~~

- ~~• One or more Transmission Facilities are above their SOL or IROL.~~
- ~~• One or more Transmission Facilities will exceed their SOL or IROL upon the removal from service of a generating unit or another transmission facility.~~

~~2.8.2. — Implementing emergency procedures. If the Reliability Coordinator deems that transmission loading is critical to Bulk Electric System reliability, the Reliability Coordinator shall immediately direct the Balancing Authorities and Transmission Operators in its Reliability Area to redispatch generation, or reconfigure transmission, or reduce load to mitigate the critical condition until Interchange Transactions can be reduced utilizing the TLR Procedures or other procedures to return the system to a secure state. All Balancing Authorities and Transmission Operators shall comply with all requests from their Reliability Coordinator.~~

~~2.9. — TLR Level 0 — TLR concluded~~

~~2.9.1. — Interchange Transaction restoration and notification procedures. The Reliability Coordinator initiating the TLR Procedure shall notify all Reliability Coordinators within the Interconnection via the RCIS when the SOL or IROL violations are mitigated and the system is in a reliable state, allowing Interchange Transactions to be reestablished at its discretion. Those with the highest transmission priorities shall be reestablished first if possible.~~

~~3. Interchange Transaction Curtailment Order for use in TLR Procedures~~

~~3.1. Priority of Interchange Transactions~~

~~3.1.1. Interchange Transaction curtailment priority shall be determined by the Transmission Service reserved over the constrained facility(ies) as follows:~~

~~Transmission Service Priorities~~

~~Priority 0. Next hour Market Service — NX\*~~

~~Priority 1. Service over secondary receipt and delivery points — NS~~

~~Priority 2. Non Firm Point to Point Hourly Service — NH~~

~~Priority 3. Non Firm Point to Point Daily Service — ND~~

~~Priority 4. Non Firm Point to Point Weekly Service — NW~~

~~Priority 5. Non Firm Point to Point Monthly Service — NM~~

~~Priority 6. Network Integration Transmission Service from sources not designated as network resources — NN~~

~~Priority 7. Firm Point to Point Transmission Service — F and Network Integration Transmission Service from Designated Resources — FN~~

~~3.1.2. The curtailment priority for Interchange Transactions that do not have a Transmission Service reservation over the constrained facility(ies) shall be defined by the lowest priority of the individual reserved transmission segments.~~

~~3.2. Curtailment of Interchange Transactions Using Non-firm Transmission Service~~

~~3.2.1. The Reliability Coordinator shall direct the curtailment of Interchange Transactions using Non-firm Transmission Service that are at or above the Curtailment Threshold for the following TLR Levels:~~

~~3.2.1.1. TLR Level 3a. Enable Interchange Transactions using a higher Transmission reservation priority to be implemented, or~~

~~3.2.1.2. TLR Level 3b. Mitigate an SOL or IROL violation.~~

~~3.3. Curtailment of Interchange Transactions Using Firm Transmission Service~~

~~3.3.1. The Reliability Coordinator shall direct the curtailment of Interchange Transactions using Firm Transmission Service that are at or above the Curtailment Threshold for the following TLR Levels:~~

~~3.3.1.1. TLR Level 5a. Enable additional Interchange Transactions using Firm Point to Point Transmission Service to be implemented after~~

~~all Interchange Transactions using Non-firm Point-to-Point Service have been curtailed, or~~

~~3.3.1.2. TLR Level 5b. Mitigate a SOL or IROL violation that remains after all Interchange Transactions using Non-firm Transmission Service has been curtailed under TLR Level 3b, and following attempts to reconfigure transmission under TLR Level 4.~~



#### ~~4. — Mitigating Constraints On and Off the Contract Path during TLR~~

##### ~~Introduction~~

~~Reserving Transmission Service for an Interchange Transaction along a Contract Path may not reflect the actual distribution of the power flows over the transmission network from generation source to load sink. Interchange Transactions arranged over a Contract Path may, therefore, overload transmission elements on other electrically parallel paths.~~

~~The curtailment priority of an Interchange Transaction depends on whether the Constrained Facility is on or off the Contract Path as detailed below.~~

##### ~~4.1. — Constraints ON the Contract Path~~

~~4.1.1. — The Reliability Coordinator initiating TLR shall consider the entire Interchange Transaction non-firm if the transmission link (i.e., a segment on the Contract Path) on the Constrained Facility is Non-firm Point-to-Point Transmission Service, even if other links in the Contract Path are firm. When the Constrained Facility is on the Contract Path, the Interchange Transaction takes on the Transmission Service Priority of the Transmission Service link with the Constrained Facility regardless of the Transmission Service Priority on the other links along the Contract Path.~~

~~**Discussion.** The Transmission Operator simply has to call its Reliability Coordinator, request the TLR Procedure be initiated, and allow the curtailments of all Interchange Transactions that are at or above the Curtailment Threshold to progress until the relief is realized. Firm Point-to-Point Transmission Service links elsewhere in the Contract Path do not obligate Transmission Providers providing Non-firm Point-to-Point Transmission Service to treat the transaction as firm. For curtailment purposes, the Interchange Transaction's priority will be the priority of the Transmission Service link with the Constrained Facility. (See Requirement 4.1.2 below.)~~

~~4.1.2. — The Reliability Coordinator initiating TLR shall consider the entire Interchange Transaction firm if the transmission link on the Constrained Facility is Firm Point-to-Point Transmission Service, even if other links in the Contract Path are non-firm.~~

~~**Discussion.** The curtailment priority of an Interchange Transaction on a Contract Path link is not affected by the Transmission Service Priorities arranged with other links on the Contract Path. If the Constrained Facility is on a Firm Point-to-Point Transmission Service Contract Path link, then the curtailment priority of the Interchange Transaction is considered firm regardless of the Transmission Service arrangements elsewhere on the Contract Path. If the Transmission Provider provides its services under the FERC pro forma tariff, it may also be obligated to offer its Transmission Customer alternate receipt and delivery points, thus allowing the customer to curtail its Transmission Service over the Constrained Facilities.~~

~~4.2.— Constraints OFF the Contract Path~~

~~4.2.1.— The Reliability Coordinator initiating TLR shall consider the entire Interchange Transaction non-firm if none of the transmission links on the Contract Path are on the Constrained Facility and if any of the transmission links on the Contract Path are Non-firm Point-to-Point Transmission Service; the Interchange Transaction shall take on the lowest Transmission Service Priority of all Transmission Service links along the Contract Path.~~

~~**Discussion.** An Interchange Transaction arranged over a Contract Path where one or more individual links consist of Non-firm Point-to-Point Transmission Service is considered to be a non-firm Interchange Transaction for Constrained Facilities off the Contract Path. Sufficient Interchange Transactions that are at or above the Curtailment Threshold will be curtailed before any Interchange Transactions using Firm Point-to-Point Transmission Service are curtailed. The priority level for curtailment purposes will be the lowest level of Transmission Service arranged for on the Contract Path.~~

~~4.2.2.— The Reliability Coordinator initiating TLR shall consider the entire Interchange Transaction firm if all of the transmission links on the Contract Path are Firm Point-to-Point Transmission Service, even if none of the transmission links are on the Constrained Facility and shall not be curtailed to relieve a Constraint off the Contract Path until all non-firm Interchange Transactions that are at or above the Curtailment Threshold have been curtailed.~~

~~**Discussion.** If the entire Contract Path is Firm Point-to-Point Transmission Service, then the TLR procedure will treat the Interchange Transaction as firm, even for Constraints off the Contract Path, and will not curtail that Interchange Transaction until all non-firm Interchange Transactions that are at or above the Curtailment Threshold have been curtailed. However, Transmission Providers off the Contract Path are not obligated to reconfigure their transmission system or provide other congestion management procedures unless special arrangements are in place. Because the Interchange Transaction is considered firm everywhere, the Reliability Coordinator may attempt to arrange for Transmission Operators to reconfigure transmission or provide other congestion management options or Balancing Authorities to redispatch, even if they are off the Contract Path, to try to avoid curtailing the Interchange Transaction that is using the Firm Point-to-Point Transmission Service.~~

## ~~5. — Parallel Flow Calculation Procedure for Reallocating or Curtailing Firm Transmission Service during TLR~~

### ~~Introduction~~

~~The provision of Point-to-Point Transmission Service, Network Integration Transmission Service and service to Native Load results in parallel flows on the transmission network of other Transmission Operators. When a transmission facility becomes constrained curtailment of Interchange Transactions is required to allow Interchange Transactions of higher priority to be scheduled (Reallocation) or to provide transmission loading relief (Curtailment). An Interchange Transaction is considered for Reallocation or Curtailment if its Transfer Distribution Factor (TDF) exceeds the TLR Curtailment Threshold.~~

~~In compliance with the Transmission Service Provider tariffs, Interchange Transactions using Non-firm Point-to-Point Transmission Service are curtailed first (TLR Level 3a and 3b), followed by transmission reconfiguration (TLR Level 4), and then the curtailment of Interchange Transactions using Firm Point-to-Point Transmission Service, Network Integration Transmission Service and service to Native Load (TLR Level 5a and 5b). Curtailment of Firm Point-to-Point Transmission Service shall be accompanied by the comparable curtailment of Network Integration Transmission Service and service to Native Load to the degree that these three Transmission Services contribute to the Constraint.~~

### ~~5.1. — Requirements~~

~~A methodology, called the Per Generator Method without Counter Flow, or simply the Per Generator Method, has been programmed into the IDC to calculate the portion of parallel flows on any Constrained Facility due to service to Native Load of each Balancing Authority. The following requirements are necessary to assure comparable Reallocation or Curtailment of firm Transmission Service:~~

- ~~8.1.1. — The Reliability Coordinator initiating a curtailment shall identify for curtailment all firm Transmission Services (i.e. Point-to-Point, Network Integration and service to Native Load) that contribute to the flow on any Constrained Facility by an amount greater than or equal to the Curtailment Threshold on a pro-rata basis.~~
- ~~8.1.2. — For Firm Point-to-Point Transmission Services, the Transfer Distribution Factors must be greater than or equal to the Curtailment Threshold.~~
- ~~8.1.3. — For Network Integration Transmission Service and service to Native Load, the Generator To Load Distribution Factors must be greater than or equal to the Curtailment Threshold.~~
- ~~8.1.4. — The Per Generator Method shall assign the amount of Constrained Facility relief that must be achieved by each Balancing Authority's Network Integration Transmission Service or service to Native Load. It shall not specify how the reduction will be achieved.~~
- ~~8.1.5. — All Balancing Authorities in the Eastern Interconnection shall be obligated to achieve the amount of Constrained Facility relief assigned to them by the Per Generator Method.~~

~~8.1.6.—The implementation of the Per Generator Method shall be based on transmission and generation information that is readily available.~~

~~8.2.—Calculation Method~~

~~The calculation of the flow on a Constrained Facility due to Network Integration Transmission Service or service to Native Load shall be based on the Generation Shift Factors (GSFs) of a Balancing Authority's assigned generation and the Load Shift Factors (LSFs) of its native load, relative to the system swing bus. The GSFs shall be calculated from a single bus location in the IDC. The IDC shall report all generators assigned to native load for which the GLDF is greater than or equal to the Curtailment Threshold.~~

## **12. — Interchange Transaction Reallocation During TLR Levels 3a and 5a**

### **Introduction**

This section provides the details for implementing TLR Levels 3a and 5a, both of which provide a means for Reallocation of Transmission Service.

**TLR Level 3a** accomplishes Reallocation by curtailing Interchange Transactions using Non-firm Point-to-Point Transmission Service to allow Interchange Transactions using higher priority Non-firm or Firm Point-to-Point Transmission Service to start. (See **Requirement 2.3, “TLR Level 3a.”**) When a TLR Level 3a is in effect, Reliability Coordinators shall reallocate Interchange Transactions according to the Transactions’ Transmission Service Priorities. Reallocation also includes the orderly reloading of Transactions by priority when conditions permit curtailed Transactions to be reinstated.

**TLR Level 5a** accomplishes Reallocation by curtailing Interchange Transactions using Firm Point-to-Point Transmission Service on a pro-rata basis to allow new Interchange Transactions using Firm Point-to-Point Transmission Service to begin, also on a pro-rata basis. (See **Requirement 2.6, “TLR Level 5a.”**)

### **6.1. — Requirements**

The basic requirements for Transaction Reallocation are as follows:

- 12.1.1.** When identifying transactions for Reallocation the Reliability Coordinator shall normally only involve Curtailments of Interchange Transactions using Non-firm Point-to-Point Transmission Service during TLR 3a. However, Reallocation may be used during TLR 5a to allow the implementation of additional Interchange Transactions using Firm Transmission Service on a pro-rata basis.
- 12.1.2.** When identifying transactions for Reallocation, the Reliability Coordinator shall only consider those Interchange Transactions at or above the Curtailment Threshold for which a TLR 2 or higher is called.
- 12.1.3.** When identifying transactions for Reallocation, the Reliability Coordinator shall displace Interchange Transactions utilizing lower priority Transmission Service with Interchange Transactions utilizing higher Transmission Service Priority.
- 12.1.4.** When identifying transactions for Reallocation, the Reliability Coordinator shall not curtail Interchange Transactions using Non-firm Transmission Service to allow the start or increase of another transaction having the same Non-Firm Transmission Service Priority (marginal “bucket”).
- 12.1.5.** When identifying transactions for Reallocation, the Reliability Coordinator shall reload curtailed Interchange Transactions prior to starting new or increasing existing Interchange Transactions.

~~12.1.6. Interchange Transactions whose tags were submitted prior to the TLR 2 or 3a being called, but were subsequently held from starting because they failed to meet the approved tag submission deadline for Reallocation (see Section 6.2, “Communications and Timing Requirements”), shall be considered to have been curtailed and thus would be eligible for reload at the same time as the curtailed Interchange Transaction.~~

~~12.1.7. The Reliability Coordinator shall reload or start all eligible Transactions on a pro-rata basis.~~

~~12.1.8. Interchange Transactions whose tags meet the approved tag submission deadline for Reallocation (see Section 6.2, “Communications and Timing Requirements”) shall be considered for Reallocation for the upcoming hour. (However, Interchange Transactions using Firm Point to Point Transmission Service shall be allowed to start as scheduled.) Interchange Transactions whose tags are submitted to the IDC after the approved tag submission deadline for Reallocation shall be considered for Reallocation the following hour. This applies to Interchange Transactions using either Non-firm Point to Point Transmission Service or Firm Point to Point Transmission Service. If an Interchange Transaction using Firm Interchange Transaction is submitted after the approved tag submission deadline and after the TLR is declared, that Transaction shall be held and then allowed to start in the upcoming hour.~~

~~It should be noted that calling a TLR 3a does not necessarily mean that Interchange Transactions using Non-firm Transmission Service will always be curtailed the next hour. However, TLR Levels 3a and 5a trigger the approved tag submission deadline for Reallocation requirements and allow for a coordinated assessment of all Interchange Transactions tagged to start the upcoming hour.~~

**6.2. Communication and Timing Requirements**

The following timeline shall be utilized to support Reallocation decisions during TLR Levels 3a or 5a. See Figures 2 and 3 for a depiction of the Reallocation Time Line.

**6.2.1. Time Convention.** In this document, the beginning of the current hour shall be referenced as 00:00. The beginning of the next hour shall be referenced as 01:00. The end of the next hour shall be referenced as 02:00. See Figure 1.

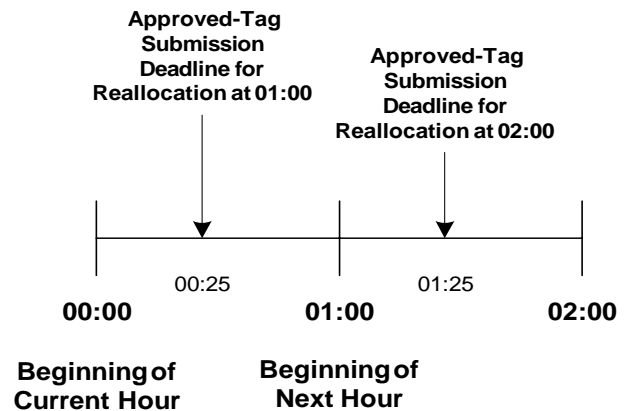


Figure 1 - Timeline showing Approved-tag Submission Deadline for Reallocation

~~6.2.2.—Approved tag submission deadline for Reallocation~~ Reliability

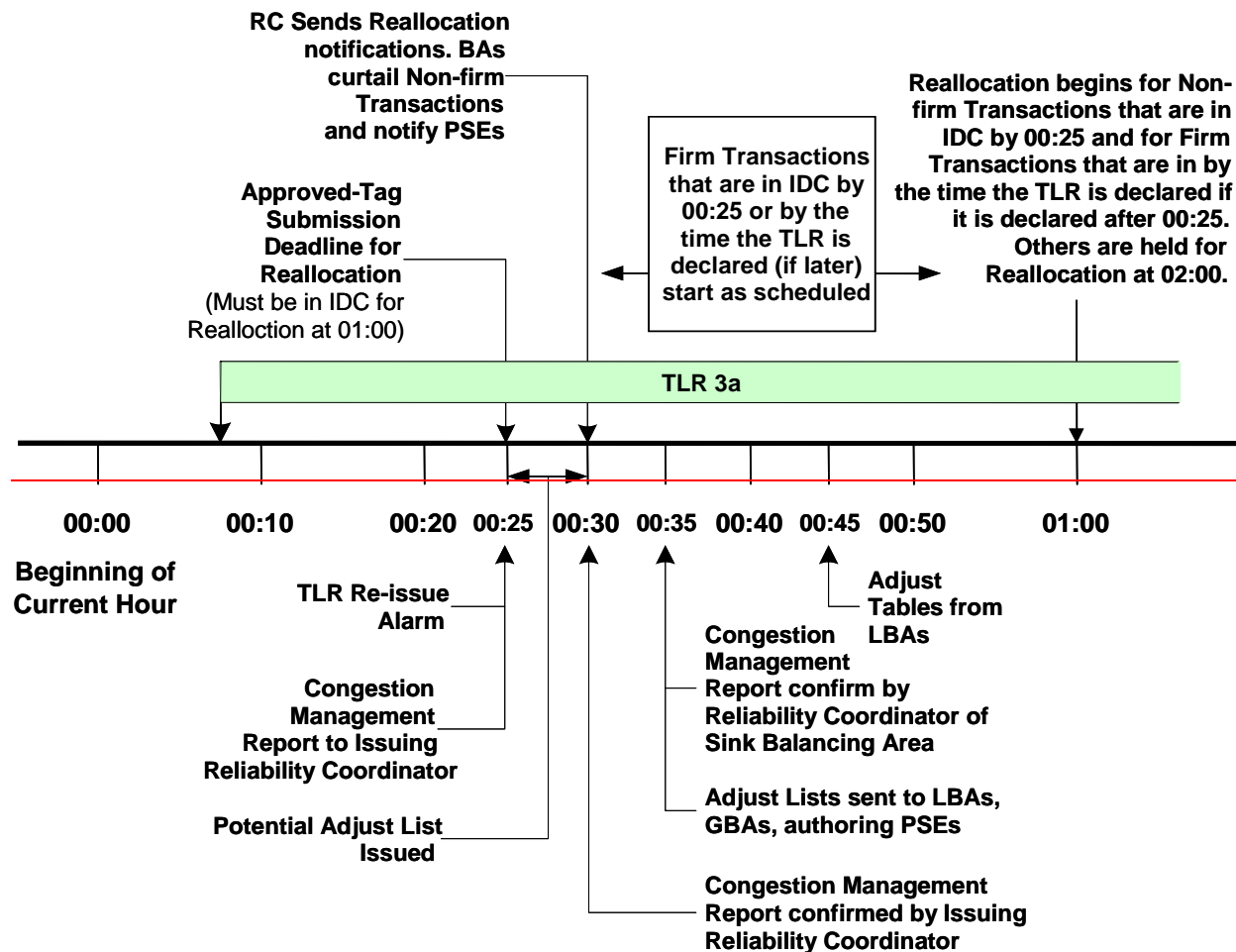
~~Coordinators shall consider all approved Tags for Interchange Transactions at or above the Curtailment Threshold that have been submitted to the IDC by 00:25 for Reallocation at 01:00. See Figure 1. However, Interchange Transactions using Firm Point-to-Point Transmission Service will be allowed to start as scheduled.~~

~~6.2.2.1. Reliability Coordinators shall consider all approved tags submitted to the IDC beyond these deadlines for Reallocation at 02:00 (for both Firm and Non-firm Point-to-Point Transmission Service). However, these Interchange Transactions will not be allowed to start or increase at 01:00.~~

~~6.2.2.2. The approved tag submission deadline for Reallocation shall cease to be in effect as soon as the TLR level is reduced to 1 or 0.~~

~~6.2.3.—Off-hour Transactions.~~ Interchange Transactions with a start time other than xx:00 shall be considered for Reallocation at xx+1:00. For example, an Interchange Transaction with a start time of 01:05 and whose Tag was submitted at 00:15 will be considered for Reallocation at 02:00.

~~6.2.4.—Tag Evaluation Period.~~ Balancing Authorities and Transmission Providers shall evaluate all tags submitted for Reallocation and shall communicate approval or rejection by 00:25.



**Figure 2 — Reallocation Timing for TLR 3a Called at 00:08**

**6.2.5. Collective Scheduling Assessment Period.** At 00:25, the initiating Reliability Coordinator (the one who called and still has a TLR 3a or 5a in effect) shall run the IDC to obtain a three-part list of Interchange Transactions including their transaction status:

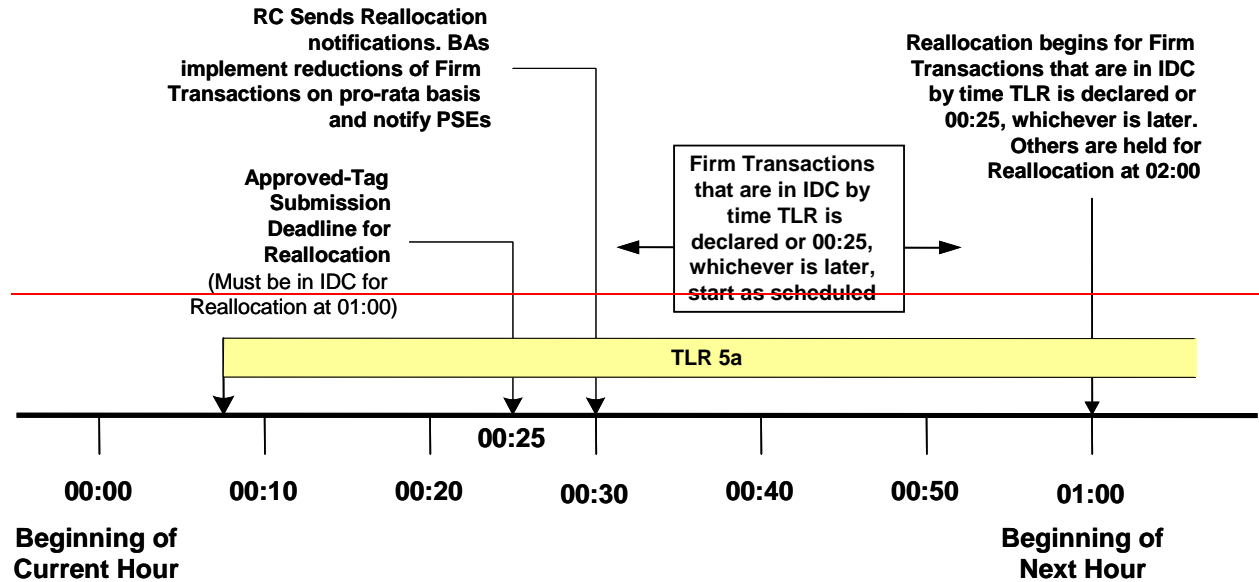
**6.2.5.1.** Interchange Transactions that may start, increase, or reload shall have a status of PROCEED, and

**6.2.5.2.** Interchange Transactions that must be curtailed or Interchange Transactions whose tags were submitted prior to the TLR 2 or higher being declared but were not permitted to start or increase shall have a status of CURTAILED, and

**6.2.5.3.** Interchange Transactions that are entered into the IDC after 00:25 shall have a status of HOLD and be considered for Reallocation at 02:00. Also, Interchange Transactions using Non-firm Point-to-Point Transmission Service submitted after TLR 2 or higher was declared (“post-tagged”) but have not been allowed to start shall retain the HOLD status until given permission to PROCEED or E-



~~Tag expires. (Note: TLR Level 2 does not hold Interchange Transactions using Firm Point-to-Point Transmission Service).~~



**Figure 3 — Reallocation timing for TLR 5a called at 00:08.**

~~6.2.5.4. The initiating Reliability Coordinator shall communicate the list of Interchange Transactions to the appropriate sink Reliability Coordinators via the IDC, who shall in turn communicate the list to the Sink Balancing Authorities at 00:30 for appropriate actions to implement Interchange Transactions (CURTAIL, PROCEED or HOLD). The IDC will prompt the initiating Reliability Coordinator to input the necessary information (i.e., maximum flowgate loading and curtailment requirement) into the IDC by 00:25.~~

~~6.2.5.5. Subsequent required reports before 01:00 shall allow the Reliability Coordinators to include those Interchange Transactions whose tags were submitted to the IDC after the Approved-Tag Submission Time for Reallocation and were given the HOLD status (not permitted to PROCEED). Transactions at or above the Curtailment Threshold that are not indicated as “PROCEED” on Reload/Reallocation Report shall not be permitted to start or increase the next hour.~~

~~**Discussion:** Note that TLR 2 does not initiate the approved tag submission deadline for Reallocation, but a TLR3a or 5a does. It is, however, important to recognize the time when a TLR 2 is called, where applicable, to determine the status of a held transaction — “CURTAILED” if tagged before the TLR was called but “HOLD” if tagged after the TLR was called.~~

~~6.2.5.6. In running the IDC, the Reliability Coordinator shall have an option to specify the maximum loading of the Constrained Facility by all Interchange Transactions using Point to Point Transmission Service.~~

~~**Discussion:** This allows the Reliability Coordinator to take into consideration SOLs or IROLs and changes in Transactions using other than Point to Point service taken under the Open Access Transmission Tariff. This option is needed to avoid loading the Constrained Facility to its limit with known Interchange Transactions while other factors push the facility into a SOL or IROL violation and hence triggering the declaration of a TLR 3b or 5b.~~

~~6.2.5.7. Notification of Interchange Transaction status shall be provided from the IDC to the Reliability Coordinators via an IDC Report. The Reliability Coordinators shall communicate this information to the Balancing Authorities and Transmission Operators.~~

~~Additional reporting and communications details on information posted from the IDC to the NERC TLR website are contained in Appendix E.~~

~~6.2.6. **Customer Preferences on Timing to Call TLR 3a or 5a.** Reliability Coordinators shall leave a TLR 2 and call a TLR 3a as soon as possible (but no later than 30 minutes) to initiate the Approved Tag Submission Deadline and start reallocating Transactions. Nevertheless, recognizing the approved tag submission deadline for Reallocation, from a Transmission Customer perspective, it is preferable that the Reliability Coordinator call a TLR 3a within a certain time period to allow for tag preparation and submission. See Figure 4.~~

~~**Discussion:** A Reliability Coordinator calls a TLR 2 or 3a whenever it deems necessary to indicate that a transmission facility is approaching its SOL or IROL. It is envisioned, though not required, that a TLR 2 or 3a is preceded by a period of a TLR 1 declaration, hence Transmission Customers should normally have advance notice of a potential constraint. For example, a TLR 3a initiated during the period 01:00 to 01:25 would allow the Purchasing-Selling Entity to submit a Tag for entry into the IDC by the Approved Tag Submission Deadline for Reallocation at 02:00. See Figure 4. However, the preferred time period to declare a TLR 3a or 5a would be between 00:40 (when tags for Next Hour Market have been submitted) and 01:15. This will allow the Transmission Customers a range of 15 to 35 minutes to prepare and submit tags. (Note: In this situation, the Reliability Coordinator would need to reissue the TLR 3a at 01:00.)~~

~~It must be emphasized that the preferred time period is not a requirement, and should not in any way impede a Reliability Coordinator's ability to declare a TLR 3a, 3b, 4, 5a, or 5b whenever the need arises.~~

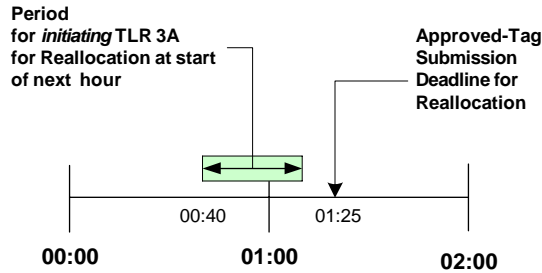


Figure 4. “Ideal” time for issuing TLR 3a for Reallocation at 02:00.

~~7. Interchange Transaction Curtailments During TLR Level 3b~~

~~Introduction~~

~~This section provides the details for implementing TLR Level 3b, which curtails Interchange Transactions using Non firm Point to Point Transmission Service to assist the Reliability Coordinator to recover from SOL or IROL violations.~~

~~TLR Level 3b curtails Interchange Transactions using Non firm Point to Point Transmission Service that are at or above the Curtailment Threshold in the current hour while Reallocating to a determined flow for the top of the next hour (See Requirement 2.4, “TLR Level 3b.”).~~

~~Requirements~~

~~7.1. The Reliability Coordinator shall be allowed to call a TLR 3b at any time to help mitigate a SOL or IROL violation.~~

~~7.2. The Reliability Coordinator shall consider only those Interchange Transactions at or above the Curtailment Threshold for curtailment or holding.~~

~~7.3. The Reliability Coordinator shall curtail existing Interchange Transactions using Non firm Point to Point Transmission Service as necessary to provide the required relief on the Constrained Facility for the current hour.~~

~~7.4. The Reliability Coordinator shall Reallocate Interchange Transactions using Non firm Point to Point Transmission Service in accordance with Section 6 of this document for the next hour to maintain the desired flow using Reallocation in accordance with the following timing specification:~~

~~7.4.1. If issued prior to XX: 25, Non firm Interchange Transactions will be curtailed to meet the desired current hour relief~~

~~7.4.1.1. At XX: 25 a Reallocation will be performed to maintain the desired flow at the top of the following hour~~

~~7.4.2. If issued after XX: 25, Non firm Interchange Transactions will be curtailed to meet the desired current hour relief and a Reallocation will be performed to maintain the target flow identified for the current hour.~~

- ~~7.4.3. Transactions must be in the IDC by the Approved tag Submission Deadline for Reallocation (see Requirement 6.2).~~
- ~~7.5. The Reliability Coordinator shall allow Interchange Transactions using Firm Point-to-Point Transmission Service to start as explained in Appendix F, “Considerations for Interchange Transactions using Firm Point-to-Point Transmission Service.”~~
- ~~7.6. The Reliability Coordinator shall progress to TLR Level 5b as necessary if there is still insufficient transmission capacity for Interchange Transactions using Firm Point-to-Point Transmission Service to start as scheduled after all Interchange Transactions using Non-firm Point-to-Point Transmission Service have been curtailed.~~
- ~~7.7. The IDC shall issue ADJUST Lists to the Generation and Load Balancing Authority Areas and the Purchasing-Selling Entity who submitted the tag. The ADJUST List will include:~~
- ~~7.7.1. Interchange Transactions using Non-firm Point-to-Point Transmission Service that are to be curtailed or held during current and next hours.~~
- ~~7.7.2. Interchange Transactions using Firm Point-to-Point Transmission Service that were entered after XX:25 or issuance of TLR 3b (see Case 3 in Appendix F).~~
- ~~7.8. The Sink Balancing Authority shall send the ADJUST Lists back to the IDC as soon as possible to ensure the most accurate calculations for actions subsequent to the TLR 3b being called.~~
- ~~7.9. The Reliability Coordinator will no longer be required to call a TLR Level 3a as soon as the SOL or IROL violation that caused the TLR 3b to be called has been mitigated due to the inherent next hour Reallocation that takes place for the top of the next hour in the TLR Level 3b.~~

~~Appendices for Transmission Loading Relief Standard~~

~~Appendix A. Transaction Management and Curtailment Process.~~

~~Appendix B. Transaction Curtailment Formula.~~

~~Appendix C. Sample NERC Transmission Loading Relief Procedure Log.~~

~~Appendix D. Examples for Parallel Flow Calculation Procedure for Reallocating or Curtailing Firm Transmission Service.~~

~~Appendix E. How the IDC Handles Reallocation.~~

~~Section E1: Summary of IDC Features that Support Transaction Reloading/Reallocation.~~

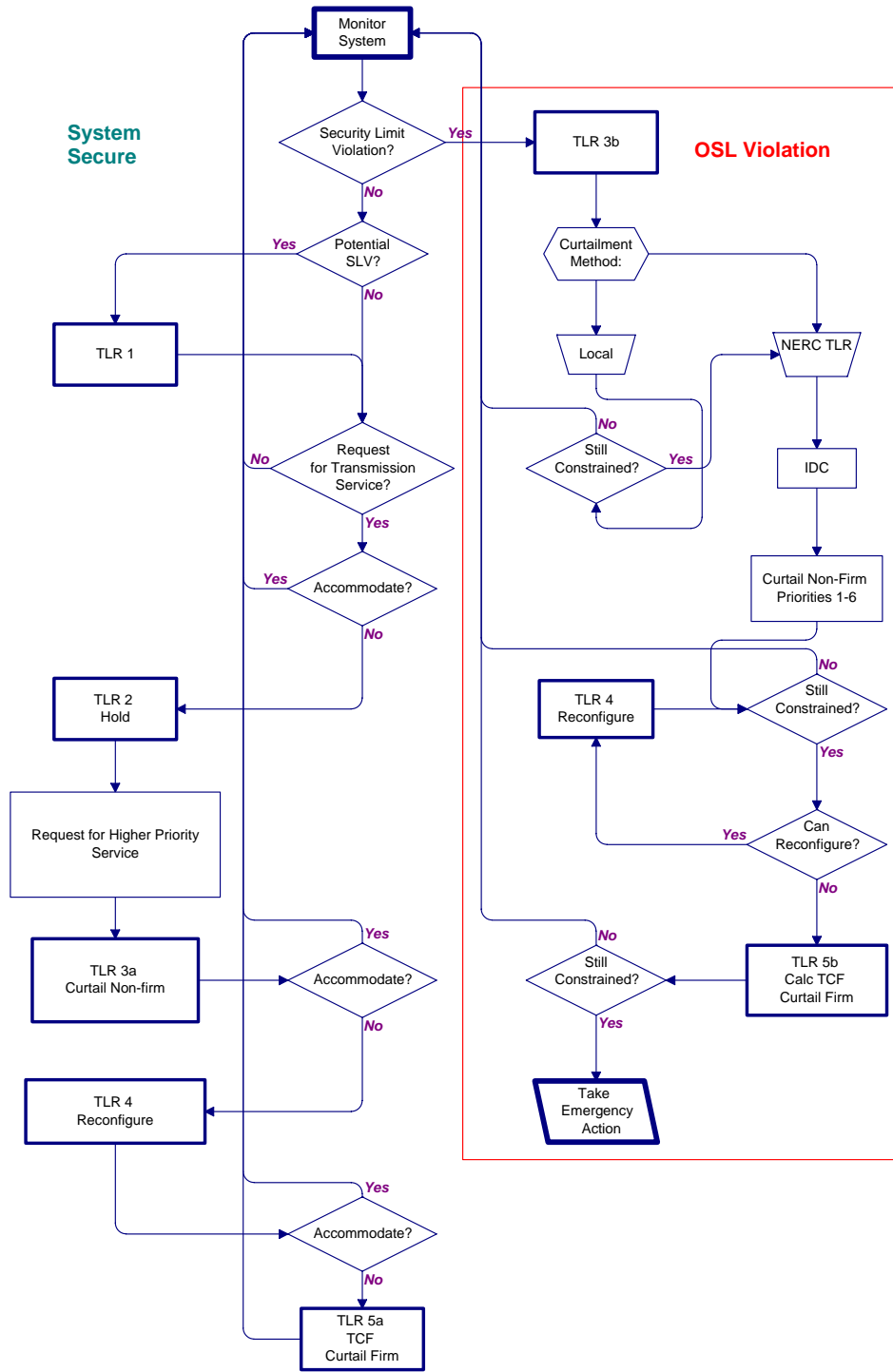
~~Section E2: Timing Requirements.~~

~~Appendix F. Considerations for Interchange Transactions using Firm Point-to-Point Transmission Service.~~

~~Appendix G. Examples of On-Path and Off-Path Mitigation.~~

**Appendix A. Transaction Management and Curtailment Process**

This flowchart depicts an overview of the Transaction Management and Curtailment process. Detailed decisions are not shown.



**Appendix B. Transaction Curtailment Formula**

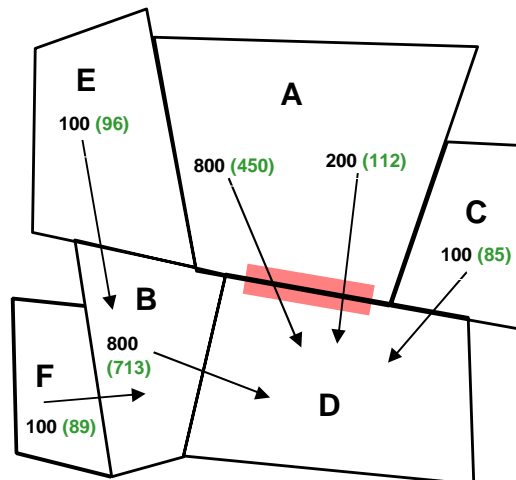
**Example**

This example is based on the premise that a transaction should be curtailed in proportion to its Transfer Distribution Factor on the Constraints. Its effect on the interface is a combination of its size in MW and its effect based on its distribution factor.

Column	Description
1. Initial Transaction	Interchange Transaction before the TLR Procedure is implemented.
2. Distribution Factor	Proportional effect of the Transaction over the constrained interface due to the physical arrangement and impedance of the transmission system.
3. Impact on the Interface	Result of multiplying the Transaction MW by the distribution factor. This yields the MW that flow through the constrained interface from the Transaction. Performing this calculation for each Transaction yields the total flow through the constrained interface from all the Interchange Transactions. In this case, 760 MW.
4. Impact Weighting Factor	“Normalization” of the total of the Distribution Factors in Column 2. Calculated by dividing the Distribution Factor for each Transaction by the total of the Distribution Factors.
5. Weighted Maximum Interface Reduction	Multiplying the Impact on the Interface from each Transaction by its Impact Weighting Factor yields a new proportion that is a combination of the MW Impact on the Interface and the Distribution Factor.
6. Interface Reduction	Multiplying the amount needed to reduce the flow over the constrained interface (280 MW) by the normalization of the Weighted Maximum Interface Reduction yields the actual MW reduction that each Transaction must <i>contribute</i> to achieve the total reduction.
7. Transaction Reduction	Now divide by the Distribution Factor to see how much the Transaction must be reduced to yield the result calculated in Column 7. Note that the reductions for the first two Interchange Transactions (A-D (1) and A-D (2)) are in proportion to their size since their distribution factors are equal.
8. New Transaction Amount	Subtracting the Transaction Reduction from the Initial Transaction yields the New Transaction Amount.
9. Adjusted Impact on Interface	A check to ensure the new constrained interface MW flow has been reduced to the target amount.

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Allocation based on Weighted Impact									
Transaction ID	1 Initial Transaction	2 Distribution Factor	3 (1)*(2) Impact On Interface	4 (2)/(2TOT) Impact weighting factor	5 (3)*(4) Weighted Max Interface Reduction	6 (5)*(Relief Requested)/(5 Tot) Interface Reduction	7 (6)/(2) Transaction Reduction	8 (1)-(7) New Transaction Amount	9 (8)*(2) Adjusted Impact On Interface
<b>Example 1</b>									
A-D(1)	800	0.6	480	0.34	164.57	209.73	349.54	450.46	270.27
A-D(2)	200	0.6	120	0.34	41.14	52.43	87.39	112.61	67.57
B-D	800	0.15	120	0.09	10.29	13.11	87.39	712.61	106.89
C-D	100	0.2	20	0.11	2.29	2.91	14.56	85.44	17.09
E-B	100	0.05	5	0.03	0.14	0.18	3.64	96.36	4.82
F-B	100	0.15	15	0.09	1.29	1.64	10.92	89.08	13.36
	<b>2100</b>	<b>1.75</b>	<b>760</b>		<b>219.71</b>	<b>280.00</b>	<b>553.45</b>	<b>1546.55</b>	<b>480.00</b>
<b>Example 2</b>									
A-D(1)	1000	0.6	600	0.52	313.04	262.16	436.93	563.07	337.84
B-D	800	0.15	120	0.13	15.65	13.11	87.39	712.61	106.89
C-D	100	0.2	20	0.17	3.48	2.91	14.56	85.44	17.09
E-B	100	0.05	5	0.04	0.22	0.18	3.64	96.36	4.82
F-B	100	0.15	15	0.13	1.96	1.64	10.92	89.08	13.36
	<b>2100</b>	<b>1.15</b>	<b>760</b>		<b>334.35</b>	<b>280.00</b>	<b>553.45</b>	<b>1546.55</b>	<b>480.00</b>
<b>Example 3</b>									
A-D(1A)	200	0.6	120	0.17	20.28	52.43	87.39	112.61	67.57
A-D(1B)	200	0.6	120	0.17	20.28	52.43	87.39	112.61	67.57
A-D(1C)	200	0.6	120	0.17	20.28	52.43	87.39	112.61	67.57
A-D(1D)	200	0.6	120	0.17	20.28	52.43	87.39	112.61	67.57
A-D(2)	200	0.6	120	0.17	20.28	52.43	87.39	112.61	67.57
B-D	800	0.15	120	0.04	5.07	13.11	87.39	712.61	106.89
C-D	100	0.2	20	0.06	1.13	2.91	14.56	85.44	17.09
E-B	100	0.05	5	0.01	0.07	0.18	3.64	96.36	4.82
F-B	100	0.15	15	0.04	0.63	1.64	10.92	89.08	13.36
	<b>2100</b>	<b>3.55</b>	<b>760</b>		<b>108.31</b>	<b>280.00</b>	<b>553.45</b>	<b>1546.55</b>	<b>480.00</b>



**Board of Trustees Adoption: August 2, 2006 Draft 1: May 1, 2007**  
**Proposed Effective Date: E.2. effective upon effective Upon BOT adoption;**  
**Effective date for other changes to be announced.**



**Appendix C. Sample NERC Transmission Loading Relief Procedure Log**

SAVE FILE DIRECTORY:

**NERC TRANSMISSION LOADING RELIEF (TLR) PROCEDURE LOG**

FILE SAVED AS: .XLS

INCIDENT:	DATE:	IMPACTED RELIABILITY COORDINATOR:	ID NO:
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**INITIAL CONDITIONS**

Limiting Flowgate (LIMIT):	Rating:	Contingent Flowgate (CONT.):	ODF:
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<p><b>TLR Levels</b></p> <p>0: TLR Incident Canceled</p> <p>1. Notify Reliability Coordinators of potential problems.</p> <p>2: Halt additional transactions that contribute to the overload</p> <p>3a and 3b: Curtail transactions using Non-firm Transmission Service</p> <p>4. Reconfigure to continue firm transactions if needed.</p> <p>5a and 5b: Curtail Transactions using Firm Transmission Service.</p> <p>6: Implement emergency procedures.</p>	<p><b>Priorities</b></p> <p>NX Next Hour Market Service</p> <p>NS Service over secondary receipt and delivery points</p> <p>NH Hourly Service</p> <p>ND Daily Service</p> <p>NW Weekly Service</p> <p>NM Monthly Service</p> <p>NN Non-firm imports for native load and network customers from non-designated network resources</p> <p>F Firm Service</p>
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**TLR ACTIONS**

LEVEL	TIME	Priority	TLR 3,4		MW Flow			COMMENTS ABOUT ACTIONS
			No. TX Curtail	TLR 3,4 MW Curtail	Limiting Element		Cont. Element	
					Present	Post Cont.	Present	

**Appendix D. Examples for Parallel Flow Calculation Procedure  
for Reallocating or Curtailing Firm Transmission Service**

The NERC “Parallel Flow Calculation Procedure Reference Document” provides additional information about the criteria used to include generators in the IDC calculation process.

**Example of Results of Calculation Method**

An example of the output of the IDC calculation of curtailment of firm Transmission Service is provided below for the specific Constrained Facility identified in the *Book of Flowgates* as Flowgate 1368. In this example, a total Firm Point-to-Point contribution to the Constrained Facility, as calculated by the IDC, is assumed to be 21.8 MW.

The table below presents a summary of each Balancing Authority’s responsibility to provide relief to the Constrained Facility due to its Network Integration Transmission Service and service to Native Load contribution to the Constrained Facility. In this example, Balancing Authority LAGN would be requested to curtail 17.3 MW of its total of 401.1 MW of flow contribution on the Constrained Facility. See the “Parallel Flow Calculation Procedure Reference Document” for additional details regarding the information illustrated in the table (e. g. Scaled P Max and Flowgate NNative Load MW).

In summary, Interchange transactions would be curtailed by a total of 21.8 MW and Network Integration Transmission Service and service to Native Load would be curtailed by a total of 178.2 MW by the five Balancing Authorities identified in the table. These curtailments would provide a total of 200.0 MW of relief to the Constrained Facility.

Sink Reliability Coordinator	Service Point	Scaled P Max	Flowgate NNative Load MW	Current NNative Load Relief	NNative Load Responsibility		NNative Load Responsibility Acknowledgement	
					Ine/Dec	Current Hr	Acknowledge Time	Total MW Resp.
EES	EES	8429.7	2991.4	0.0	128.9	128.9	13:44	128.9
EES	LAGN	1514.0	718.6	0.0	31.0	31.0	13:44	31.0
SOCO	SOCO	5089.2	401.1	0.0	17.3	17.3	13:44	17.3
SWPP	CLEC	235.7	18.0	0.0	0.8	0.8	13:42	0.8
SWPP	LEPA	22.8	4.1	0.0	0.2	0.2	13:42	0.2
<b>Total</b>				<b>0.0</b>				

### **Appendix E. How the IDC Handles Reallocation**

The IDC algorithms reflect the Reallocation and reloading principles in this Appendix, as well as the reporting requirements, and status display. The IDC will obtain the Tag Submittal Time from the Tag Authority and post the Reloading/Reallocation information to the NERC TLR website.

A summary of IDC features that support the Reallocation process is provided in Attachment E1. Details on the interface and display features are provided in Attachment E2. Refer to Version 1.7.095 NERC Transaction Information Systems Working Group (TISWG) *Electronic Tagging Functional Specification* for details about the E-Tag system.

#### **E1. Summary of IDC Features that Support Transaction Reloading/Reallocation**

The following is a summary of IDC features and E-Tag interface that support Reloading/Reallocation:

##### **Information posted from IDC to NERC TLR website.**

1. Restricted directions (all source/sink combinations that impact a Constrained Facility(ies) with TLR 2 or higher) will be posted to the NERC TLR website and updated as necessary.
2. TLR Constrained Facility status and Transfer Distribution Factors will continue to be posted to NERC TLR website.
3. Lowest priority of Interchange Transactions (marginal “bucket”) to be Reloaded/Reallocated next hour on each TLR Constrained Facility will be posted on NERC TLR website. This will provide an indication to the market of priority of Interchange Transactions that may be Reloaded/Reallocated the following hours.

##### **IDC Logic, IDC Report, and Timing**

1. The Reliability Coordinator will run the IDC the Reloading/Reallocation report at approximately 00:26. The IDC will prompt the Reliability Coordinator to enter a maximum loading value. The IDC will alarm if the Reliability Coordinator does not enter this value and issue a report by 00:30 or change from TLR 3a Level. The Report will be distributed to Balancing Authorities and Transmission Operators at 00:30. This process repeats every hour as long as the approved tag submission deadline for Reallocation is in effect (or until the TLR level is reduced to 1 or 0).
2. For Interchange Transactions in the restricted directions, tags must be submitted to the IDC by the approved tag submission deadline for Reallocation to be considered for Reallocation next hour. The time stamp by the Tag Authority is regarded the official tag submission time.
3. Tags submitted to IDC after the approved tag submission deadline for Reallocation will not be allowed to start or increase but will be considered for Reallocation the next hour.
4. Interchange Transactions in restricted directions that are not indicated as “PROCEED” on the Reload/Reallocation Report will not be permitted to start or increase next hour.

### **Reloading/Reallocation Transaction Status**

~~Reloading/Reallocation status will be determined by the IDC for all Interchange Transactions. The Reloading/Reallocation status of each Interchange Transaction will be listed on IDC reports and NERC TLR website as appropriate. An Interchange Transaction is considered to be in a restricted direction if it is at or above the Curtailment Threshold. Interchange Transactions below the Curtailment Threshold are unrestricted and free to flow subject to all applicable Reliability Standards and tariff rules.~~

- ~~1. **HOLD.** Permission has not been given for Interchange Transaction to start or increase and is waiting for the next Reloading/Reallocation evaluation for which it is a candidate. Interchange Transactions with E-tags submitted to the Tag Authority prior to TLR 2 or higher being declared (pre-tagged) will change to CURTAILED Status upon evaluation that does not permit them to start or increase. Transactions with E-tags submitted to Tag Authority after TLR 2 or higher was declared (post-tagged) will retain HOLD Status until given permission to proceed or E-Tag expires.~~
- ~~2. **CURTAILED.** Transactions for which E-Tags were submitted to Tag Authority prior to TLR 2 or higher being declared (pre-tagged) and ordered to be curtailed totally, curtailed partially, not permitted to start, or not permitted to increase. Interchange Transactions (pre-tagged or post-tagged) that were flowing and ordered to be reduced or totally curtailed. The Balancing Authority will indicate to the IDC through the E-Tag adjustment table the Interchange Transaction's curtailed values.~~
- ~~3. **PROCEED:** Interchange Transaction is flowing or has been permitted to flow as a result of Reloading/Reallocation evaluation. The Balancing Authority will indicate through the E-Tag adjustment table to IDC if Interchange Transaction will reload, start, or increase next hour per Purchasing-Selling Entity's energy schedule as appropriate.~~

### **Reallocation/Reloading Priorities**

- ~~1. Interchange Transaction candidates are ranked for loading and curtailment by priority as per Section 4, "Principles for Mitigating Constraints On and Off the Contract Path." This is called the "Constrained Path Method," or CPM. (secondary, hourly, daily, ... firm etc). Interchange Transactions are curtailed and loaded pro-rata within priority level per TLR algorithm.~~
- ~~2. Reloading/Reallocation of Interchange Transactions are prioritized first by priority per CPM. E-Tags must be submitted to the IDC by the approved tag submission deadline for Reallocation of the hour during which the Interchange Transaction is scheduled to start or increase to be considered for Reallocation.~~
- ~~3. During Reloading/Reallocation, Interchange Transactions using lower priority Transmission Service will be curtailed pro-rata to allow higher priority transactions to reload, increase, or start. Equal priority Interchange Transactions will not reload, start, or increase by pro-rata Curtailment of other equal priority Interchange Transactions.~~
- ~~4. Reloading of Interchange Transactions using Non-firm Transmission Service with CURTAILED Status will take precedence over starting or increasing of Interchange~~

~~Transactions using Non-firm Transmission Service of the same priority with PENDING Statuses.~~

- ~~5. Interchange Transactions using Firm Point-to-Point Transmission Service will be allowed to start as scheduled under TLR 3a as long as their E-Tag was received by the IDC by the approved tag submission deadline for Reallocation of the hour during which the Interchange Transaction is due to start or increase, regardless of whether the E-tag was submitted to the Tag Authority prior to TLR 2 or higher being declared or not. If this is the initial issuance of the TLR 3a, Interchange Transactions using Firm Point-to-Point Transmission Service will be allowed to start as scheduled as long as their E-Tag was received by the IDC by the time the TLR is declared.~~

#### **Total Flow Value on a Constrained Facility for Next Hour**

- ~~1. The Reliability Coordinator will calculate the change in net flow on a Constrained Facility due to Reallocation for the next hour based on:
  - Present constrained facility loading, present level of Interchange Transactions, and Balancing Authorities NNative Load responsibility (TLR Level 5a) impacting the Constrained Facility;
  - SOLs or IROLs, known interchange impacts and Balancing Authority NNative Load responsibility (TLR Level 5a) on the Constrained Facility the next hour, and
  - Interchange Transactions scheduled to begin the next hour.~~
- ~~2. The Reliability Coordinator will enter a maximum loading value for the constrained facility into the IDC as part of issuing the Reloading/Reallocation report.~~
- ~~3. The Reliability Coordinator is allowed to call for TLR 3a or 5a when approaching a SOL or IROL to allow maximum transactional flow next hour, and to manage flows without violating transmission limits.~~
- ~~4. The simultaneous curtailment and Reallocation for a Constrained Facility is allowed. This reduces the flow over the Constrained Facility while allowing Interchange Transactions using higher priority Transmission Service to start or increase the next hour. This may be used to accommodate change in flow next hour due to changes other than Point-to-Point Interchange Transactions while respecting the priorities of Interchange Transactions flowing and scheduled to flow the next hour. The intent is to reduce the need for using TLR 3b, which prevents new Interchange Transactions from starting or increasing the next hour.~~
- ~~5. The Reliability Coordinator must allow Interchange Transactions to be reloaded as soon as possible. Reloading must be in an orderly fashion to prevent a SOL or IROL violation from (re)occurring and requiring holding or curtailments in the restricted direction.~~

**E2. Timing Requirements**

**TLR Levels 3a and 5a Issuing/Processing Time Requirement**

1. ~~In order for the IDC to be reasonably certain that a TLR Level 3a or 5a re-allocation/reloading report in which all tags submitted by the approved tag submission deadline for Reallocation are included, the report must be generated no earlier than 00:25 to allow the 10 minute approval time for Transactions that start next hour.~~
2. ~~In order to allow a Reliability Coordinator to declare a TLR Level 3a or 5a at any time during the hour, the TLR declaration and Reallocation/Reloading report distribution will be treated as independent processes by the IDC. That is, a Reliability Coordinator may declare a TLR Level 3a or 5a at any time during the course of an hour. However, if a TLR Level 3a or 5a is declared for the next hour prior to 00:25 (see Figure 5 at right), the Reallocation/Reloading report that is generated will be made available to the issuing Reliability Coordinator only for previewing purposes, and cannot be distributed to the other Reliability Coordinators or the market. Instead, the issuing Reliability Coordinator will be reminded by an IDC alarm at 00:25 to generate a new Reallocation/Reloading report that will include all tags submitted prior to the approved tag submission deadline for Reallocation.~~
3. ~~A TLR Level 3a or 5a Reallocation/Reloading report must be confirmed by the issuing Reliability Coordinator prior to 00:30 in order to provide a minimum of 30 minutes for the Reliability Coordinators with tags sinking in its Reliability Area to coordinate the Reallocation and Reloading with the Sink Balancing Authorities. This provides only 5 minutes (from 00:25 to 00:30) for the issuing Reliability Coordinator to generate a Reallocation/Reloading report, review it, and approve it.~~
4. ~~The TLR declaration time will be recorded in the IDC for evaluating transaction sub-priorities for Reallocation/Reloading purposes (see Subpriority Table, in the **IDC Calculations and Reporting** section below).~~

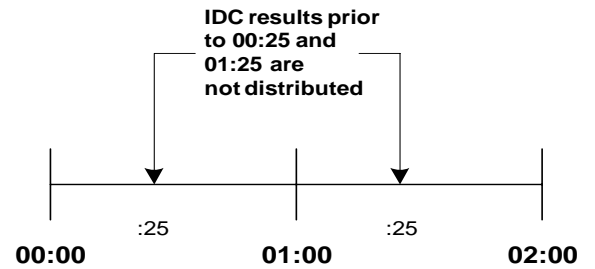


Figure 5 - IDC report may be run prior to 00:25, but results are not distributed.

**Re-Issuing of a TLR Level 2 or Higher**

Each hour, the IDC will automatically remind the issuing Reliability Coordinator (via an IDC alarm) of a TLR level 2 or higher declared in the previous hour or earlier about re-issuing the TLR. The purpose of the reminder is to enable the Reliability Coordinator to Reallocate or reload currently halted or curtailed Interchange Transactions next hour. The reminder will be in the form of an alarm to the issuing Reliability Coordinator, and will take place at 00:25 so that, if the Reliability Coordinator re-issues the TLR as a TLR level 3a or 5a, all tags submitted prior to the approved tag submission deadline for Reallocation are available in the IDC.

**IDC Assistance with Next Hour Point-to-Point Transactions**

In order to assist a Reliability Coordinator in determining the MW relief required on a Constrained Facility for the next hour for a TLR level 3a or 5a, the IDC will calculate and present the total MW impact of all currently flowing and scheduled Point to Point Transactions

~~for the next hour. In order to assist a Reliability Coordinator in determining the MW relief required on a Constrained Facility for the next hour during a TLR level 5a, the IDC will calculate and present the total MW impact of all currently flowing and scheduled Point to Point Transactions for the next hour as well as Balancing Authority with flows due to service to Network Customers and Native Load. The Reliability Coordinator will then be requested to provide the total incremental or decremental MW amount of flow through the Constrained Facility that can be allowed for the next hour. The value entered by the Reliability Coordinator and the IDC calculated amounts will be used by the IDC to identify the relief/reloading amounts (delta incremental flow value) on the constrained facility. The IDC will determine the Transactions to be reloaded, reallocated, or curtailed to make room for the Transactions using higher priority Transmission Service. The following examples show the calculation performed by IDC to identify the “delta incremental flow:”~~

**Example 1**

<del>Flow to maintain on Facility</del>	<del>800 MW</del>
<del>Expected flow next hour from Transactions using Point to Point Transmission Service</del>	<del>950 MW</del>
<del>Contribution from flow next hour from service to Network customers and Native Load</del>	<del>-100 MW</del>
<del>Expected Net flow next hour on Facility</del>	<del>850 MW</del>
<del>Amount of Transactions using Point to Point Transmission Service to hold for Reallocation</del>	<del>850 MW — 800 MW = 50 MW</del>
<del>Amount to enter into IDC for Transactions using Point to Point Transmission Service</del>	<del>950 MW — 50 MW = 900 MW</del>

**Example 2**

<del>Flow to maintain on Facility</del>	<del>800 MW</del>
<del>Expected flow next hour from Transactions using Point to Point Transmission Service</del>	<del>950 MW</del>
<del>Contribution from flow next hour from service to Network customers and Native Load</del>	<del>50 MW</del>
<del>Expected Net flow next hour on Facility</del>	<del>1000 MW</del>
<del>Amount of Transactions using Point to Point Transmission Service to hold for Reallocation</del>	<del>1000 MW — 800 MW = 200 MW</del>
<del>Amount to enter into IDC for Transactions using Point to Point Transmission Service</del>	<del>950 MW — 200 MW = 750 MW</del>

**Example 3**

<del>Flow to maintain on Facility</del>	<del>800 MW</del>
<del>Expected flow next hour from Transactions using Point</del>	<del>950 MW</del>

<del>to-Point Transmission Service</del>	
<del>Contribution from flow next hour from service to Network customers and Native Load</del>	<del>-200 MW</del>
<del>Expected Net flow next hour on Facility</del>	<del>750 MW</del>
<del>Amount of Transactions using Point-to-Point Transmission Service to hold for Reallocation</del>	<del>750 MW—800 MW = -50 MW None are held</del>

~~For a TLR levels 3b or 5b the IDC will request the Reliability Coordinator to provide the MW requested relief amount on the Constrained Facility, and will not present the current and next hour MW impact of Point to Point transactions. The Reliability Coordinator entered requested relief amount will be used by the IDC to determine the Interchange Transaction Curtailments and flows due to service to Network Customers and Native Load (TLR Level 5b) in order to reduce the SOL or IROL violation on the Constrained Facility by the requested amount.~~

***IDC Calculations and Reporting***

~~At the time the TLR report is processed, the IDC will use all candidate Interchange Transactions for Reallocation that met the approved tag submission deadline for Reallocation plus those Interchange Transactions that were curtailed or halted on the previous TLR action of the same TLR event. The IDC will calculate and present an Interchange Transactions Halt/Curtailment list that will include reload and Reallocation of Interchange Transactions. The Interchange Transactions are prioritized as follows:~~

- ~~1. All Interchange Transactions will be arranged by Transmission Service Priority according to the Constrained Path Method. These priorities range from 1 to 6 for the various non-firm Transmission Service products (TLR levels 3a and 3b). Interchange Transactions using Firm Transmission Service (priority 7) are used only in TLR levels 5a and 5b. Next Hour Market Service is included at priority 0.~~
- ~~2. In a TLR Level 3a the Interchange Transactions using Non-firm Transmission Service in a given priority will be further divided into four sub-priorities, based on current schedule, current active schedule (identified by the submittal of a tag ADJUST message), next hour schedule, and tag status. Solely for the purpose of identifying which Interchange Transactions to be loaded under a TLR 3a, various MW levels of an Interchange Transaction may be in different sub-priorities. The sub-priorities are shown in the following table:~~

<b>Priority</b>	<b>Purpose</b>	<b>Explanation and Conditions</b>
<del>S1</del>	<del>To allow a flowing Interchange Transaction to maintain or reduce its current MW amount in accordance with its energy profile.</del>	<del>The MW amount is the lowest between currently flowing MW amount and the next-hour schedule. The currently flowing MW amount is determined by the e-tag ENERGY PROFILE and ADJUST tables. If the calculated amount is negative, zero is used instead.</del>

~~Board of Trustees Adoption: August 2, 2006 Draft 1: May 1, 2007  
Proposed Effective Date: E.2. effective upon effective Upon BOT adoption;  
Effective date for other changes to be announced.~~



<b>Priority</b>	<b>Purpose</b>	<b>Explanation and Conditions</b>
<del>S2</del>	<del>To allow a flowing Interchange Transaction that has been curtailed or halted by TLR to reload to the <i>lesser</i> of its current hour MW amount or next-hour schedule in accordance with its energy profile.</del>	<del>The Interchange Transaction MW amount used is determined through the e-tag ENERGY PROFILE and ADJUST tables. If the calculated amount is negative, zero is used instead.</del>
<del>S3</del>	<del>To allow a flowing Transaction to increase from its current hour schedule to its next hour schedule in accordance with its energy profile.</del>	<del>The MW amounts used in this sub-priority is determined by the e-tag ENERGY PROFILE table. If the calculated amount is negative, zero is used instead.</del>
<del>S4</del>	<del>To allow a Transaction that had never started and was submitted to the Tag Authority after the TLR (level 2 or higher) has been declared to begin flowing (i.e., the Interchange Transaction never had an active MW and was submitted to the IDC <i>after</i> the first TLR Action of the TLR Event had been declared.)</del>	<del>The Transaction would not be allowed to start until all other Interchange Transactions submitted prior to the TLR with the same priority have been (re)loaded. The MW amount used is the sub-priority is the next-hour schedule determined by the e-tag ENERGY PROFILE table.</del>

~~Examples of Interchange Transactions using Non-firm Transmission Service sub-priority settings begin in the **Transaction Sub-priority Examples** following sections.~~

~~3. All Interchange Transactions using Firm Transmission Service will be put in the same priority group, and will be Curtailed/Reallocated pro-rata, independent of their current status (curtailed or halted) or time of submittal with respect to TLR issuance (TLR level 5a). Under a TLR 5a, all Interchange Transactions using Non-firm Transmission Service that is at or above the Curtailment Threshold will have been curtailed and hence sub-prioritizing is not required.~~

~~All Interchange Transactions processed in a TLR are assigned one of the following statuses:~~

~~**PROCEED:** The Interchange Transaction has started or is allowed to start to the next hour MW schedule amount.~~

~~**CURTAILED:** The Interchange Transaction has started and is curtailed due to the TLR, or it had not started but it was submitted prior to the TLR being declared (level 2 or higher).~~

~~**HOLD:** The Interchange Transaction had never started and it was submitted after the TLR being declared—the Interchange Transaction is held from starting next hour or the transaction had never started and it was submitted to the IDC after the Approved-Tag Submission Deadline—the Interchange Transaction is to be held~~

~~from starting next hour and is not included in the Reallocation calculations until following hour.~~

~~Upon acceptance of the TLR Transaction Reallocation/reloading report by the issuing Reliability Coordinator, the IDC will generate a report to be sent to NERC that will include the PSE name and Tag ID of each Interchange Transaction in the IDC TLR report. The Interchange Transaction will be ranked according to its assigned status of HOLD, CURTAILED or PROCEED. The reloading/Reallocation report will be made available at NERC's public TLR website, and it is NERC's responsibility to format and publish the report.~~

### **Tag Reloading for TLR Levels 1 and 0**

~~When a TLR Level 1 or 0 is issued, the Constrained Facility is no longer under SOL or IROL violation and all Interchange Transactions are allowed to flow. In order to provide the Reliability Coordinators with a view of the Interchange Transactions that were halted or curtailed on previous TLR actions (level 2 or higher) and are now available for reloading, the IDC provides such information in the TLR report.~~

### **New Tag Alarming**

~~Those Interchange Transactions that are at or above the Curtailment Threshold and are *not* candidates for Reallocation because the tags for those Transactions were not submitted by the approved tag submission deadline for Reallocation will be flagged as HOLD and must not be permitted to start or increase during the next hour. To alert Reliability Coordinators of those Transactions required to be held, the IDC will generate a report (for viewing within the IDC only) at various times. The report will include a list of all HOLD Transactions. In order not to overwhelm the Reliability Coordinator with alarms, only those who issued the TLR and those whose Transactions sink within their Reliability Area will be alarmed. An alarm will be issued for a given tag only once and will be issued for all TLR levels for which halting new Transactions is required: TLR Level 2, 3a, 3b, 5a and 5b.~~

### **Tag Adjustment**

~~The Interchange Transactions with statuses of HOLD, CURTAILED or PROCEED must be adjusted by a Tag Authority or Tag Approval entity. Without the tag adjustments, the IDC will assume that Interchange Transactions were not curtailed/held and are flowing at their specified schedule amounts.~~

- ~~1. Interchange Transactions marked as CURTAILED should be adjusted to a cap equal to, or at the request of the originating PSE, less than the reallocated amount (shown as the MW CAP on the IDC report). This amount may be zero if the Transaction is fully curtailed.~~
- ~~2. Interchange Transaction marked as PROCEED should be adjusted to reload (NULL or to its MW level in accordance with its Energy Profile in the adjusted MW in the E Tag) if the Interchange Transaction has been previously adjusted; otherwise, if the Interchange Transaction is flowing in full, the Tag Authority need not issue an adjust.~~
- ~~3. Interchange Transactions marked as HOLD should be adjusted to 0 MW.~~

### **Special Tag Status**

~~There are cases in which a tag may be marked with a composite state of ATTN\_REQD to indicate that tag Authority/Approval failed to communicate or there is an inconsistency between~~

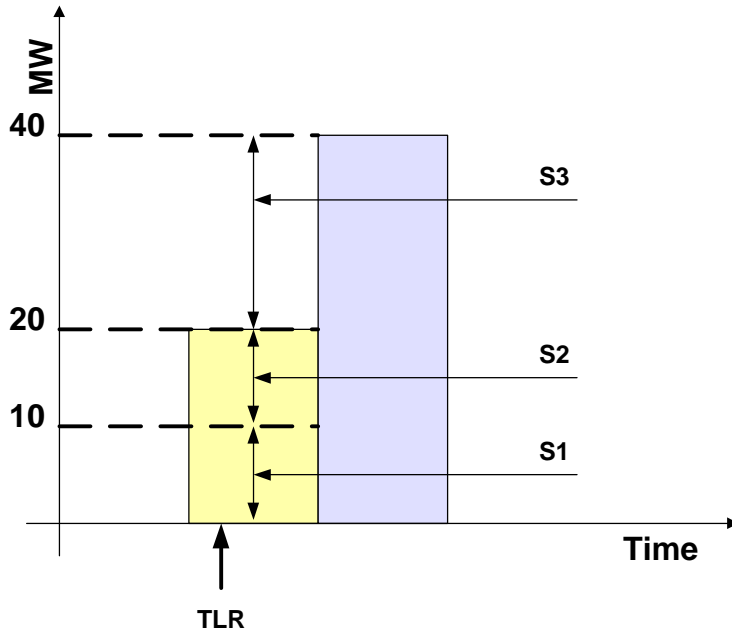
~~the validation software of different tag Authority/Approval entities. In this situation, the tag is no longer subject to passive approval and its status change to IMPLEMENT may take longer than 10 minutes. Under these circumstances, the IDC may have a tag that is issued prior to the Tag Submittal Deadline that will not be a candidate for Reallocation. Such tags, when approved by the Tag Authority, will be marked as HOLD and must be halted.~~

### **~~Transaction Sub-Priority Examples~~**

~~The following describes examples of Interchange Transactions using Non-firm Transmission Service sub-priority setting for an Interchange Transaction under different circumstances of current-hour and next-hour schedules and active MW flowing as modified by tag-adjust table in E-Tag.~~

Example 1 — Transaction curtailed, next-hour Energy Profile is higher

Energy Profile: Current hour	20 MW
Actual flow following curtailment: Current hour	10 MW
Energy Profile: Next hour	40 MW

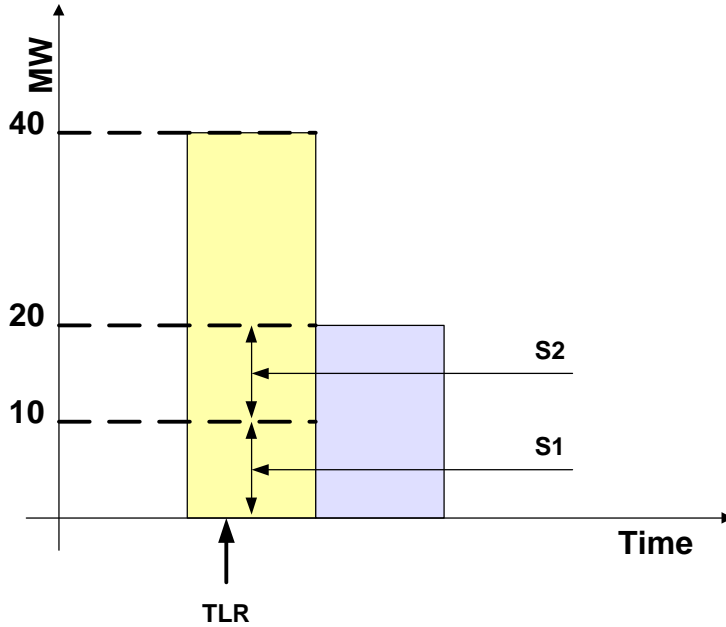


Sub-priorities for Transaction MW:

<i>Sub-Priority</i>	<i>MW Value</i>	<i>Explanation</i>
S1	+10 MW	Maintain current curtailed flow
S2	+10 MW	Reload to current hour Energy Profile
S3	+20 MW	Load to next hour Energy Profile
S4		

**Example 2 — Transaction curtailed, next-hour Energy Profile is lower**

Energy Profile: Current hour	40 MW
Actual flow following curtailment: Current hour	10 MW
Energy Profile: Next hour	20 MW

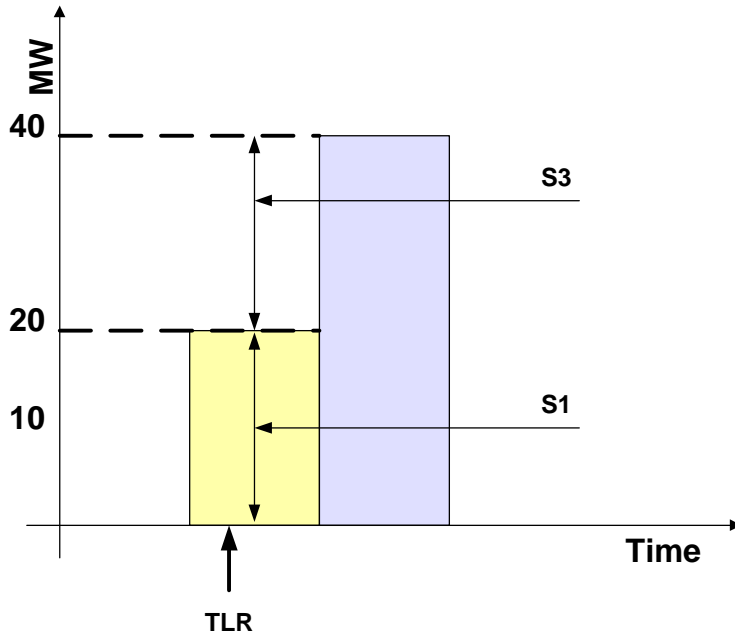


**Sub-priorities for Transaction MW:**

<i>Sub-Priority</i>	<i>MW Value</i>	<i>Explanation</i>
S1	+10 MW	Maintain current curtailed flow
S2	+10 MW	Reload to <i>lesser</i> of current and next-hour Energy Profile
S3	+0 MW	Next-hour Energy Profile is 20MW, so no change in MW value
S4		

**Example 3 — Transaction not curtailed, next-hour Energy Profile is higher**

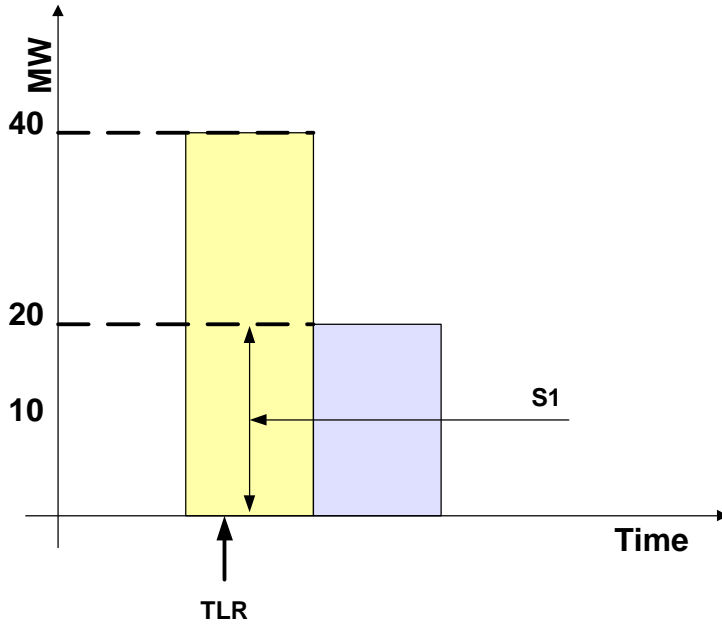
Energy Profile: Current hour	20 MW
Actual flow following curtailment: Current hour	20 MW (no curtailment)
Energy Profile: Next hour	40 MW



<i>Sub-Priority</i>	<i>MW Value</i>	<i>Explanation</i>
S1	20 MW	Maintain current flow (not curtailed)
S2	+0 MW	Reload to <i>lesser</i> of current and next-hour Energy Profile
S3	+20 MW	Next-hour Energy Profile is 40MW
S4		

**Example 4 — Transaction not curtailed, next-hour Energy Profile is lower**

Energy Profile: Current hour	40 MW
Actual flow following curtailment: Current hour	40 MW (no curtailment)
Energy Profile: Next hour	20 MW

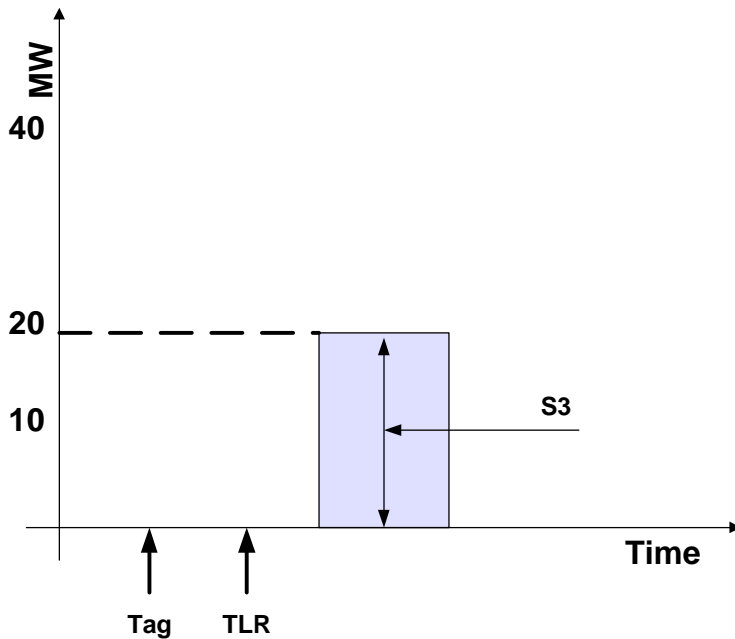


**Sub-priorities for Transaction MW:**

<i>Sub-Priority</i>	<i>MW Value</i>	<i>Explanation</i>
S1	20 MW	Reduce flow to next-hour Energy Profile (20MW)
S2	+0 MW	Reload to <i>lesser</i> of current and next-hour Energy Profile
S3	+0 MW	Next-hour Energy Profile is 20MW
S4		

**Example 5 — TLR Issued before Transaction was scheduled to start**

Energy Profile: Current hour	0 MW
Actual flow following curtailment: Current hour	0 MW (Transaction scheduled to start <i>after</i> TLR initiated)
Energy Profile: Next hour	20 MW



<i>Sub-Priority</i>	<i>MW Value</i>	<i>Explanation</i>
S1	0 MW	Transaction was not allowed to start
S2	+0 MW	Transaction was not allowed to start
S3	+20 MW	Next hour Energy Profile is 20MW
S4	+0	Tag submitted prior to TLR

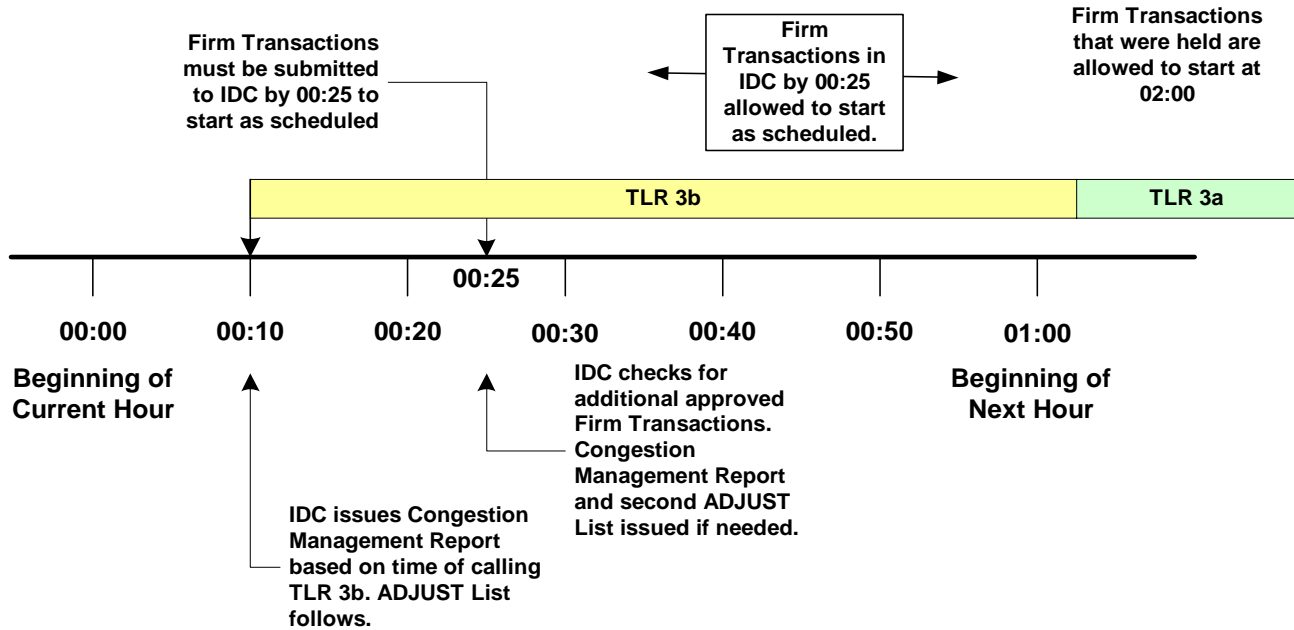


**Appendix F. Considerations for Interchange Transactions**

**Using Firm Point-to-Point Transmission Service**

The following cases explain the circumstances under which an Interchange Transaction using Firm Point-to-Point Transmission Service will be allowed to start as scheduled during a TLR 3b:

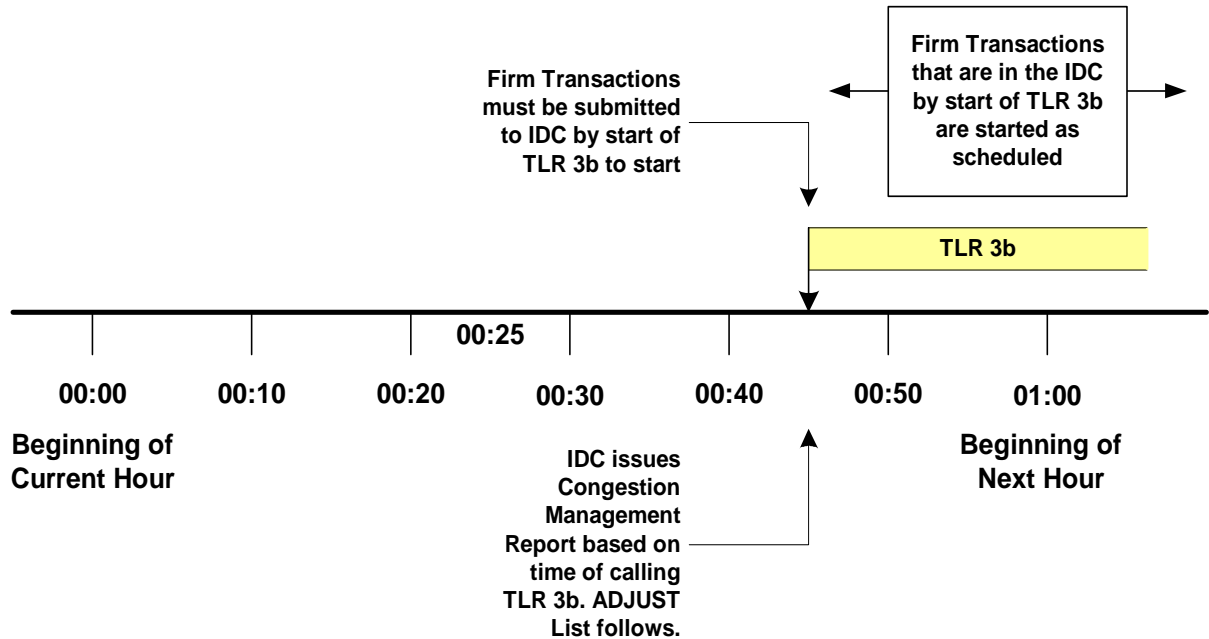
**Case 1: TLR 3b is called between 00:00 and 00:25 and the Interchange Transaction using Firm Point-to-Point Transmission Service is submitted to IDC by 00:25.**



1. ~~The IDC will examine the current hour (00) and next hour (01) for all Interchange Transactions.~~
2. ~~The IDC will issue an ADJUST List based upon the time the TLR 3b is called. The ADJUST List will include curtailments of Interchange Transactions using Non-firm Point-to-Point Transmission Service as necessary to allow room for those Interchange Transactions using Firm Point-to-Point Transmission Service to start as scheduled.~~
3. ~~At 00:25, the IDC will check for additional Interchange Transactions using Firm Point-to-Point Transmission Service that were submitted to the IDC by that time and issue a second ADJUST List if those additional Interchange Transactions are found.~~
4. ~~All existing or new Interchange Transactions using Non-firm Point-to-Point Transmission Service that are increasing or expected to start during the current hour or next hour will be placed on HALT or HOLD. There is no Reallocation of lower-priority Interchange Transactions using Non-firm Point-to-Point Transmission Service.~~
5. ~~Interchange Transactions using Firm Point-to-Point Transmission Service that were submitted to the IDC by 00:25 will be allowed to start as scheduled.~~

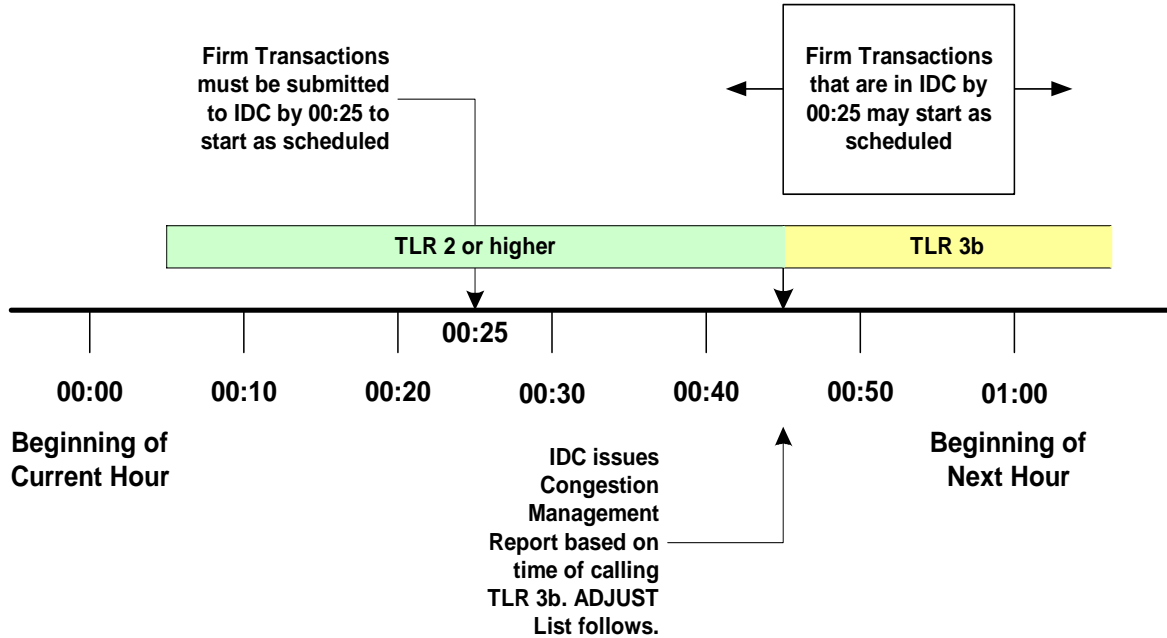
- ~~6. Interchange Transactions using Firm Point-to-Point Transmission Service that were submitted to the IDC after 00:25 will be held.~~
- ~~7. Once the SOL or IROL violation is mitigated, the Reliability Coordinator shall call a TLR Level 3a (or lower). If a TLR Level 3a is called:
  - ~~a. Interchange Transactions using Firm Point-to-Point Transmission Service that were submitted to the IDC by 00:25 will be allowed to start as scheduled at 02:00.~~
  - ~~b. Interchange Transactions using Non-firm Point-to-Point Transmission Service that were held may then be reallocated to start at 02:00.~~~~

~~Case 2: TLR 3b is called after 00:25 and the Interchange Transaction using Firm Point-to-Point Transmission Service is submitted to the IDC no later than the time at which the TLR 3b is called.~~



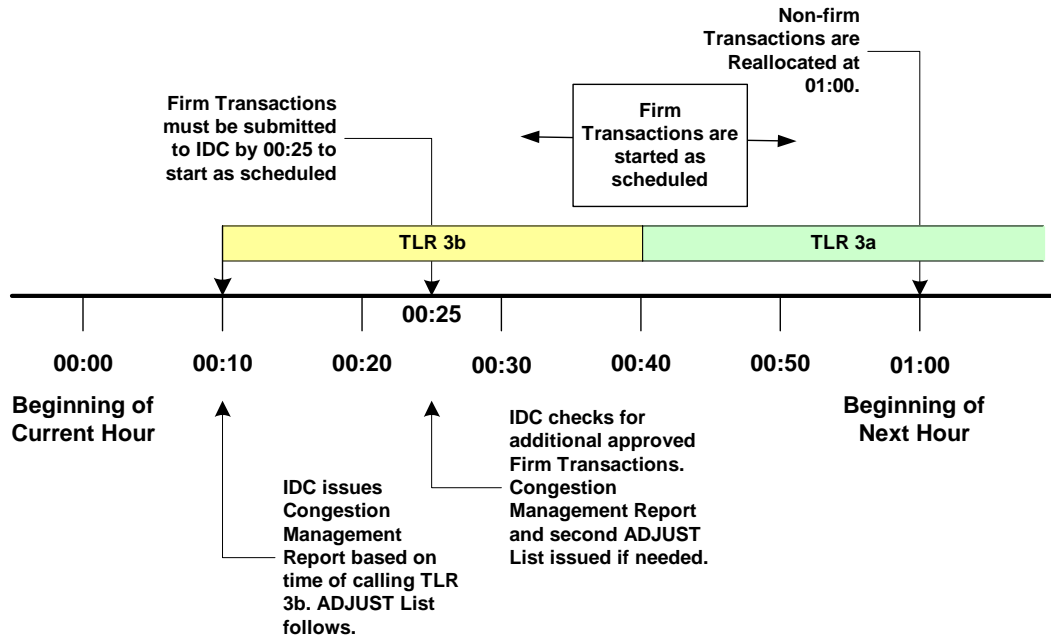
- ~~1. The IDC will examine the current hour (00) and next hour (01) for all Interchange Transactions.~~
- ~~2. The IDC will issue an ADJUST List at the time the TLR 3b is called. The ADJUST List will include additional curtailments of Interchange Transactions using Non firm Point to Point Transmission Service as necessary to allow room for those Interchange Transactions using Firm Point to Point Transmission Service to start at as scheduled.~~
- ~~3. All existing or new Interchange Transactions using Non firm Point to Point Transmission Service that are increasing or expected to start during the current hour or next hour will be placed on HALT or HOLD. There is no Reallocation of lower priority Interchange Transactions using Non firm Point to Point Transmission Service.~~
- ~~4. Interchange Transactions using Firm Point to Point Transmission Service that were submitted to the IDC by the time the TLR 3b was called will be allowed to start at as scheduled.~~
- ~~5. Interchange Transaction using Firm Point to Point Transmission Service that were submitted to the IDC after the TLR 3b was called will be held until the next issuance for TLR (either TLR 3b, 3a, or lower level).~~

~~Case 3. TLR 2 or higher is in effect, a TLR 3b is called after 00:25, and the Interchange Transaction using Firm Point-to-Point Transmission Service is submitted to the IDC by 00:25.~~



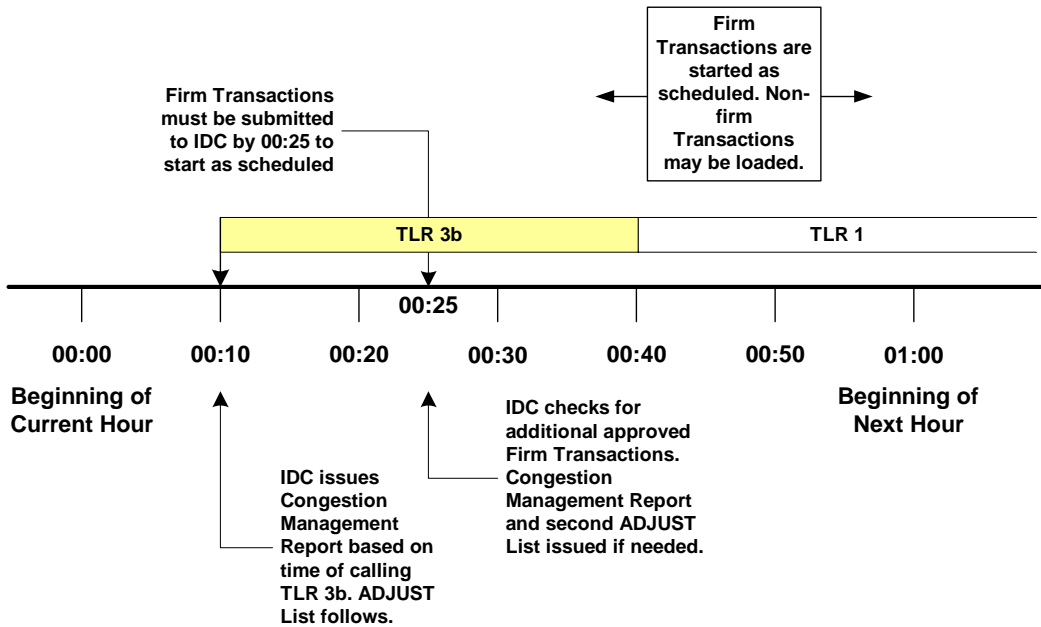
~~If a TLR 2 or higher has been issued and 3B is subsequently issued, then only those Interchange Transactions using Firm Point to Point Transmission Service that had been submitted to the IDC by 00:25 will be allowed to start as scheduled. All other Interchange Transactions are held.~~

Case 4. TLR 3b is called before 00:25 and the Interchange Transaction is submitted to the IDC by 00:25. TLR 3a is called at 00:40.



1. Same as Case 1, but TLR Level 3b ends at 00:40 and becomes TLR Level 3a.
2. All Interchange Transactions using Firm Point-to-Point Transmission Service will start as scheduled if in by the time the 3A is declared.
3. All Interchange Transactions using Non-firm Point-to-Point Transmission Service are reallocated at 01:00.

**Case 5. TLR 3b is called before 00:25 and the Interchange Transaction is submitted to the IDC by 00:25. TLR 1 is called at 00:40.**



- ~~1. Same as Case 1, but TLR Level 3b ends at 00:40 and becomes TLR Level 1.~~
- ~~2. All Interchange Transactions using Firm Point to Point Transmission Service will start as scheduled.~~
- ~~3. All Interchange Transactions using Non-firm Point to Point Transmission Service may be loaded immediately.~~

**Appendix G. Examples of On-Path and Off-Path Mitigation**

**Examples**

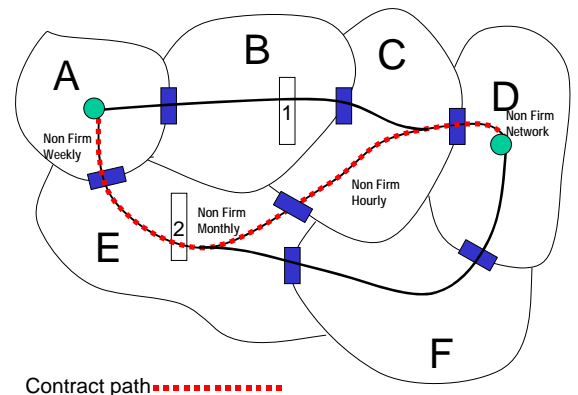
This section explains, by example, the obligations of the Transmission Service Providers on and off the Contract Path when calling for Transmission Loading Relief. (References to Principles refer to **Requirement 4, “Mitigating Constraints On and Off the Contract Path during TLR,”** on the preceding pages.) When Reallocating or curtailing Interchange Transactions using Firm Point to Point Transmission Service under TLR Level 5a or 5b, the Transmission Service Providers may be obligated to perform comparable curtailments of its Transmission Service to Network Integration and Native Load customers. See **Requirement 5, “Parallel Flow Calculation Procedure for Reallocating or Curtailing Firm Transmission Service during TLR.”**

**Scenario:**

- Interchange Transaction arranged from system A to system D, and assumed to be at or above the Curtailment Threshold.
- Contract path is A-E-C-D (except as noted).
- Locations 1 and 2 denote Constraints.

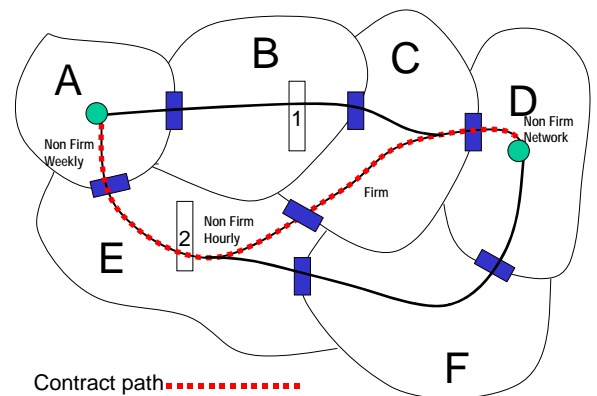
**Case 1: E is a non-firm Monthly path; C is non-firm Hourly; E has Constraint at #2**

- E may call its Reliability Coordinator for TLR to relieve overload at Constraint #2.
- Interchange Transaction A-D may be curtailed by TLR action as though it was being served by Non-firm Monthly Point to Point Transmission Service, even though it was using Non-firm Hourly Point to Point Transmission Service from C. That is, it takes on the priority of the link with the Constrained Facility along the Contract Path (Principle 1).



**Case 2: E is a non-firm hourly path, C is firm; E has Constraint at #2**

- Although C is providing Firm Service, the Constraint is not on C’s system; therefore E is not obligated to treat the Interchange Transaction as though it was being served by Firm Point to Point Transmission Service.
- E may call its Reliability Coordinator for TLR to relieve overload at Constraint #2.
- Interchange Transaction A-D may be curtailed by TLR action as though it was being served by Non-firm Hourly Point to Point Transmission Service, even though it was using firm service from C. That is, when the constraint is on the

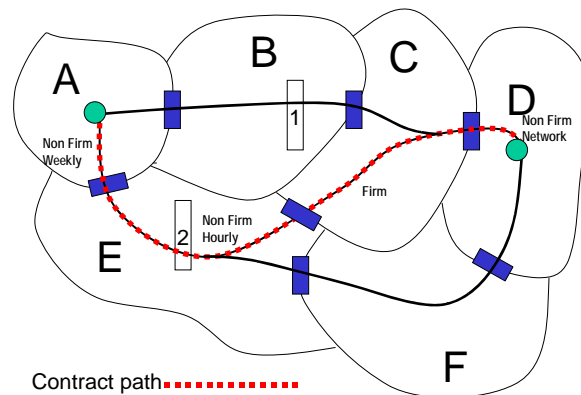


~~Contract Path, the Interchange Transaction takes on the priority of the link with the Constrained Facility (Principle 1).~~



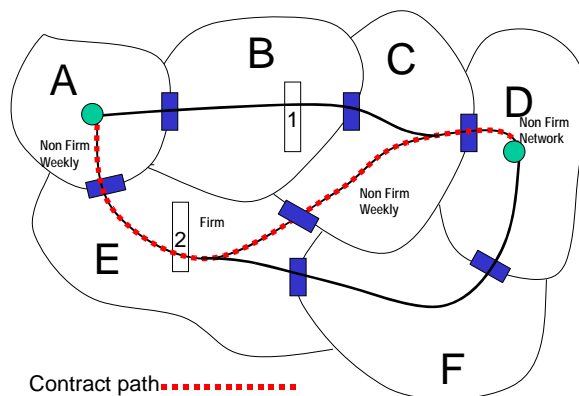
**Case 3: E is a non-firm hourly path, C is firm, B has Constraint at #1**

- B may call its Reliability Coordinator for TLR to relieve overload at Constraint #1.
- Interchange Transaction A-D may be curtailed by TLR action as though it was being served by Non-firm Hourly Transmission Service, even if it was using firm Transmission Service elsewhere on the path. When the constraint is off the Contract Path, the Interchange Transaction takes on the lowest priority reserved on the Contract Path (Principle 3).



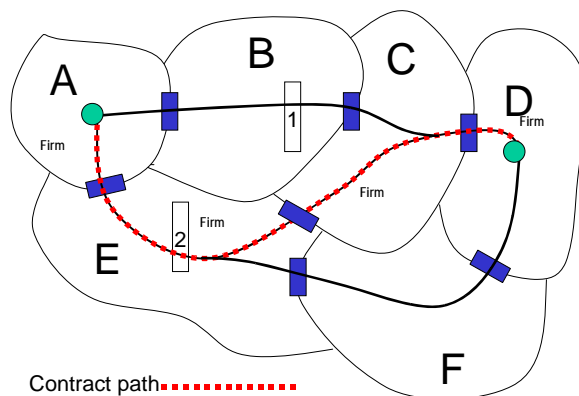
**Case 4: E is a firm path; A, D, and C are Non-firm; E has Constraint at #2**

- Interchange Transaction A-D is considered Firm priority for curtailment purposes.
- E may then call its Reliability Coordinator for TLR, which would curtail all Interchange Transactions using Non-firm Point-to-Point Transmission Service first.
- E is obligated to try to reconfigure transmission to mitigate Constraint #2 in E before E may curtail the Interchange Transaction as ordered by the TLR (Principle 2).



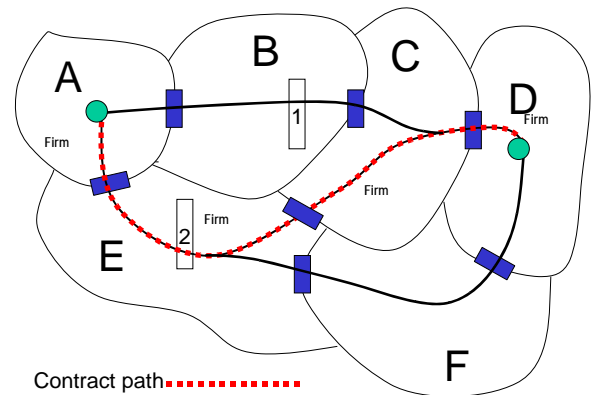
**Case 5: The entire path (A-E-C-D) is firm; E has Constraint at #2**

- Interchange Transaction A-D is considered Firm priority for curtailment purposes.
- E may call its Reliability Coordinator for TLR, which would curtail all Interchange Transactions using Non-firm Point-to-Point Transmission Service first.
- E is obligated to curtail Interchange Transactions using Non-firm Point-to-Point Transmission Service, and then reconfigure transmission on its system, or, if there is an agreement in place, arrange for reconfiguration or other congestion management options on another system, to mitigate Constraint #2 in E before the firm A-D transaction is curtailed (Principle 2).
- A, C, D, may be requested by E to try to reconfigure transmission to mitigate Constraint #2 in E at E's expense (Principle 2).

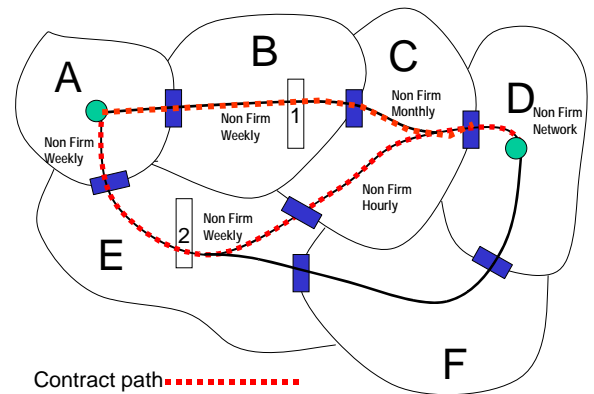


**Case 6: The entire path (A-E-C-D) is firm; B has Constraint at #1.**

- Interchange Transaction A—D is considered Firm priority for curtailment purposes.
- B may call its Reliability Coordinator for TLR for all non-firm Interchange Transactions that contribute to the overload at Constraint #1.



- Following the curtailment of all non-firm Interchange Transactions, the Reliability Coordinator (ies) will determine which Transmission Operator(s) will reconfigure their transmission, if possible, to mitigate constraint #1 (Principle 4).
- A-D transaction may be curtailed as a result. However, the A-D transaction is treated as a firm Interchange Transaction and will be curtailed only after non-firm Interchange Transactions. (Note: This means that the firm Contract Path is respected by all parties, including those not on the Contract Path.) (Principle 4)



**Case 7: Two A-to-D transactions using A-B-C-D and A-E-C-D; A and B are non-firm; B has Constraint at #1**

- B is not obligated to reconfigure transmission to mitigate Constraint at #1. (Principle 1)
- B may call its Reliability Coordinator for TLR to relieve overload at Constraint #1.

<p>If both A—D Interchange Transactions have the same Transfer Distribution Factors across Constraint #1, then they both are subject to curtailment. However, Interchange Transaction A—D using the</p>	<p><u>February 26, 2007</u></p>	<p><u>Revised Purpose and Attachment 1 related to NERC NAESB split of the TLR procedure</u></p>	<p><u>Revision</u></p>
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<p>A-B-C-D path is assigned a higher priority (priority NW on B), and would not be curtailed until after the Interchange Transaction using the path A-E-C-D (priority NH on the Contract Path as observed by B who is off the Contract Path).<sup>3</sup></p>			
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May 1, 2007

TO: REGISTERED BALLOT BODY

Ladies and Gentlemen:

**Announcement: Comment Period Opens**

**The Standards Committee (SC) announces the following standards action:**

**IRO-006 — Reliability Coordination — Transmission Loading Relief (Project 2006-08)  
Posted for 45-day Comment Period May 1–June 14, 2007**

The first draft of the first phase of revisions to [IRO-006](#) is posted for a 45-day comment period from May 1 through June 14, 2007. IRO-006 provides acceptable methods of preventing and managing congestion on the bulk electric system.

The approved SAR for this project supports modifying IRO-006 in three phases. The posted standard includes the revisions proposed for the first phase of modifications to IRO-006, with revisions focused primarily on the agreed-upon split between NERC and NAESB of the requirements in IRO-006 Attachment 1.

The drafting team has posted the following documents to assist in reviewing the changes to IRO-006:

- White paper — explains the history and purpose of the split of requirements in IRO-006 Attachment 1
- IRO-006-4 and IRO-006 Attachment 1 in both clean and redline versions with annotations to identify the reasons for changes
- IRO-006-4 Attachment 1 with a “mapping” to show each requirement and whether it was retained in the associated NAESB business practice or the NERC standard
- Implementation Plan

Please use the [comment form](#) to provide comments on IRO-006-4.

**Standards Development Process**

The [Reliability Standards Development Procedure](#) contains all the procedures governing the standards development process. The success of the NERC standards development process depends on stakeholder participation. We extend our thanks to all those who participate. If you have any questions, please contact me at 813-468-5998 or [maureen.long@nerc.net](mailto:maureen.long@nerc.net).

Sincerely,

*Maureen E. Long*

cc: Registered Ballot Body Registered Users  
Standards Mailing List  
NERC Roster

## **Summary**

As filed with FERC, the NERC TLR Drafting Team has identified the reliability aspects of IRO-006 in a draft revision to the standard. In order to ensure industry understanding of these efforts, the drafting team has prepared the following documents:

- white paper detailing the reasons for and history of this SAR
- Draft reliability standard (both in redline and in clean formats)
- Draft Attachment 1 (both in redline and in clean formats)
- Reference to the approved NAESB business practices (to show where commercial aspects will be covered)
- Annotated mark-up of the original IRO-006-3 Attachment 1 (highlighting how each part of the standard was divided)

## **Prerequisite Approvals**

There are no other reliability standards or Standard Authorization Requests (SARs), approved, that must be implemented before this standard can be implemented.

## **Modified Standards**

IRO-006-3 should be retired when IRO-006-4 and IRO-006-4 Attachment 1 become effective.

## **Compliance with Standards**

Once this standard becomes effective, the responsible entities identified in the applicability section of the standard must comply with the requirements. These include:

- Reliability Coordinator
- Balancing Authority

## **Proposed Effective Date**

All requirements in the standard should become effective on the first day of the first quarter after Board of Trustee adoption.

**PLEASE NOTE: items designated for inclusion in the NAESB TLR business practice following completion of the standard revision were deleted. Please see the mapped document to see which items were move to NAESB and what future changes are expected.**

## Attachment 1-IRO-006

### Transmission Loading Relief Procedure — Eastern Interconnection

#### Purpose

This standard defines procedures for curtailment and reloading of Interchange Transactions to relieve overloads on transmission facilities modeled in the Interchange Distribution Calculator.

#### Applicability

This standard only applies to the Eastern Interconnection.

The flexibility for ISOs and RTOs to use redispatch is contained explicitly in the NAESB business practice Section 1.3.

#### 1. Transmission Loading Relief (TLR) Procedure

- 1.1. Initiation only by Reliability Coordinator.** A Reliability Coordinator shall be the only entity authorized to initiate the TLR Procedure and shall do so at 1) the Reliability Coordinator’s own request, or 2) upon the request of a Transmission Operator.
- 1.2. Mitigating SOL and IROL violations.** A Reliability Coordinator may utilize the TLR Procedure to mitigate potential or existing System Operating Limit (SOL) violations or to prevent or mitigate Interconnection Reliability Operating Limit (IROL) violations on any transmission facility modeled in the IDC. However, the TLR procedure is an inappropriate and ineffective tool as a sole means to mitigate existing IROL violations due to the time required to implement the procedure. Reconfiguration, redispatch, and load shedding are more timely and effective in mitigating existing IROL violations
  - 1.2.1. Requesting relief on tie facilities.** Any Transmission Operator who operates the tie facility shall be allowed to request relief from its Reliability Coordinator.
- 1.3. Sequencing of TLR Levels and taking emergency action.** The Reliability Coordinator shall not be required to follow the TLR Levels in their numerical sequence (Section 2, “TLR Levels”). Furthermore, if a Reliability Coordinator deems that a transmission loading condition could jeopardize Bulk Electric System reliability, the Reliability Coordinator shall have the authority to enter TLR Level 6 directly, and immediately direct the Balancing Authorities or Transmission Operators to take such actions as redispatching generation, or reconfiguring transmission, or reducing load to mitigate the critical condition until Interchange Transactions can be reduced utilizing the TLR Procedure or other methods to return the system to a secure state.
- 1.4. Notification of TLR Procedure implementation.** The Reliability Coordinator initiating the use of the TLR Procedure shall notify other Reliability Coordinators and Balancing Authorities and Transmission Operators, and must post the initiation and progress of the TLR event on

This notification is automated in the Interchange Distribution Calculator (IDC) and populates a message on the NERC RCIS.

the appropriate NERC web page(s).

**1.4.1. Notifying other Reliability Coordinators.** The Reliability Coordinator initiating the TLR Procedure shall inform all other Reliability Coordinators via the Reliability Coordinator Information System (RCIS) that the TLR Procedure has been implemented.

**1.4.1.1. Actions expected.** The Reliability Coordinator initiating the TLR Procedure shall indicate the actions expected to be taken by other Reliability Coordinators.

**1.4.2. Notifying Transmission Operators and Balancing Authorities.** The Reliability Coordinator shall notify Transmission Operators and Balancing Authorities in its Reliability Area when entering and leaving any TLR level.

This notification is automated in the Interchange Distribution Calculator (IDC) and populates a message on the NERC RCIS.

**1.4.3. Notifying Sink Balancing Authorities.** The Reliability Coordinator for the sink Balancing Authority shall be responsible for directing the Sink Balancing Authority to curtail the Interchange Transactions as specified by the Reliability Coordinator implementing the TLR Procedure.

**1.4.3.1. Notification order.** Within a Transmission Service Priority level, the Sink Balancing Authorities whose Interchange Transactions have the largest impact on the Constrained Facilities shall be notified first if practicable.

**1.4.4. Updates.** At least once each hour, or when conditions change, the Reliability Coordinator implementing the TLR Procedure shall update all other Reliability Coordinators (via the RCIS). Transmission Operators and Balancing Authorities who have had Interchange Transactions impacted by the TLR will be updated by their Reliability Coordinator.

**1.5. Obligations.** All Reliability Coordinators shall comply with the request of the Reliability Coordinator who initiated the TLR Procedure, unless the initiating Reliability Coordinator agrees otherwise.

**1.6. Consideration of Interchange Transactions.** The administration of the TLR Procedure shall be guided by information obtained from the IDC.

**1.6.1. Interchange Transactions not in the IDC.** Reliability Coordinators shall also treat known Interchange Transactions that may not appear in the IDC in accordance with the procedures in this document.

**1.6.2. Transmission elements not in IDC.** When a Reliability Coordinator is faced with an overload on a transmission element that is not modeled in the IDC, the Reliability Coordinator shall use the best information available to curtail Interchange Transactions in order to operate the system in a reliable manner. The Reliability Coordinator shall use its best efforts to ensure that Interchange Transactions with a Transfer Distribution Factor of less than the Curtailment Threshold on the transmission element not modeled in the IDC are not curtailed.

**1.6.3. Questionable IDC results.** Any Reliability Coordinator who believes the curtailment list from the IDC for a particular TLR event is incorrect shall use its best efforts to communicate those adjustments necessary to bring the curtailment list into conformance with the principles of this Procedure to the initiating Reliability Coordinator. Causes of questionable IDC results may include:

- Missing Interchange Transactions that are known to contribute to the Constraint.
- Significant change in transmission system topology.
- TDF matrix error.

Impacts of questionable IDC results may include:

- Curtailment that would have no effect on, or aggravate the constraint.
- Curtailment that would initiate a constraint elsewhere.

If other Reliability Coordinators are involved in the TLR event, all impacted Reliability Coordinators shall be in agreement before any adjustments to the Curtailment list are made.

**1.6.4. Curtailment that would cause a constraint elsewhere.** A Reliability Coordinator shall be allowed to exempt an Interchange Transaction from Curtailment if that Reliability Coordinator is aware that the Interchange Transaction Curtailment directed by the IDC would cause a constraint to occur elsewhere. This exemption shall only be allowed after the Reliability Coordinator has consulted with the Reliability Coordinator who initiated the Curtailment.

**1.7 Logging.** The Reliability Coordinator shall complete the NERC Transmission Loading Relief Procedure Log whenever it invokes TLR Level 2 or above, and send a copy of the log via email to NERC within two business days of the TLR event for posting on the NERC website.

Creation and distribution of the TLR Procedure Log is now automated in the IDC.

**1.8 TLR Event Review.** The Reliability Coordinator shall report the TLR event to the Operating Reliability Subcommittee in accordance with TLR review processes established by NERC as required.

**1.8.1 Providing information.** Transmission Operators and Balancing Authorities within the Reliability Coordinator's Area, and all other Reliability Coordinators, including Transmission Operators and Balancing Authorities within their respective Reliability Areas, shall provide information, as requested by the initiating Reliability Coordinator, in accordance with TLR review processes established by NERC.

**1.8.2 Market Committee reviews.** The Market Committee may conduct reviews of certain TLR events based on the size and number of Interchange Transactions that are affected, the frequency that the TLR Procedure is called for a particular Constrained Facility, or other factors.

The Market Committee no longer exists and this requirement will be removed in Phase 3.



- 1.8.3 Operating Reliability Subcommittee reviews.** The Operating Reliability Subcommittee shall conduct reviews to ensure proper implementation and for “lessons learned.”

## **2. Transmission Loading Relief (TLR) Levels**

### **Introduction**

This section describes the various levels of the TLR Procedure. The description of each level begins with the circumstances that define the TLR Level, followed by the procedures to be followed.

The decision that a Reliability Coordinator makes in selecting a particular TLR Level often depends on the transmission loading condition and whether the Interchange Transaction is using Non-firm Point-to-Point Transmission Service or Firm Point-to-Point Transmission Service. There are further considerations that depend on whether the Constrained Facility is on or off the Contract Path. It is important to note that an Interchange Transaction using Firm Point-to-Point Transmission Service on all Contract Path links is considered a “firm” Interchange Transaction even if the Constrained Facility is off the Contract Path.

### **2.1. TLR Level 1 — Notify Reliability Coordinators of potential SOL or IROL Violations**

- 2.1.1.** The Reliability Coordinator shall use the following circumstances to establish the need for TLR Level 1:

- The transmission system is secure.
- The Reliability Coordinator foresees a transmission or generation contingency or other operating problem within its Reliability Area that could cause one or more transmission facilities to approach or exceed their SOL or IROL.

- 2.1.2. Notification procedures.** The Reliability Coordinator shall notify all Reliability Coordinators via the Reliability Coordinator Information System (RCIS) as soon as the condition is foreseen. All affected Reliability Coordinators shall check to ensure that Interchange Transactions are posted in the IDC.

### **2.2. TLR Level 2 — Hold transfers at present level to prevent SOL or IROL Violations**

- 2.2.1.** The Reliability Coordinator shall use the following circumstances to establish the need for entering TLR Level 2:

- The transmission system is secure.
- One or more transmission facilities are expected to approach, or are approaching, or are at their SOL or IROL.

### **2.3 TLR Level 3a — Reallocation of Transmission Service by curtailing Interchange Transactions using Non-firm Point-to-Point Transmission Service to allow Interchange Transactions using higher priority Transmission Service**

- 2.3.1.** The Reliability Coordinator shall use the following circumstances to establish the need for entering TLR Level 3a:

- The transmission system is secure.

- One or more transmission facilities are expected to approach, or are approaching, or are at their SOL or IROL.
- Transactions using Non-firm Point-to-Point Transmission Service are flowing that are at or above the Curtailment Threshold on those facilities.
- The Transmission Provider has previously approved a higher priority Point-to-Point Transmission Service reservation over which a Transmission Customer wishes to begin an Interchange Transaction.

**2.4. TLR Level 3b — Curtail Interchange Transactions using Non-Firm Transmission Service Arrangements to mitigate a SOL or IROL Violation**

**2.4.1.** The Reliability Coordinator shall use the following circumstances to establish the need for entering TLR Level 3b:

- One or more transmission facilities are operating above their SOL or IROL, or
- Such operation is imminent and it is expected that facilities will exceed their reliability limit unless corrective action is taken, or
- One or more Transmission Facilities will exceed their SOL or IROL upon the removal from service of a generating unit or another transmission facility.
- Transactions using Non-firm Point-to-Point Transmission Service are flowing that are at or above the Curtailment Threshold on those facilities.

**2.5 TLR Level 4 — Reconfigure Transmission**

**2.5.1.** The Reliability Coordinator shall use the following circumstances to establish the need for entering TLR Level 4:

- One or more Transmission Facilities are above their SOL or IROL, or
- Such operation is imminent and it is expected that facilities will exceed their reliability limit unless corrective action is taken.

**2.5.2. Reconfiguration procedures.** The issuance of a TLR Level 4 shall result in the curtailment, in the current hour and the next hour, of all Interchange Transactions using Non-firm Point-to-Point Transmission Service that are at or above the Curtailment Threshold that impact the Constrained Facilities. If a SOL or IROL violation is imminent or occurring, the Reliability Coordinator(s) shall request that the affected Transmission Operators reconfigure transmission on their system, or arrange for reconfiguration on other transmission systems, to mitigate the constraint. Specific details are explained in Section 4, “Principles for Mitigating Constraints On and Off the Contract Path”.

**2.6. TLR Level 5a — Reallocation of Transmission Service by curtailing Interchange Transactions using Firm Point-to-Point Transmission Service on a pro rata basis to allow additional Interchange Transactions using Firm Point-to-Point Transmission Service**

**2.6.1.** The Reliability Coordinator shall use the following circumstances to establish the need for entering TLR Level 5a:

- The transmission system is secure.
- One or more transmission facilities are at their SOL or IROL.

- All Interchange Transactions using Non-firm Point-to-Point Transmission Service that are at or above the Curtailment Threshold have been curtailed.
- The Transmission Provider has been requested to begin an Interchange Transaction using previously arranged Firm Transmission Service that would result in a SOL or IROL violation.
- No further transmission reconfiguration is possible or effective.

**2.7. TLR Level 5b — Curtail Interchange Transactions using Firm Point-to-Point Transmission Service to mitigate an SOL or IROL violation**

**2.7.1.** The Reliability Coordinator shall use following circumstances to establish the need for entering TLR Level 5b:

- One or more Transmission Facilities are operating above their SOL or IROL, or
- Such operation is imminent, or
- One or more Transmission Facilities will exceed their SOL or IROL upon the removal from service of a generating unit or another transmission facility.
- All Interchange Transactions using Non-firm Point-to-Point Transmission Service that are at or above the Curtailment Threshold have been curtailed.
- No further transmission reconfiguration is possible or effective.

**2.8. Curtailment of Interchange Transactions Using Firm Transmission Service**

**2.8.1.** The Reliability Coordinator shall direct the curtailment of Interchange Transactions using Firm Transmission Service that are at or above the Curtailment Threshold for the following TLR Levels:

**2.8.1.1. TLR Level 5a.** Enable additional Interchange Transactions using Firm Point-to-Point Transmission Service to be implemented after all Interchange Transactions using Non-firm Point-to-Point Service have been curtailed, or

**2.8.1.2. TLR Level 5b.** Mitigate a SOL or IROL violation that remains after all Interchange Transactions using Non-firm Transmission Service has been curtailed under TLR Level 3b, and following attempts to reconfigure transmission under TLR Level 4.

Formerly NERC section 3.3

**2.9. TLR Level 6 — Emergency Procedures**

**2.9.1** The Reliability Coordinator shall use following circumstances to establish the need for entering TLR Level 6:

- One or more Transmission Facilities are above their SOL or IROL.
- One or more Transmission Facilities will exceed their SOL or IROL upon the removal from service of a generating unit or another transmission facility.

**2.9.2 Implementing emergency procedures.** If the Reliability Coordinator deems that transmission loading is critical to Bulk Electric System reliability, the Reliability Coordinator shall immediately direct the Balancing Authorities and Transmission Operators in its Reliability Area to redispatch generation, or reconfigure transmission, or reduce load to mitigate the critical condition until Interchange Transactions can be reduced utilizing the TLR Procedures or other procedures to return the system to a secure state. All Balancing Authorities and Transmission Operators shall comply with all requests from their Reliability Coordinator.

**3.0 TLR Level 0 — TLR concluded**

**3.0.1 Interchange Transaction restoration and notification procedures.** The Reliability Coordinator initiating the TLR Procedure shall notify all Reliability Coordinators within the Interconnection via the RCIS when the SOL or IROL violations are mitigated and the system is in a reliable state, allowing Interchange Transactions to be reestablished at its discretion. Those with the highest transmission priorities shall be reestablished first if possible.

**Requirements**

**4.1** The Reliability Coordinator shall be allowed to call a TLR 3b at any time to help mitigate a SOL or IROL violation.

**4.2** The Reliability Coordinator shall Reallocate Interchange Transactions using Non-firm Point-to-Point Transmission for the next hour to maintain the desired flow using Reallocation in accordance with the following timing specification:

**4.2.1** If issued prior to XX: 25, Non-firm Interchange Transactions will be curtailed to meet the desired current hour relief

**4.2.1.1** At XX: 25 a Reallocation will be performed to maintain the desired flow at the top of the following hour

**4.2.2** If issued after XX: 25, Non firm Interchange Transactions will be curtailed to meet the desired current hour relief and a Reallocation will be performed to maintain the target flow identified for the current hour.

**4.2.3** Transactions must be in the IDC by the Approved-tag Submission Deadline for Reallocation.

**4.3** The IDC shall issue ADJUST Lists to the Generation and Load Balancing Authority Areas and the Purchasing-Selling Entity who submitted the tag. The ADJUST List will include:

**4.3.1** Interchange Transactions using Non-firm Point-to-Point Transmission Service that are to be curtailed or held during current and next hours.

**4.3.2** Interchange Transactions using Firm Point-to-Point Transmission Service that were entered after XX:25 or issuance of TLR 3b (see Case 3 in Appendix F).

**4.4** The Sink Balancing Authority shall send the ADJUST Lists back to the IDC as soon as possible to ensure the most accurate calculations for actions subsequent to the TLR 3b being called.

- 4.5** The Reliability Coordinator will no longer be required to call a TLR Level 3a as soon as the SOL or IROL violation that caused the TLR 3b to be called has been mitigated due to the inherent next hour Reallocation that takes place for the top of the next hour in the TLR Level 3b.

**Appendices for Transmission Loading Relief Standard**

**PLEASE NOTE: items designated for inclusion in the NAESB TLR business practice following completion of the standard revision were deleted from this version of the NERC standard. Please see the mapped document to see which requirements were moved to NAESB and what future changes are expected. Appendices B, D, G, and the sub-priority portions of E-2 have been moved to NAESB, The appendices below (A, C, E, F) will be renumbered in the final standard.**

Appendix A. Transaction Management and Curtailment Process.

Appendix C. Sample NERC Transmission Loading Relief Procedure Log.

Appendix E. How the IDC Handles Reallocation.

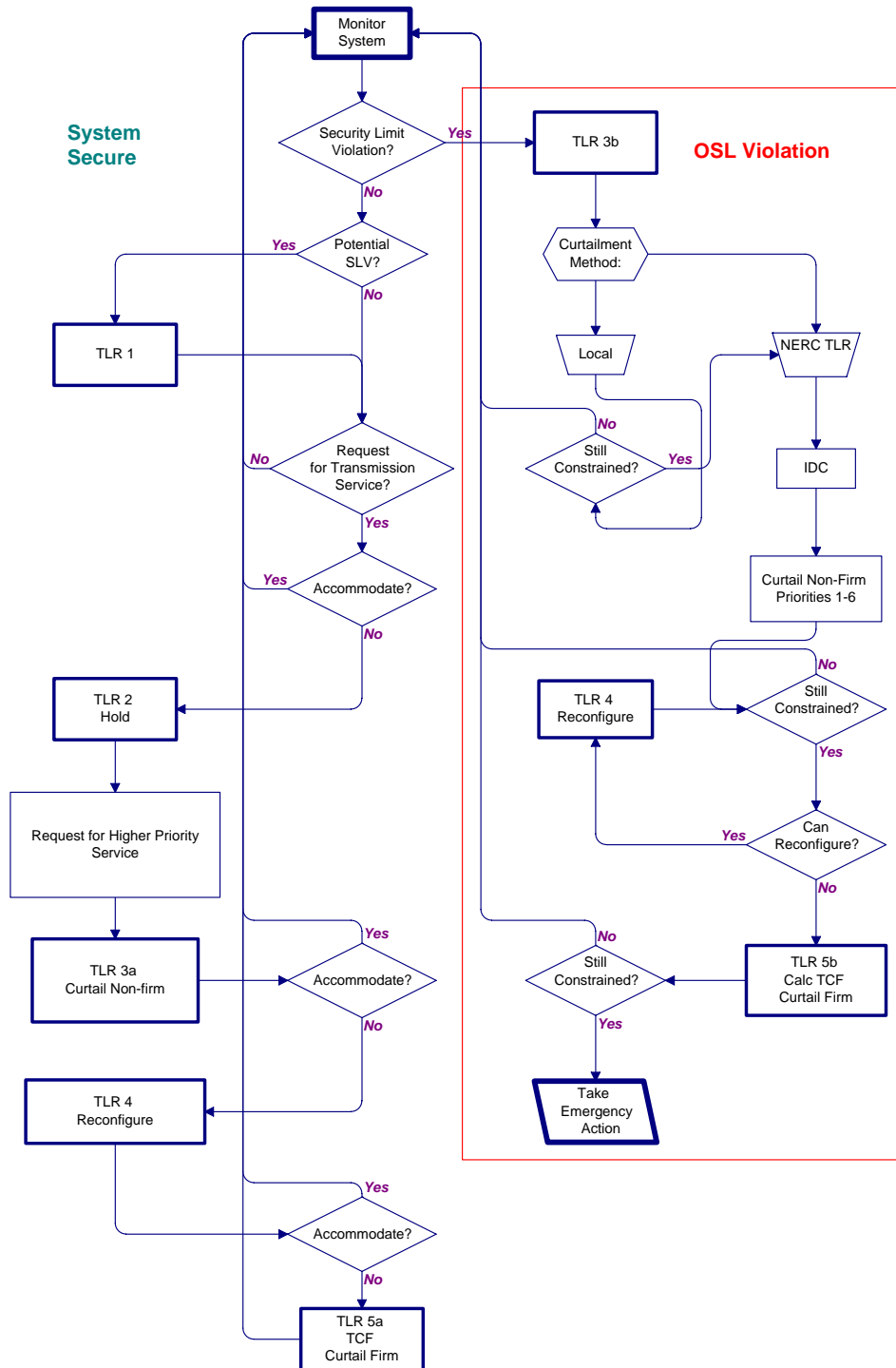
Section E1: Summary of IDC Features that Support Transaction Reloading/Reallocation.

Section E2: Timing Requirements.

Appendix F. Considerations for Interchange Transactions using Firm Point-to-Point Transmission Service.

Appendix A. Transaction Management and Curtailment Process

This flowchart depicts an overview of the Transaction Management and Curtailment process. Detailed decisions are not shown.



**Standard IRO-006-4 — Reliability Coordination — Transmission Loading Relief – Attachment 1**

**Appendix C. Sample NERC Transmission Loading Relief Procedure Log**

SAVE FILE DIRECTORY:

**NERC TRANSMISSION LOADING RELIEF (TLR) PROCEDURE LOG**

FILE SAVED AS: .XLS

INCIDENT			DATE		IMPACTED RELIABILITY COORDINATOR			ID NO.
<b>INITIAL CONDITIONS</b>								
Limiting Flowgate (LIMIT)					Rating	Contingent Flowgate (CONT.)		ODF
<b>TLR Levels</b>					<b>Priorities</b>			
0: TLR Incident Canceled					NX Next Hour Market Service			
1. Notify Reliability Coordinators of potential problems.					NS Service over secondary receipt and delivery points			
2: Halt additional transactions that contribute to the overload					NH Hourly Service			
3a and 3b: Curtail transactions using Non-firm Transmission Service					ND Daily Service			
4. Reconfigure to continue firm transactions if needed.					NW Weekly Service			
5a and 5b: Curtail Transactions using Firm Transmission Service.					NM Monthly Service			
6: Implement emergency procedures.					NN Non-firm imports for native load and network customers from non-designated network resources			
					F Firm Service			
<b>TLR ACTIONS</b>								
LEVEL	TIME	Priority	TLR 3,4		MW Flow			COMMENTS ABOUT ACTIONS
			No. TX Curtail	MW Curtail	Limiting Element		Cont. Element	
					Present	Post Cont.		



### **Appendix E. How the IDC Handles Reallocation**

The IDC algorithms reflect the Reallocation and reloading principles in this Appendix, as well as the reporting requirements, and status display. The IDC will obtain the Tag Submittal Time from the Tag Authority and post the Reloading/Reallocation information to the NERC TLR website.

A summary of IDC features that support the Reallocation process is provided in Attachment E1. Details on the interface and display features are provided in Attachment E2. Refer to Version 1.7.095 NERC Transaction Information Systems Working Group (TISWG) *Electronic Tagging Functional Specification* for details about the E-Tag system.

#### **E1. Summary of IDC Features that Support Transaction Reloading/Reallocation**

The following is a summary of IDC features and E-Tag interface that support Reloading/Reallocation:

##### **Information posted from IDC to NERC TLR website.**

1. Restricted directions (all source/sink combinations that impact a Constrained Facility(ies) with TLR 2 or higher) will be posted to the NERC TLR website and updated as necessary.
2. TLR Constrained Facility status and Transfer Distribution Factors will continue to be posted to NERC TLR website.
3. Lowest priority of Interchange Transactions (marginal “bucket”) to be Reloaded/Reallocated next-hour on each TLR Constrained Facility will be posted on NERC TLR website. This will provide an indication to the market of priority of Interchange Transactions that may be Reloaded/Reallocated the following hours.

##### **IDC Logic, IDC Report, and Timing**

1. The Reliability Coordinator will run the IDC the Reloading/Reallocation report at approximately 00:26. The IDC will prompt the Reliability Coordinator to enter a maximum loading value. The IDC will alarm if the Reliability Coordinator does not enter this value and issue a report by 00:30 or change from TLR 3a Level. The Report will be distributed to Balancing Authorities and Transmission Operators at 00:30. This process repeats every hour as long as the approved tag submission deadline for Reallocation is in effect (or until the TLR level is reduced to 1 or 0).
2. For Interchange Transactions in the restricted directions, tags must be submitted to the IDC by the approved tag submission deadline for Reallocation to be considered for Reallocation next-hour. The time stamp by the Tag Authority is regarded the official tag submission time.
3. Tags submitted to IDC after the approved tag submission deadline for Reallocation will not be allowed to start or increase but will be considered for Reallocation the next hour.
4. Interchange Transactions in restricted directions that are not indicated as “PROCEED” on the Reload/Reallocation Report will not be permitted to start or increase next hour.

##### **Reloading/Reallocation Transaction Status**

Reloading/Reallocation status will be determined by the IDC for all Interchange Transactions. The Reloading/Reallocation status of each Interchange Transaction will be listed on IDC reports and NERC TLR website as appropriate. An Interchange Transaction is considered to be in a restricted direction if it is at or above the Curtailment Threshold. Interchange Transactions below the Curtailment Threshold are unrestricted and free to flow subject to all applicable Reliability Standards and tariff rules.

1. **HOLD.** Permission has not been given for Interchange Transaction to start or increase and is waiting for the next Reloading/Reallocation evaluation for which it is a candidate. Interchange Transactions with E-tags submitted to the Tag Authority prior to TLR 2 or higher being declared (pre-tagged) will change to CURTAILED Status upon evaluation that does not permit them to start or increase. Transactions with E-tags submitted to Tag Authority after TLR 2 or higher was declared (post-tagged) will retain HOLD Status until given permission to proceed or E-Tag expires.
2. **CURTAILED.** Transactions for which E-Tags were submitted to Tag Authority prior to TLR 2 or higher being declared (pre-tagged) and ordered to be curtailed totally, curtailed partially, not permitted to start, or not permitted to increase. Interchange Transactions (pre-tagged or post-tagged) that were flowing and ordered to be reduced or totally curtailed. The Balancing Authority will indicate to the IDC through the E-Tag adjustment table the Interchange Transaction's curtailed values.
3. **PROCEED:** Interchange Transaction is flowing or has been permitted to flow as a result of Reloading/Reallocation evaluation. The Balancing Authority will indicate through the E-Tag adjustment table to IDC if Interchange Transaction will reload, start, or increase next-hour per Purchasing-Selling Entity's energy schedule as appropriate.

#### **Reallocation/Reloading Priorities**

1. Interchange Transaction candidates are ranked for loading and curtailment by priority as per Section 4, "Principles for Mitigating Constraints On and Off the Contract Path." This is called the "Constrained Path Method," or CPM. (Secondary, hourly, daily, ... firm etc). Interchange Transactions are curtailed and loaded pro-rata within priority level per TLR algorithm.
2. Reloading/Reallocation of Interchange Transactions are prioritized first by priority per CPM. E-Tags must be submitted to the IDC by the approved tag submission deadline for Reallocation of the hour during which the Interchange Transaction is scheduled to start or increase to be considered for Reallocation.
3. During Reloading/Reallocation, Interchange Transactions using lower priority Transmission Service will be curtailed pro-rata to allow higher priority transactions to reload, increase, or start. Equal priority Interchange Transactions will not reload, start, or increase by pro-rata Curtailment of other equal priority Interchange Transactions.
4. Reloading of Interchange Transactions using Non-firm Transmission Service with CURTAILED Status will take precedence over starting or increasing of Interchange Transactions using Non-firm Transmission Service of the same priority with PENDING Statuses.
5. Interchange Transactions using Firm Point-to-Point Transmission Service will be allowed to start as scheduled under TLR 3a as long as their E-Tag was received by the IDC by the approved tag submission deadline for Reallocation of the hour during which the Interchange Transaction is due to start or increase, regardless of whether the E-tag was submitted to the Tag Authority prior to TLR 2 or higher being declared or not. If this is the initial issuance of the TLR 3a, Interchange Transactions using Firm Point-to-Point Transmission Service will be allowed to start as scheduled as long as their E-Tag was received by the IDC by the time the TLR is declared.

#### **Total Flow Value on a Constrained Facility for Next Hour**

1. The Reliability Coordinator will calculate the change in net flow on a Constrained Facility due to Reallocation for the next hour based on:

## **Standard IRO-006-4 — Reliability Coordination — Transmission Loading Relief – Attachment 1**

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- Present constrained facility loading, present level of Interchange Transactions, and Balancing Authorities NNative Load responsibility (TLR Level 5a) impacting the Constrained Facility,
  - SOLs or IROLs, known interchange impacts and Balancing Authority NNative Load responsibility (TLR Level 5a) on the Constrained Facility the next hour, and
  - Interchange Transactions scheduled to begin the next hour.
2. The Reliability Coordinator will enter a maximum loading value for the constrained facility into the IDC as part of issuing the Reloading/Reallocation report.
  3. The Reliability Coordinator is allowed to call for TLR 3a or 5a when approaching a SOL or IROL to allow maximum transactional flow next hour, and to manage flows without violating transmission limits.
  4. The simultaneous curtailment and Reallocation for a Constrained Facility is allowed. This reduces the flow over the Constrained Facility while allowing Interchange Transactions using higher priority Transmission Service to start or increase the next hour. This may be used to accommodate change in flow next-hour due to changes other than Point-to-Point Interchange Transactions while respecting the priorities of Interchange Transactions flowing and scheduled to flow the next hour. The intent is to reduce the need for using TLR 3b, which prevents new Interchange Transactions from starting or increasing the next hour.
  5. The Reliability Coordinator must allow Interchange Transactions to be reloaded as soon as possible. Reloading must be in an orderly fashion to prevent a SOL or IROL violation from (re)occurring and requiring holding or curtailments in the restricted direction.

## E2. Timing Requirements

### TLR Levels 3a and 5a Issuing/Processing Time Requirement

1. In order for the IDC to be reasonably certain that a TLR Level 3a or 5a re-allocation/reloading report in which all tags submitted by the approved tag submission deadline for Reallocation are included, the report must be generated no earlier than 00:25 to allow the 10-minute approval time for Transactions that start next hour.
2. In order to allow a Reliability Coordinator to declare a TLR Level 3a or 5a at any time during the hour, the TLR declaration and Reallocation/Reloading report distribution will be treated as independent processes by the IDC. That is, a Reliability Coordinator may declare a TLR Level 3a or 5a at any time during the course of an hour. However, if a TLR Level 3a or 5a is declared for the next hour prior to 00:25 (see Figure 5 at right), the Reallocation/Reloading report that is generated will be made available to the issuing Reliability Coordinator only for previewing purposes, and cannot be distributed to the other Reliability Coordinators or the market. Instead, the issuing Reliability Coordinator will be reminded by an IDC alarm at 00:25 to generate a new Reallocation/Reloading report that will include all tags submitted prior to the approved tag submission deadline for Reallocation.
3. A TLR Level 3a or 5a Reallocation/Reloading report must be confirmed by the issuing Reliability Coordinator prior to 00:30 in order to provide a minimum of 30 minutes for the Reliability Coordinators with tags sinking in its Reliability Area to coordinate the Reallocation and Reloading with the Sink Balancing Authorities. This provides only 5 minutes (from 00:25 to 00:30) for the issuing Reliability Coordinator to generate a Reallocation/Reloading report, review it, and approve it.
4. The TLR declaration time will be recorded in the IDC for evaluating transaction sub-priorities for Reallocation/Reloading purposes (see Subpriority Table, in the **IDC Calculations and Reporting** section below).

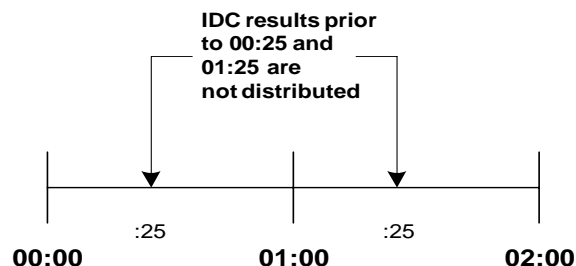


Figure 5 - IDC report may be run prior to 00:25, but results are not distributed.

### Re-Issuing of a TLR Level 2 or Higher

Each hour, the IDC will automatically remind the issuing Reliability Coordinator (via an IDC alarm) of a TLR level 2 or higher declared in the previous hour or earlier about re-issuing the TLR. The purpose of the reminder is to enable the Reliability Coordinator to Reallocate or reload currently halted or curtailed Interchange Transactions next hour. The reminder will be in the form of an alarm to the issuing Reliability Coordinator, and will take place at 00:25 so that, if the Reliability Coordinator re-issues the TLR as a TLR level 3a or 5a, all tags submitted prior to the approved tag submission deadline for Reallocation are available in the IDC.

### IDC Assistance with Next Hour Point-to-Point Transactions

In order to assist a Reliability Coordinator in determining the MW relief required on a Constrained Facility for the next hour for a TLR level 3a or 5a, the IDC will calculate and present the total MW impact of all currently flowing and scheduled Point-to-Point Transactions for the next hour. In order to assist a Reliability Coordinator in determining the MW relief required on a Constrained Facility for the next hour during a TLR level 5a, the IDC will calculate and present the total MW impact of all currently flowing and scheduled Point-to-Point Transactions for the next hour as well as Balancing Authority with flows due to service to Network Customers and Native Load. The Reliability Coordinator will then be requested to provide the total incremental or decremental MW amount of flow through the Constrained Facility that can be allowed for the next hour. The value entered by the Reliability Coordinator and the

**Standard IRO-006-4 — Reliability Coordination — Transmission Loading Relief – Attachment 1**

IDC-calculated amounts will be used by the IDC to identify the relief/reloading amounts (delta incremental flow value) on the constrained facility. The IDC will determine the Transactions to be reloaded, reallocated, or curtailed to make room for the Transactions using higher priority Transmission Service. The following examples show the calculation performed by IDC to identify the “delta incremental flow:”

**Example 1**

Flow to maintain on Facility	800 MW
Expected flow next hour from Transactions using Point-to-Point Transmission Service	950 MW
Contribution from flow next hour from service to Network customers and Native Load	-100 MW
Expected Net flow next hour on Facility	850 MW
Amount of Transactions using Point-to-Point Transmission Service to hold for Reallocation	$850 \text{ MW} - 800 \text{ MW} = 50 \text{ MW}$
Amount to enter into IDC for Transactions using Point-to-Point Transmission Service	$950 \text{ MW} - 50 \text{ MW} = 900 \text{ MW}$

**Example 2**

Flow to maintain on Facility	800 MW
Expected flow next hour from Transactions using Point-to-Point Transmission Service	950 MW
Contribution from flow next hour from service to Network customers and Native Load	50 MW
Expected Net flow next hour on Facility	1000 MW
Amount of Transactions using Point-to-Point Transmission Service to hold for Reallocation	$1000 \text{ MW} - 800 \text{ MW} = 200 \text{ MW}$
Amount to enter into IDC for Transactions using Point-to-Point Transmission Service	$950 \text{ MW} - 200 \text{ MW} = 750 \text{ MW}$

**Example 3**

Flow to maintain on Facility	800 MW
Expected flow next hour from Transactions using Point-to-Point Transmission Service	950 MW
Contribution from flow next hour from service to Network customers and Native Load	-200 MW
Expected Net flow next hour on Facility	750 MW
Amount of Transactions using Point-to-Point Transmission Service to hold for Reallocation	$750 \text{ MW} - 800 \text{ MW} = -50 \text{ MW}$ None are held

For a TLR levels 3b or 5b the IDC will request the Reliability Coordinator to provide the MW requested relief amount on the Constrained Facility, and will not present the current and next hour MW impact of Point-to-Point transactions. The Reliability Coordinator-entered requested relief amount will be used by the IDC to determine the Interchange Transaction Curtailments and flows due to service to Network Customers and Native Load (TLR Level 5b) in order to reduce the SOL or IROL violation on the Constrained Facility by the requested amount.

### ***IDC Calculations and Reporting***

At the time the TLR report is processed, the IDC will use all candidate Interchange Transactions for Reallocation that met the approved tag submission deadline for Reallocation plus those Interchange Transactions that were curtailed or halted on the previous TLR action of the same TLR event. The IDC will calculate and present an Interchange Transactions Halt/Curtailment list that will include reload and Reallocation of Interchange Transactions. The Interchange Transactions are prioritized as follows:

1. All Interchange Transactions will be arranged by Transmission Service Priority according to the Constrained Path Method. These priorities range from 1 to 6 for the various non-firm Transmission Service products (TLR levels 3a and 3b). Interchange Transactions using Firm Transmission Service (priority 7) are used only in TLR levels 5a and 5b. Next-Hour Market Service is included at priority 0

Examples of Interchange Transactions using Non-firm Transmission Service sub-priority settings begin in the **Transaction Sub-priority Examples** following sections

2. All Interchange Transactions using Firm Transmission Service will be put in the same priority group, and will be Curtailed/Reallocated pro-rata, independent of their current status (curtailed or halted) or time of submittal with respect to TLR issuance (TLR level 5a). Under a TLR 5a, all Interchange Transactions using Non-firm Transmission Service that is at or above the Curtailment Threshold will have been curtailed and hence sub-prioritizing is not required.

All Interchange Transactions processed in a TLR are assigned one of the following statuses:

- PROCEED:** The Interchange Transaction has started or is allowed to start to the next hour MW schedule amount.
- CURTAILED:** The Interchange Transaction has started and is curtailed due to the TLR, or it had not started but it was submitted prior to the TLR being declared (level 2 or higher).
- HOLD:** The Interchange Transaction had never started and it was submitted after the TLR being declared – the Interchange Transaction is held from starting next hour or the transaction had never started and it was submitted to the IDC after the Approved-Tag Submission Deadline – the Interchange Transaction is to be held from starting next hour and is not included in the Reallocation calculations until following hour.

Upon acceptance of the TLR Transaction Reallocation/reloading report by the issuing Reliability Coordinator, the IDC will generate a report to be sent to NERC that will include the PSE name and Tag ID of each Interchange Transaction in the IDC TLR report. The Interchange Transaction will be ranked according to its assigned status of HOLD, CURTAILED or PROCEED. The reloading/Reallocation report will be made available at NERC's public TLR website, and it is NERC's responsibility to format and publish the report.

### **Tag Reloading for TLR Levels 1 and 0**

When a TLR Level 1 or 0 is issued, the Constrained Facility is no longer under SOL or IROL violation and all Interchange Transactions are allowed to flow. In order to provide the Reliability Coordinators with

a view of the Interchange Transactions that were halted or curtailed on previous TLR actions (level 2 or higher) and are now available for reloading, the IDC provides such information in the TLR report.

### **New Tag Alarming**

Those Interchange Transactions that are at or above the Curtailment Threshold and are *not* candidates for Reallocation because the tags for those Transactions were not submitted by the approved tag submission deadline for Reallocation will be flagged as HOLD and must not be permitted to start or increase during the next hour. To alert Reliability Coordinators of those Transactions required to be held, the IDC will generate a report (for viewing within the IDC only) at various times. The report will include a list of all HOLD Transactions. In order not to overwhelm the Reliability Coordinator with alarms, only those who issued the TLR and those whose Transactions sink within their Reliability Area will be alarmed. An alarm will be issued for a given tag only once and will be issued for all TLR levels for which halting new Transactions is required: TLR Level 2, 3a, 3b, 5a and 5b.

### **Tag Adjustment**

The Interchange Transactions with statuses of HOLD, CURTAILED or PROCEED must be adjusted by a Tag Authority or Tag Approval entity. Without the tag adjustments, the IDC will assume that Interchange Transactions were not curtailed/held and are flowing at their specified schedule amounts.

1. Interchange Transactions marked as CURTAILED should be adjusted to a cap equal to, or at the request of the originating PSE, less than the reallocated amount (shown as the MW CAP on the IDC report). This amount may be zero if the Transaction is fully curtailed.
2. Interchange Transaction marked as PROCEED should be adjusted to reload (NULL or to its MW level in accordance with its Energy Profile in the adjusted MW in the E-Tag) if the Interchange Transaction has been previously adjusted; otherwise, if the Interchange Transaction is flowing in full, the Tag Authority need not issue an adjust.
3. Interchange Transactions marked as HOLD should be adjusted to 0 MW.

### **Special Tag Status**

There are cases in which a tag may be marked with a composite state of ATTN\_REQD to indicate that tag Authority/Approval failed to communicate or there is an inconsistency between the validation software of different tag Authority/Approval entities. In this situation, the tag is no longer subject to passive approval and its status change to IMPLEMENT may take longer than 10 minutes. Under these circumstances, the IDC may have a tag that is issued prior to the Tag Submittal Deadline that will not be a candidate for Reallocation. Such tags, when approved by the Tag Authority, will be marked as HOLD and must be halted.

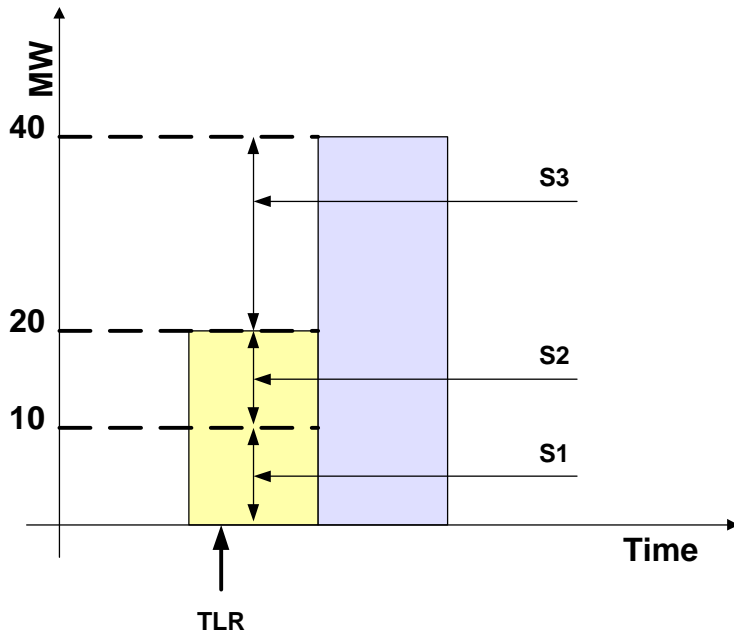
### **Transaction Sub-Priority Examples**

The following describes examples of Interchange Transactions using Non-firm Transmission Service sub-priority setting for an Interchange Transaction under different circumstances of current-hour and next-hour schedules and active MW flowing as modified by tag adjust table in E-Tag.

**Standard IRO-006-4 — Reliability Coordination — Transmission Loading Relief — Attachment 1**

Example 1 – Transaction curtailed, next-hour Energy Profile is higher

Energy Profile: Current hour	20 MW
Actual flow following curtailment: Current hour	10 MW
Energy Profile: Next hour	40 MW



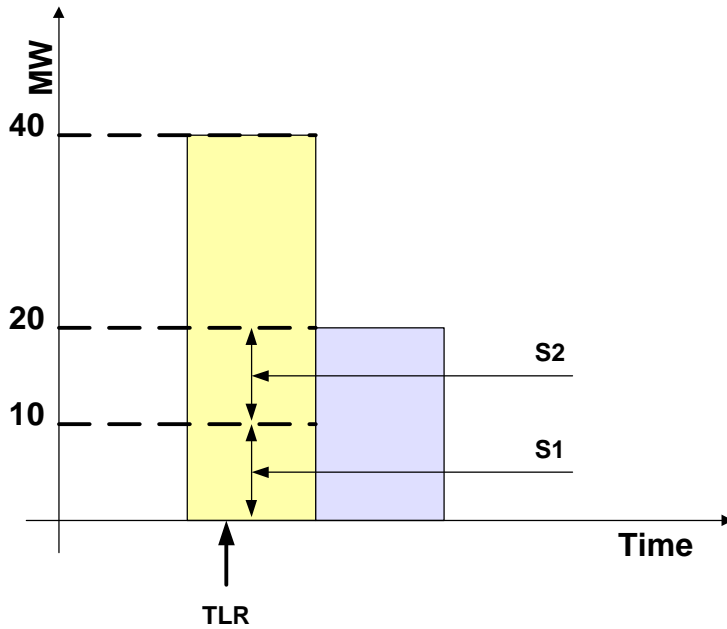
**Sub-priorities for Transaction MW:**

<i>Sub-Priority</i>	<i>MW Value</i>	<i>Explanation</i>
S1	10 MW	Maintain current curtailed flow
S2	+10 MW	Reload to current hour Energy Profile
S3	+20 MW	Load to next hour Energy Profile
S4		



**Example 2 – Transaction curtailed, next-hour Energy Profile is lower**

Energy Profile: Current hour	40 MW
Actual flow following curtailment: Current hour	10 MW
Energy Profile: Next hour	20 MW

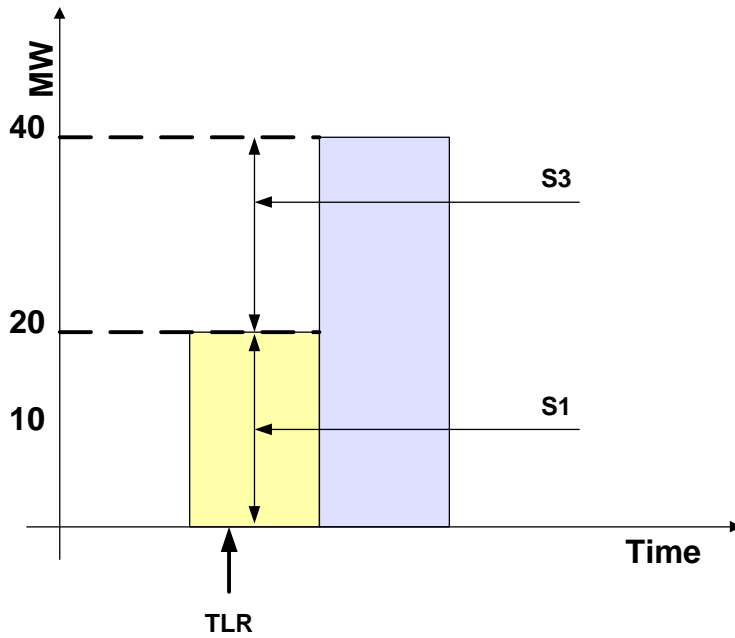


**Sub-priorities for Transaction MW:**

<i>Sub-Priority</i>	<i>MW Value</i>	<i>Explanation</i>
S1	10 MW	Maintain current curtailed flow
S2	+10 MW	Reload to <i>lesser</i> of current and next-hour Energy Profile
S3	+0 MW	Next-hour Energy Profile is 20MW, so no change in MW value
S4		

**Example 3 – Transaction not curtailed, next-hour Energy Profile is higher**

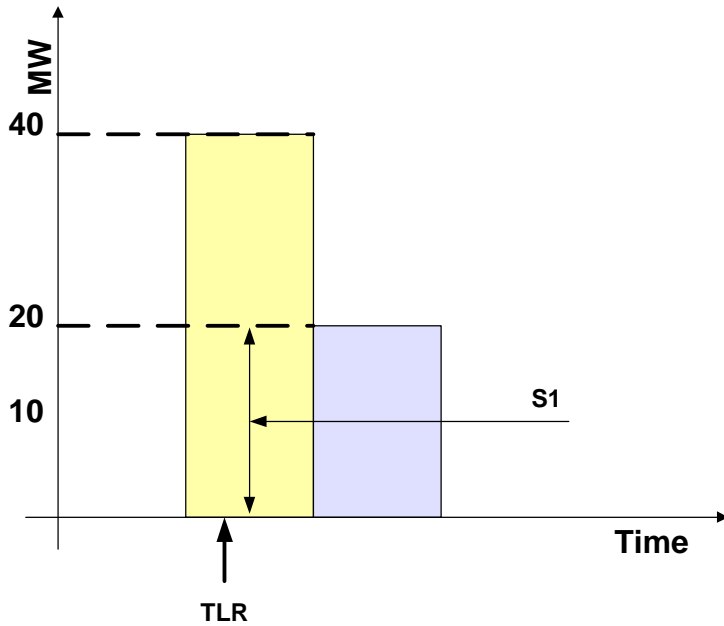
Energy Profile: Current hour	20 MW
Actual flow following curtailment: Current hour	20 MW (no curtailment)
Energy Profile: Next hour	40 MW



<i>Sub-Priority</i>	<i>MW Value</i>	<i>Explanation</i>
S1	20 MW	Maintain current flow (not curtailed)
S2	+0 MW	Reload to <i>lesser</i> of current and next-hour Energy Profile
S3	+20 MW	Next-hour Energy Profile is 40MW
S4		

**Example 4 – Transaction not curtailed, next-hour Energy Profile is lower**

Energy Profile: Current hour	40 MW
Actual flow following curtailment: Current hour	40 MW (no curtailment)
Energy Profile: Next hour	20 MW

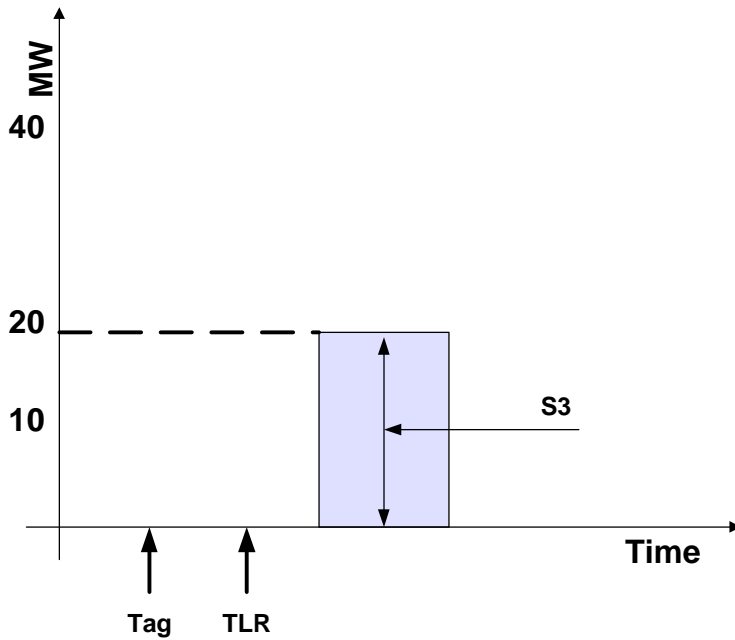


**Sub-priorities for Transaction MW:**

<i>Sub-Priority</i>	<i>MW Value</i>	<i>Explanation</i>
S1	20 MW	Reduce flow to next-hour Energy Profile (20MW)
S2	+0 MW	Reload to <i>lesser</i> of current and next-hour Energy Profile
S3	+0 MW	Next-hour Energy Profile is 20MW
S4		

**Example 5 — TLR Issued before Transaction was scheduled to start**

Energy Profile: Current hour	0 MW
Actual flow following curtailment: Current hour	0 MW (Transaction scheduled to start <i>after</i> TLR initiated)
Energy Profile: Next hour	20 MW



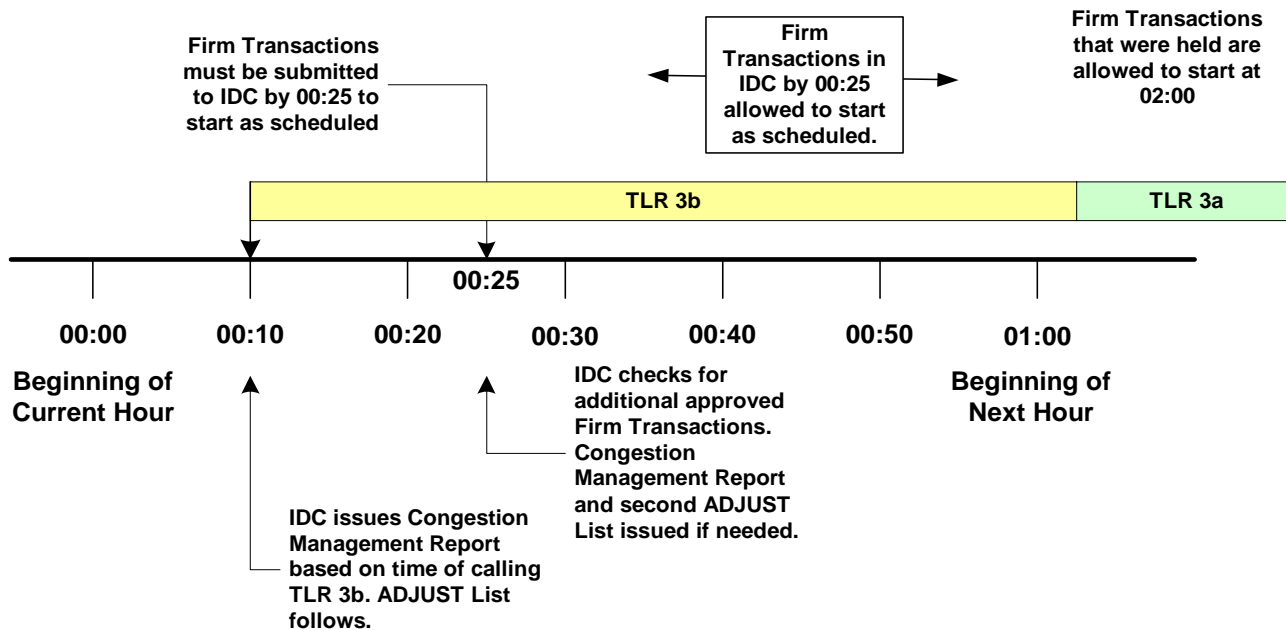
<i>Sub-Priority</i>	<i>MW Value</i>	<i>Explanation</i>
S1	0 MW	Transaction was not allowed to start
S2	+0 MW	Transaction was not allowed to start
S3	+20 MW	Next-hour Energy Profile is 20MW
S4	+0	Tag submitted prior to TLR

**Appendix F. Considerations for Interchange Transactions**

**Using Firm Point-to-Point Transmission Service**

The following cases explain the circumstances under which an Interchange Transaction using Firm Point-to-Point Transmission Service will be allowed to start as scheduled during a TLR 3b:

**Case 1: TLR 3b is called between 00:00 and 00:25 and the Interchange Transaction using Firm Point-to-Point Transmission Service is submitted to IDC by 00:25.**



The IDC will examine the current hour (00) and next hour (01) for all Interchange Transactions.

The IDC will issue an ADJUST List based upon the time the TLR 3b is called. The ADJUST List will include curtailments of Interchange Transactions using Non-firm Point-to-Point Transmission Service as necessary to allow room for those Interchange Transactions using Firm Point-to-Point Transmission Service to start as scheduled.

At 00:25, the IDC will check for additional Interchange Transactions using Firm Point-to-Point Transmission Service that were submitted to the IDC by that time and issue a second ADJUST List if those additional Interchange Transactions are found.

All existing or new Interchange Transactions using Non-firm Point-to-Point Transmission Service that are increasing or expected to start during the current hour or next hour will be placed on HALT or HOLD. There is no Reallocation of lower-priority Interchange Transactions using Non-firm Point-to-Point Transmission Service.

Interchange Transactions using Firm Point-to-Point Transmission Service that were submitted to the IDC by 00:25 will be allowed to start as scheduled.

**Standard IRO-006-4 — Reliability Coordination — Transmission Loading Relief –  
Attachment 1**

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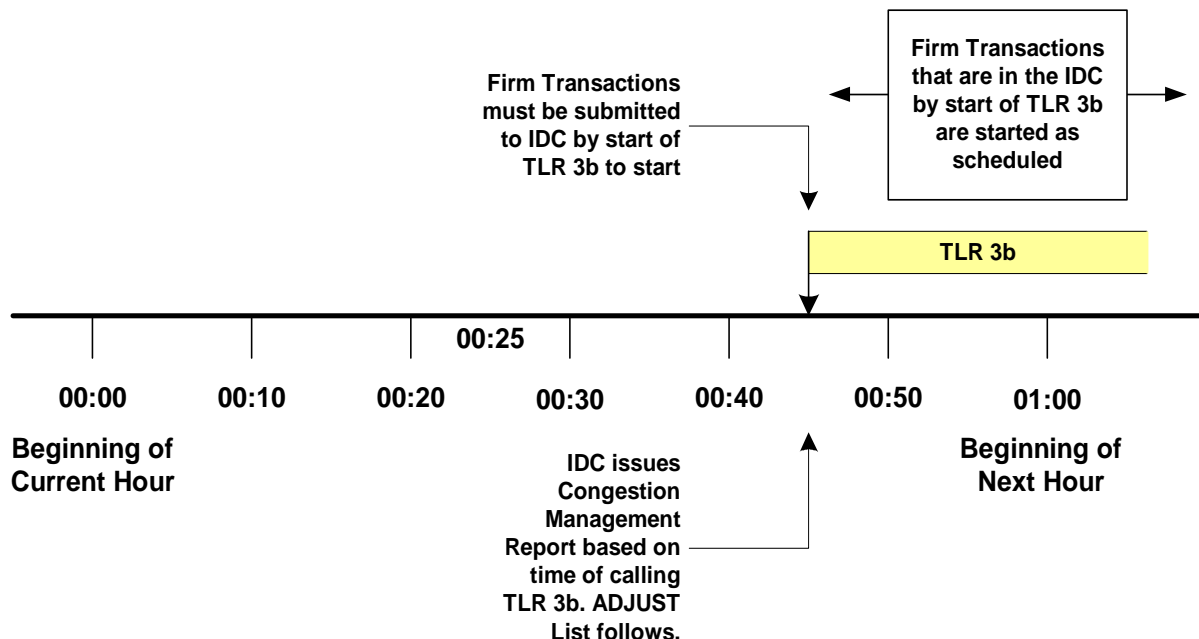
Interchange Transactions using Firm Point-to-Point Transmission Service that were submitted to the IDC after 00:25 will be held.

Once the SOL or IROL violation is mitigated, the Reliability Coordinator shall call a TLR Level 3a (or lower). If a TLR Level 3a is called:

Interchange Transactions using Firm Point-to-Point Transmission Service that were submitted to the IDC by 00:25 will be allowed to start as scheduled at 02:00.

Interchange Transactions using Non-firm Point-to-Point Transmission Service that were held may then be reallocated to start at 02:00.

**Case 2: TLR 3b is called after 00:25 and the Interchange Transaction using Firm Point-to-Point Transmission Service is submitted to the IDC no later than the time at which the TLR 3b is called.**



The IDC will examine the current hour (00) and next hour (01) for all Interchange Transactions.

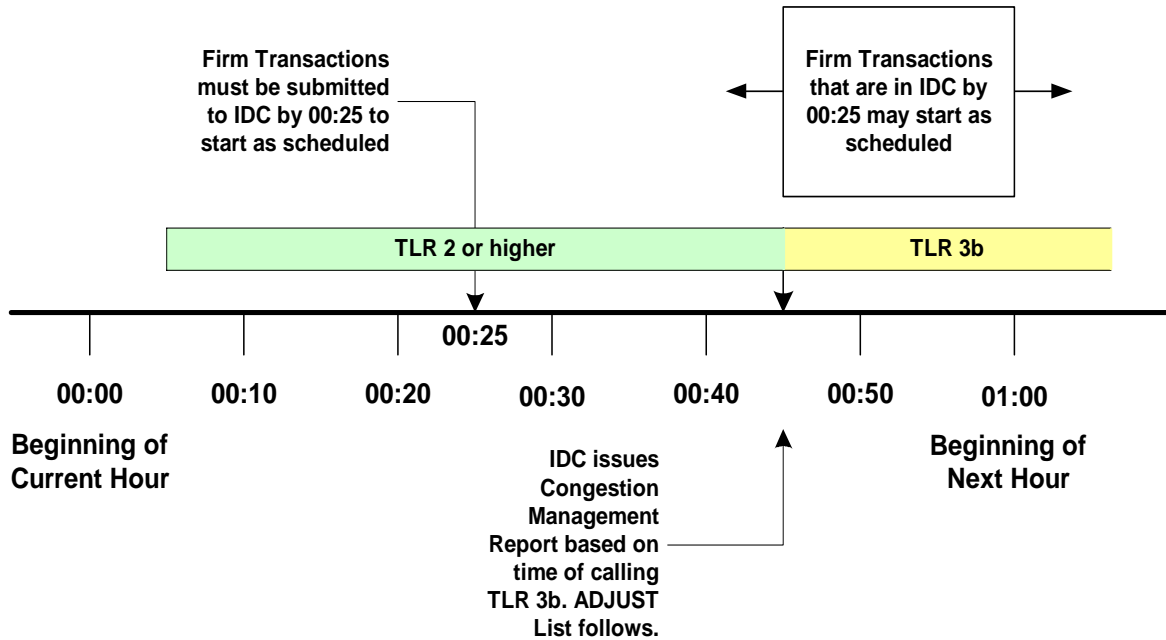
The IDC will issue an ADJUST List at the time the TLR 3b is called. The ADJUST List will include additional curtailments of Interchange Transactions using Non-firm Point-to-Point Transmission Service as necessary to allow room for those Interchange Transactions using Firm Point-to-Point Transmission Service to start at as scheduled.

All existing or new Interchange Transactions using Non-firm Point-to-Point Transmission Service that are increasing or expected to start during the current hour or next hour will be placed on HALT or HOLD. There is no Reallocation of lower-priority Interchange Transactions using Non-firm Point-to-Point Transmission Service.

Interchange Transactions using Firm Point-to-Point Transmission Service that were submitted to the IDC by the time the TLR 3b was called will be allowed to start at as scheduled.

Interchange Transaction using Firm Point-to-Point Transmission Service that were submitted to the IDC after the TLR 3b was called will be held until the next issuance for TLR (either TLR 3b, 3a, or lower level).

Case 3. TLR 2 or higher is in effect, a TLR 3b is called after 00:25, and the Interchange Transaction using Firm Point-to-Point Transmission Service is submitted to the IDC by 00:25.

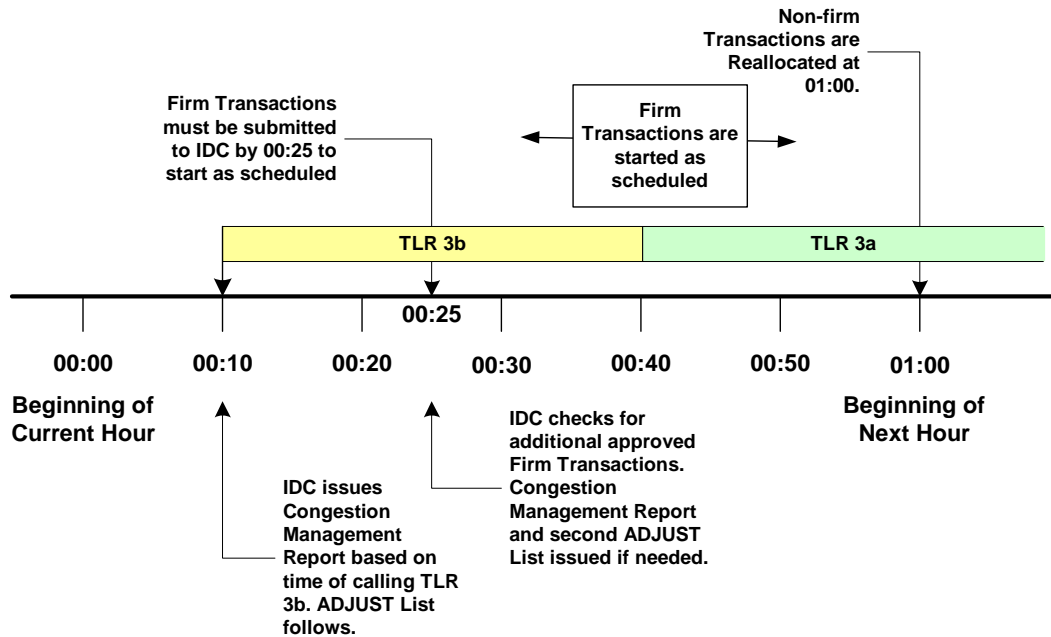


If a TLR 2 or higher has been issued and 3B is subsequently issued, then only those Interchange Transactions using Firm Point-to-Point Transmission Service that had been submitted to the IDC by 00:25 will be allowed to start as scheduled. All other Interchange Transactions are held.



**Standard IRO-006-4 — Reliability Coordination — Transmission Loading Relief – Attachment 1**

**Case 4. TLR 3b is called before 00:25 and the Interchange Transaction is submitted to the IDC by 00:25. TLR 3a is called at 00:40.**



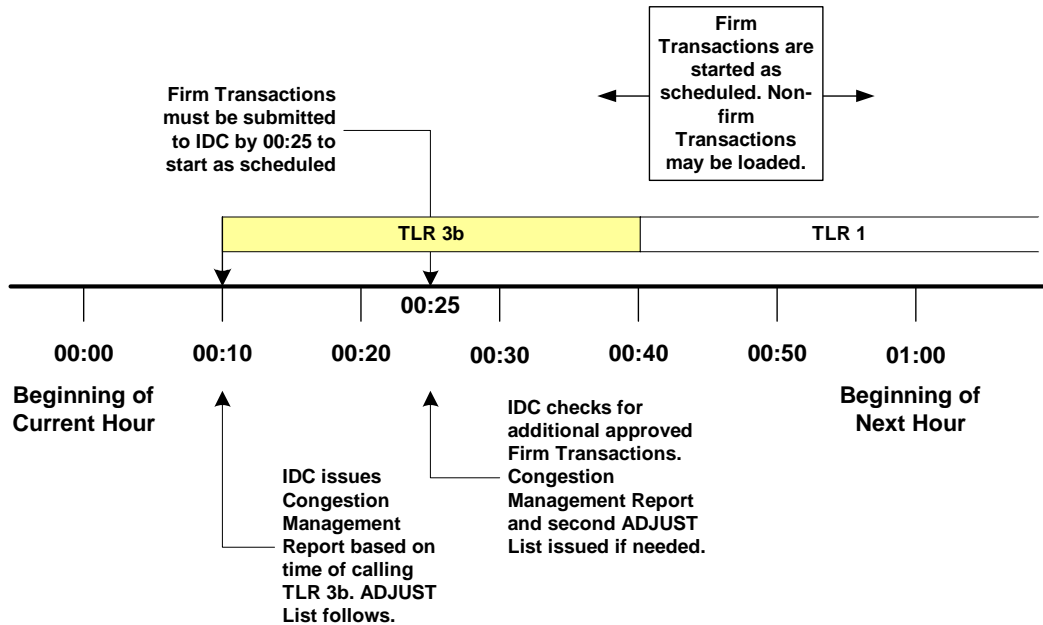
Same as Case 1, but TLR Level 3b ends at 00:40 and becomes TLR Level 3a.

All Interchange Transactions using Firm Point-to-Point Transmission Service will start as scheduled if in by the time the 3A is declared.

All Interchange Transactions using Non-firm Point-to-Point Transmission Service are reallocated at 01:00.

**Standard IRO-006-4 — Reliability Coordination — Transmission Loading Relief – Attachment 1**

**Case 5. TLR 3b is called before 00:25 and the Interchange Transaction is submitted to the IDC by 00:25. TLR 1 is called at 00:40.**



Same as Case 1, but TLR Level 3b ends at 00:40 and becomes TLR Level 1.

All Interchange Transactions using Firm Point-to-Point Transmission Service will start as scheduled.

All Interchange Transactions using Non-firm Point-to-Point Transmission Service may be loaded immediately.

**PLEASE NOTE: items designated for inclusion in the NAESB TLR business practice following completion of the standard revision were deleted. Please see the mapped document to see which items were move to NAESB and what future changes are expected.**

**Attachment 1-IRO-006**

**Transmission Loading Relief Procedure — Eastern Interconnection**

**Purpose**

This standard defines procedures for curtailment and reloading of Interchange Transactions to relieve overloads on transmission facilities modeled in the Interchange Distribution Calculator.

~~This standard defines procedures for curtailment and reloading of Interchange Transactions to relieve overloads on transmission facilities modeled in the Interchange Distribution Calculator. This process is defined in the requirements below, and is depicted in Appendix A. Examples of curtailment calculations using these procedures are contained in Appendix B.~~

The flexibility for ISOs and RTOs to use redispatch is contained explicitly in the NAESB business practice Section 1.3.

**Applicability**

This standard only applies to the Eastern Interconnection.

**1. Transmission Loading Relief (TLR) Procedure**

- 1.1. Initiation only by Reliability Coordinator.** A Reliability Coordinator shall be the only entity authorized to initiate the TLR Procedure and shall do so at 1) the Reliability Coordinator's own request, or 2) upon the request of a Transmission Operator.
- 1.2. Mitigating ~~transmission constraints~~**SOL and IROL violations.**** A Reliability Coordinator may utilize the TLR Procedure to mitigate potential or ~~actual-existing~~ System Operating Limit (SOL) violations or ~~to prevent or mitigate~~ Interconnection Reliability Operating Limit (IROL) violations on any transmission facility modeled in the IDC. ~~However, the TLR procedure is an inappropriate and ineffective tool as a sole means to mitigate existing IROL violations due to the time required to implement the procedure. Reconfiguration, redispatch, and load shedding are more timely and effective in mitigating existing IROL violations~~
- 1.2.1. Requesting relief on tie facilities.** Any Transmission Operator who operates the tie facility shall be allowed to request relief from its Reliability Coordinator.

~~**1.2.1.1. Interchange Transaction priority on tie facilities.** The priority of the Interchange Transaction(s) to be curtailed shall be determined by the Transmission Service reserved on the Transmission Service Provider's system who requested the relief.~~

- 1.3. ~~Order~~**Sequencing** of TLR Levels and taking emergency action.** The Reliability Coordinator shall not be required to follow the TLR Levels in their numerical ~~order~~ **sequence** (Section 2, "TLR Levels"). Furthermore, if a Reliability Coordinator deems that a transmission loading condition could jeopardize Bulk Electric System reliability, the Reliability Coordinator shall have the authority to enter TLR Level 6 directly, and immediately direct the Balancing Authorities or Transmission Operators to take such actions as redispatching generation, or reconfiguring transmission, or reducing load to

mitigate the critical condition until Interchange Transactions can be reduced utilizing the TLR Procedure or other methods to return the system to a secure state.

- 1.4. Notification of TLR Procedure implementation.** The Reliability Coordinator initiating the use of the TLR Procedure shall notify other Reliability Coordinators and Balancing Authorities and Transmission Operators, and must post the initiation and progress of the TLR event on the appropriate NERC web page(s).

This notification is automated in the Interchange Distribution Calculator (IDC) and populates a message on the NERC RCIS.

- 1.4.1. Notifying other Reliability Coordinators.** The Reliability Coordinator initiating the TLR Procedure shall inform all other Reliability Coordinators via the Reliability Coordinator Information System (RCIS) that the TLR Procedure has been implemented.

- 1.4.1.1. Actions expected.** The Reliability Coordinator initiating the TLR Procedure shall indicate the actions expected to be taken by other Reliability Coordinators.

- 1.4.2. Notifying Transmission Operators and Balancing Authorities.** The Reliability Coordinator shall notify Transmission Operators and Balancing Authorities in its Reliability Area when entering and leaving any TLR level.

This notification is automated in the Interchange Distribution Calculator (IDC) and populates a message on the NERC RCIS.

- 1.4.3. Notifying Sink Balancing Authorities.** The Reliability Coordinator for the sink Balancing Authority shall be responsible for directing the Sink Balancing Authority to curtail the Interchange Transactions as specified by the Reliability Coordinator implementing the TLR Procedure.

- 1.4.3.1. Notification order.** Within a Transmission Service Priority level, the Sink Balancing Authorities whose Interchange Transactions have the largest impact on the Constrained Facilities shall be notified first if practicable.

- 1.4.4. Updates.** At least once each hour, or when conditions change, the Reliability Coordinator implementing the TLR Procedure shall update all other Reliability Coordinators (via the RCIS). Transmission Operators and Balancing Authorities who have had Interchange Transactions impacted by the TLR will be updated by their Reliability Coordinator.

- 1.5. Obligations.** All Reliability Coordinators shall comply with the request of the Reliability Coordinator who initiated the TLR Procedure, unless the initiating Reliability Coordinator agrees otherwise.

~~**1.5.1. Use of TLR Procedure with “local” procedures.** A Reliability Coordinator shall be allowed to implement a local transmission loading relief or congestion management procedure simultaneously with an Interconnection wide procedure. However, the Reliability Coordinator shall be obligated to follow the curtailments as directed by the Interconnection wide procedure. If the Reliability~~

~~Coordinator desires to use a local procedure as a substitute for Curtailments as directed by the Interconnection wide procedure, it may do so only if such use is approved by the NERC Operating Committee.~~

**1.6. Consideration of Interchange Transactions.** The administration of the TLR Procedure shall be guided by information obtained from the IDC.

**1.6.1. Interchange Transactions not in the IDC.** Reliability Coordinators shall also treat known Interchange Transactions that may not appear in the IDC in accordance with the procedures in this document.

**1.6.2. Transmission elements not in IDC.** When a Reliability Coordinator is faced with an overload on a transmission element that is not modeled in the IDC, the Reliability Coordinator shall use the best information available to curtail Interchange Transactions in order to operate the system in a reliable manner. The Reliability Coordinator shall use its best efforts to ensure that Interchange Transactions with a Transfer Distribution Factor of less than the Curtailment Threshold on the transmission element not modeled in the IDC are not curtailed.

**1.6.3. Questionable IDC results.** Any Reliability Coordinator ~~(or Transmission Operator through its Reliability Coordinator)~~ who believes the curtailment list from the IDC for a particular TLR event is incorrect shall use its best efforts to communicate those adjustments necessary to bring the curtailment list into conformance with the principles of this Procedure to the initiating Reliability Coordinator. Causes of questionable IDC results may include:

- Missing Interchange Transactions that are known to contribute to the Constraint.
- Significant change in transmission system topology.
- TDF matrix error.

Impacts of questionable IDC results may include:

- Curtailment that would have no effect on, or aggravate the constraint.
- Curtailment that would initiate a constraint elsewhere.

If other Reliability Coordinators are involved in the TLR event, all impacted Reliability Coordinators shall be in agreement before any adjustments to the Curtailment list are made.

**1.6.4. Curtailment that would cause a constraint elsewhere.** A Reliability Coordinator shall be allowed to exempt an Interchange Transaction from Curtailment if that Reliability Coordinator is aware that the Interchange Transaction Curtailment directed by the IDC would cause a constraint to occur elsewhere. This exemption shall only be allowed after the Reliability Coordinator has consulted with the Reliability Coordinator who initiated the Curtailment.

~~1.6.5.1.7 **Redispatch options.** The Reliability Coordinator shall ensure that Interchange Transactions that are linked to redispatch options are protected from Curtailment in accordance with the redispatch provisions.~~

~~1.6.6. **Reallocation.** The Reliability Coordinator shall consider for Reallocation any Transactions of higher priority that meet the approved tag submission~~

Creation and distribution of the TLR Procedure Log is now automated in the IDC.

~~deadline during a TLR Level 3A. The Reliability Coordinator shall consider for Reallocation any Transaction using Firm Transmission Service that has met the approved tag submission deadline during a TLR Level 5A. Note Reallocations for Dynamic Schedules are as follows: If an Interchange Transaction is identified as a Dynamic Schedule and the transmission service is considered firm according to the constrained path method, then it will not be held by the IDC during TLR level 4 or lower. Adjustments to Dynamic Schedules in accordance with INT-004 R5 will not be held under TLR level 4 or lower.~~

~~1.7 IDC updates. Any Interchange Transaction adjustments or curtailments that result from using this Procedure must be entered into the IDC.~~

**Logging.** The Reliability Coordinator shall complete the NERC Transmission Loading Relief Procedure Log whenever it invokes TLR Level 2 or above, and send a copy of the log via email to NERC within two business days of the TLR event for posting on the NERC website.

**1.8 TLR Event Review.** The Reliability Coordinator shall report the TLR event to the ~~NERC Market Committee and~~ Operating Reliability Subcommittee in accordance with TLR review processes established by NERC as required.

**1.8.1 Providing information.** Transmission Operators and Balancing Authorities within the Reliability Coordinator’s Area, and all other Reliability Coordinators, including Transmission Operators and Balancing Authorities within their respective Reliability Areas, shall provide information, as requested by the initiating Reliability Coordinator, in accordance with TLR review processes established by NERC.

**1.8.2 Market Committee reviews.** The Market Committee may conduct reviews of certain TLR events based on the size and number of Interchange Transactions that are affected, the frequency that the TLR Procedure is called for a particular Constrained Facility, or other factors.

The Market Committee no longer exists and this requirement will be removed in Phase 3.

**1.8.3 Operating Reliability Subcommittee reviews.** The Operating Reliability Subcommittee shall conduct reviews to ensure proper implementation and for “lessons learned.”

## **2. Transmission Loading Relief (TLR) Levels**

### **Introduction**

This section describes the various levels of the TLR Procedure. The description of each level begins with the circumstances that define the TLR Level, followed by the procedures to be followed.

The decision that a Reliability Coordinator makes in selecting a particular TLR Level often depends on the transmission loading condition and whether the Interchange Transaction is using Non-firm Point-to-Point Transmission Service or Firm Point-to-Point Transmission Service. There are further considerations that depend on whether the Constrained Facility is on or off the Contract Path. It is important to note that an Interchange Transaction using Firm Point-to-Point Transmission Service on all Contract Path links is considered a “firm” Interchange Transaction even if the Constrained Facility is off the Contract Path.

### **2.1. TLR Level 1 — Notify Reliability Coordinators of potential SOL or IROL Violations**

**2.1.1.** The Reliability Coordinator shall use the following circumstances to establish the need for TLR Level 1:

- The transmission system is secure.
- The Reliability Coordinator foresees a transmission or generation contingency or other operating problem within its Reliability Area that could cause one or more transmission facilities to approach or exceed their SOL or IROL.

**2.1.2. Notification procedures.** The Reliability Coordinator shall notify all Reliability Coordinators via the Reliability Coordinator Information System (RCIS) as soon as the condition is foreseen. All affected Reliability Coordinators shall check to ensure that Interchange Transactions are posted in the IDC.

### **2.2. TLR Level 2 — Hold transfers at present level to prevent SOL or IROL Violations**

**2.2.1.** The Reliability Coordinator shall use the following circumstances to establish the need for entering TLR Level 2:

- The transmission system is secure.
- One or more transmission facilities are expected to approach, or are approaching, or are at their SOL or IROL.

~~2.2.2.2.3 **Holding procedures.** The Reliability Coordinator shall be allowed to hold the implementation of any additional Interchange Transactions that are at or above the Curtailment Threshold. However, the Reliability Coordinator should allow additional Interchange Transactions that flow across the Constrained Facility if their flow reduces the loading on the Constrained Facility or has a Transfer Distribution Factor less than the Curtailment Threshold. All Interchange Transactions using Firm Point-to-Point Transmission Service shall be allowed to start.~~

~~2.2.3. TLR Level 2 is a transient state, which requires a quick decision to proceed to higher TLR Levels (3 and above) to allow Interchange Transactions to be implemented according to their transmission reservation priority. The time for being in TLR Level 2 should be no more than 30 minutes, with the understanding that there may be circumstances where this time may be~~

~~exceeded. If the time in TLR Level 2 exceeds 30 minutes, the Reliability Coordinator shall document this action on the TLR Log.~~

**2.3.TLR Level 3a — Reallocation of Transmission Service by curtailing Interchange Transactions using Non-firm Point-to-Point Transmission Service to allow Interchange Transactions using higher priority Transmission Service**

**2.3.1.** The Reliability Coordinator shall use the following circumstances to establish the need for entering TLR Level 3a:

- The transmission system is secure.
- One or more transmission facilities are expected to approach, or are approaching, or are at their SOL or IROL.
- Transactions using Non-firm Point-to-Point Transmission Service are flowing that are at or above the Curtailment Threshold on those facilities.
- The Transmission Provider has previously approved a higher priority Point-to-Point Transmission Service reservation over which a Transmission Customer wishes to begin an Interchange Transaction.

~~**2.3.2.Reallocation procedures to allow Interchange Transactions using higher priority Point-to-Point Transmission Service to start.** The Reliability Coordinator with the constraint shall give preference to those Interchange Transactions using Firm Point-to-Point Transmission Service, followed by those using higher priority Non-firm Point-to-Point Transmission Service as specified in Section 3. “Interchange Transaction Curtailment Order.” Interchange Transactions that have been held or curtailed as prescribed in this Section shall be reallocated (reloaded) according to their Transmission Service priorities when operating conditions permit as specified in Section 6. “Interchange Transaction Reallocation During TLR Level 3a and 5a.”~~

~~**2.3.2.1.**The Reliability Coordinator shall displace Interchange Transactions with lower priority Transmission Service using Interchange Transactions having higher priority Non-firm or Firm Transmission Service.~~

~~**2.3.2.2.**The Reliability Coordinator shall not curtail Interchange Transactions using Non-firm Transmission Service to allow the start or increase of another Interchange Transaction having the same priority Non-firm Transmission Service.~~

~~**2.3.2.3.**If there are insufficient Interchange Transactions using Non-firm Point-to-Point Transmission Service that can be curtailed to allow for Interchange Transactions using Firm Point-to-Point Transmission Service to begin, the Reliability Coordinator shall proceed to TLR Level 5a.~~

~~**2.3.2.4.**The Reliability Coordinator shall reload curtailed Interchange Transactions prior to allowing the start of new or increased Interchange Transactions.~~

~~**2.3.2.4.1.**Interchange Transactions whose tags were submitted prior to the TLR Level 2 or Level 3a being called, but were subsequently held from starting, are considered to have been curtailed and thus would be reloaded the same time as the curtailed Interchange Transactions.~~



~~2.3.2.5. The Reliability Coordinator shall fill available transmission capability by reloading or starting eligible Transactions on a pro-rata basis.~~

~~2.3.2.6. The Reliability Coordinator shall consider transactions whose tags meet the approved tag submission deadline for Reallocation for the upcoming hour. Tags submitted after this deadline shall be considered for Reallocation the following hour.~~

**2.4. TLR Level 3b — Curtail Interchange Transactions using Non-Firm Transmission Service Arrangements to mitigate a SOL or IROL Violation**

**2.4.1.** The Reliability Coordinator shall use the following circumstances to establish the need for entering TLR Level 3b:

- One or more transmission facilities are operating above their SOL or IROL, or
- Such operation is imminent and it is expected that facilities will exceed their reliability limit unless corrective action is taken, or
- One or more Transmission Facilities will exceed their SOL or IROL upon the removal from service of a generating unit or another transmission facility.
- Transactions using Non-firm Point-to-Point Transmission Service are flowing that are at or above the Curtailment Threshold on those facilities.

~~2.4.2.2.5. **Curtailment procedures to mitigate an SOL or IROL.** The Reliability Coordinator shall curtail Interchange Transactions using Non-firm Point to Point Transmission Service that are at or above the Curtailment Threshold as specified in Section 3, “Interchange Transaction Curtailment Order” in the current hour to mitigate an SOL or IROL as well as reallocating, in accordance with Section 6 of this document, to a determined flow for the top of the next hour.~~

~~The Reliability Coordinator shall allow Interchange Transactions using Firm Point to Point Transmission Service to start if they are submitted to the IDC within specific time limits as explained in Section 7 “Interchange Transaction Curtailments during TLR Level 3b.”~~

**2.5. TLR Level 4 — Reconfigure Transmission**

**2.5.1.** The Reliability Coordinator shall use the following circumstances to establish the need for entering TLR Level 4:

- One or more Transmission Facilities are above their SOL or IROL, or
- Such operation is imminent and it is expected that facilities will exceed their reliability limit unless corrective action is taken.

~~2.5.2. **Holding new Interchange Transactions.** The Reliability Coordinator shall hold all new Interchange Transactions using Non-firm Point to Point Transmission Service that are at or above the Curtailment Threshold during the period of the SOL or IROL Violation. The Reliability Coordinator shall allow Interchange Transactions using Firm Point to Point Transmission Service to start if they are submitted to the IDC by 25 minutes past the hour or the time at which the TLR Level 4 is called, whichever is later. See Appendix E, Section E2—Timing Requirements.~~

~~2.5.3.2.5.2. **Reconfiguration procedures.** The issuance of a TLR Level 4 shall result in the curtailment, in the current hour and the next hour, of all Interchange~~

Transactions using Non-firm Point-to-Point Transmission Service that are at or above the Curtailment Threshold that impact the Constrained Facilities. If a SOL or IROL violation is imminent or occurring, the Reliability Coordinator(s) shall request that the affected Transmission Operators reconfigure transmission on their system, or arrange for reconfiguration on other transmission systems, to mitigate the constraint. Specific details are explained in Section 4, “Principles for Mitigating Constraints On and Off the Contract Path”.

**2.6. TLR Level 5a — Reallocation of Transmission Service by curtailing Interchange Transactions using Firm Point-to-Point Transmission Service on a pro rata basis to allow additional Interchange Transactions using Firm Point-to-Point Transmission Service**

**2.6.1.** The Reliability Coordinator shall use the following circumstances to establish the need for entering TLR Level 5a:

- The transmission system is secure.
- One or more transmission facilities are at their SOL or IROL.
- All Interchange Transactions using Non-firm Point-to-Point Transmission Service that are at or above the Curtailment Threshold have been curtailed.
- The Transmission Provider has been requested to begin an Interchange Transaction using previously arranged Firm Transmission Service that would result in a SOL or IROL violation.
- No further transmission reconfiguration is possible or effective.

~~**2.6.2. Reallocation procedures to allow new Interchange Transactions using Firm Point-to-Point Transmission Service to start.** The Reliability Coordinator shall use the following three-step process for Reallocation of Interchange Transactions using Firm Point-to-Point Transmission Service:~~

~~**2.6.2.1. Step 1 — Identify available redispatch options.** The Reliability Coordinator shall assist the Transmission Operator(s) in identifying those known redispatch options that are available to the Transmission Customer that will mitigate the loading on the Constrained Facilities. If such redispatch options are deemed insufficient to mitigate loading on the Constrained Facilities, the Reliability Coordinator shall proceed to implement these options while proceeding to Steps 2 and 3 below.~~

~~**2.6.2.2. Step 2 —** The Reliability Coordinator shall calculate the percent of the overload on the Constrained Facility caused by both Firm Point-to-Point Transmission Service (at or above the Curtailment Threshold) and the Transmission Provider’s Network Integration Transmission Service and Native Load, as required by the Transmission Provider’s filed tariff. This is described in Section 5, “Parallel Flow Calculation Procedure for Reallocation or Curtailing Firm Transmission Service.”~~

~~**2.6.2.3. Step 3 — Curtail Interchange Transactions using Firm Transmission Service.** The Reliability Coordinator shall curtail or reallocate on a pro-rata basis (based on the MW level of the MW total to all such Interchange Transactions), those Interchange Transactions as calculated in Section 7.2.2 over the Constrained Facilities. (See also Section 6, “Interchange Transaction Reallocation during TLR 3a and 5a.”) The~~

~~Reliability Coordinator shall assist the Transmission Provider in curtailing Transmission Service to Network Integration Transmission Service customers and Native Load if such curtailments are required by the Transmission Provider's tariff. Available redispatch options will continue to be implemented.~~

**2.7. TLR Level 5b — Curtail Interchange Transactions using Firm Point-to-Point Transmission Service to mitigate an SOL or IROL violation**

**2.7.1.** The Reliability Coordinator shall use following circumstances to establish the need for entering TLR Level 5b:

- One or more Transmission Facilities are operating above their SOL or IROL, or
- Such operation is imminent, or
- One or more Transmission Facilities will exceed their SOL or IROL upon the removal from service of a generating unit or another transmission facility.
- All Interchange Transactions using Non-firm Point-to-Point Transmission Service that are at or above the Curtailment Threshold have been curtailed.
- No further transmission reconfiguration is possible or effective.

**2.8. Curtailment of Interchange Transactions Using Firm Transmission Service**

**2.8.1.** The Reliability Coordinator shall direct the curtailment of Interchange Transactions using Firm Transmission Service that are at or above the Curtailment Threshold for the following TLR Levels:

**2.8.1.1. TLR Level 5a.** Enable additional Interchange Transactions using Firm Point-to-Point Transmission Service to be implemented after all Interchange Transactions using Non-firm Point-to-Point Service have been curtailed, or

**2.8.1.2. TLR Level 5b.** Mitigate a SOL or IROL violation that remains after all Interchange Transactions using Non-firm Transmission Service has been curtailed under TLR Level 3b, and following attempts to reconfigure transmission under TLR Level 4.

~~**2.8.1.** The Reliability Coordinator shall use the following three-step process for curtailment of Interchange Transactions using Firm Point to Point Transmission Service:~~

~~**2.8.1.1. Step 1 — Identify available redispatch options.** The Reliability Coordinator shall assist the Transmission Operator(s) in identifying those known redispatch options that are available to the Transmission Customer that will mitigate the loading on the Constrained Facilities. If such redispatch options are deemed insufficient to mitigate loading on~~

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~~the Constrained Facilities, the Reliability Coordinator shall proceed to implement these options while proceeding to Steps 2 and 3 below.~~

~~**2.8.1.2.Step 2**— The Reliability Coordinator shall calculate the percent of the overload on the Constrained Facility caused by both Firm Point to Point Transmission Service (at or above the Curtailment Threshold) and the Transmission Provider’s Network Integration Transmission Service and Native Load, as required by the Transmission Provider’s filed tariff. This is described in Section 5, “Parallel Flow Calculation Procedure for Reallocating or Curtailing Firm Transmission Service.”~~

~~**2.8.1.3.Step 3**— **Curtailment of Interchange Transactions using Firm Transmission Service.** At this point, the Reliability Coordinator shall begin the process of curtailing Interchange Transactions as calculated in Section 2.7.2.2 over the Constrained Facilities using Firm Point to Point Transmission Service until the SOL or IROL violation has been mitigated. The Reliability Coordinator shall assist the Transmission Provider in curtailing Transmission Service to Network Integration Transmission Service customers and Native Load if such curtailments are required by the Transmission Providers’ tariff. Available redispatch options will continue to be implemented.~~

**2.8.2.9. TLR Level 6 — Emergency Procedures**

**2.8.1.2.9.1** The Reliability Coordinator shall use following circumstances to establish the need for entering TLR Level 6:

- One or more Transmission Facilities are above their SOL or IROL.
- One or more Transmission Facilities will exceed their SOL or IROL upon the removal from service of a generating unit or another transmission facility.

**2.8.2.2.9.2** **Implementing emergency procedures.** If the Reliability Coordinator deems that transmission loading is critical to Bulk Electric System reliability, the Reliability Coordinator shall immediately direct the Balancing Authorities and Transmission Operators in its Reliability Area to redispatch generation, or reconfigure transmission, or reduce load to mitigate the critical condition until Interchange Transactions can be reduced utilizing the TLR Procedures or other procedures to return the system to a secure state. All Balancing Authorities and Transmission Operators shall comply with all requests from their Reliability Coordinator.

**2.9.3.0 TLR Level 0 — TLR concluded**

**2.9.1.3.0.1** **Interchange Transaction restoration and notification procedures.**

The Reliability Coordinator initiating the TLR Procedure shall notify all Reliability Coordinators within the Interconnection via the RCIS when the SOL or IROL violations are mitigated and the system is in a reliable state, allowing Interchange Transactions to be reestablished at its discretion. Those with the highest transmission priorities shall be reestablished first if possible.

**Requirements**

- 4.1** The Reliability Coordinator shall be allowed to call a TLR 3b at any time to help mitigate a SOL or IROL violation.
- 4.2** The Reliability Coordinator shall Reallocate Interchange Transactions using Non-firm Point-to-Point Transmission for the next hour to maintain the desired flow using Reallocation in accordance with the following timing specification:
  - 4.2.1** If issued prior to XX: 25, Non-firm Interchange Transactions will be curtailed to meet the desired current hour relief
    - 4.2.1.1** At XX: 25 a Reallocation will be performed to maintain the desired flow at the top of the following hour
  - 4.2.2** If issued after XX: 25, Non firm Interchange Transactions will be curtailed to meet the desired current hour relief and a Reallocation will be performed to maintain the target flow identified for the current hour.
  - 4.2.3** Transactions must be in the IDC by the Approved-tag Submission Deadline for Reallocation.
- 4.3** The IDC shall issue ADJUST Lists to the Generation and Load Balancing Authority Areas and the Purchasing-Selling Entity who submitted the tag. The ADJUST List will include:
  - 4.3.1** Interchange Transactions using Non-firm Point-to-Point Transmission Service that are to be curtailed or held during current and next hours.
  - 4.3.2** Interchange Transactions using Firm Point-to-Point Transmission Service that were entered after XX:25 or issuance of TLR 3b (see Case 3 in Appendix F).
- 4.4** The Sink Balancing Authority shall send the ADJUST Lists back to the IDC as soon as possible to ensure the most accurate calculations for actions subsequent to the TLR 3b being called.
- 4.5** The Reliability Coordinator will no longer be required to call a TLR Level 3a as soon as the SOL or IROL violation that caused the TLR 3b to be called has been mitigated due to the inherent next hour Reallocation that takes place for the top of the next hour in the TLR Level 3b.

### **3. Interchange Transaction Curtailment Order for use in TLR Procedures**

#### **3.1. Priority of Interchange Transactions**

**3.1.1.** Interchange Transaction curtailment priority shall be determined by the Transmission Service reserved over the constrained facility(ies) as follows:

##### **Transmission Service Priorities**

Priority 0. — Next hour Market Service — NX\*

Priority 1. — Service over secondary receipt and delivery points — NS

Priority 2. — Non Firm Point to Point Hourly Service — NH

Priority 3. — Non Firm Point to Point Daily Service — ND

Priority 4. — Non Firm Point to Point Weekly Service — NW

Priority 5. — Non Firm Point to Point Monthly Service — NM

Priority 6. — Network Integration Transmission Service from sources not designated as network resources — NN

Priority 7. — Firm Point to Point Transmission Service — F and Network Integration Transmission Service from Designated Resources — FN

**3.1.2.** The curtailment priority for Interchange Transactions that do not have a Transmission Service reservation over the constrained facility(ies) shall be defined by the lowest priority of the individual reserved transmission segments.

#### **3.2. Curtailment of Interchange Transactions Using Non-firm Transmission Service**

**3.2.1.** The Reliability Coordinator shall direct the curtailment of Interchange Transactions using Non-firm Transmission Service that are at or above the Curtailment Threshold for the following TLR Levels:

**3.2.1.1. TLR Level 3a.** Enable Interchange Transactions using a higher Transmission reservation priority to be implemented, or

**3.2.1.2. TLR Level 3b.** Mitigate an SOL or IROL violation.

#### **3.3. Curtailment of Interchange Transactions Using Firm Transmission Service**

**3.3.1.** The Reliability Coordinator shall direct the curtailment of Interchange Transactions using Firm Transmission Service that are at or above the Curtailment Threshold for the following TLR Levels:

**3.3.1.1. TLR Level 5a.** Enable additional Interchange Transactions using Firm Point to Point Transmission Service to be implemented after all Interchange Transactions using Non-firm Point to Point Service have been curtailed, or

**3.3.1.2. TLR Level 5b.** Mitigate a SOL or IROL violation that remains after all Interchange Transactions using Non-firm Transmission Service has been curtailed under TLR Level 3b, and following attempts to reconfigure transmission under TLR Level 4.

## **4. Mitigating Constraints On and Off the Contract Path during TLR**

### **Introduction**

Reserving Transmission Service for an Interchange Transaction along a Contract Path may not reflect the actual distribution of the power flows over the transmission network from generation source to load sink. Interchange Transactions arranged over a Contract Path may, therefore, overload transmission elements on other electrically parallel paths.

The curtailment priority of an Interchange Transaction depends on whether the Constrained Facility is on or off the Contract Path as detailed below.

#### **4.1. Constraints ON the Contract Path**

**4.1.1.** The Reliability Coordinator initiating TLR shall consider the entire Interchange Transaction non firm if the transmission link (i.e., a segment on the Contract Path) on the Constrained Facility is Non firm Point to Point Transmission Service, even if other links in the Contract Path are firm. When the Constrained Facility is on the Contract Path, the Interchange Transaction takes on the Transmission Service Priority of the Transmission Service link with the Constrained Facility regardless of the Transmission Service Priority on the other links along the Contract Path.

**Discussion.** The Transmission Operator simply has to call its Reliability Coordinator, request the TLR Procedure be initiated, and allow the curtailments of all Interchange Transactions that are at or above the Curtailment Threshold to progress until the relief is realized. Firm Point to Point Transmission Service links elsewhere in the Contract Path do not obligate Transmission Providers providing Non firm Point to Point Transmission Service to treat the transaction as firm. For curtailment purposes, the Interchange Transaction's priority will be the priority of the Transmission Service link with the Constrained Facility. (See Requirement 4.1.2 below.)

**4.1.2.** The Reliability Coordinator initiating TLR shall consider the entire Interchange Transaction firm if the transmission link on the Constrained Facility is Firm Point to Point Transmission Service, even if other links in the Contract Path are non firm.

**Discussion.** The curtailment priority of an Interchange Transaction on a Contract Path link is not affected by the Transmission Service Priorities arranged with other links on the Contract Path. If the Constrained Facility is on a Firm Point to Point Transmission Service Contract Path link, then the curtailment priority of the Interchange Transaction is considered firm regardless of the Transmission Service arrangements elsewhere on the Contract Path. If the Transmission Provider provides its services under the FERC pro forma tariff, it may also be obligated to offer its Transmission Customer alternate receipt and delivery points, thus allowing the customer to curtail its Transmission Service over the Constrained Facilities.

#### **4.2. Constraints OFF the Contract Path**

**4.2.1.** The Reliability Coordinator initiating TLR shall consider the entire Interchange Transaction non firm if none of the transmission links on the Contract Path are on the Constrained Facility and if any of the transmission links on the Contract Path are Non firm Point to Point Transmission Service; the Interchange

Transaction shall take on the lowest Transmission Service Priority of all Transmission Service links along the Contract Path.

**Discussion.** An Interchange Transaction arranged over a Contract Path where one or more individual links consist of Non-firm Point-to-Point Transmission Service is considered to be a non-firm Interchange Transaction for Constrained Facilities off the Contract Path. Sufficient Interchange Transactions that are at or above the Curtailment Threshold will be curtailed before any Interchange Transactions using Firm Point-to-Point Transmission Service are curtailed. The priority level for curtailment purposes will be the lowest level of Transmission Service arranged for on the Contract Path.

**4.2.2.** The Reliability Coordinator initiating TLR shall consider the entire Interchange Transaction firm if all of the transmission links on the Contract Path are Firm Point-to-Point Transmission Service, even if none of the transmission links are on the Constrained Facility and shall not be curtailed to relieve a Constraint off the Contract Path until all non-firm Interchange Transactions that are at or above the Curtailment Threshold have been curtailed.

**Discussion.** If the entire Contract Path is Firm Point-to-Point Transmission Service, then the TLR procedure will treat the Interchange Transaction as firm, even for Constraints off the Contract Path, and will not curtail that Interchange Transaction until all non-firm Interchange Transactions that are at or above the Curtailment Threshold have been curtailed. However, Transmission Providers off the Contract Path are not obligated to reconfigure their transmission system or provide other congestion management procedures unless special arrangements are in place. Because the Interchange Transaction is considered firm everywhere, the Reliability Coordinator may attempt to arrange for Transmission Operators to reconfigure transmission or provide other congestion management options or Balancing Authorities to redispatch, even if they are off the Contract Path, to try to avoid curtailing the Interchange Transaction that is using the Firm Point-to-Point Transmission Service.



## **5. Parallel Flow Calculation Procedure for Reallocating or Curtailing Firm Transmission Service during TLR**

### **Introduction**

The provision of Point to Point Transmission Service, Network Integration Transmission Service and service to Native Load results in parallel flows on the transmission network of other Transmission Operators. When a transmission facility becomes constrained curtailment of Interchange Transactions is required to allow Interchange Transactions of higher priority to be scheduled (Reallocation) or to provide transmission loading relief (Curtailment). An Interchange Transaction is considered for Reallocation or Curtailment if its Transfer Distribution Factor (TDF) exceeds the TLR Curtailment Threshold.

In compliance with the Transmission Service Provider tariffs, Interchange Transactions using Non-firm Point to Point Transmission Service are curtailed first (TLR Level 3a and 3b), followed by transmission reconfiguration (TLR Level 4), and then the curtailment of Interchange Transactions using Firm Point to Point Transmission Service, Network Integration Transmission Service and service to Native Load (TLR Level 5a and 5b). Curtailment of Firm Point to Point Transmission Service shall be accompanied by the comparable curtailment of Network Integration Transmission Service and service to Native Load to the degree that these three Transmission Services contribute to the Constraint.

### **5.1. Requirements**

A methodology, called the Per Generator Method without Counter Flow, or simply the Per Generator Method, has been programmed into the IDC to calculate the portion of parallel flows on any Constrained Facility due to service to Native Load of each Balancing Authority. The following requirements are necessary to assure comparable Reallocation or Curtailment of firm Transmission Service:

- 5.1.1.** The Reliability Coordinator initiating a curtailment shall identify for curtailment all firm Transmission Services (i.e. Point to Point, Network Integration and service to Native Load) that contribute to the flow on any Constrained Facility by an amount greater than or equal to the Curtailment Threshold on a pro-rata basis.
- 5.1.2.** For Firm Point to Point Transmission Services, the Transfer Distribution Factors must be greater than or equal to the Curtailment Threshold.
- 5.1.3.** For Network Integration Transmission Service and service to Native Load, the Generator To Load Distribution Factors must be greater than or equal to the Curtailment Threshold.
- 5.1.4.** The Per Generator Method shall assign the amount of Constrained Facility relief that must be achieved by each Balancing Authority's Network Integration Transmission Service or service to Native Load. It shall not specify how the reduction will be achieved.
- 5.1.5.** All Balancing Authorities in the Eastern Interconnection shall be obligated to achieve the amount of Constrained Facility relief assigned to them by the Per Generator Method.
- 5.1.6.** The implementation of the Per Generator Method shall be based on transmission and generation information that is readily available.

**5.2. Calculation Method**

The calculation of the flow on a Constrained Facility due to Network Integration Transmission Service or service to Native Load shall be based on the Generation Shift Factors (GSFs) of a Balancing Authority's assigned generation and the Load Shift Factors (LSFs) of its native load, relative to the system swing bus. The GSFs shall be calculated from a single bus location in the IDC. The IDC shall report all generators assigned to native load for which the GLDF is greater than or equal to the Curtailment Threshold.

## **6. Interchange Transaction Reallocation During TLR Levels 3a and 5a**

### **Introduction**

This section provides the details for implementing TLR Levels 3a and 5a, both of which provide a means for Reallocation of Transmission Service.

**TLR Level 3a** accomplishes Reallocation by curtailing Interchange Transactions using Non-firm Point-to-Point Transmission Service to allow Interchange Transactions using higher priority Non-firm or Firm Point-to-Point Transmission Service to start. (See **Requirement 2.3, “TLR Level 3a.”**) When a TLR Level 3a is in effect, Reliability Coordinators shall reallocate Interchange Transactions according to the Transactions’ Transmission Service Priorities. Reallocation also includes the orderly reloading of Transactions by priority when conditions permit curtailed Transactions to be reinstated.

**TLR Level 5a** accomplishes Reallocation by curtailing Interchange Transactions using Firm Point-to-Point Transmission Service on a pro-rata basis to allow new Interchange Transactions using Firm Point-to-Point Transmission Service to begin, also on a pro-rata basis. (See **Requirement 2.6, “TLR Level 5a.”**)

### **6.1. Requirements**

The basic requirements for Transaction Reallocation are as follows:

- 6.1.1.** When identifying transactions for Reallocation the Reliability Coordinator shall normally only involve Curtailments of Interchange Transactions using Non-firm Point-to-Point Transmission Service during TLR 3a. However, Reallocation may be used during TLR 5a to allow the implementation of additional Interchange Transactions using Firm Transmission Service on a pro-rata basis.
- 6.1.2.** When identifying transactions for Reallocation, the Reliability Coordinator shall only consider those Interchange Transactions at or above the Curtailment Threshold for which a TLR 2 or higher is called.
- 6.1.3.** When identifying transactions for Reallocation, the Reliability Coordinator shall displace Interchange Transactions utilizing lower priority Transmission Service with Interchange Transactions utilizing higher Transmission Service Priority.
- 6.1.4.** When identifying transactions for Reallocation, the Reliability Coordinator shall not curtail Interchange Transactions using Non-firm Transmission Service to allow the start or increase of another transaction having the same Non-Firm Transmission Service Priority (marginal “bucket”).
- 6.1.5.** When identifying transactions for Reallocation, the Reliability Coordinator shall reload curtailed Interchange Transactions prior to starting new or increasing existing Interchange Transactions.
- 6.1.6.** Interchange Transactions whose tags were submitted prior to the TLR 2 or 3a being called, but were subsequently held from starting because they failed to meet the approved tag submission deadline for Reallocation (see Section 6.2, “Communications and Timing Requirements”), shall be considered to have been curtailed and thus would be eligible for reload at the same time as the curtailed Interchange Transaction.

~~6.1.7. The Reliability Coordinator shall reload or start all eligible Transactions on a pro-rata basis.~~

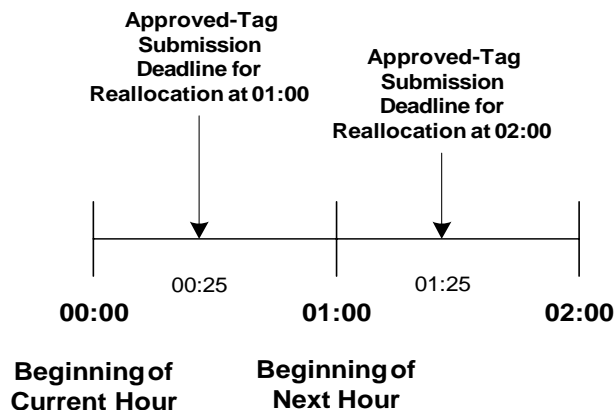
~~6.1.8. Interchange Transactions whose tags meet the approved tag submission deadline for Reallocation (see Section 6.2, “Communications and Timing Requirements”) shall be considered for Reallocation for the upcoming hour. (However, Interchange Transactions using Firm Point to Point Transmission Service shall be allowed to start as scheduled.) Interchange Transactions whose tags are submitted to the IDC after the approved tag submission deadline for Reallocation shall be considered for Reallocation the following hour. This applies to Interchange Transactions using either Non-firm Point to Point Transmission Service or Firm Point to Point Transmission Service. If an Interchange Transaction using Firm Interchange Transaction is submitted after the approved tag submission deadline and after the TLR is declared, that Transaction shall be held and then allowed to start in the upcoming hour.~~

It should be noted that calling a TLR 3a does not necessarily mean that Interchange Transactions using Non-firm Transmission Service will always be curtailed the next hour. However, TLR Levels 3a and 5a trigger the approved tag submission deadline for Reallocation requirements and allow for a coordinated assessment of all Interchange Transactions tagged to start the upcoming hour.

### **6.2. Communication and Timing Requirements**

The following timeline shall be utilized to support Reallocation decisions during TLR Levels 3a or 5a. See Figures 2 and 3 for a depiction of the Reallocation Time Line.

~~6.2.1. Time Convention. In this document, the beginning of the current hour shall be referenced as 00:00. The beginning of the next hour shall be referenced as 01:00. The end of the next hour shall be referenced as 02:00. See Figure 1.~~



**Figure 1 - Timeline showing Approved-tag Submission Deadline for Reallocation**

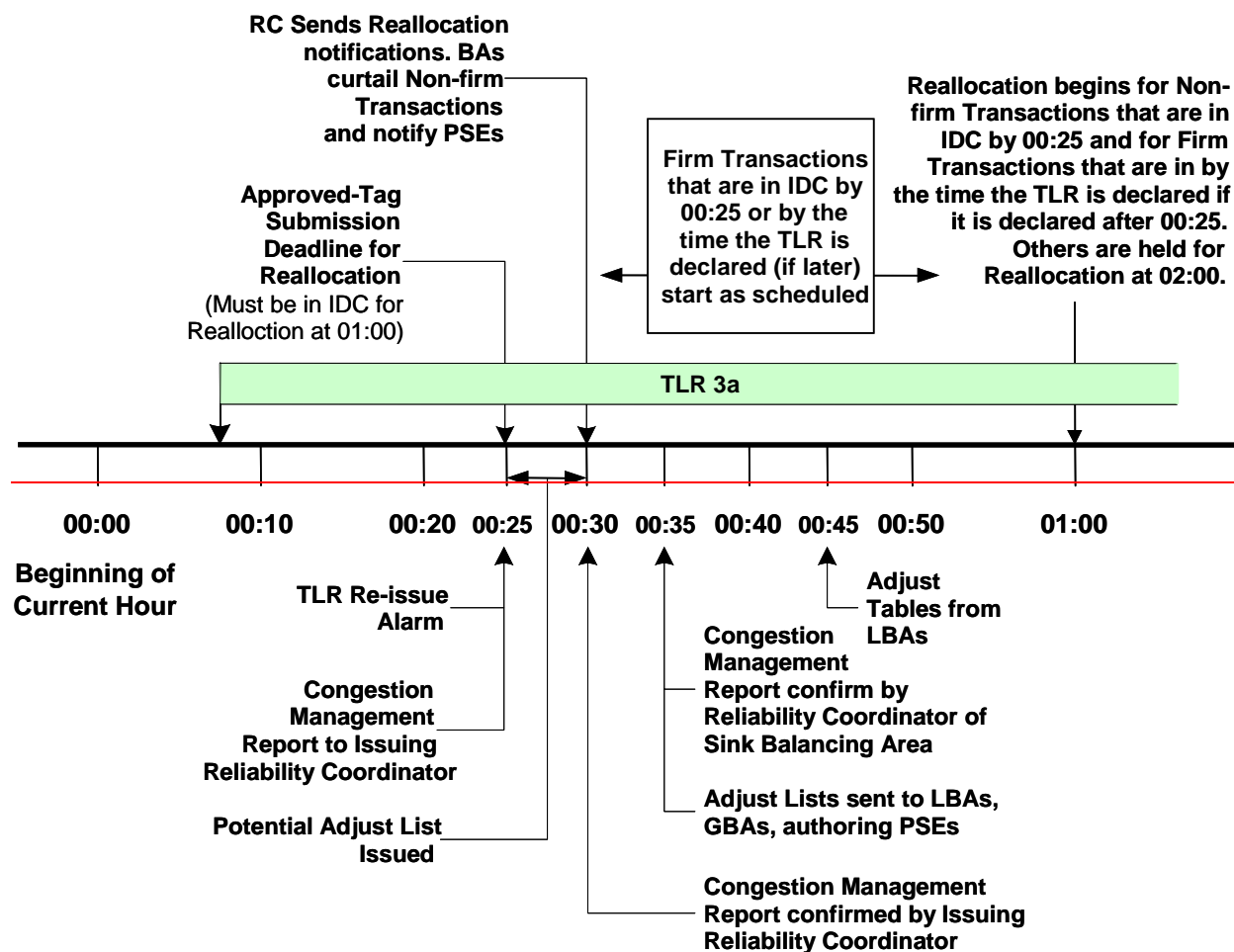
~~6.2.2. Approved tag submission deadline for Reallocation Reliability Coordinators shall consider all approved Tags for Interchange Transactions at or above the Curtailment Threshold that have been submitted to the IDC by 00:25 for Reallocation at 01:00. See Figure 1. However, Interchange Transactions using Firm Point to Point Transmission Service will be allowed to start as scheduled.~~

~~6.2.2.1. Reliability Coordinators shall consider all approved tags submitted to the IDC beyond these deadlines for Reallocation at 02:00 (for both Firm and Non-firm Point to Point Transmission Service). However, these Interchange Transactions will not be allowed to start or increase at 01:00.~~

~~6.2.2.2. The approved tag submission deadline for Reallocation shall cease to be in effect as soon as the TLR level is reduced to 1 or 0.~~

**6.2.3. Off-hour Transactions.** Interchange Transactions with a start time other than xx:00 shall be considered for Reallocation at xx+1:00. For example, an Interchange Transaction with a start time of 01:05 and whose Tag was submitted at 00:15 will be considered for Reallocation at 02:00.

**6.2.4. Tag Evaluation Period.** Balancing Authorities and Transmission Providers shall evaluate all tags submitted for Reallocation and shall communicate approval or rejection by 00:25.



**Figure 2 — Reallocation Timing for TLR 3a Called at 00:08**

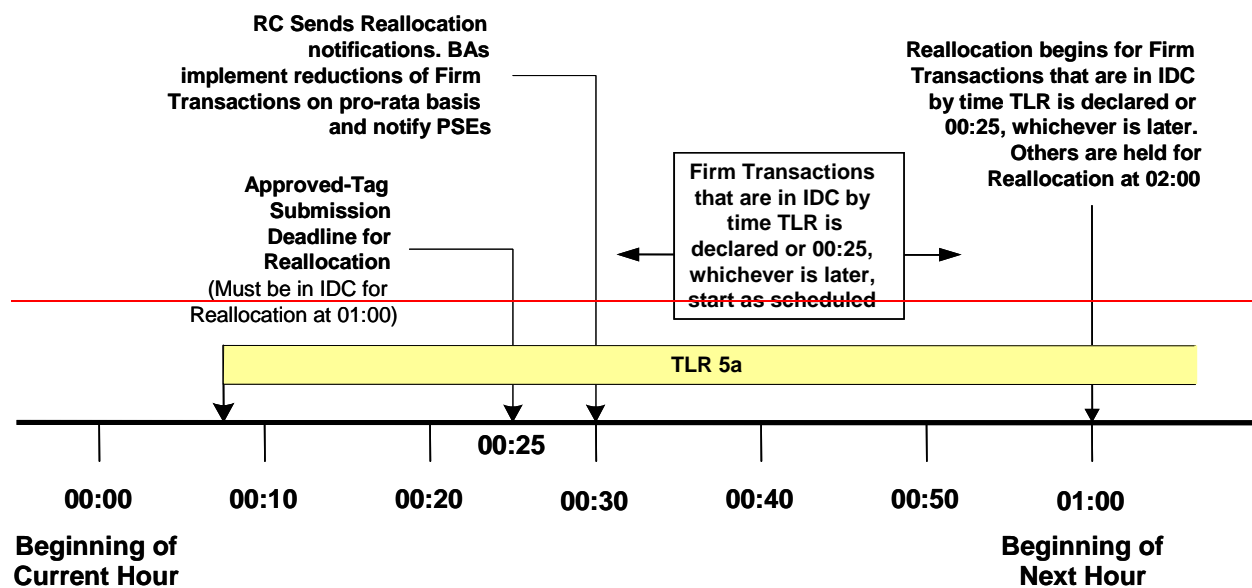
**6.2.5. Collective Scheduling Assessment Period.** At 00:25, the initiating Reliability Coordinator (the one who called and still has a TLR 3a or 5a in effect) shall run the IDC to obtain a three-part list of Interchange Transactions including their transaction status:

**6.2.5.1.** Interchange Transactions that may start, increase, or reload shall have a status of PROCEED, and

**6.2.5.2.** Interchange Transactions that must be curtailed or Interchange Transactions whose tags were submitted prior to the TLR 2 or higher

being declared but were not permitted to start or increase shall have a status of CURTAILED, and

**6.2.5.3.** Interchange Transactions that are entered into the IDC after 00:25 shall have a status of HOLD and be considered for Reallocation at 02:00. Also, Interchange Transactions using Non-firm Point-to-Point Transmission Service submitted after TLR 2 or higher was declared (“post-tagged”) but have not been allowed to start shall retain the HOLD status until given permission to PROCEED or E-Tag expires. (Note: TLR Level 2 does not hold Interchange Transactions using Firm Point-to-Point Transmission Service).



**Figure 3 — Reallocation timing for TLR 5a called at 00:08.**

**6.2.5.4.** The initiating Reliability Coordinator shall communicate the list of Interchange Transactions to the appropriate sink Reliability Coordinators via the IDC, who shall in turn communicate the list to the Sink Balancing Authorities at 00:30 for appropriate actions to implement Interchange Transactions (CURTAIL, PROCEED or HOLD). The IDC will prompt the initiating Reliability Coordinator to input the necessary information (i.e., maximum flowgate loading and curtailment requirement) into the IDC by 00:25.

**6.2.5.5.** Subsequent required reports before 01:00 shall allow the Reliability Coordinators to include those Interchange Transactions whose tags were submitted to the IDC after the Approved-Tag Submission Time for Reallocation and were given the HOLD status (not permitted to PROCEED). Transactions at or above the Curtailment Threshold that are not indicated as “PROCEED” on Reload/Reallocation Report shall not be permitted to start or increase the next hour.

**Discussion:** Note that TLR 2 does not initiate the approved tag submission deadline for Reallocation, but a TLR3a or 5a does. It is, however, important to recognize the time when a TLR 2 is called, where applicable, to determine the status of a held transaction—“CURTAILED” if tagged before the TLR was called but “HOLD” if tagged after the TLR was called.

~~6.2.5.6. In running the IDC, the Reliability Coordinator shall have an option to specify the maximum loading of the Constrained Facility by all Interchange Transactions using Point-to-Point Transmission Service.~~

**Discussion:** This allows the Reliability Coordinator to take into consideration SOLs or IROLs and changes in Transactions using other than Point-to-Point service taken under the Open Access Transmission Tariff. This option is needed to avoid loading the Constrained Facility to its limit with known Interchange Transactions while other factors push the facility into a SOL or IROL violation and hence triggering the declaration of a TLR 3b or 5b.

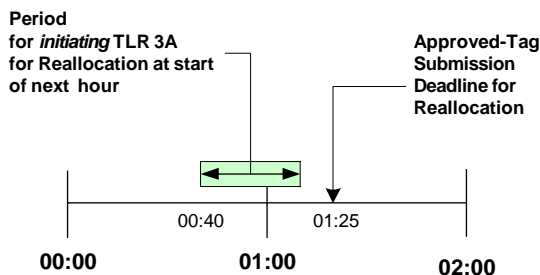
~~6.2.5.7. Notification of Interchange Transaction status shall be provided from the IDC to the Reliability Coordinators via an IDC Report. The Reliability Coordinators shall communicate this information to the Balancing Authorities and Transmission Operators.~~

~~Additional reporting and communications details on information posted from the IDC to the NERC TLR website are contained in Appendix E.~~

~~6.2.6. **Customer Preferences on Timing to Call TLR 3a or 5a.** Reliability Coordinators shall leave a TLR 2 and call a TLR 3a as soon as possible (but no later than 30 minutes) to initiate the Approved Tag Submission Deadline and start reallocating Transactions. Nevertheless, recognizing the approved tag submission deadline for Reallocation, from a Transmission Customer perspective, it is preferable that the Reliability Coordinator call a TLR 3a within a certain time period to allow for tag preparation and submission. See Figure 4.~~

**Discussion:** A Reliability Coordinator calls a TLR 2 or 3a whenever it deems necessary to indicate that a transmission facility is approaching its SOL or IROL. It is envisioned, though not required, that a TLR 2 or 3a is preceded by a period of a TLR 1 declaration, hence Transmission Customers should normally have advance notice of a potential constraint. For example, a TLR 3a initiated during the period 01:00 to 01:25 would allow the Purchasing-Selling Entity to submit a Tag for entry into the IDC by the Approved Tag Submission Deadline for Reallocation at 02:00. See Figure 4. However, the preferred time period to declare a TLR 3a or 5a would be between 00:40 (when tags for Next Hour Market have been submitted) and 01:15. This will allow the Transmission Customers a range of 15 to 35 minutes to prepare and submit tags. (Note: In this situation, the Reliability Coordinator would need to reissue the TLR 3a at 01:00.)

~~It must be emphasized that the preferred time period is not a requirement, and should not in any way impede a Reliability Coordinator’s ability to declare a TLR 3a, 3b, 4, 5a, or 5b whenever the need arises.~~



**Figure 4. "Ideal" time for issuing TLR 3a for Reallocation at 02:00.**

### **7. Interchange Transaction Curtailments During TLR Level 3b**

#### **Introduction**

This section provides the details for implementing TLR Level 3b, which curtails Interchange Transactions using Non firm Point to Point Transmission Service to assist the Reliability Coordinator to recover from SOL or IROL violations:

TLR Level 3b curtails Interchange Transactions using Non firm Point to Point Transmission Service that are at or above the Curtailment Threshold in the current hour while Reallocating to a determined flow for the top of the next hour (See **Requirement 2.4, "TLR Level 3b."**).

#### **Requirements**

- 7.1.** The Reliability Coordinator shall be allowed to call a TLR 3b at any time to help mitigate a SOL or IROL violation.
- 7.2.** The Reliability Coordinator shall consider only those Interchange Transactions at or above the Curtailment Threshold for curtailment or holding.
- 7.3.** The Reliability Coordinator shall curtail existing Interchange Transactions using Non firm Point to Point Transmission Service as necessary to provide the required relief on the Constrained Facility for the current hour.
- 7.4.** The Reliability Coordinator shall Reallocate Interchange Transactions using Non firm Point to Point Transmission Service in accordance with Section 6 of this document for the next hour to maintain the desired flow using Reallocation in accordance with the following timing specification:
  - 7.4.1.** If issued prior to XX: 25, Non firm Interchange Transactions will be curtailed to meet the desired current hour relief
    - 7.4.1.1.** At XX: 25 a Reallocation will be performed to maintain the desired flow at the top of the following hour
  - 7.4.2.** If issued after XX: 25, Non firm Interchange Transactions will be curtailed to meet the desired current hour relief and a Reallocation will be performed to maintain the target flow identified for the current hour.
  - 7.4.3.** Transactions must be in the IDC by the Approved tag Submission Deadline for Reallocation (see Requirement 6.2).



- ~~7.5. The Reliability Coordinator shall allow Interchange Transactions using Firm Point-to-Point Transmission Service to start as explained in Appendix F, “Considerations for Interchange Transactions using Firm Point-to-Point Transmission Service.”~~
- ~~7.6. The Reliability Coordinator shall progress to TLR Level 5b as necessary if there is still insufficient transmission capacity for Interchange Transactions using Firm Point-to-Point Transmission Service to start as scheduled after all Interchange Transactions using Non-firm Point-to-Point Transmission Service have been curtailed.~~
- ~~7.7. The IDC shall issue ADJUST Lists to the Generation and Load Balancing Authority Areas and the Purchasing-Selling Entity who submitted the tag. The ADJUST List will include:~~
- ~~7.7.1. Interchange Transactions using Non firm Point to Point Transmission Service that are to be curtailed or held during current and next hours.~~
- ~~7.7.2. Interchange Transactions using Firm Point to Point Transmission Service that were entered after XX:25 or issuance of TLR 3b (see Case 3 in Appendix F).~~
- ~~7.8. The Sink Balancing Authority shall send the ADJUST Lists back to the IDC as soon as possible to ensure the most accurate calculations for actions subsequent to the TLR 3b being called.~~
- ~~7.9. The Reliability Coordinator will no longer be required to call a TLR Level 3a as soon as the SOL or IROL violation that caused the TLR 3b to be called has been mitigated due to the inherent next hour Reallocation that takes place for the top of the next hour in the TLR Level 3b.~~

**Appendices for Transmission Loading Relief Standard**

**PLEASE NOTE: items designated for inclusion in the NAESB TLR business practice following completion of the standard revision were deleted from this version of the NERC standard. Please see the mapped document to see which requirements were moved to NAESB and what future changes are expected. Appendices B, D, G, and the sub-priority portions of E-2 have been moved to NAESB. The appendices below (A, C, E, F) will be renumbered in the final standard.**

Appendix A. Transaction Management and Curtailment Process.

~~Appendix B. Transaction Curtailment Formula.~~

Appendix C. Sample NERC Transmission Loading Relief Procedure Log.

~~Appendix D. Examples for Parallel Flow Calculation Procedure for Reallocating or Curtailing Firm Transmission Service.~~

Appendix E. How the IDC Handles Reallocation.

Section E1: Summary of IDC Features that Support Transaction Reloading/Reallocation.

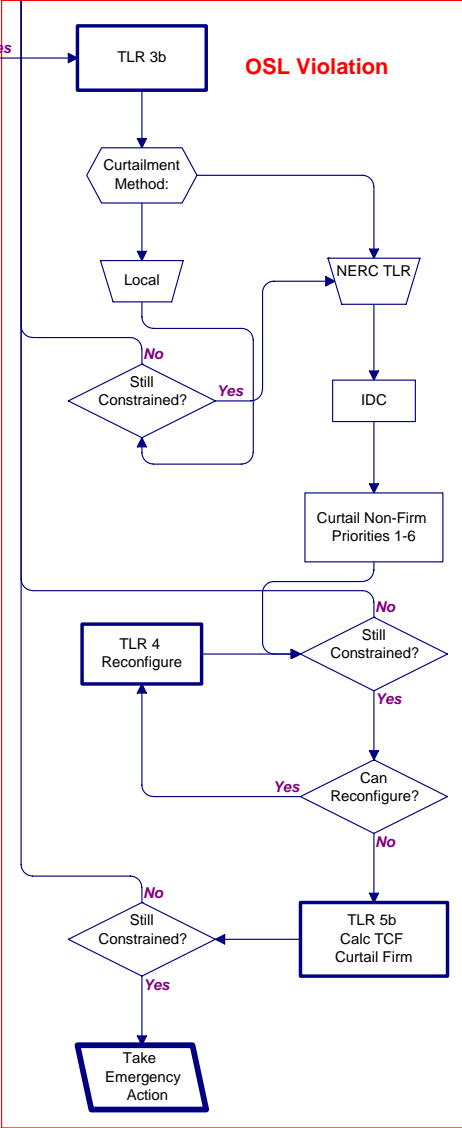
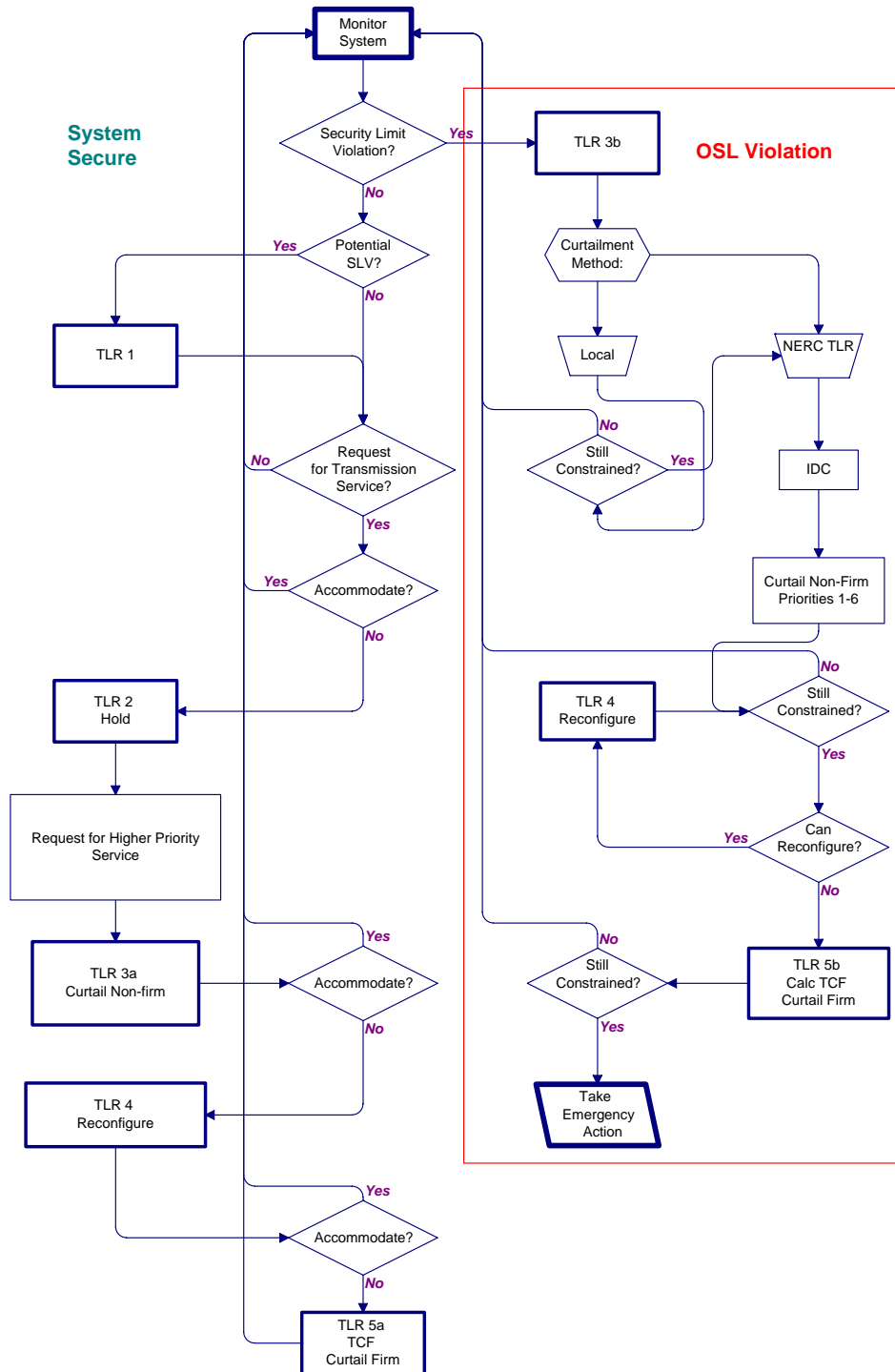
Section E2: Timing Requirements.

Appendix F. Considerations for Interchange Transactions using Firm Point-to-Point Transmission Service.

~~Appendix G. Examples of On-Path and Off-Path Mitigation.~~

**Appendix A. Transaction Management and Curtailment Process**

This flowchart depicts an overview of the Transaction Management and Curtailment process. Detailed decisions are not shown.



**Appendix B. Transaction Curtailment Formula**

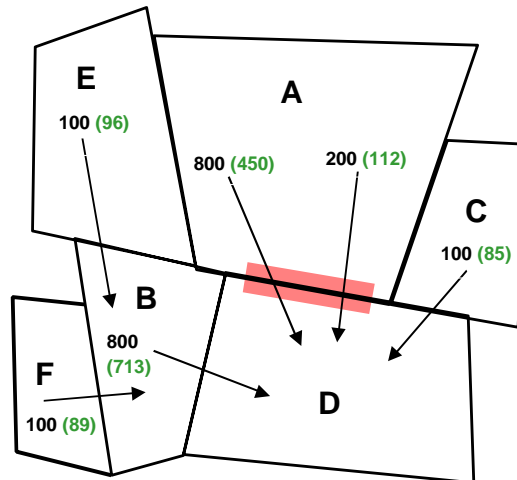
***Example***

This example is based on the premise that a transaction should be curtailed in proportion to its Transfer Distribution Factor on the Constraints. Its effect on the interface is a combination of its size in MW and its effect based on its distribution factor.

<b>Column</b>	<b>Description</b>
1. Initial Transaction	Interchange Transaction before the TLR Procedure is implemented.
2. Distribution Factor	Proportional effect of the Transaction over the constrained interface due to the physical arrangement and impedance of the transmission system.
3. Impact on the Interface	Result of multiplying the Transaction MW by the distribution factor. This yields the MW that flow through the constrained interface from the Transaction. Performing this calculation for each Transaction yields the total flow through the constrained interface from all the Interchange Transactions. In this case, 760 MW.
4. Impact Weighting Factor	“Normalization” of the total of the Distribution Factors in Column 2. Calculated by dividing the Distribution Factor for each Transaction by the total of the Distribution Factors.
5. Weighted Maximum Interface Reduction	Multiplying the Impact on the Interface from each Transaction by its Impact Weighting Factor yields a new proportion that is a combination of the MW Impact on the Interface and the Distribution Factor.
6. Interface Reduction	Multiplying the amount needed to reduce the flow over the constrained interface (280 MW) by the normalization of the Weighted Maximum Interface Reduction yields the actual MW reduction that each Transaction must <i>contribute</i> to achieve the total reduction.
7. Transaction Reduction	Now divide by the Distribution Factor to see how much the Transaction must be reduced to yield the result calculated in Column 7. Note that the reductions for the first two Interchange Transactions (A-D (1) and A-D (2)) are in proportion to their size since their distribution factors are equal.
8. New Transaction Amount	Subtracting the Transaction Reduction from the Initial Transaction yields the New Transaction Amount.
9. Adjusted Impact on Interface	A check to ensure the new constrained interface MW flow has been reduced to the target amount.

**Standard IRO-006-4 — Reliability Coordination — Transmission Loading Relief – Attachment 1**

	Allocation based on Weighted Impact								
	1	2	3	4	5	6	7	8	9
Transaction ID	Initial Transaction	Distribution Factor	(1)*(2) Impact On Interface	(2)/(2TOT) Impact weighting factor	(3)*(4) Weighted Max Interface Reduction	(5)*(Relief Requested)/(5 Tot) Interface Reduction	(6)/(2) Transaction Reduction	(1)-(7) New Transaction Amount	(8)*(2) Adjusted Impact On Interface
<b>Example 1</b>									
A-D(1)	800	0.6	480	0.34	164.57	209.73	349.54	450.46	270.27
A-D(2)	200	0.6	120	0.34	41.14	52.43	87.39	112.61	67.57
B-D	800	0.15	120	0.09	10.29	13.11	87.39	712.61	106.89
C-D	100	0.2	20	0.11	2.29	2.91	14.56	85.44	17.09
E-B	100	0.05	5	0.03	0.14	0.18	3.64	96.36	4.82
F-B	100	0.15	15	0.09	1.29	1.64	10.92	89.08	13.36
	<b>2100</b>	<b>1.75</b>	<b>760</b>		<b>219.71</b>	<b>280.00</b>	<b>553.45</b>	<b>1546.55</b>	<b>480.00</b>
<b>Example 2</b>									
A-D(1)	1000	0.6	600	0.52	313.04	262.16	436.93	563.07	337.84
B-D	800	0.15	120	0.13	15.65	13.11	87.39	712.61	106.89
C-D	100	0.2	20	0.17	3.48	2.91	14.56	85.44	17.09
E-B	100	0.05	5	0.04	0.22	0.18	3.64	96.36	4.82
F-B	100	0.15	15	0.13	1.96	1.64	10.92	89.08	13.36
	<b>2100</b>	<b>1.15</b>	<b>760</b>		<b>334.35</b>	<b>280.00</b>	<b>553.45</b>	<b>1546.55</b>	<b>480.00</b>
<b>Example 3</b>									
A-D(1A)	200	0.6	120	0.17	20.28	52.43	87.39	112.61	67.57
A-D(1B)	200	0.6	120	0.17	20.28	52.43	87.39	112.61	67.57
A-D(1C)	200	0.6	120	0.17	20.28	52.43	87.39	112.61	67.57
A-D(1D)	200	0.6	120	0.17	20.28	52.43	87.39	112.61	67.57
A-D(2)	200	0.6	120	0.17	20.28	52.43	87.39	112.61	67.57
B-D	800	0.15	120	0.04	5.07	13.11	87.39	712.61	106.89
C-D	100	0.2	20	0.06	1.13	2.91	14.56	85.44	17.09
E-B	100	0.05	5	0.01	0.07	0.18	3.64	96.36	4.82
F-B	100	0.15	15	0.04	0.63	1.64	10.92	89.08	13.36
	<b>2100</b>	<b>3.55</b>	<b>760</b>		<b>108.31</b>	<b>280.00</b>	<b>553.45</b>	<b>1546.55</b>	<b>480.00</b>



**Standard IRO-006-4 — Reliability Coordination — Transmission Loading Relief – Attachment 1**

**Appendix C. Sample NERC Transmission Loading Relief Procedure Log**

SAVE FILE DIRECTORY:

**NERC TRANSMISSION LOADING RELIEF (TLR) PROCEDURE LOG**

FILE SAVED AS: .XLS

INCIDENT	DATE	IMPACTED RELIABILITY COORDINATOR	ID. NO.
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**INITIAL CONDITIONS**

Limiting Flowgate (LIMIT)	Rating	Contingent Flowgate (CONT.)	ODF
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TLR Levels	Priorities
0: TLR Incident Canceled	NX Next Hour Market Service
1. Notify Reliability Coordinators of potential problems.	NS Service over secondary receipt and delivery points
2: Halt additional transactions that contribute to the overload	NH Hourly Service
3a and 3b: Curtail transactions using Non-firm Transmission Service	ND Daily Service
4. Reconfigure to continue firm transactions if needed.	NW Weekly Service
5a and 5b: Curtail Transactions using Firm Transmission Service.	NM Monthly Service
6: Implement emergency procedures.	NN Non-firm imports for native load and network customers from non-designated network resources
	F Firm Service

**TLR ACTIONS**

LEVEL	TIME	Priority	TLR 3,4 No. TX Curtail	TLR 3,4 MW Curtail	MW Flow			COMMENTS ABOUT ACTIONS
					Limiting Element	Cont. Element		
					Present	Post Cont.	Present	

**Appendix D. Examples for Parallel Flow Calculation Procedure for Reallocating or Curtailing Firm Transmission Service**

The NERC “**Parallel Flow Calculation Procedure Reference Document**” provides additional information about the criteria used to include generators in the IDC calculation process.

**Example of Results of Calculation Method**

An example of the output of the IDC calculation of curtailment of firm Transmission Service is provided below for the specific Constrained Facility identified in the *Book of Flowgates* as Flowgate 1368. In this example, a total Firm Point to Point contribution to the Constrained Facility, as calculated by the IDC, is assumed to be 21.8 MW.

The table below presents a summary of each Balancing Authority’s responsibility to provide relief to the Constrained Facility due to its Network Integration Transmission Service and service to Native Load contribution to the Constrained Facility. In this example, Balancing Authority LAGN would be requested to curtail 17.3 MW of its total of 401.1 MW of flow contribution on the Constrained Facility. See the “**Parallel Flow Calculation Procedure Reference Document**” for additional details regarding the information illustrated in the table (e. g. Scaled P Max and Flowgate NNative Load MW).

In summary, Interchange transactions would be curtailed by a total of 21.8 MW and Network Integration Transmission Service and service to Native Load would be curtailed by a total of 178.2 MW by the five Balancing Authorities identified in the table. These curtailments would provide a total of 200.0 MW of relief to the Constrained Facility.

Sink Reliability Coordinator	Service Point	Scaled P Max	Flowgate NNative Load MW	Current NNative Load Relief	NNative Load Responsibility		NNative Load Responsibility Acknowledgement	
					Inc/Dec	Current Hr	Acknowledge Time	Total MW Resp.
EES	EES	8429.7	2991.4	0.0	128.9	128.9	13:44	128.9
EES	LAGN	1514.0	718.6	0.0	31.0	31.0	13:44	31.0
SOCO	SOCO	5089.2	401.1	0.0	17.3	17.3	13:44	17.3
SWPP	CLEC	235.7	18.0	0.0	0.8	0.8	13:42	0.8
SWPP	LEPA	22.8	4.1	0.0	0.2	0.2	13:42	0.2
<b>Total</b>				<b>0.0</b>				

## **Appendix E. How the IDC Handles Reallocation**

The IDC algorithms reflect the Reallocation and reloading principles in this Appendix, as well as the reporting requirements, and status display. The IDC will obtain the Tag Submittal Time from the Tag Authority and post the Reloading/Reallocation information to the NERC TLR website.

A summary of IDC features that support the Reallocation process is provided in Attachment E1. Details on the interface and display features are provided in Attachment E2. Refer to Version 1.7.095 NERC Transaction Information Systems Working Group (TISWG) *Electronic Tagging Functional Specification* for details about the E-Tag system.

### **E1. Summary of IDC Features that Support Transaction Reloading/Reallocation**

The following is a summary of IDC features and E-Tag interface that support Reloading/Reallocation:

#### **Information posted from IDC to NERC TLR website.**

1. Restricted directions (all source/sink combinations that impact a Constrained Facility(ies) with TLR 2 or higher) will be posted to the NERC TLR website and updated as necessary.
2. TLR Constrained Facility status and Transfer Distribution Factors will continue to be posted to NERC TLR website.
3. Lowest priority of Interchange Transactions (marginal “bucket”) to be Reloaded/Reallocated next-hour on each TLR Constrained Facility will be posted on NERC TLR website. This will provide an indication to the market of priority of Interchange Transactions that may be Reloaded/Reallocated the following hours.

#### **IDC Logic, IDC Report, and Timing**

1. The Reliability Coordinator will run the IDC the Reloading/Reallocation report at approximately 00:26. The IDC will prompt the Reliability Coordinator to enter a maximum loading value. The IDC will alarm if the Reliability Coordinator does not enter this value and issue a report by 00:30 or change from TLR 3a Level. The Report will be distributed to Balancing Authorities and Transmission Operators at 00:30. This process repeats every hour as long as the approved tag submission deadline for Reallocation is in effect (or until the TLR level is reduced to 1 or 0).
2. For Interchange Transactions in the restricted directions, tags must be submitted to the IDC by the approved tag submission deadline for Reallocation to be considered for Reallocation next-hour. The time stamp by the Tag Authority is regarded the official tag submission time.
3. Tags submitted to IDC after the approved tag submission deadline for Reallocation will not be allowed to start or increase but will be considered for Reallocation the next hour.
4. Interchange Transactions in restricted directions that are not indicated as “PROCEED” on the Reload/Reallocation Report will not be permitted to start or increase next hour.

#### **Reloading/Reallocation Transaction Status**

Reloading/Reallocation status will be determined by the IDC for all Interchange Transactions. The Reloading/Reallocation status of each Interchange Transaction will be listed on IDC reports and NERC TLR website as appropriate. An Interchange Transaction is considered to be in a restricted direction if it is at or above the Curtailment Threshold. Interchange Transactions below the Curtailment Threshold are unrestricted and free to flow subject to all applicable Reliability Standards and tariff rules.



1. **HOLD.** Permission has not been given for Interchange Transaction to start or increase and is waiting for the next Reloading/Reallocation evaluation for which it is a candidate. Interchange Transactions with E-tags submitted to the Tag Authority prior to TLR 2 or higher being declared (pre-tagged) will change to CURTAILED Status upon evaluation that does not permit them to start or increase. Transactions with E-tags submitted to Tag Authority after TLR 2 or higher was declared (post-tagged) will retain HOLD Status until given permission to proceed or E-Tag expires.
2. **CURTAILED.** Transactions for which E-Tags were submitted to Tag Authority prior to TLR 2 or higher being declared (pre-tagged) and ordered to be curtailed totally, curtailed partially, not permitted to start, or not permitted to increase. Interchange Transactions (pre-tagged or post-tagged) that were flowing and ordered to be reduced or totally curtailed. The Balancing Authority will indicate to the IDC through the E-Tag adjustment table the Interchange Transaction's curtailed values.
3. **PROCEED:** Interchange Transaction is flowing or has been permitted to flow as a result of Reloading/Reallocation evaluation. The Balancing Authority will indicate through the E-Tag adjustment table to IDC if Interchange Transaction will reload, start, or increase next-hour per Purchasing-Selling Entity's energy schedule as appropriate.

#### **Reallocation/Reloading Priorities**

1. Interchange Transaction candidates are ranked for loading and curtailment by priority as per Section 4, "Principles for Mitigating Constraints On and Off the Contract Path." This is called the "Constrained Path Method," or CPM. (secondary, hourly, daily, ... firm etc). Interchange Transactions are curtailed and loaded pro-rata within priority level per TLR algorithm.
2. Reloading/Reallocation of Interchange Transactions are prioritized first by priority per CPM. E-Tags must be submitted to the IDC by the approved tag submission deadline for Reallocation of the hour during which the Interchange Transaction is scheduled to start or increase to be considered for Reallocation.
3. During Reloading/Reallocation, Interchange Transactions using lower priority Transmission Service will be curtailed pro-rata to allow higher priority transactions to reload, increase, or start. Equal priority Interchange Transactions will not reload, start, or increase by pro-rata Curtailment of other equal priority Interchange Transactions.
4. Reloading of Interchange Transactions using Non-firm Transmission Service with CURTAILED Status will take precedence over starting or increasing of Interchange Transactions using Non-firm Transmission Service of the same priority with PENDING Statuses.
5. Interchange Transactions using Firm Point-to-Point Transmission Service will be allowed to start as scheduled under TLR 3a as long as their E-Tag was received by the IDC by the approved tag submission deadline for Reallocation of the hour during which the Interchange Transaction is due to start or increase, regardless of whether the E-tag was submitted to the Tag Authority prior to TLR 2 or higher being declared or not. If this is the initial issuance of the TLR 3a, Interchange Transactions using Firm Point-to-Point Transmission Service will be allowed to start as scheduled as long as their E-Tag was received by the IDC by the time the TLR is declared.

#### **Total Flow Value on a Constrained Facility for Next Hour**

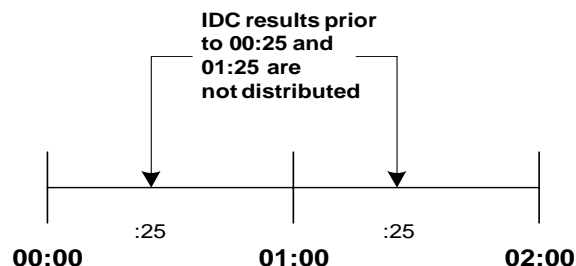
1. The Reliability Coordinator will calculate the change in net flow on a Constrained Facility due to Reallocation for the next hour based on:

- Present constrained facility loading, present level of Interchange Transactions, and Balancing Authorities NNative Load responsibility (TLR Level 5a) impacting the Constrained Facility,
  - SOLs or IROLs, known interchange impacts and Balancing Authority NNative Load responsibility (TLR Level 5a) on the Constrained Facility the next hour, and
  - Interchange Transactions scheduled to begin the next hour.
2. The Reliability Coordinator will enter a maximum loading value for the constrained facility into the IDC as part of issuing the Reloading/Reallocation report.
  3. The Reliability Coordinator is allowed to call for TLR 3a or 5a when approaching a SOL or IROL to allow maximum transactional flow next hour, and to manage flows without violating transmission limits.
  4. The simultaneous curtailment and Reallocation for a Constrained Facility is allowed. This reduces the flow over the Constrained Facility while allowing Interchange Transactions using higher priority Transmission Service to start or increase the next hour. This may be used to accommodate change in flow next-hour due to changes other than Point-to-Point Interchange Transactions while respecting the priorities of Interchange Transactions flowing and scheduled to flow the next hour. The intent is to reduce the need for using TLR 3b, which prevents new Interchange Transactions from starting or increasing the next hour.
  5. The Reliability Coordinator must allow Interchange Transactions to be reloaded as soon as possible. Reloading must be in an orderly fashion to prevent a SOL or IROL violation from (re)occurring and requiring holding or curtailments in the restricted direction.

## E2. Timing Requirements

### TLR Levels 3a and 5a Issuing/Processing Time Requirement

1. In order for the IDC to be reasonably certain that a TLR Level 3a or 5a re-allocation/reloading report in which all tags submitted by the approved tag submission deadline for Reallocation are included, the report must be generated no earlier than 00:25 to allow the 10-minute approval time for Transactions that start next hour.
2. In order to allow a Reliability Coordinator to declare a TLR Level 3a or 5a at any time during the hour, the TLR declaration and Reallocation/Reloading report distribution will be treated as independent processes by the IDC. That is, a Reliability Coordinator may declare a TLR Level 3a or 5a at any time during the course of an hour. However, if a TLR Level 3a or 5a is declared for the next hour prior to 00:25 (see Figure 5 at right), the Reallocation/Reloading report that is generated will be made available to the issuing Reliability Coordinator only for previewing purposes, and cannot be distributed to the other Reliability Coordinators or the market. Instead, the issuing Reliability Coordinator will be reminded by an IDC alarm at 00:25 to generate a new Reallocation/Reloading report that will include all tags submitted prior to the approved tag submission deadline for Reallocation.
3. A TLR Level 3a or 5a Reallocation/Reloading report must be confirmed by the issuing Reliability Coordinator prior to 00:30 in order to provide a minimum of 30 minutes for the Reliability Coordinators with tags sinking in its Reliability Area to coordinate the Reallocation and Reloading with the Sink Balancing Authorities. This provides only 5 minutes (from 00:25 to 00:30) for the issuing Reliability Coordinator to generate a Reallocation/Reloading report, review it, and approve it.
4. The TLR declaration time will be recorded in the IDC for evaluating transaction sub-priorities for Reallocation/Reloading purposes (see Subpriority Table, in the **IDC Calculations and Reporting** section below).



**Figure 5 - IDC report may be run prior to 00:25, but results are not distributed.**

### Re-Issuing of a TLR Level 2 or Higher

Each hour, the IDC will automatically remind the issuing Reliability Coordinator (via an IDC alarm) of a TLR level 2 or higher declared in the previous hour or earlier about re-issuing the TLR. The purpose of the reminder is to enable the Reliability Coordinator to Reallocate or reload currently halted or curtailed Interchange Transactions next hour. The reminder will be in the form of an alarm to the issuing Reliability Coordinator, and will take place at 00:25 so that, if the Reliability Coordinator re-issues the TLR as a TLR level 3a or 5a, all tags submitted prior to the approved tag submission deadline for Reallocation are available in the IDC.

### IDC Assistance with Next Hour Point-to-Point Transactions

In order to assist a Reliability Coordinator in determining the MW relief required on a Constrained Facility for the next hour for a TLR level 3a or 5a, the IDC will calculate and present the total MW impact of all currently flowing and scheduled Point-to-Point Transactions for the next hour. In order to assist a Reliability Coordinator in determining the MW relief required on a Constrained Facility for the next hour during a TLR level 5a, the IDC will calculate and present the total MW impact of all currently flowing and scheduled Point-to-Point Transactions for the next hour as well as Balancing Authority with flows due to service to Network Customers and Native Load. The Reliability Coordinator will then be requested to provide the total incremental or decremental MW amount of flow through the Constrained Facility that can be allowed for the next hour. The value entered by the Reliability Coordinator and the

IDC-calculated amounts will be used by the IDC to identify the relief/reloading amounts (delta incremental flow value) on the constrained facility. The IDC will determine the Transactions to be reloaded, reallocated, or curtailed to make room for the Transactions using higher priority Transmission Service. The following examples show the calculation performed by IDC to identify the “delta incremental flow:”

**Example 1**

Flow to maintain on Facility	800 MW
Expected flow next hour from Transactions using Point-to-Point Transmission Service	950 MW
Contribution from flow next hour from service to Network customers and Native Load	-100 MW
Expected Net flow next hour on Facility	850 MW
Amount of Transactions using Point-to-Point Transmission Service to hold for Reallocation	$850 \text{ MW} - 800 \text{ MW} = 50 \text{ MW}$
Amount to enter into IDC for Transactions using Point-to-Point Transmission Service	$950 \text{ MW} - 50 \text{ MW} = 900 \text{ MW}$

**Example 2**

Flow to maintain on Facility	800 MW
Expected flow next hour from Transactions using Point-to-Point Transmission Service	950 MW
Contribution from flow next hour from service to Network customers and Native Load	50 MW
Expected Net flow next hour on Facility	1000 MW
Amount of Transactions using Point-to-Point Transmission Service to hold for Reallocation	$1000 \text{ MW} - 800 \text{ MW} = 200 \text{ MW}$
Amount to enter into IDC for Transactions using Point-to-Point Transmission Service	$950 \text{ MW} - 200 \text{ MW} = 750 \text{ MW}$

**Example 3**

Flow to maintain on Facility	800 MW
Expected flow next hour from Transactions using Point-to-Point Transmission Service	950 MW
Contribution from flow next hour from service to Network customers and Native Load	-200 MW
Expected Net flow next hour on Facility	750 MW
Amount of Transactions using Point-to-Point Transmission Service to hold for Reallocation	$750 \text{ MW} - 800 \text{ MW} = -50 \text{ MW}$ None are held

**Standard IRO-006-4 — Reliability Coordination — Transmission Loading Relief – Attachment 1**

For a TLR levels 3b or 5b the IDC will request the Reliability Coordinator to provide the MW requested relief amount on the Constrained Facility, and will not present the current and next hour MW impact of Point-to-Point transactions. The Reliability Coordinator-entered requested relief amount will be used by the IDC to determine the Interchange Transaction Curtailments and flows due to service to Network Customers and Native Load (TLR Level 5b) in order to reduce the SOL or IROL violation on the Constrained Facility by the requested amount.

***IDC Calculations and Reporting***

At the time the TLR report is processed, the IDC will use all candidate Interchange Transactions for Reallocation that met the approved tag submission deadline for Reallocation plus those Interchange Transactions that were curtailed or halted on the previous TLR action of the same TLR event. The IDC will calculate and present an Interchange Transactions Halt/Curtailment list that will include reload and Reallocation of Interchange Transactions. The Interchange Transactions are prioritized as follows:

1. All Interchange Transactions will be arranged by Transmission Service Priority according to the Constrained Path Method. These priorities range from 1 to 6 for the various non-firm Transmission Service products (TLR levels 3a and 3b). Interchange Transactions using Firm Transmission Service (priority 7) are used only in TLR levels 5a and 5b. Next-Hour Market Service is included at priority 0.

Examples of Interchange Transactions using Non-firm Transmission Service sub-priority settings begin in the **Transaction Sub-priority Examples** following sections

~~2. In a TLR Level 3a the Interchange Transactions using Non-firm Transmission Service in a given priority will be further divided into four sub-priorities, based on current schedule, current active schedule (identified by the submittal of a tag ADJUST message), next-hour schedule, and tag status. Solely for the purpose of identifying which Interchange Transactions to be loaded under a TLR 3a, various MW levels of an Interchange Transaction may be in different sub-priorities. The sub-priorities are shown in the following table:~~

<b>Priority</b>	<b>Purpose</b>	<b>Explanation and Conditions</b>
<del>S1</del>	<del>To allow a flowing Interchange Transaction to maintain or reduce its current MW amount in accordance with its energy profile.</del>	<del>The MW amount is the lowest between currently flowing MW amount and the next hour schedule. The currently flowing MW amount is determined by the e-tag ENERGY PROFILE and ADJUST tables. If the calculated amount is negative, zero is used instead.</del>
<del>S2</del>	<del>To allow a flowing Interchange Transaction that has been curtailed or halted by TLR to reload to the lesser of its current hour MW amount or next hour schedule in accordance with its energy profile.</del>	<del>The Interchange Transaction MW amount used is determined through the e-tag ENERGY PROFILE and ADJUST tables. If the calculated amount is negative, zero is used instead.</del>

**Standard IRO-006-4 — Reliability Coordination — Transmission Loading Relief – Attachment 1**

<b>Priority</b>	<b>Purpose</b>	<b>Explanation and Conditions</b>
S3	To allow a flowing Transaction to increase from its current hour schedule to its next-hour schedule in accordance with its energy profile.	The MW amounts used in this sub-priority is determined by the e-tag ENERGY PROFILE table. If the calculated amount is negative, zero is used instead.
S4	To allow a Transaction that had never started and was submitted to the Tag Authority after the TLR (level 2 or higher) has been declared to begin flowing (i.e., the Interchange Transaction never had an active MW and was submitted to the IDC after the first TLR Action of the TLR Event had been declared.)	The Transaction would not be allowed to start until all other Interchange Transactions submitted prior to the TLR with the same priority have been (re)loaded. The MW amount used in the sub-priority is the next hour schedule determined by the e-tag ENERGY PROFILE table.

~~Examples of Interchange Transactions using Non-firm Transmission Service sub-priority settings begin in the **Transaction Sub-priority Examples** following sections:~~

~~3.2.~~ All Interchange Transactions using Firm Transmission Service will be put in the same priority group, and will be Curtailed/Reallocated pro-rata, independent of their current status (curtailed or halted) or time of submittal with respect to TLR issuance (TLR level 5a). Under a TLR 5a, all Interchange Transactions using Non-firm Transmission Service that is at or above the Curtailment Threshold will have been curtailed and hence sub-prioritizing is not required.

All Interchange Transactions processed in a TLR are assigned one of the following statuses:

- PROCEED:** The Interchange Transaction has started or is allowed to start to the next hour MW schedule amount.
- CURTAILED:** The Interchange Transaction has started and is curtailed due to the TLR, or it had not started but it was submitted prior to the TLR being declared (level 2 or higher).
- HOLD:** The Interchange Transaction had never started and it was submitted after the TLR being declared – the Interchange Transaction is held from starting next hour or the transaction had never started and it was submitted to the IDC after the Approved-Tag Submission Deadline – the Interchange Transaction is to be held from starting next hour and is not included in the Reallocation calculations until following hour.

Upon acceptance of the TLR Transaction Reallocation/reloading report by the issuing Reliability Coordinator, the IDC will generate a report to be sent to NERC that will include the PSE name and Tag ID of each Interchange Transaction in the IDC TLR report. The Interchange Transaction will be ranked according to its assigned status of HOLD, CURTAILED or PROCEED. The reloading/Reallocation report will be made available at NERC’s public TLR website, and it is NERC’s responsibility to format and publish the report.

**Tag Reloading for TLR Levels 1 and 0**

When a TLR Level 1 or 0 is issued, the Constrained Facility is no longer under SOL or IROL violation and all Interchange Transactions are allowed to flow. In order to provide the Reliability Coordinators with

a view of the Interchange Transactions that were halted or curtailed on previous TLR actions (level 2 or higher) and are now available for reloading, the IDC provides such information in the TLR report.

### **New Tag Alarming**

Those Interchange Transactions that are at or above the Curtailment Threshold and are *not* candidates for Reallocation because the tags for those Transactions were not submitted by the approved tag submission deadline for Reallocation will be flagged as HOLD and must not be permitted to start or increase during the next hour. To alert Reliability Coordinators of those Transactions required to be held, the IDC will generate a report (for viewing within the IDC only) at various times. The report will include a list of all HOLD Transactions. In order not to overwhelm the Reliability Coordinator with alarms, only those who issued the TLR and those whose Transactions sink within their Reliability Area will be alarmed. An alarm will be issued for a given tag only once and will be issued for all TLR levels for which halting new Transactions is required: TLR Level 2, 3a, 3b, 5a and 5b.

### **Tag Adjustment**

The Interchange Transactions with statuses of HOLD, CURTAILED or PROCEED must be adjusted by a Tag Authority or Tag Approval entity. Without the tag adjustments, the IDC will assume that Interchange Transactions were not curtailed/held and are flowing at their specified schedule amounts.

1. Interchange Transactions marked as CURTAILED should be adjusted to a cap equal to, or at the request of the originating PSE, less than the reallocated amount (shown as the MW CAP on the IDC report). This amount may be zero if the Transaction is fully curtailed.
2. Interchange Transaction marked as PROCEED should be adjusted to reload (NULL or to its MW level in accordance with its Energy Profile in the adjusted MW in the E-Tag) if the Interchange Transaction has been previously adjusted; otherwise, if the Interchange Transaction is flowing in full, the Tag Authority need not issue an adjust.
3. Interchange Transactions marked as HOLD should be adjusted to 0 MW.

### **Special Tag Status**

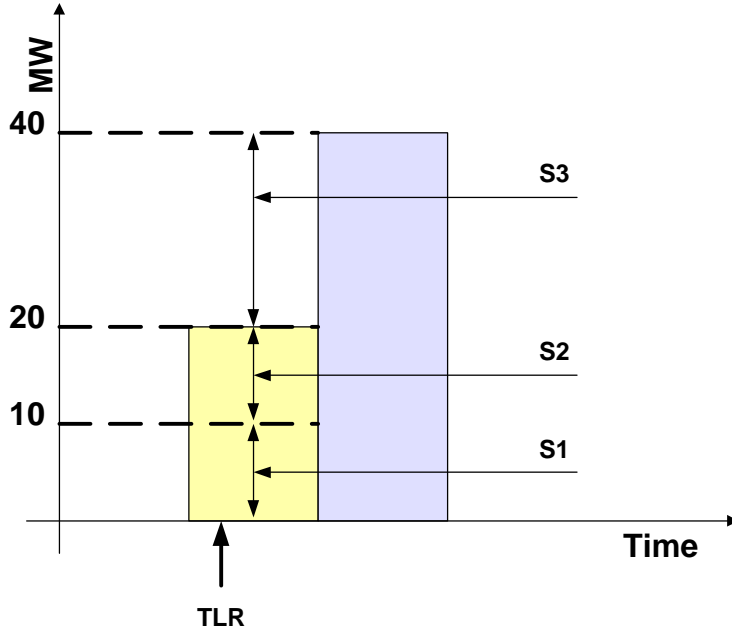
There are cases in which a tag may be marked with a composite state of ATTN\_REQD to indicate that tag Authority/Approval failed to communicate or there is an inconsistency between the validation software of different tag Authority/Approval entities. In this situation, the tag is no longer subject to passive approval and its status change to IMPLEMENT may take longer than 10 minutes. Under these circumstances, the IDC may have a tag that is issued prior to the Tag Submittal Deadline that will not be a candidate for Reallocation. Such tags, when approved by the Tag Authority, will be marked as HOLD and must be halted.

### **Transaction Sub-Priority Examples**

The following describes examples of Interchange Transactions using Non-firm Transmission Service sub-priority setting for an Interchange Transaction under different circumstances of current-hour and next-hour schedules and active MW flowing as modified by tag adjust table in E-Tag.

Example 1 – Transaction curtailed, next-hour Energy Profile is higher

Energy Profile: Current hour	20 MW
Actual flow following curtailment: Current hour	10 MW
Energy Profile: Next hour	40 MW



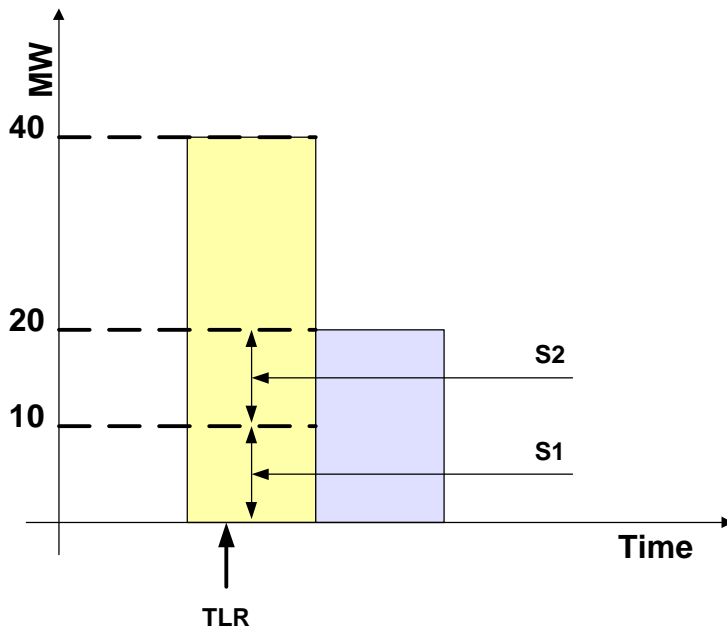
**Sub-priorities for Transaction MW:**

<i>Sub-Priority</i>	<i>MW Value</i>	<i>Explanation</i>
S1	10 MW	Maintain current curtailed flow
S2	+10 MW	Reload to current hour Energy Profile
S3	+20 MW	Load to next hour Energy Profile
S4		



**Example 2 – Transaction curtailed, next-hour Energy Profile is lower**

Energy Profile: Current hour	40 MW
Actual flow following curtailment: Current hour	10 MW
Energy Profile: Next hour	20 MW

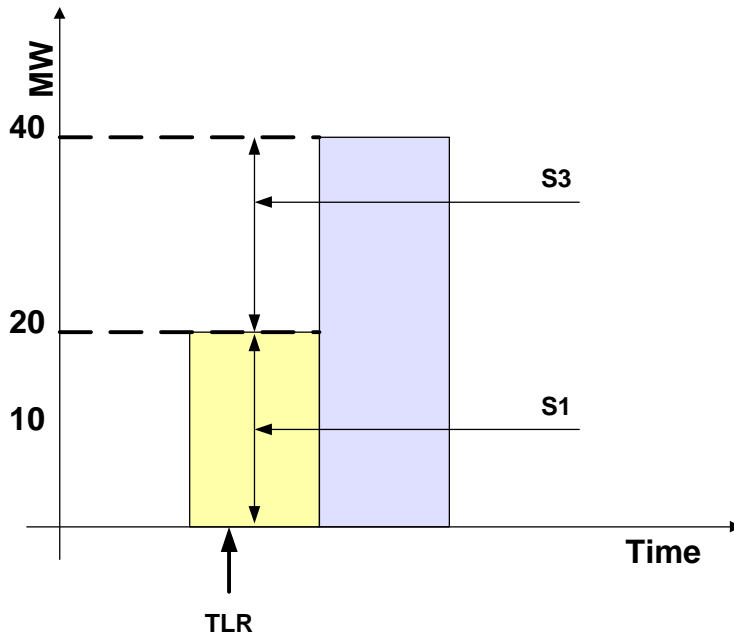


**Sub-priorities for Transaction MW:**

<i>Sub-Priority</i>	<i>MW Value</i>	<i>Explanation</i>
S1	10 MW	Maintain current curtailed flow
S2	+10 MW	Reload to <i>lesser</i> of current and next-hour Energy Profile
S3	+0 MW	Next-hour Energy Profile is 20MW, so no change in MW value
S4		

**Example 3 – Transaction not curtailed, next-hour Energy Profile is higher**

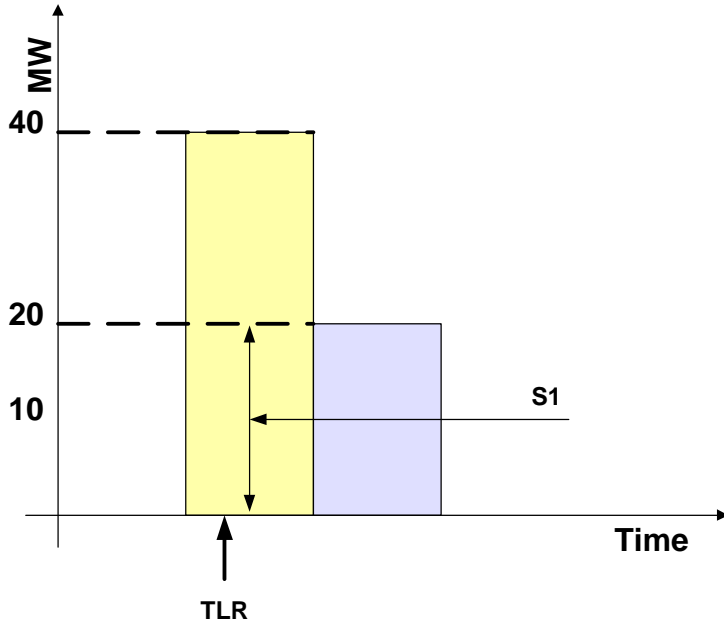
Energy Profile: Current hour	20 MW
Actual flow following curtailment: Current hour	20 MW (no curtailment)
Energy Profile: Next hour	40 MW



<i>Sub-Priority</i>	<i>MW Value</i>	<i>Explanation</i>
S1	20 MW	Maintain current flow (not curtailed)
S2	+0 MW	Reload to <i>lesser</i> of current and next-hour Energy Profile
S3	+20 MW	Next-hour Energy Profile is 40MW
S4		

**Example 4 – Transaction not curtailed, next-hour Energy Profile is lower**

Energy Profile: Current hour	40 MW
Actual flow following curtailment: Current hour	40 MW (no curtailment)
Energy Profile: Next hour	20 MW

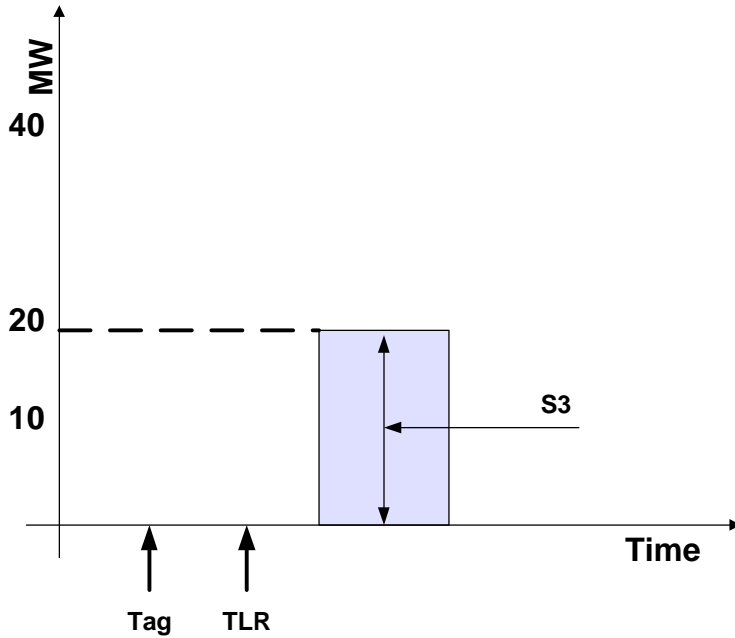


**Sub-priorities for Transaction MW:**

<i>Sub-Priority</i>	<i>MW Value</i>	<i>Explanation</i>
S1	20 MW	Reduce flow to next-hour Energy Profile (20MW)
S2	+0 MW	Reload to <i>lesser</i> of current and next-hour Energy Profile
S3	+0 MW	Next-hour Energy Profile is 20MW
S4		

**Example 5 — TLR Issued before Transaction was scheduled to start**

Energy Profile: Current hour	0 MW
Actual flow following curtailment: Current hour	0 MW (Transaction scheduled to start <i>after</i> TLR initiated)
Energy Profile: Next hour	20 MW



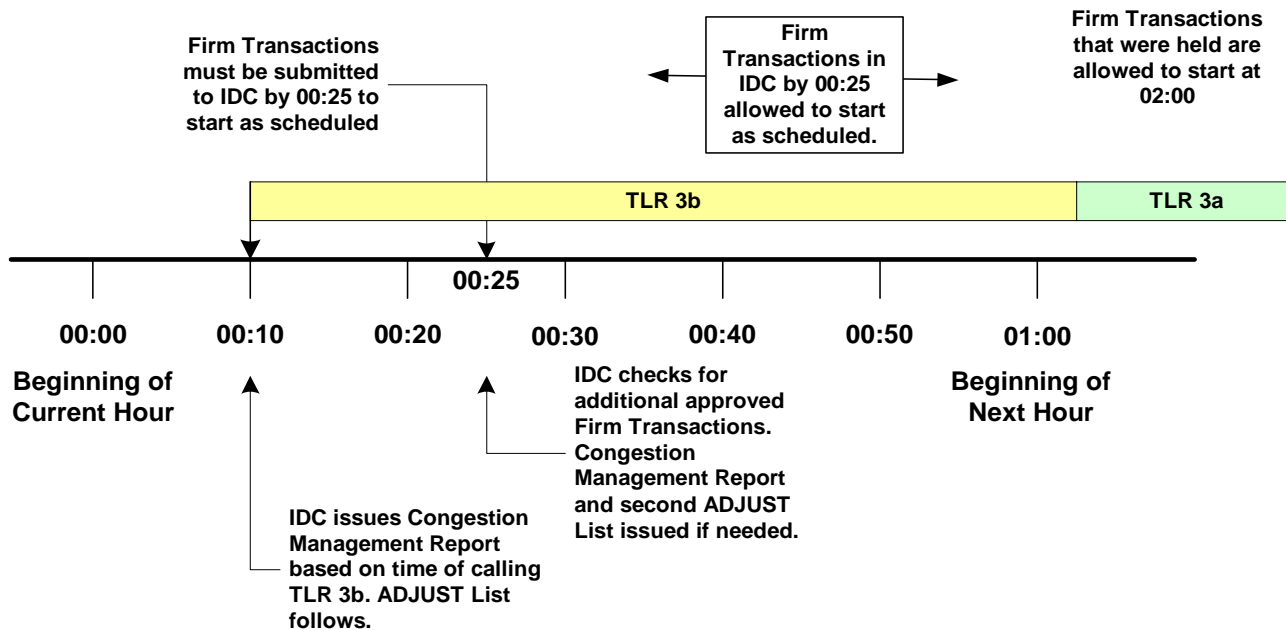
<i>Sub-Priority</i>	<i>MW Value</i>	<i>Explanation</i>
S1	0 MW	Transaction was not allowed to start
S2	+0 MW	Transaction was not allowed to start
S3	+20 MW	Next-hour Energy Profile is 20MW
S4	+0	Tag submitted prior to TLR

**Appendix F. Considerations for Interchange Transactions**

**Using Firm Point-to-Point Transmission Service**

The following cases explain the circumstances under which an Interchange Transaction using Firm Point-to-Point Transmission Service will be allowed to start as scheduled during a TLR 3b:

**Case 1: TLR 3b is called between 00:00 and 00:25 and the Interchange Transaction using Firm Point-to-Point Transmission Service is submitted to IDC by 00:25.**



The IDC will examine the current hour (00) and next hour (01) for all Interchange Transactions.

The IDC will issue an ADJUST List based upon the time the TLR 3b is called. The ADJUST List will include curtailments of Interchange Transactions using Non-firm Point-to-Point Transmission Service as necessary to allow room for those Interchange Transactions using Firm Point-to-Point Transmission Service to start as scheduled.

At 00:25, the IDC will check for additional Interchange Transactions using Firm Point-to-Point Transmission Service that were submitted to the IDC by that time and issue a second ADJUST List if those additional Interchange Transactions are found.

All existing or new Interchange Transactions using Non-firm Point-to-Point Transmission Service that are increasing or expected to start during the current hour or next hour will be placed on HALT or HOLD. There is no Reallocation of lower-priority Interchange Transactions using Non-firm Point-to-Point Transmission Service.

Interchange Transactions using Firm Point-to-Point Transmission Service that were submitted to the IDC by 00:25 will be allowed to start as scheduled.

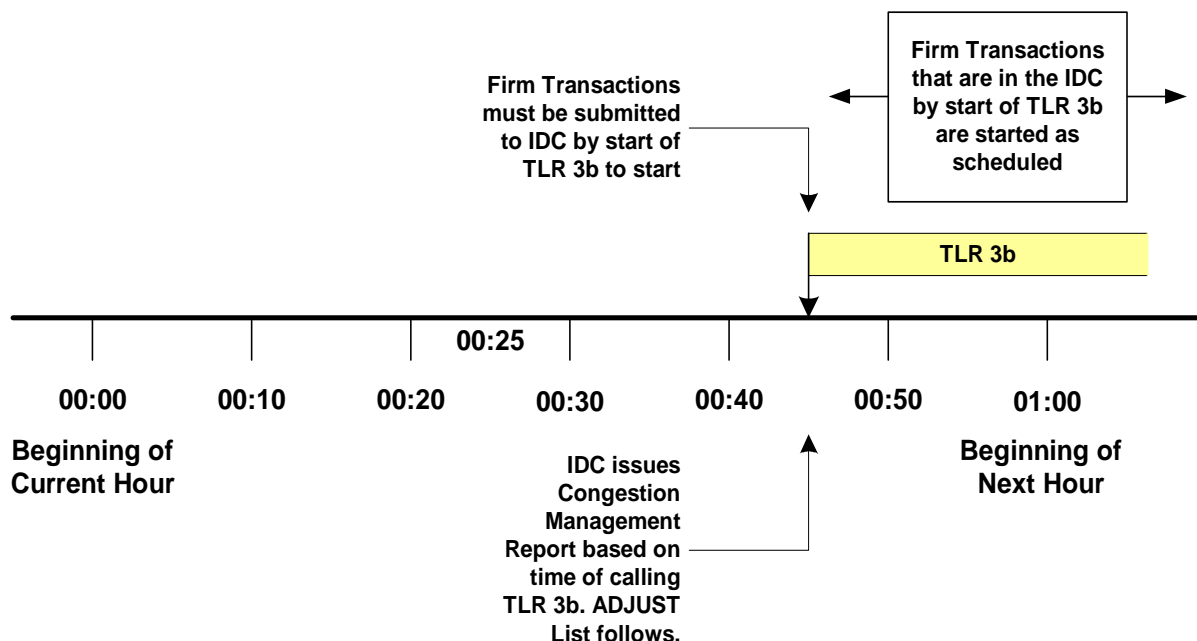
Interchange Transactions using Firm Point-to-Point Transmission Service that were submitted to the IDC after 00:25 will be held.

Once the SOL or IROL violation is mitigated, the Reliability Coordinator shall call a TLR Level 3a (or lower). If a TLR Level 3a is called:

Interchange Transactions using Firm Point-to-Point Transmission Service that were submitted to the IDC by 00:25 will be allowed to start as scheduled at 02:00.

Interchange Transactions using Non-firm Point-to-Point Transmission Service that were held may then be reallocated to start at 02:00.

**Case 2: TLR 3b is called after 00:25 and the Interchange Transaction using Firm Point-to-Point Transmission Service is submitted to the IDC no later than the time at which the TLR 3b is called.**



The IDC will examine the current hour (00) and next hour (01) for all Interchange Transactions.

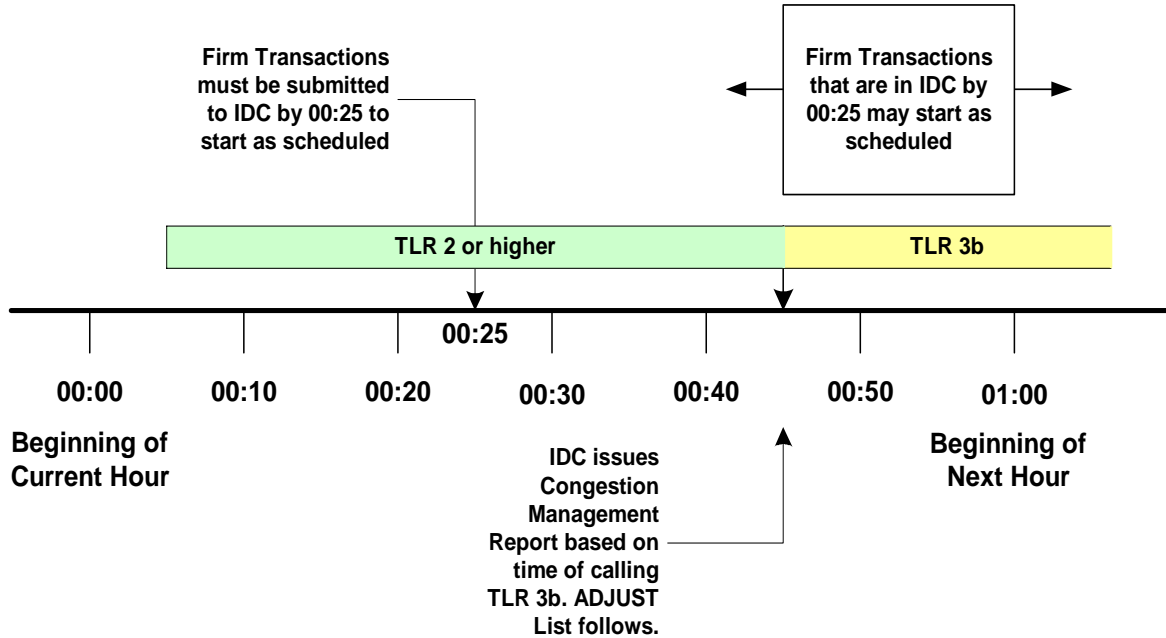
The IDC will issue an ADJUST List at the time the TLR 3b is called. The ADJUST List will include additional curtailments of Interchange Transactions using Non-firm Point-to-Point Transmission Service as necessary to allow room for those Interchange Transactions using Firm Point-to-Point Transmission Service to start at as scheduled.

All existing or new Interchange Transactions using Non-firm Point-to-Point Transmission Service that are increasing or expected to start during the current hour or next hour will be placed on HALT or HOLD. There is no Reallocation of lower-priority Interchange Transactions using Non-firm Point-to-Point Transmission Service.

Interchange Transactions using Firm Point-to-Point Transmission Service that were submitted to the IDC by the time the TLR 3b was called will be allowed to start at as scheduled.

Interchange Transaction using Firm Point-to-Point Transmission Service that were submitted to the IDC after the TLR 3b was called will be held until the next issuance for TLR (either TLR 3b, 3a, or lower level).

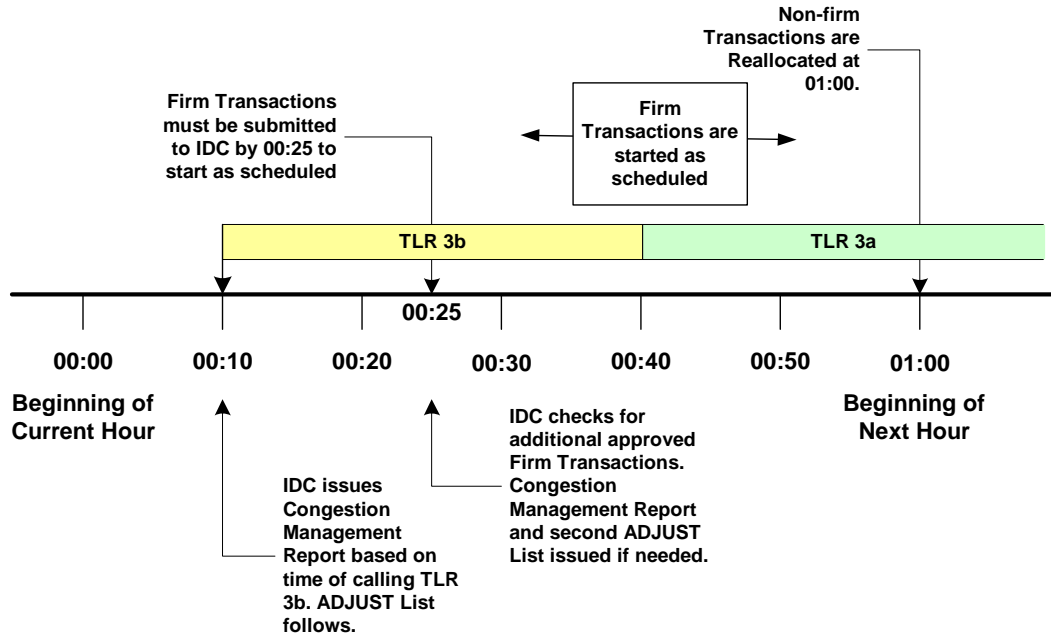
**Case 3. TLR 2 or higher is in effect, a TLR 3b is called after 00:25, and the Interchange Transaction using Firm Point-to-Point Transmission Service is submitted to the IDC by 00:25.**



If a TLR 2 or higher has been issued and 3B is subsequently issued, then only those Interchange Transactions using Firm Point-to-Point Transmission Service that had been submitted to the IDC by 00:25 will be allowed to start as scheduled. All other Interchange Transactions are held.



Case 4. TLR 3b is called before 00:25 and the Interchange Transaction is submitted to the IDC by 00:25. TLR 3a is called at 00:40.

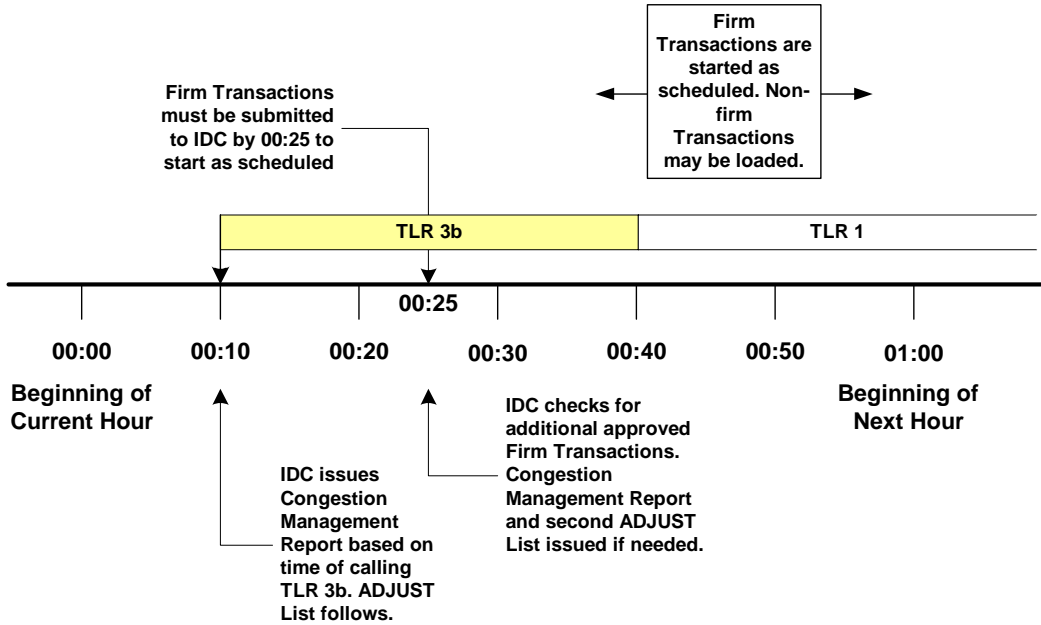


Same as Case 1, but TLR Level 3b ends at 00:40 and becomes TLR Level 3a.

All Interchange Transactions using Firm Point-to-Point Transmission Service will start as scheduled if in by the time the 3A is declared.

All Interchange Transactions using Non-firm Point-to-Point Transmission Service are reallocated at 01:00.

**Case 5. TLR 3b is called before 00:25 and the Interchange Transaction is submitted to the IDC by 00:25. TLR 1 is called at 00:40.**



Same as Case 1, but TLR Level 3b ends at 00:40 and becomes TLR Level 1.

All Interchange Transactions using Firm Point-to-Point Transmission Service will start as scheduled.

All Interchange Transactions using Non-firm Point-to-Point Transmission Service may be loaded immediately.

## Appendix G. Examples of On-Path and Off-Path Mitigation

### *Examples*

~~This section explains, by example, the obligations of the Transmission Service Providers on and off the Contract Path when calling for Transmission Loading Relief. (References to Principles refer to Requirement 4, “Mitigating Constraints On and Off the Contract Path during TLR,” on the preceding pages.) When Reallocating or curtailing Interchange Transactions using Firm Point-to-Point Transmission Service under TLR Level 5a or 5b, the Transmission Service Providers may be obligated to perform comparable curtailments of its Transmission Service to Network Integration and Native Load customers. See Requirement 5, “Parallel Flow Calculation Procedure for Reallocating or Curtailing Firm Transmission Service during TLR.”~~

#### ~~Scenario:~~

~~Interchange Transaction arranged from system A to system D, and assumed to be at or above the Curtailment Threshold.~~

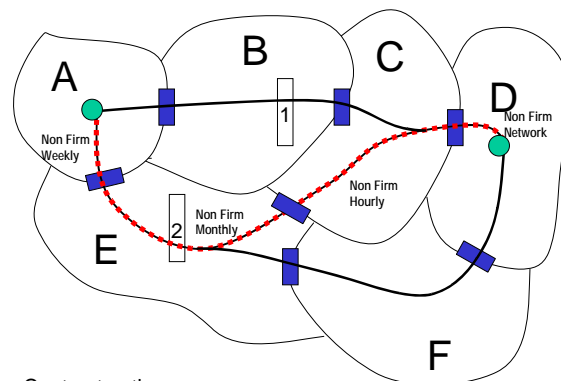
~~Contract path is A-E-C-D (except as noted).~~

~~Locations 1 and 2 denote Constraints.~~

~~Case 1: E is a non-firm Monthly path; C is non-firm Hourly; E has Constraint at #2~~

~~E may call its Reliability Coordinator for TLR to relieve overload at Constraint #2.~~

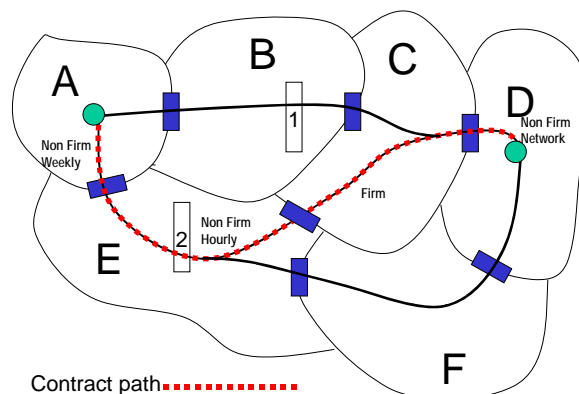
~~Interchange Transaction A-D may be curtailed by TLR action as though it was being served by~~



~~Non-firm Monthly Point-to-Point Transmission Service, even though it was using Non-firm Hourly Point-to-Point Transmission Service from C. That is, it takes on the priority of the link with the Constrained Facility along the Contract Path (Principle 1).~~

~~Case 2: E is a non-firm hourly path, C is firm; E has Constraint at #2~~

~~Although C is providing Firm Service, the Constraint is not on C's system; therefore E is not obligated to treat the Interchange Transaction as though it was being served by Firm Point-to-Point Transmission Service.~~



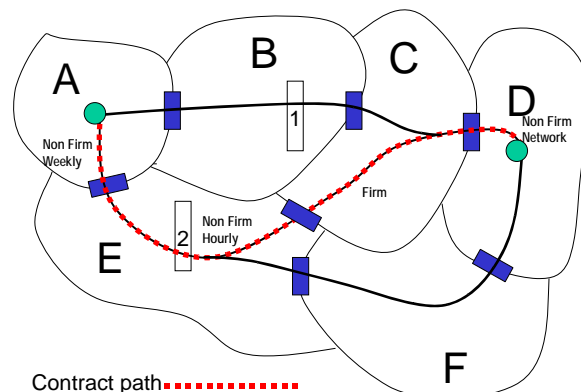
~~E may call its Reliability Coordinator for TLR to relieve overload at Constraint #2.~~

~~Interchange Transaction A-D may be curtailed by TLR action as though it was being served by Non-firm Hourly Point-to-Point Transmission Service, even though it was using firm service from C. That is, when the constraint is on the Contract Path, the Interchange Transaction takes on the priority of the link with the Constrained Facility (Principle 1).~~

~~Case 3: E is a non-firm hourly path, C is firm, B has Constraint at #1~~

~~B may call its Reliability Coordinator for TLR to relieve overload at Constraint #1.~~

~~Interchange Transaction A-D may be curtailed by TLR action as though it was being served by Non-firm Hourly Transmission Service, even if it was using firm Transmission Service elsewhere on the path. When the constraint is off the Contract Path, the Interchange Transaction takes on the lowest priority reserved on the Contract Path (Principle 3).~~



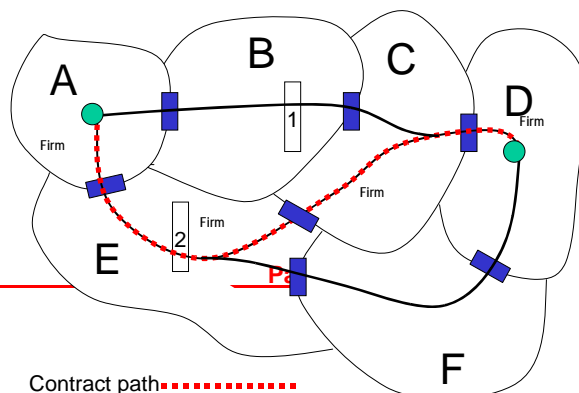
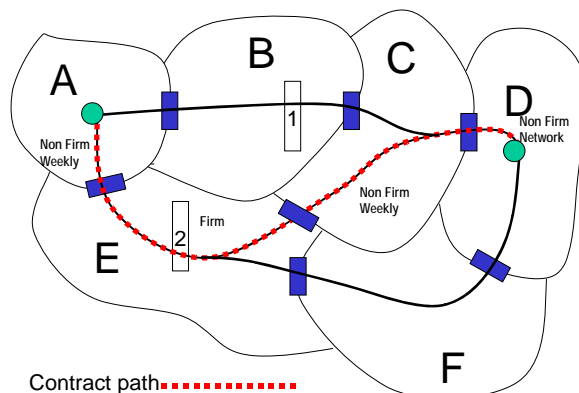
~~Case 4: E is a firm path; A, D, and C are Non-firm; E has Constraint at #2~~

~~Interchange Transaction A-D is considered Firm priority for curtailment purposes.~~

~~E may then call its Reliability Coordinator for TLR, which would curtail all Interchange Transactions using Non-firm Point-to-Point Transmission Service first.~~

~~E is obligated to try to reconfigure transmission to mitigate Constraint #2 in E before E may curtail the Interchange Transaction as ordered by the TLR (Principle 2).~~

~~Case 5: The entire path (A-E-C-D) is firm; E has Constraint at #2~~



~~Interchange Transaction A – D is considered Firm priority for curtailment purposes.~~

~~E may call its Reliability Coordinator for TLR, which would curtail all Interchange Transactions using Non-firm Point-to-Point Transmission Service first.~~

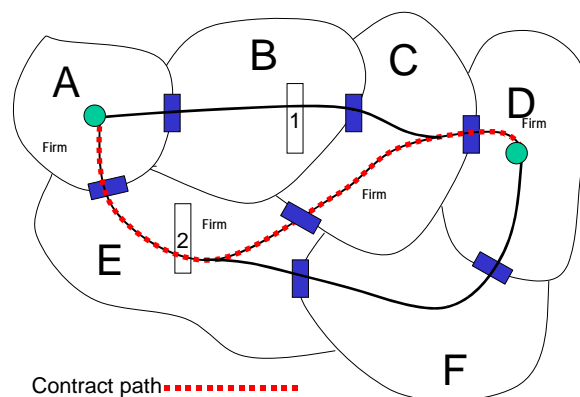
~~E is obligated to curtail Interchange Transactions using Non-firm Point-to-Point Transmission Service, and then reconfigure transmission on its system, or, if there is an agreement in place, arrange for reconfiguration or other congestion management options on another system, to mitigate Constraint #2 in E before the firm A-D transaction is curtailed (Principle 2).~~

~~A, C, D, may be requested by E to try to reconfigure transmission to mitigate Constraint #2 in E at E's expense (Principle 2).~~

~~Case 6: The entire path (A-E-C-D) is firm; B has Constraint at #1.~~

~~Interchange Transaction A – D is considered Firm priority for curtailment purposes.~~

~~B may call its Reliability Coordinator for TLR for all *non-firm* Interchange Transactions that~~



~~contribute to the overload at Constraint #1.~~

~~Following the curtailment of all non-firm Interchange Transactions, the Reliability Coordinator (ies) will determine which Transmission Operator(s) will reconfigure their transmission, if possible, to mitigate constraint #1 (Principle 4).~~

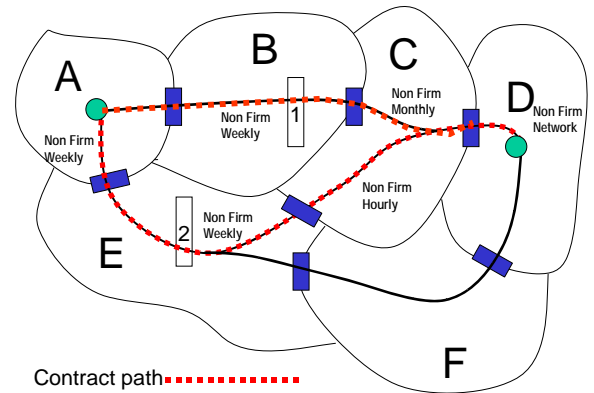
~~A-D transaction may be curtailed as a result. However, the A-D transaction is treated as a firm Interchange Transaction and will be curtailed only after non-firm Interchange Transactions. (Note: This means that the firm Contract Path is respected by all parties, including those not on the Contract Path.) (Principle 4)~~

~~Case 7: Two A-to-D transactions using A-B-C-D and A-E-C-D; A and B are non-firm; B has Constraint at #1~~

~~B is not obligated to reconfigure transmission to mitigate Constraint at #1. (Principle 1)~~

~~B may call its Reliability Coordinator for TLR to relieve overload at Constraint #1.~~

~~If both A – D Interchange Transactions have the same Transfer Distribution Factors across Constraint #1, then they both are subject to curtailment. However, Interchange Transaction A – D using the A-B-C-D path is assigned a higher priority (priority NW on B), and would not be curtailed until after the Interchange Transaction using the path A-E-C-D (priority NH on the Contract Path as observed by B who is off the Contract Path).~~



R1.



## Executive Summary

As filed with FERC, the NERC Transmission Loading Relief (TLR) Standard Drafting Team has identified the reliability aspects of IRO-006 in a draft revision to the standard. The industry is being asked to review the draft revision (and associated Attachment 1) to determine whether or not the reliability objectives associated with the original standard have been maintained. In order to ensure industry understanding of these efforts, the Drafting Team has prepared the following documents:

- The draft reliability standard (both in redline and in clean formats),
- A draft Attachment 1 (both in redline and in clean formats),
- A [reference](#)<sup>1</sup> to the approved NAESB business practices (to show where commercial aspects will be covered), and
- An annotated mark-up of the original IRO-006 (highlighting how each part of the standard was divided).

Additionally, in response to industry comments, the team is developing a **Joint Operating Manual** that will provide operators with an integrated view of both the NERC and NAESB standards.

The work being presented for review is related only to the first phase of work that is to be undertaken by the drafting team, which is ensuring the division of the reliability and commercial aspects of IRO-006 continue to meet the needs of the industry. This includes the development of measures, compliance elements and other standard components to meet the requirements of the NERC Reliability Standards Development Procedure. Future phases are intended to provide support for changes to the MISO/PJM/SPP congestion management process, as well as improve the overall clarity of the standard.

In conducting the first phase of this work, the team attempted to retain the original requirements to the extent possible to avoid creating new elements that may precipitate lengthy debates hence delaying implementing the split. However, where in the judgment of the team the standard requirements as written were deemed to create difficulties in developing the necessary measures and compliance elements, the team modified the requirements to achieve those objectives.

## Background

The original decision to separate the commercial and reliability standards was made in August, 2004, by the NERC Version 0 Standards Drafting Team and the

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<sup>1</sup> Please access [http://naesb.org/misc/fa\\_weq\\_r06002\\_attachment%202 .pdf](http://naesb.org/misc/fa_weq_r06002_attachment%202.pdf) to review the NAESB TLR Business Practice Standards in conjunction with the proposed NERC TLR Reliability Standards to ensure that all relevant aspects of TLR standards are either included in the NERC proposal or in the NAESB business practices. Please note that the NAESB business practice standards are copyright protected. Should you need to obtain a copy of the NAESB standards for other purposes, please contact the NAESB office.

NAESB Business Practice Subcommittee (BPS). This decision was supported by the Joint Interface Committee, consisting of NERC, NAESB, and the IRC (ISO/RTO Council). The agreement was to begin with Version 0 standards for both organizations, meaning standards would be identical, and then to move to Version 1 by the end of 2005 which would totally separate commercial and reliability standards. Approval of Version 1 would then call for the retirement of the Version 0 standards. This decision was also endorsed by the NERC Operating Committee and the Standards Authorization Committee (now called the Standards Committee).

A Joint NERC/NAESB TLR Task Force was formed and held eight meetings to complete the separation. In June of 2005, this team voted unanimously on the separation and agreed that each organization would begin Version 1 work on their portion of the separated standards.

In June, 2005, the NAESB BPS began work on its portion of the split and completed its process with an approval of the Wholesale Electric Quadrant (WEQ) Executive Committee and a subsequent member ratification on April 10, 2006. The decision was made to hold the ratified business practice in abeyance until NERC completed its portion of the split so that both organizations could make their appropriate filings with the FERC at the same time.

NERC posted the approved split for industry comment and received 12 sets of comments, six in favor of the split and six against the split. Those submitting negative comments stated the following concerns: the future management and coordination of the standards; keeping the standards in one accessible location; and the inclusion of business practices in the Interchange Distribution Calculator (IDC) Reference Document. The Operating Reliability Subcommittee at that point asked NAESB to cease work on their business practices (November, 2005) but reconsidered their decision in May, 2006 and approved the development of a SAR and formation of the NERC TLR SAR Drafting Team for the Standard Authorization Committee's ~~(SAC's and now known as Standards Committee (SC))~~ consideration.

To address concerns stated by the industry surrounding the division of the commercial practices and reliability standards, NERC and NAESB Executive leadership developed a process for joint development and maintenance of standards. This process was approved by the NAESB Board in February, 2006 and the NERC Board of Trustees in May, 2006. In addition, both organizations filed reports with the FERC in February, 2006, stating they would use this process to complete the TLR split in February, 2006. The template outlines a joint process for the overall development of standards, the posting of draft standards, and the industry comment periods for those standards. It additionally provides for the joint publication of standards, if Executive Management so decides. The template/process will not change the rights of the ballot body to vote at NERC or the rights of the membership to vote at NAESB.

This template answers the concerns of the industry by providing a method by which standards that are jointly **developed** can be maintained in realistic synchronization. The template for joint standards development also provides for a method to jointly publish standards when the industry provides feedback that one manual with both standards is necessary.

FERC placed additional emphasis on the NERC/NAESB joint development process in Order 676, stating “The WEQ also adopted business practice standards that complement NERC’s Version 0 reliability standards. The development of such standards will be of increasing importance in the future as the Commission approves reliability standards under the recently enacted Energy Policy Act of 2005 (EPAAct 2005).<sup>2</sup> Business practice and reliability standards must complement each other to support an efficient grid. Companies need to have means of conducting business that ensure compliance with the reliability standards. We, therefore, are pleased NERC and NAESB have developed operating protocols that synchronize their standards development to provide for efficient and coordinated implementation of their respective standards.”<sup>3</sup> The support of the Commission for joint standards development and the commitment by both NERC and NAESB to complete the joint standards drafting for TLR standards, illustrates the importance of the task at hand to the Commission and to the industry.

### **The Work Scope of the NERC Drafting Team**

NERC issued a SAR for TLR in December, 2006 to complete three phases of drafting work. The three phases include:

**Phase 1** - - A coordinated effort with NAESB to clarify and refine the steps in the Transmission Loading Relief Procedure for the Eastern Interconnection to reaffirm the steps needed to support reliability and the steps needed to support the business practice. This should be accomplished as soon as possible and should not wait for other technical changes to the standard.

**Phase 2** - A second set of modifications to this standard involves further consideration of a change to the market flow calculation specified in PJM/MISO and SPP regional differences E.1 and E.2 in Standard IRO-006-03 to address a reliability issue when MISO, PJM and SPP are unable to meet their relief obligations during TLR. The proposed modification would change the market flow threshold for MISO, PJM and SPP from 0% to 3%. Based on stakeholder comments, (submitted with the SAR to Modify IRO-006 for Market Information), this change needs to be field tested to verify that it would not have any unforeseen adverse consequences. The field test will start June 1, 2007 for PJM; MISO and SPP will join the field test in September 2007. The field test is expected to end May 31, 2008. This change would replace the SPP Urgent

<sup>2</sup> Energy Policy Act of 2005, Pub. L. No. 109-58, 119 Stat. 594 (2005), 42 U.S.C. 15801 *et seq.* See Order Nos. 672 and 672-A.

<sup>3</sup> See Order 676 at para. 14.

Action Regional Difference to IRO-006. Since the end of the field test will not be completed before the SPP Urgent Action expires, SPP will need to take steps to extend the Urgent Action for one year. Since there was a delay in the start of the field test, changes related to Phase 2 will likely be introduced after the completion of Phase 3.

The PJM/MISO and SPP Regional Differences are also contained in the NAESB Business Practice, Appendix D – Sections A&B. Upon completion of the field test these Regional Differences will be removed from the NERC Standard.

**Phase 3** - A third set of modifications includes the changes needed to elevate the overall quality of the standard and to address the additional technical issues that have been posed with this standard by stakeholders and FERC (see Standard Review Form and Reliability Standard Review Guidelines). In addition to revising the IDC Reference Document, the development may include other improvements to the standards deemed appropriate by the drafting team, with the consensus of stakeholders, consistent with establishing high quality, enforceable and technically sufficient bulk power system reliability standards.

Part of the team's task is to ensure the reliability portion of the standard is enforceable as a mandatory reliability standard with financial penalties — the applicability to bulk power system owners, operators, and users, and as appropriate particular classes of facilities, is clearly defined; the purpose, requirements, and measures are results-focused and unambiguous; the consequences of violating the requirements are clear. The team is also tasked with incorporating other general issues needed to elevate the quality of the standard and to bring the format of the standard into compliance with the ERO Rules of Procedure as described in the standards development work plan (see Standard Review Form and Standard Review Guidelines). IRO-006 was developed as a Version 0 standard and although it has been updated to address some specific technical concerns, the SARs associated with the changes made to the standard limited modifications to just those modifications that were immediately needed. As the electric reliability organization begins enforcing compliance with reliability standards under Section 215 of the Federal Power Act in the United States and applicable statutes and regulations in Canada, the industry needs a set of clear, measurable, and enforceable reliability standards. The Version 0 standards, while a good foundation, were translated from historical operating and planning policies and guides that were appropriate in an era of voluntary compliance. The Version 0 standards and recent updates were put in place as a temporary starting point to stand up the electric reliability organization and begin enforcement of mandatory standards. However, it is important to update the standards in a timely manner, incorporating improvements to make the standards more suitable for enforcement and to capture prior recommendations that were deferred during the Version 0 translation.

## Status

The team has drafted revisions to the NERC TLR Reliability Standard and is seeking industry comment. Supporting documents are being posted so that industry participants can understand the history of how the decision was made and approved to split commercial and business practice language. These documents include:

1. The draft reliability standard (both in redline and in clean formats),
2. A draft Attachment 1 (both in redline and in clean formats),
3. A reference<sup>4</sup> to the approved NAESB business practices (to show where commercial aspects will be covered), and
4. An annotated mark-up of the original IRO-006 (highlighting how each part of the standard was divided).

## Next Steps

The TLR drafting team will consider industry comments made on the NERC portion of the TLR standard and make any language revisions they stakeholders deem appropriate. Once the NERC community is comfortable with the reliability portion of the TLR standard and votes to approve, they will file the Phase 1 portion of the completed standards with the FERC. It is the suggestion of the joint drafting team that NAESB wait to file until NERC has completed its Phase 1 process; this recommendation is not intended to bind NAESB to a particular filing date.

Following the completion of this initial phase of work, the group will begin submitting Phase 2 and 3 changes to industry for comment and balloting.

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<sup>4</sup> Please access [http://naesb.org/misc/fa\\_weq\\_r06002\\_attachment%202.pdf](http://naesb.org/misc/fa_weq_r06002_attachment%202.pdf) to review the NAESB TLR Business Practice Standards in conjunction with the proposed NERC TLR Reliability Standards to ensure that all relevant aspects of TLR standards are either included in the NERC proposal or in the NAESB business practices. Please note that the NAESB business practice standards are copyright protected. Should you need to obtain a copy of the NAESB standards for other purposes, please contact the NAESB office.

**Comment Form — Draft Standard IRO-006-4 — Reliability Coordination — Transmission Loading Relief**

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Please use this form to submit comments on the first draft of the TLR procedure NERC/NAESB split for the Eastern Interconnection (IRO-006-4 — Reliability Coordination — Transmission Loading Relief – Attachment 1). Comments must be submitted by **June 14, 2007**. You must submit the completed form by e-mail to [sarcomm@nerc.net](mailto:sarcomm@nerc.net) with the words "**NERC/NAESB TLR Split**" in the subject line. If you have questions please contact Andy Rodriquez at [andy.rodriquez@nerc.net](mailto:andy.rodriquez@nerc.net) or 609-947-3885.

<b>Individual Commenter Information</b> <b>(Complete this page for comments from one organization or individual.)</b>		
Name:		
Organization:		
Telephone:		
E-mail:		
<b>NERC Region</b>		<b>Registered Ballot Body Segment</b>
<input type="checkbox"/> <b>ERCOT</b>	<input type="checkbox"/>	1 — Transmission Owners
<input type="checkbox"/> <b>FRCC</b>	<input type="checkbox"/>	2 — RTOs and ISOs
<input type="checkbox"/> <b>MRO</b>	<input type="checkbox"/>	3 — Load-serving Entities
<input type="checkbox"/> <b>NPCC</b>	<input type="checkbox"/>	4 — Transmission-dependent Utilities
<input type="checkbox"/> <b>RFC</b>	<input type="checkbox"/>	5 — Electric Generators
<input type="checkbox"/> <b>SERC</b>	<input type="checkbox"/>	6 — Electricity Brokers, Aggregators, and Marketers
<input type="checkbox"/> <b>SPP</b>	<input type="checkbox"/>	7 — Large Electricity End Users
<input type="checkbox"/> <b>WECC</b>	<input type="checkbox"/>	8 — Small Electricity End Users
<input type="checkbox"/> <b>NA – Not Applicable</b>	<input type="checkbox"/>	9 — Federal, State, Provincial Regulatory or other Government Entities
	<input type="checkbox"/>	10 - Regional Reliability Organizations, and Regional Entities



## Comment Form — Draft Standard IRO-006-4 — Reliability Coordination — Transmission Loading Relief

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### Background Information

NERC and the North American Energy Standards Board (NAESB) last year finalized a procedure for coordinating the development of standards in areas that affect both reliability and business practices, such as power interchange and congestion management. This approach allows the reliability requirements to be developed through the NERC process and the business practices to be developed through the NAESB process, with the actual development work being done by a joint team sponsored by NERC and NAESB.

Thus the standards will be separate but closely integrated. This approach is more effective than previous efforts that assigned standards to either NERC or NAESB when the subject matter obviously contains both reliability and business practice elements.

On June 1–2, 2005, following an extensive joint process, the NERC NAESB TLR Subcommittee completed a review of and recommended split of both reliability and business practice requirements of the NERC TLR standard IRO-006.

NAESB completed its ratification of its respective [TLR business practices](#)<sup>1</sup> on April 10, 2006, with updates for an SPP regional difference and changes to TLR Levels 3b and 4 ratified on September 1, 2006.

Following completion of its SAR process, NERC formed a TLR Drafting Team in August 2006. The NERC TLR Drafting Team has been meeting jointly with the NAESB Wholesale Electric Quadrant (WEQ) Business Practices Subcommittee to complete the respective changes to the NERC TLR standard IRO-006 to document the previously agreed-upon NERC/NAESB split of the TLR requirements. In addition, the team has also developed measures, compliance elements and other standard elements to meet the requirements of the NERC Reliability Standards Development Procedure.

In conducting this work, the team attempted to retain the original IRO-006 requirements to the extent possible to avoid creating new elements that may precipitate lengthy debates hence delaying implementing the NERC/NAESB split. However, where in the judgment of the team the standard requirements as written were deemed to create difficulties in developing the necessary measures and compliance elements, the team modified the requirements to achieve those objectives.

The comment form is asking for comments ONLY on the changes to the draft NERC standard. The sections highlighted<sup>2</sup> in the mapping document for the draft standard are being recommended for retirement from the NERC TLR standard.

As part of the project plan for this effort, the drafting team envisions creating a joint operators' manual that will contain both the NERC and NAESB portions of the TLR procedure.

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<sup>1</sup> Please access [http://naesb.org/misc/fa\\_weq\\_r06002\\_attachment%202.pdf](http://naesb.org/misc/fa_weq_r06002_attachment%202.pdf) to review the NAESB TLR Business Practice Standards in conjunction with the proposed NERC TLR Reliability Standards to ensure that all relevant aspects of TLR standards are either included in the NERC proposal or in the NAESB business practices. Please note that the NAESB business practice standards are copyright protected. Should you need to obtain a copy of the NAESB standards for other purposes, please contact the NAESB office.

<sup>2</sup> In the mapping of the NERC/NAESB TLR split, the following key is being used: Yellow — recommended for transfer to a new Attachment 2 in future work on the standard, Gray — agreed as being part of the NAESB Business Practices, Blue — to be deleted as obsolete in future work on the standard.



## Comment Form — Draft Standard IRO-006-4 — Reliability Coordination — Transmission Loading Relief

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### Note that you do not have to answer all questions.

1. Do you agree that the new “Purpose” statement captures the intent of the standard? If not, please explain your answer.

The original purpose stated “Regardless of the process it uses, the Reliability Coordinator must direct its Balancing Authorities and Transmission Operators to return the transmission system to within its Interconnection Reliability Operating Limits as soon as possible, but no longer than 30 minutes. The Reliability Coordinator needs to direct Balancing Authorities and Transmission Operators to execute actions such as reconfiguration, redispatch, or load shedding until relief requested by the TLR process is achieved.”

The new purpose states “The purpose of this standard is to provide a method to prevent and or manage congestion on the Bulk Electric System.”

Yes

No

Comments:

2. In order to develop appropriate measures and compliance elements for the requirements and hold the applicable reliability functions responsible for meeting these requirements, the team has removed Transmission Operator from the applicability list on the basis that the requirements in IRO-006-3 that apply to the Transmission Operators are either not applicable (Section 1.6.3, Attachment 1) or already covered by other standards (Sections 1.8.1 and 2.9.2, Attachment 1). Do you agree with the applicable entities defined in the standard? If not, please specify to which entities the standard should apply.

Yes

No

Comments:

3. The intent of the revised standard is to capture the reliability requirements of the former TLR procedure following the NERC/NAESB split. Do you agree that the draft revisions to the standard and Attachment 1 accomplished this objective? If not, please explain your answer.

Yes

No

Comments:

4. Do you agree with the violation risk factors proposed in the standard? If not, please explain your answer.

Yes

No

Comments:

**Comment Form — Draft Standard IRO-006-4 — Reliability Coordination —  
Transmission Loading Relief**

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5. Do you agree with the time horizons proposed in the standard? The drafting team was given the following criteria to use in assigning a “time horizon.” Note that time horizons are used as one component in determining the size of a sanction. More information about time horizons can be found in the Sanctions Guidelines.

- Long-term Planning — a planning horizon of one year or longer.
- Operations Planning — operating and resource plans from day-ahead up to and including seasonal.
- Same-day Operations — routine actions required within the timeframe of a day, but not real-time.
- Real-time Operations — actions required within one hour or less to preserve the reliability of the Bulk Electric System.
- Operations Assessment — follow-up evaluations and reporting of real time operations.

If not, please explain your answer.

Yes

No

Comments:

6. Do you agree with the measures proposed in the standard? If not, please explain your answer.

Yes

No

Comments:

7. Do you agree with the compliance elements proposed in the standard? If not, please explain your answer.

Yes

No

Comments:

8. The drafting team is planning a joint NERC NAESB TLR operator’s manual for the TLR procedure. What would your organization like to see contained in a joint manual?

Comments:

9. Are you aware of any conflicts between the proposed standard and any regulatory function, rule/order, tariff, rate schedule, legislative requirement or agreement? If yes, please explain your answer.

Yes

No

Comments:

**Comment Form — Draft Standard IRO-006-4 — Reliability Coordination —  
Transmission Loading Relief**

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10. Do you have any concerns that would prevent you from voting to approve this draft standard? If yes, please explain your answer.

Yes

No

Comments:

11. Please provide any other comments you have (that you have not already provided in response to the above questions) regarding this draft standard.

Comments:

**Comment Form — Draft Standard IRO-006-4 — Reliability Coordination — Transmission Loading Relief**

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Please use this form to submit comments on the first draft of the TLR procedure NERC/NAESB split for the Eastern Interconnection (IRO-006-4 — Reliability Coordination — Transmission Loading Relief – Attachment 1). Comments must be submitted by **June 14, 2007**. You must submit the completed form by e-mail to [sarcomm@nerc.net](mailto:sarcomm@nerc.net) with the words "**NERC/NAESB TLR Split**" in the subject line. If you have questions please contact Andy Rodriquez at [andy.rodriquez@nerc.net](mailto:andy.rodriquez@nerc.net) or 609-947-3885.

<b>Individual Commenter Information</b>	
<b>(Complete this page for comments from one organization or individual.)</b>	
Name:	Thad K. Ness
Organization:	American Electric Power (AEP)
Telephone:	614-716-2053
E-mail:	tkness@aep.com
NERC Region	Registered Ballot Body Segment
<input checked="" type="checkbox"/> <b>ERCOT</b>	<input checked="" type="checkbox"/> 1 — Transmission Owners
<input type="checkbox"/> <b>FRCC</b>	<input type="checkbox"/> 2 — RTOs and ISOs
<input type="checkbox"/> <b>MRO</b>	<input type="checkbox"/> 3 — Load-serving Entities
<input type="checkbox"/> <b>NPCC</b>	<input type="checkbox"/> 4 — Transmission-dependent Utilities
<input checked="" type="checkbox"/> <b>RFC</b>	<input checked="" type="checkbox"/> 5 — Electric Generators
<input type="checkbox"/> <b>SERC</b>	<input checked="" type="checkbox"/> 6 — Electricity Brokers, Aggregators, and Marketers
<input checked="" type="checkbox"/> <b>SPP</b>	<input type="checkbox"/> 7 — Large Electricity End Users
<input type="checkbox"/> <b>WECC</b>	<input type="checkbox"/> 8 — Small Electricity End Users
<input type="checkbox"/> <b>NA – Not Applicable</b>	<input type="checkbox"/> 9 — Federal, State, Provincial Regulatory or other Government Entities
	<input type="checkbox"/> 10 - Regional Reliability Organizations, and Regional Entities



## Comment Form — Draft Standard IRO-006-4 — Reliability Coordination — Transmission Loading Relief

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### Background Information

NERC and the North American Energy Standards Board (NAESB) last year finalized a procedure for coordinating the development of standards in areas that affect both reliability and business practices, such as power interchange and congestion management. This approach allows the reliability requirements to be developed through the NERC process and the business practices to be developed through the NAESB process, with the actual development work being done by a joint team sponsored by NERC and NAESB.

Thus the standards will be separate but closely integrated. This approach is more effective than previous efforts that assigned standards to either NERC or NAESB when the subject matter obviously contains both reliability and business practice elements.

On June 1–2, 2005, following an extensive joint process, the NERC NAESB TLR Subcommittee completed a review of and recommended split of both reliability and business practice requirements of the NERC TLR standard IRO-006.

NAESB completed its ratification of its respective [TLR business practices](#)<sup>1</sup> on April 10, 2006, with updates for an SPP regional difference and changes to TLR Levels 3b and 4 ratified on September 1, 2006.

Following completion of its SAR process, NERC formed a TLR Drafting Team in August 2006. The NERC TLR Drafting Team has been meeting jointly with the NAESB Wholesale Electric Quadrant (WEQ) Business Practices Subcommittee to complete the respective changes to the NERC TLR standard IRO-006 to document the previously agreed-upon NERC/NAESB split of the TLR requirements. In addition, the team has also developed measures, compliance elements and other standard elements to meet the requirements of the NERC Reliability Standards Development Procedure.

In conducting this work, the team attempted to retain the original IRO-006 requirements to the extent possible to avoid creating new elements that may precipitate lengthy debates hence delaying implementing the NERC/NAESB split. However, where in the judgment of the team the standard requirements as written were deemed to create difficulties in developing the necessary measures and compliance elements, the team modified the requirements to achieve those objectives.

The comment form is asking for comments ONLY on the changes to the draft NERC standard. The sections highlighted<sup>2</sup> in the mapping document for the draft standard are being recommended for retirement from the NERC TLR standard.

As part of the project plan for this effort, the drafting team envisions creating a joint operators' manual that will contain both the NERC and NAESB portions of the TLR procedure.

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<sup>1</sup> Please access [http://naesb.org/misc/fa\\_weq\\_r06002\\_attachment%202.pdf](http://naesb.org/misc/fa_weq_r06002_attachment%202.pdf) to review the NAESB TLR Business Practice Standards in conjunction with the proposed NERC TLR Reliability Standards to ensure that all relevant aspects of TLR standards are either included in the NERC proposal or in the NAESB business practices. Please note that the NAESB business practice standards are copyright protected. Should you need to obtain a copy of the NAESB standards for other purposes, please contact the NAESB office.

<sup>2</sup> In the mapping of the NERC/NAESB TLR split, the following key is being used: Yellow — recommended for transfer to a new Attachment 2 in future work on the standard, Gray — agreed as being part of the NAESB Business Practices, Blue — to be deleted as obsolete in future work on the standard.

## Comment Form — Draft Standard IRO-006-4 — Reliability Coordination — Transmission Loading Relief

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### Note that you do not have to answer all questions.

1. Do you agree that the new “Purpose” statement captures the intent of the standard? If not, please explain your answer.

The original purpose stated “Regardless of the process it uses, the Reliability Coordinator must direct its Balancing Authorities and Transmission Operators to return the transmission system to within its Interconnection Reliability Operating Limits as soon as possible, but no longer than 30 minutes. The Reliability Coordinator needs to direct Balancing Authorities and Transmission Operators to execute actions such as reconfiguration, redispatch, or load shedding until relief requested by the TLR process is achieved.”

The new purpose states “The purpose of this standard is to provide a method to prevent and or manage congestion on the Bulk Electric System.”

Yes

No

Comments: IRO-005-2 deals with current day operations. IRO-005-2 R3, R16, and R17 all deal with the IROL violation issue and taking appropriate action to relieve the violation within 30 minutes.

IRO-005-2 R3: As portions of the transmission system approach or exceed SOLs or IROLs, the Reliability Coordinator shall work with its Transmission Operators and Balancing Authorities to evaluate and assess any additional Interchange Schedules that would violate those limits. If a potential or actual IROL violation cannot be avoided through proactive intervention, the Reliability Coordinator shall initiate control actions or emergency procedures to relieve the violation without delay, and no longer than 30 minutes. The Reliability Coordinator shall ensure all resources, including load shedding, are available to address a potential or actual IROL violation.

IRO-005-2 R16: Each Reliability Coordinator shall confirm reliability assessment results and determine the effects within its own and adjacent Reliability Coordinator Areas. The Reliability Coordinator shall discuss options to mitigate potential or actual SOL or IROL violations and take actions as necessary to always act in the best interests of the Interconnection at all times.

IRO-005-2 R17: When an IROL or SOL is exceeded, the Reliability Coordinator shall evaluate the local and wide-area impacts, both real-time and post-contingency, and determine if the actions being taken are appropriate and sufficient to return the system to within IROL in thirty minutes. If the actions being taken are not appropriate or sufficient, the Reliability Coordinator shall direct the Transmission Operator, Balancing Authority, Generator Operator, or Load-Serving Entity to return the system to within IROL or SOL.

2. In order to develop appropriate measures and compliance elements for the requirements and hold the applicable reliability functions responsible for meeting these requirements, the team has removed Transmission Operator from the applicability list on the basis that the requirements in IRO-006-3 that apply to the Transmission Operators are either not applicable (Section 1.6.3, Attachment 1) or already covered by other standards (Sections

**Comment Form — Draft Standard IRO-006-4 — Reliability Coordination —  
Transmission Loading Relief**

---

1.8.1 and 2.9.2, Attachment 1). Do you agree with the applicable entities defined in the standard? If not, please specify to which entities the standard should apply.

Yes

No

Comments:

3. The intent of the revised standard is to capture the reliability requirements of the former TLR procedure following the NERC/NAESB split. Do you agree that the draft revisions to the standard and Attachment 1 accomplished this objective? If not, please explain your answer.

Yes

No

Comments:

4. Do you agree with the violation risk factors proposed in the standard? If not, please explain your answer.

Yes

No

Comments:

5. Do you agree with the time horizons proposed in the standard? The drafting team was given the following criteria to use in assigning a "time horizon." Note that time horizons are used as one component in determining the size of a sanction. More information about time horizons can be found in the Sanctions Guidelines.

- Long-term Planning — a planning horizon of one year or longer.
- Operations Planning — operating and resource plans from day-ahead up to and including seasonal.
- Same-day Operations — routine actions required within the timeframe of a day, but not real-time.
- Real-time Operations — actions required within one hour or less to preserve the reliability of the Bulk Electric System.
- Operations Assessment — follow-up evaluations and reporting of real time operations.

If not, please explain your answer.

Yes

No

Comments:

6. Do you agree with the measures proposed in the standard? If not, please explain your answer.



## Comment Form — Draft Standard IRO-006-4 — Reliability Coordination — Transmission Loading Relief

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Yes

No

Comments:

7. Do you agree with the compliance elements proposed in the standard? If not, please explain your answer.

Yes

No

Comments: The Violation Severity Levels do not make sense, especially those for the Eastern Interconnection. What is the rationale for the selection of 2-3 procedural violations being moderate and 4-5 being high and 6 or more being severe? For ERCOT and the Western Interconnection, not following just one procedural requirement is a severe violation. Also, for the east, is the SDT stating that all the requirements in Attachment 1 are of equal weight, hence the 2-3, and 4-5, etc. division? The SDT needs to review these one more time.

For 2.3.2, this should be moved to the lower category and made 2.1.3 once R4 is cleaned up. The requirement it references, R4, is unclear. Each Interconnection has their own Interconnection-wide procedure. So when curtailing an Interchange Transaction that crosses an Interconnection boundary, which Interconnection-wide procedure are the initiating and responding RC to use, the one in the initiating RC's interconnection or the one in the responding RC's interconnection?

2.4.4 should be restated as follows: While attempting to mitigate an existing IROL violation in the Eastern Interconnection, the Reliability Coordinator only applied TLR Levels 5 and lower as the sole remedy for an existing IROL violation.

In the situation under 2.4.4, the appropriate action for the RC to take is to issue a TLR Level 6 - Emergency Procedures, which provides for the RC to redispatch generation, reconfigure transmission, or reduce load to mitigate the critical condition, which an IROL violation is. See 2.9 of Attachment 1 to IRO-006-4 for reference.

8. The drafting team is planning a joint NERC NAESB TLR operator's manual for the TLR procedure. What would your organization like to see contained in a joint manual?

Comments: No comment.

9. Are you aware of any conflicts between the proposed standard and any regulatory function, rule/order, tariff, rate schedule, legislative requirement or agreement? If yes, please explain your answer.

Yes

No

Comments:

10. Do you have any concerns that would prevent you from voting to approve this draft standard? If yes, please explain your answer.

## Comment Form — Draft Standard IRO-006-4 — Reliability Coordination — Transmission Loading Relief

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Yes

No

Comments: Yes, see our comments to Q#7 and Q#11.

11. Please provide any other comments you have (that you have not already provided in response to the above questions) regarding this draft standard.

Comments: For the Standard, IRO-006-4:

R1.1 - Delete the following: "TLR procedure alone is an inappropriate and ineffective tool to mitigate an IROL violation. Other acceptable and more effective procedures to mitigate actual IROL violations include: reconfiguration, redispatch, or load shedding." This is an incorrect statement. The Eastern Interconnection TLR procedure includes TLR Level 6 - Emergency Procedures, which provides for the RC to redispatch generation, reconfigure transmission, or reduce load to mitigate the critical condition, which an IROL violation is. See 2.9 of Attachment 1 to IRO-006-4 for reference. TLR Level 6 is an often forgotten element of the TLR procedure, but it does exist and is perfect for the situation sited.

For Attachment 1:

1.2 - Delete the following: "However, the TLR procedure is an inappropriate and ineffective tool as a sole means to mitigate existing IROL violations due to the time required to implement the procedure. Reconfiguration, redispatch, and load shedding are more timely and effective in mitigating existing IROL violations." This is an incorrect statement for the reason sited above in R1.1. It is interesting to note that in 1.3 of Attachment 1 acknowledges our position by stating that "Furthermore, if a Reliability Coordinator deems that a transmission loading condition could jeopardize Bulk Electric System reliability, the Reliability Coordinator shall have the authority to enter TLR Level 6 directly, and immediately direct the Balancing Authorities or Transmission Operators to take such actions as redispatching generation, or reconfiguring transmission, or reducing load to mitigate the critical condition until Interchange Transactions can be reduced utilizing the TLR Procedure or other methods to return the system to a secure state." As TLR Level 6 is part of the TLR procedures, and TLR Level 6 is for directing immediate reconfiguration, redispatch, or load shedding, then the TLR procedure is an effective tool to mitigate IROL violations.

3.0 TLR Level 0 - This is numbered incorrectly. It is part of section 2, thus should be numbered 2.10, and 3.0.1 should be numbered 2.10.1.

Under the heading Requirements on pg. 7, 4.1 to 4.5 were part of former section 7, Interchange Transaction Curtailments During TLR Level 3B. If these requirements are to stay, then this heading should be used again, and they should be numbered section 3. However, we question why these remain. All but 4.5 appear to be related to the business practice side of TLR, thus they should go to NAESB.

Appendix A - This is very out of date. NERC has not used the term OSL violation for years. This chart needs to be updated to the present terminology, using IROL and SOL, not OSL and Security Limit Violation.

**Comment Form — Draft Standard IRO-006-4 — Reliability Coordination — Transmission Loading Relief**

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Please use this form to submit comments on the first draft of the TLR procedure NERC/NAESB split for the Eastern Interconnection (IRO-006-4 — Reliability Coordination — Transmission Loading Relief – Attachment 1). Comments must be submitted by **June 14, 2007**. You must submit the completed form by e-mail to [sarcomm@nerc.net](mailto:sarcomm@nerc.net) with the words "**NERC/NAESB TLR Split**" in the subject line. If you have questions please contact Andy Rodriquez at [andy.rodriquez@nerc.net](mailto:andy.rodriquez@nerc.net) or 609-947-3885.

<b>Individual Commenter Information</b> <b>(Complete this page for comments from one organization or individual.)</b>		
Name:	Bill Lohrman	
Organization:	Prague Power, LLC	
Telephone:	908-630-0289	
E-mail:	wwlohrman@praguepower.com	
<b>NERC Region</b>	<b>Registered Ballot Body Segment</b>	
<input type="checkbox"/> <b>ERCOT</b>	<input type="checkbox"/>	1 — Transmission Owners
<input type="checkbox"/> <b>FRCC</b>	<input type="checkbox"/>	2 — RTOs and ISOs
<input type="checkbox"/> <b>MRO</b>	<input type="checkbox"/>	3 — Load-serving Entities
<input type="checkbox"/> <b>NPCC</b>	<input type="checkbox"/>	4 — Transmission-dependent Utilities
<input type="checkbox"/> <b>RFC</b>	<input type="checkbox"/>	5 — Electric Generators
<input type="checkbox"/> <b>SERC</b>	<input type="checkbox"/>	6 — Electricity Brokers, Aggregators, and Marketers
<input type="checkbox"/> <b>SPP</b>	<input type="checkbox"/>	7 — Large Electricity End Users
<input type="checkbox"/> <b>WECC</b>	<input type="checkbox"/>	8 — Small Electricity End Users
<input checked="" type="checkbox"/> <b>NA – Not Applicable</b>	<input checked="" type="checkbox"/>	9 — Federal, State, Provincial Regulatory or other Government Entities
	<input type="checkbox"/>	10 - Regional Reliability Organizations, and Regional Entities



## Comment Form — Draft Standard IRO-006-4 — Reliability Coordination — Transmission Loading Relief

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### Background Information

NERC and the North American Energy Standards Board (NAESB) last year finalized a procedure for coordinating the development of standards in areas that affect both reliability and business practices, such as power interchange and congestion management. This approach allows the reliability requirements to be developed through the NERC process and the business practices to be developed through the NAESB process, with the actual development work being done by a joint team sponsored by NERC and NAESB.

Thus the standards will be separate but closely integrated. This approach is more effective than previous efforts that assigned standards to either NERC or NAESB when the subject matter obviously contains both reliability and business practice elements.

On June 1–2, 2005, following an extensive joint process, the NERC NAESB TLR Subcommittee completed a review of and recommended split of both reliability and business practice requirements of the NERC TLR standard IRO-006.

NAESB completed its ratification of its respective [TLR business practices](#)<sup>1</sup> on April 10, 2006, with updates for an SPP regional difference and changes to TLR Levels 3b and 4 ratified on September 1, 2006.

Following completion of its SAR process, NERC formed a TLR Drafting Team in August 2006. The NERC TLR Drafting Team has been meeting jointly with the NAESB Wholesale Electric Quadrant (WEQ) Business Practices Subcommittee to complete the respective changes to the NERC TLR standard IRO-006 to document the previously agreed-upon NERC/NAESB split of the TLR requirements. In addition, the team has also developed measures, compliance elements and other standard elements to meet the requirements of the NERC Reliability Standards Development Procedure.

In conducting this work, the team attempted to retain the original IRO-006 requirements to the extent possible to avoid creating new elements that may precipitate lengthy debates hence delaying implementing the NERC/NAESB split. However, where in the judgment of the team the standard requirements as written were deemed to create difficulties in developing the necessary measures and compliance elements, the team modified the requirements to achieve those objectives.

The comment form is asking for comments ONLY on the changes to the draft NERC standard. The sections highlighted<sup>2</sup> in the mapping document for the draft standard are being recommended for retirement from the NERC TLR standard.

As part of the project plan for this effort, the drafting team envisions creating a joint operators' manual that will contain both the NERC and NAESB portions of the TLR procedure.

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<sup>1</sup> Please access [http://naesb.org/misc/fa\\_weq\\_r06002\\_attachment%202.pdf](http://naesb.org/misc/fa_weq_r06002_attachment%202.pdf) to review the NAESB TLR Business Practice Standards in conjunction with the proposed NERC TLR Reliability Standards to ensure that all relevant aspects of TLR standards are either included in the NERC proposal or in the NAESB business practices. Please note that the NAESB business practice standards are copyright protected. Should you need to obtain a copy of the NAESB standards for other purposes, please contact the NAESB office.

<sup>2</sup> In the mapping of the NERC/NAESB TLR split, the following key is being used: Yellow — recommended for transfer to a new Attachment 2 in future work on the standard, Gray — agreed as being part of the NAESB Business Practices, Blue — to be deleted as obsolete in future work on the standard.

## Comment Form — Draft Standard IRO-006-4 — Reliability Coordination — Transmission Loading Relief

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### Note that you do not have to answer all questions.

1. Do you agree that the new “Purpose” statement captures the intent of the standard? If not, please explain your answer.

The original purpose stated “Regardless of the process it uses, the Reliability Coordinator must direct its Balancing Authorities and Transmission Operators to return the transmission system to within its Interconnection Reliability Operating Limits as soon as possible, but no longer than 30 minutes. The Reliability Coordinator needs to direct Balancing Authorities and Transmission Operators to execute actions such as reconfiguration, redispatch, or load shedding until relief requested by the TLR process is achieved.”

The new purpose states “The purpose of this standard is to provide a method to prevent and or manage congestion on the Bulk Electric System.”

Yes

No

Comments:

2. In order to develop appropriate measures and compliance elements for the requirements and hold the applicable reliability functions responsible for meeting these requirements, the team has removed Transmission Operator from the applicability list on the basis that the requirements in IRO-006-3 that apply to the Transmission Operators are either not applicable (Section 1.6.3, Attachment 1) or already covered by other standards (Sections 1.8.1 and 2.9.2, Attachment 1). Do you agree with the applicable entities defined in the standard? If not, please specify to which entities the standard should apply.

Yes

No

Comments:

3. The intent of the revised standard is to capture the reliability requirements of the former TLR procedure following the NERC/NAESB split. Do you agree that the draft revisions to the standard and Attachment 1 accomplished this objective? If not, please explain your answer.

Yes

No

Comments:

4. Do you agree with the violation risk factors proposed in the standard? If not, please explain your answer.

Yes

No

Comments:

**Comment Form — Draft Standard IRO-006-4 — Reliability Coordination —  
Transmission Loading Relief**

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5. Do you agree with the time horizons proposed in the standard? The drafting team was given the following criteria to use in assigning a “time horizon.” Note that time horizons are used as one component in determining the size of a sanction. More information about time horizons can be found in the Sanctions Guidelines.

- Long-term Planning — a planning horizon of one year or longer.
- Operations Planning — operating and resource plans from day-ahead up to and including seasonal.
- Same-day Operations — routine actions required within the timeframe of a day, but not real-time.
- Real-time Operations — actions required within one hour or less to preserve the reliability of the Bulk Electric System.
- Operations Assessment — follow-up evaluations and reporting of real time operations.

If not, please explain your answer.

Yes

No

Comments:

6. Do you agree with the measures proposed in the standard? If not, please explain your answer.

Yes

No

Comments:

7. Do you agree with the compliance elements proposed in the standard? If not, please explain your answer.

Yes

No

Comments:

8. The drafting team is planning a joint NERC NAESB TLR operator’s manual for the TLR procedure. What would your organization like to see contained in a joint manual?

Comments: A consistent flow of interwoven NERC and NAESB TLR requirements, clearly delineated (e.g. different fonts or shading) as to which organization is responsible for the development and maintenance of the respective requirements.

9. Are you aware of any conflicts between the proposed standard and any regulatory function, rule/order, tariff, rate schedule, legislative requirement or agreement? If yes, please explain your answer.

Yes

No

**Comment Form — Draft Standard IRO-006-4 — Reliability Coordination —  
Transmission Loading Relief**

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Comments:

10. Do you have any concerns that would prevent you from voting to approve this draft standard? If yes, please explain your answer.

Yes

No

Comments:

11. Please provide any other comments you have (that you have not already provided in response to the above questions) regarding this draft standard.

Comments: n/a



**Comment Form — Draft Standard IRO-006-4 — Reliability Coordination — Transmission Loading Relief**

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<b>Individual Commenter Information</b>	
<b>(Complete this page for comments from one organization or individual.)</b>	
Name:	Steve Myers
Organization:	ERCOT
Telephone:	512-248-3077
E-mail:	smyers@ercot.com
NERC Region	Registered Ballot Body Segment
<input checked="" type="checkbox"/> <b>ERCOT</b>	<input type="checkbox"/> 1 — Transmission Owners
<input type="checkbox"/> <b>FRCC</b>	<input checked="" type="checkbox"/> 2 — RTOs and ISOs
<input type="checkbox"/> <b>MRO</b>	<input type="checkbox"/> 3 — Load-serving Entities
<input type="checkbox"/> <b>NPCC</b>	<input type="checkbox"/> 4 — Transmission-dependent Utilities
<input type="checkbox"/> <b>RFC</b>	<input type="checkbox"/> 5 — Electric Generators
<input type="checkbox"/> <b>SERC</b>	<input type="checkbox"/> 6 — Electricity Brokers, Aggregators, and Marketers
<input type="checkbox"/> <b>SPP</b>	<input type="checkbox"/> 7 — Large Electricity End Users
<input type="checkbox"/> <b>WECC</b>	<input type="checkbox"/> 8 — Small Electricity End Users
<input type="checkbox"/> <b>NA – Not Applicable</b>	<input type="checkbox"/> 9 — Federal, State, Provincial Regulatory or other Government Entities
	<input checked="" type="checkbox"/> 10 - Regional Reliability Organizations, and Regional Entities



## Comment Form — Draft Standard IRO-006-4 — Reliability Coordination — Transmission Loading Relief

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### Background Information

NERC and the North American Energy Standards Board (NAESB) last year finalized a procedure for coordinating the development of standards in areas that affect both reliability and business practices, such as power interchange and congestion management. This approach allows the reliability requirements to be developed through the NERC process and the business practices to be developed through the NAESB process, with the actual development work being done by a joint team sponsored by NERC and NAESB.

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Following completion of its SAR process, NERC formed a TLR Drafting Team in August 2006. The NERC TLR Drafting Team has been meeting jointly with the NAESB Wholesale Electric Quadrant (WEQ) Business Practices Subcommittee to complete the respective changes to the NERC TLR standard IRO-006 to document the previously agreed-upon NERC/NAESB split of the TLR requirements. In addition, the team has also developed measures, compliance elements and other standard elements to meet the requirements of the NERC Reliability Standards Development Procedure.

In conducting this work, the team attempted to retain the original IRO-006 requirements to the extent possible to avoid creating new elements that may precipitate lengthy debates hence delaying implementing the NERC/NAESB split. However, where in the judgment of the team the standard requirements as written were deemed to create difficulties in developing the necessary measures and compliance elements, the team modified the requirements to achieve those objectives.

The comment form is asking for comments ONLY on the changes to the draft NERC standard. The sections highlighted<sup>2</sup> in the mapping document for the draft standard are being recommended for retirement from the NERC TLR standard.

As part of the project plan for this effort, the drafting team envisions creating a joint operators' manual that will contain both the NERC and NAESB portions of the TLR procedure.

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<sup>1</sup> Please access [http://naesb.org/misc/fa\\_weq\\_r06002\\_attachment%202.pdf](http://naesb.org/misc/fa_weq_r06002_attachment%202.pdf) to review the NAESB TLR Business Practice Standards in conjunction with the proposed NERC TLR Reliability Standards to ensure that all relevant aspects of TLR standards are either included in the NERC proposal or in the NAESB business practices. Please note that the NAESB business practice standards are copyright protected. Should you need to obtain a copy of the NAESB standards for other purposes, please contact the NAESB office.

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## Comment Form — Draft Standard IRO-006-4 — Reliability Coordination — Transmission Loading Relief

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### Note that you do not have to answer all questions.

1. Do you agree that the new “Purpose” statement captures the intent of the standard? If not, please explain your answer.

The original purpose stated “Regardless of the process it uses, the Reliability Coordinator must direct its Balancing Authorities and Transmission Operators to return the transmission system to within its Interconnection Reliability Operating Limits as soon as possible, but no longer than 30 minutes. The Reliability Coordinator needs to direct Balancing Authorities and Transmission Operators to execute actions such as reconfiguration, redispatch, or load shedding until relief requested by the TLR process is achieved.”

The new purpose states “The purpose of this standard is to provide a method to prevent and or manage congestion on the Bulk Electric System.”

Yes

No

Comments:

2. In order to develop appropriate measures and compliance elements for the requirements and hold the applicable reliability functions responsible for meeting these requirements, the team has removed Transmission Operator from the applicability list on the basis that the requirements in IRO-006-3 that apply to the Transmission Operators are either not applicable (Section 1.6.3, Attachment 1) or already covered by other standards (Sections 1.8.1 and 2.9.2, Attachment 1). Do you agree with the applicable entities defined in the standard? If not, please specify to which entities the standard should apply.

Yes

No

Comments:

3. The intent of the revised standard is to capture the reliability requirements of the former TLR procedure following the NERC/NAESB split. Do you agree that the draft revisions to the standard and Attachment 1 accomplished this objective? If not, please explain your answer.

Yes

No

Comments:

4. Do you agree with the violation risk factors proposed in the standard? If not, please explain your answer.

Yes

No

Comments:

**Comment Form — Draft Standard IRO-006-4 — Reliability Coordination —  
Transmission Loading Relief**

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5. Do you agree with the time horizons proposed in the standard? The drafting team was given the following criteria to use in assigning a “time horizon.” Note that time horizons are used as one component in determining the size of a sanction. More information about time horizons can be found in the Sanctions Guidelines.

- Long-term Planning — a planning horizon of one year or longer.
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- Real-time Operations — actions required within one hour or less to preserve the reliability of the Bulk Electric System.
- Operations Assessment — follow-up evaluations and reporting of real time operations.

If not, please explain your answer.

Yes

No

Comments:

6. Do you agree with the measures proposed in the standard? If not, please explain your answer.

Yes

No

Comments:

7. Do you agree with the compliance elements proposed in the standard? If not, please explain your answer.

Yes

No

Comments: The Violation Severity Levels seemingly could be interpreted in more than one way. This should be clarified before approval. Do the numbers apply per event or to a total by month? Also, there appears to be no differentiation between minor and major infractions.

The severity level of high for 2.3.2 seems to be too high and it should be a moderate level violation. It seems inconsistent that within an interconnection several requirements may be violated (2.2) but in an across interconnection situation only 1 violation is required to be a high severity. The TLR will only be applicable to one Interconnection as there are no AC connections between interconnctions. Therefore it should be treated the same with regard to severity as if it did not cross the boundry.

8. The drafting team is planning a joint NERC NAESB TLR operator’s manual for the TLR procedure. What would your organization like to see contained in a joint manual?

**Comment Form — Draft Standard IRO-006-4 — Reliability Coordination —  
Transmission Loading Relief**

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Comments: The Reliability Standard should flow as it currently does. The attachment (manual) should flow so that the TLR process is logical for both Business and Reliability organizations to follow. It is recommended that both NERC and NAESB versions of the standard contain the complete joint procedure. This is so that the industry always has the correct complete version. The current version of the approved Business and Reliability Standard should be referred to by the procedure. The attachment (manual) containing the TLR procedure should highlight the Reliability steps so that they are distinguishable from the Business steps.

9. Are you aware of any conflicts between the proposed standard and any regulatory function, rule/order, tariff, rate schedule, legislative requirement or agreement? If yes, please explain your answer.

Yes

No

Comments:

10. Do you have any concerns that would prevent you from voting to approve this draft standard? If yes, please explain your answer.

Yes

No

Comments: Only the concerns expressed with regard to Question 7 regarding Violation Severity Levels.

11. Please provide any other comments you have (that you have not already provided in response to the above questions) regarding this draft standard.

Comments:

**Comment Form — Draft Standard IRO-006-4 — Reliability Coordination — Transmission Loading Relief**

---

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<b>Individual Commenter Information</b> <b>(Complete this page for comments from one organization or individual.)</b>		
Name:		
Organization:		
Telephone:		
E-mail:		
<b>NERC Region</b>		<b>Registered Ballot Body Segment</b>
<input type="checkbox"/> <b>ERCOT</b>	<input type="checkbox"/>	1 — Transmission Owners
<input type="checkbox"/> <b>FRCC</b>	<input type="checkbox"/>	2 — RTOs and ISOs
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<input type="checkbox"/> <b>SERC</b>	<input type="checkbox"/>	6 — Electricity Brokers, Aggregators, and Marketers
<input type="checkbox"/> <b>SPP</b>	<input type="checkbox"/>	7 — Large Electricity End Users
<input type="checkbox"/> <b>WECC</b>	<input type="checkbox"/>	8 — Small Electricity End Users
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**Comment Form — Draft Standard IRO-006-4 — Reliability Coordination — Transmission Loading Relief**

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Group Comments (Complete this page if comments are from a group.)  
**Group Name:** Public Service Commission of South Carolina  
**Lead Contact:** Phil Riley  
**Contact Organization:** Public Service Commission of South Carolina  
**Contact Segment:** 9  
**Contact Telephone:** 803-896-5154  
**Contact E-mail:** philip.riley@psc.sc.gov

Additional Member Name	Additional Member Organization	Region*	Segment*
Mignon L. Clyburn	Public Service Commission of SC	SERC	9
Elizabeth B. "Lib" Fleming	Public Service Commission of SC	SERC	9
G. O'Neal Hamilton	Public Service Commission of SC	SERC	9
John E. "Butch" Howard	Public Service Commission of SC	SERC	9
Randy Mitchell	Public Service Commission of SC	SERC	9
C. Robert "Bob" Moseley	Public Service Commission of SC	SERC	9
David A. Wright	Public Service Commission of SC	SERC	9

\*If more than one Region or Segment applies, indicate the best fit for the purpose of these comments. Regional acronyms and segment numbers are shown on the prior page.



## Comment Form — Draft Standard IRO-006-4 — Reliability Coordination — Transmission Loading Relief

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### Background Information

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## Comment Form — Draft Standard IRO-006-4 — Reliability Coordination — Transmission Loading Relief

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### Note that you do not have to answer all questions.

1. Do you agree that the new "Purpose" statement captures the intent of the standard? If not, please explain your answer.

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The new purpose states "The purpose of this standard is to provide a method to prevent and or manage congestion on the Bulk Electric System."

Yes

No

Comments:

2. In order to develop appropriate measures and compliance elements for the requirements and hold the applicable reliability functions responsible for meeting these requirements, the team has removed Transmission Operator from the applicability list on the basis that the requirements in IRO-006-3 that apply to the Transmission Operators are either not applicable (Section 1.6.3, Attachment 1) or already covered by other standards (Sections 1.8.1 and 2.9.2, Attachment 1). Do you agree with the applicable entities defined in the standard? If not, please specify to which entities the standard should apply.

Yes

No

Comments:

3. The intent of the revised standard is to capture the reliability requirements of the former TLR procedure following the NERC/NAESB split. Do you agree that the draft revisions to the standard and Attachment 1 accomplished this objective? If not, please explain your answer.

Yes

No

Comments:

4. Do you agree with the violation risk factors proposed in the standard? If not, please explain your answer.

Yes

No

Comments:

**Comment Form — Draft Standard IRO-006-4 — Reliability Coordination —  
Transmission Loading Relief**

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- Operations Assessment — follow-up evaluations and reporting of real time operations.

If not, please explain your answer.

Yes

No

Comments:

6. Do you agree with the measures proposed in the standard? If not, please explain your answer.

Yes

No

Comments:

7. Do you agree with the compliance elements proposed in the standard? If not, please explain your answer.

Yes

No

Comments:

8. The drafting team is planning a joint NERC NAESB TLR operator’s manual for the TLR procedure. What would your organization like to see contained in a joint manual?

Comments: N/A for Public Service Commission of South Carolina

9. Are you aware of any conflicts between the proposed standard and any regulatory function, rule/order, tariff, rate schedule, legislative requirement or agreement? If yes, please explain your answer.

Yes

No

Comments:

**Comment Form — Draft Standard IRO-006-4 — Reliability Coordination —  
Transmission Loading Relief**

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Yes

No

Comments:

11. Please provide any other comments you have (that you have not already provided in response to the above questions) regarding this draft standard.

Comments: None

**Comment Form — Draft Standard IRO-006-4 — Reliability Coordination — Transmission Loading Relief**

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<b>Individual Commenter Information</b> <b>(Complete this page for comments from one organization or individual.)</b>		
Name:	Greg Rowland	
Organization:	Duke Energy	
Telephone:	704-382-5348	
E-mail:	gdrowlan@duke-energy.com	
<b>NERC Region</b>	<input type="checkbox"/>	<b>Registered Ballot Body Segment</b>
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<input checked="" type="checkbox"/> <b>SERC</b>	<input type="checkbox"/>	6 — Electricity Brokers, Aggregators, and Marketers
<input type="checkbox"/> <b>SPP</b>	<input type="checkbox"/>	7 — Large Electricity End Users
<input type="checkbox"/> <b>WECC</b>	<input type="checkbox"/>	8 — Small Electricity End Users
<input type="checkbox"/> <b>NA – Not Applicable</b>	<input type="checkbox"/>	9 — Federal, State, Provincial Regulatory or other Government Entities
	<input type="checkbox"/>	10 - Regional Reliability Organizations, and Regional Entities



## Comment Form — Draft Standard IRO-006-4 — Reliability Coordination — Transmission Loading Relief

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### Background Information

NERC and the North American Energy Standards Board (NAESB) last year finalized a procedure for coordinating the development of standards in areas that affect both reliability and business practices, such as power interchange and congestion management. This approach allows the reliability requirements to be developed through the NERC process and the business practices to be developed through the NAESB process, with the actual development work being done by a joint team sponsored by NERC and NAESB.

Thus the standards will be separate but closely integrated. This approach is more effective than previous efforts that assigned standards to either NERC or NAESB when the subject matter obviously contains both reliability and business practice elements.

On June 1–2, 2005, following an extensive joint process, the NERC NAESB TLR Subcommittee completed a review of and recommended split of both reliability and business practice requirements of the NERC TLR standard IRO-006.

NAESB completed its ratification of its respective [TLR business practices](#)<sup>1</sup> on April 10, 2006, with updates for an SPP regional difference and changes to TLR Levels 3b and 4 ratified on September 1, 2006.

Following completion of its SAR process, NERC formed a TLR Drafting Team in August 2006. The NERC TLR Drafting Team has been meeting jointly with the NAESB Wholesale Electric Quadrant (WEQ) Business Practices Subcommittee to complete the respective changes to the NERC TLR standard IRO-006 to document the previously agreed-upon NERC/NAESB split of the TLR requirements. In addition, the team has also developed measures, compliance elements and other standard elements to meet the requirements of the NERC Reliability Standards Development Procedure.

In conducting this work, the team attempted to retain the original IRO-006 requirements to the extent possible to avoid creating new elements that may precipitate lengthy debates hence delaying implementing the NERC/NAESB split. However, where in the judgment of the team the standard requirements as written were deemed to create difficulties in developing the necessary measures and compliance elements, the team modified the requirements to achieve those objectives.

The comment form is asking for comments ONLY on the changes to the draft NERC standard. The sections highlighted<sup>2</sup> in the mapping document for the draft standard are being recommended for retirement from the NERC TLR standard.

As part of the project plan for this effort, the drafting team envisions creating a joint operators' manual that will contain both the NERC and NAESB portions of the TLR procedure.

---

<sup>1</sup> Please access [http://naesb.org/misc/fa\\_weq\\_r06002\\_attachment%202.pdf](http://naesb.org/misc/fa_weq_r06002_attachment%202.pdf) to review the NAESB TLR Business Practice Standards in conjunction with the proposed NERC TLR Reliability Standards to ensure that all relevant aspects of TLR standards are either included in the NERC proposal or in the NAESB business practices. Please note that the NAESB business practice standards are copyright protected. Should you need to obtain a copy of the NAESB standards for other purposes, please contact the NAESB office.

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## Comment Form — Draft Standard IRO-006-4 — Reliability Coordination — Transmission Loading Relief

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### Note that you do not have to answer all questions.

1. Do you agree that the new “Purpose” statement captures the intent of the standard? If not, please explain your answer.

The original purpose stated “Regardless of the process it uses, the Reliability Coordinator must direct its Balancing Authorities and Transmission Operators to return the transmission system to within its Interconnection Reliability Operating Limits as soon as possible, but no longer than 30 minutes. The Reliability Coordinator needs to direct Balancing Authorities and Transmission Operators to execute actions such as reconfiguration, redispatch, or load shedding until relief requested by the TLR process is achieved.”

The new purpose states “The purpose of this standard is to provide a method to prevent and or manage congestion on the Bulk Electric System.”

Yes

No

Comments:

2. In order to develop appropriate measures and compliance elements for the requirements and hold the applicable reliability functions responsible for meeting these requirements, the team has removed Transmission Operator from the applicability list on the basis that the requirements in IRO-006-3 that apply to the Transmission Operators are either not applicable (Section 1.6.3, Attachment 1) or already covered by other standards (Sections 1.8.1 and 2.9.2, Attachment 1). Do you agree with the applicable entities defined in the standard? If not, please specify to which entities the standard should apply.

Yes

No

Comments:

3. The intent of the revised standard is to capture the reliability requirements of the former TLR procedure following the NERC/NAESB split. Do you agree that the draft revisions to the standard and Attachment 1 accomplished this objective? If not, please explain your answer.

Yes

No

Comments: The portions of the Regional Differences (Section E) that describe how the impact of market flows on facilities are calculated should not be moved to NAESB. The amount of flow presented to the IDC for curtailment on a constrained facility (Flowgate) clearly has Reliability aspects.

Also, while it is clear what the intent is, the objective has not been accomplished because there are some instances where information may need to be in both documents.

Attachment 1 - Section 2 Transmission Loading Relief (TLR) Levels should have a statement for each level that indicates whether or not transactions will be impacted. (Example – for TLR Level 1 – No transactions will be impacted; Level 2 - Prevents all



## Comment Form — Draft Standard IRO-006-4 — Reliability Coordination — Transmission Loading Relief

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transactions less than priority 7 with TDF > 5% from starting or increasing; etc.) A good guide for this can be found on the NERC site under IDC training – IDC TLR Matrix.

Attachment 1 - Section 3.1 (Interchange Transaction Curtailment Order for use in TLR Procedures / Priority of Interchange Transactions) should not be moved to NAESB. Without this, there will be no reference to the curtailment order in the procedure.

Additional comments:

Section 1.5.1 should not move to NAESB

Section 2.2.2 “However, the RC...on the Constrained Facility” should stay in IRO-004.

Section 2.2.3 “If the time in TLR Level 2...TLR Log” should stay in IRO-004.

Section 2.5.3 First sentence should move to NAESB.

Section 2.5.3 Reference to Section 4 in last sentence needs to be reviewed since Section 4 moves to NAESB.

Section 3.2 – 3.2.1.1 Stay in the IRO.

Section 4.1.4 Stay in the IRO.

Section 6 – 6.1 Need wording like section 7 – 7.1

Section 6.2 -6.2.6 Should move to NAESB

Section 7.4.1 – 7.4.3 Move to NAESB

Section 7.7 – 7.9, Appendix E and F should move to NAESB.

- Attachment 1 - Section 1.7 Redispatch options should not be moved
- Attachment 1 - Section 2. - Introduction – The last two sentences are “on path/off path discussion”. Similar discussion was moved.
- Attachment 1 - Section 2.5.3 – the first sentence should be moved

4. Do you agree with the violation risk factors proposed in the standard? If not, please explain your answer.

Yes

No

Comments:

5. Do you agree with the time horizons proposed in the standard? The drafting team was given the following criteria to use in assigning a “time horizon.” Note that time horizons are used as one component in determining the size of a sanction. More information about time horizons can be found in the Sanctions Guidelines.

- Long-term Planning — a planning horizon of one year or longer.
- Operations Planning — operating and resource plans from day-ahead up to and including seasonal.
- Same-day Operations — routine actions required within the timeframe of a day, but not real-time.

## Comment Form — Draft Standard IRO-006-4 — Reliability Coordination — Transmission Loading Relief

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- Real-time Operations — actions required within one hour or less to preserve the reliability of the Bulk Electric System.
- Operations Assessment — follow-up evaluations and reporting of real time operations.

If not, please explain your answer.

Yes

No

Comments:

6. Do you agree with the measures proposed in the standard? If not, please explain your answer.

Yes

No

Comments: M5 seems to be measuring compliance to other Standards. INT-001 and INT-003 has applicability for the BA and not the RC. And INT-004 has applicability for both the RC and BA. INT-004 has no measure or compliance for the RC.

There should not be a requirement (R5) or measure (M5) that requires compliance to another standard.

R3 needs to be split into two requirements, one that focuses on implementing a local procedure simultaneously with the Interconnection-wide procedure and another that states specifically, "Each Reliability Coordinator shall follow the curtailments as directed by the Interconnection-wide procedure." This requirement should have a Medium Violation Risk factor and a real time operations time horizon. This would be similar to R4, but for curtailing transactions that are within an Interconnection.

- M3 – Need to have clarity on just what is considered a procedure in this case.

7. Do you agree with the compliance elements proposed in the standard? If not, please explain your answer.

Yes

No

Comments: Violation Severity Levels 2.4.2 and 2.4.3 should be moved from Severe to High because these violations may not adversely affect the effectiveness of TLR in mitigating the congestion on the constrained facility.

- Section 2.1.2 – the RC has no compliance obligation

8. The drafting team is planning a joint NERC NAESB TLR operator's manual for the TLR procedure. What would your organization like to see contained in a joint manual?

Comments: We would like to see at least two things: 1) All the requirements that pertain to TLRs from both the IRO standard and the NAESB business practice in one place, and a concise summary of how and when to call a TLR and how to respond to it (sort of an operator's guide).

**Comment Form — Draft Standard IRO-006-4 — Reliability Coordination —  
Transmission Loading Relief**

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9. Are you aware of any conflicts between the proposed standard and any regulatory function, rule/order, tariff, rate schedule, legislative requirement or agreement? If yes, please explain your answer.

Yes

No

Comments:

10. Do you have any concerns that would prevent you from voting to approve this draft standard? If yes, please explain your answer.

Yes

No

Comments:

11. Please provide any other comments you have (that you have not already provided in response to the above questions) regarding this draft standard.

Comments: We are concerned that there is a lack of clarity between R1, R1.1 and R3 regarding the use of local procedures in response to a SOL or IROL violation. R1 states that the RC can select a local procedure at its discretion, and R1.1 recognizes that an Interconnection-wide TLR procedure used alone is an inappropriate and ineffective tool. However R3 states that the RC must have prior approval from the ERO to use a local procedure as a substitute for curtailments directed by the Interconnection-wide procedure. However it is unclear how prior approval can be obtained since the local procedure will be case-specific to the problem that initiates the Interconnection-wide procedure. Further, depending upon the resolution of this issue, M3 will need to be restated.

Also, in general the standard drafting team needs to carefully review cross-references to assure that the reliability and business practices split is correctly implemented.

B. Requirements:

- R1.1. - The statement "inappropriate and ineffective tool" need to be clarified. If the reason is that the IDC does not respond fast enough, then say so (similar to statement in Attachment 1 – 1.2.)

**Comment Form — Draft Standard IRO-006-4 — Reliability Coordination — Transmission Loading Relief**

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Please use this form to submit comments on the first draft of the TLR procedure NERC/NAESB split for the Eastern Interconnection (IRO-006-4 — Reliability Coordination — Transmission Loading Relief – Attachment 1). Comments must be submitted by **June 14, 2007**. You must submit the completed form by e-mail to [sarcomm@nerc.net](mailto:sarcomm@nerc.net) with the words **"NERC/NAESB TLR Split"** in the subject line. If you have questions please contact Andy Rodriquez at [andy.rodriquez@nerc.net](mailto:andy.rodriquez@nerc.net) or 609-947-3885.

<b>Individual Commenter Information</b> <b>(Complete this page for comments from one organization or individual.)</b>		
Name:	Narinder K. Saini	
Organization:	Entergy Services Inc.	
Telephone:	870-543-5420	
E-mail:	nsaini@entergy.com	
NERC Region		Registered Ballot Body Segment
<input type="checkbox"/> ERCOT	<input checked="" type="checkbox"/>	1 — Transmission Owners
<input type="checkbox"/> FRCC	<input type="checkbox"/>	2 — RTOs and ISOs
<input type="checkbox"/> MRO	<input type="checkbox"/>	3 — Load-serving Entities
<input type="checkbox"/> NPCC	<input type="checkbox"/>	4 — Transmission-dependent Utilities
<input type="checkbox"/> RFC	<input type="checkbox"/>	5 — Electric Generators
<input checked="" type="checkbox"/> SERC	<input type="checkbox"/>	6 — Electricity Brokers, Aggregators, and Marketers
<input type="checkbox"/> SPP	<input type="checkbox"/>	7 — Large Electricity End Users
<input type="checkbox"/> WECC	<input type="checkbox"/>	8 — Small Electricity End Users
<input type="checkbox"/> NA – Not Applicable	<input type="checkbox"/>	9 — Federal, State, Provincial Regulatory or other Government Entities
	<input type="checkbox"/>	10 - Regional Reliability Organizations, and Regional Entities



## Comment Form — Draft Standard IRO-006-4 — Reliability Coordination — Transmission Loading Relief

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### Background Information

NERC and the North American Energy Standards Board (NAESB) last year finalized a procedure for coordinating the development of standards in areas that affect both reliability and business practices, such as power interchange and congestion management. This approach allows the reliability requirements to be developed through the NERC process and the business practices to be developed through the NAESB process, with the actual development work being done by a joint team sponsored by NERC and NAESB.

Thus the standards will be separate but closely integrated. This approach is more effective than previous efforts that assigned standards to either NERC or NAESB when the subject matter obviously contains both reliability and business practice elements.

On June 1–2, 2005, following an extensive joint process, the NERC NAESB TLR Subcommittee completed a review of and recommended split of both reliability and business practice requirements of the NERC TLR standard IRO-006.

NAESB completed its ratification of its respective [TLR business practices](#)<sup>1</sup> on April 10, 2006, with updates for an SPP regional difference and changes to TLR Levels 3b and 4 ratified on September 1, 2006.

Following completion of its SAR process, NERC formed a TLR Drafting Team in August 2006. The NERC TLR Drafting Team has been meeting jointly with the NAESB Wholesale Electric Quadrant (WEQ) Business Practices Subcommittee to complete the respective changes to the NERC TLR standard IRO-006 to document the previously agreed-upon NERC/NAESB split of the TLR requirements. In addition, the team has also developed measures, compliance elements and other standard elements to meet the requirements of the NERC Reliability Standards Development Procedure.

In conducting this work, the team attempted to retain the original IRO-006 requirements to the extent possible to avoid creating new elements that may precipitate lengthy debates hence delaying implementing the NERC/NAESB split. However, where in the judgment of the team the standard requirements as written were deemed to create difficulties in developing the necessary measures and compliance elements, the team modified the requirements to achieve those objectives.

The comment form is asking for comments ONLY on the changes to the draft NERC standard. The sections highlighted<sup>2</sup> in the mapping document for the draft standard are being recommended for retirement from the NERC TLR standard.

As part of the project plan for this effort, the drafting team envisions creating a joint operators' manual that will contain both the NERC and NAESB portions of the TLR procedure.

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## Comment Form — Draft Standard IRO-006-4 — Reliability Coordination — Transmission Loading Relief

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### Note that you do not have to answer all questions.

1. Do you agree that the new "Purpose" statement captures the intent of the standard? If not, please explain your answer.

The original purpose stated "Regardless of the process it uses, the Reliability Coordinator must direct its Balancing Authorities and Transmission Operators to return the transmission system to within its Interconnection Reliability Operating Limits as soon as possible, but no longer than 30 minutes. The Reliability Coordinator needs to direct Balancing Authorities and Transmission Operators to execute actions such as reconfiguration, redispatch, or load shedding until relief requested by the TLR process is achieved."

The new purpose states "The purpose of this standard is to provide a method to prevent and or manage congestion on the Bulk Electric System."

Yes

No

Comments:

The purpose of this standard is to provide a method, as stated in R1, to prevent or relieve SOL or IROL violations to maintain the reliability of the bulk electric system. We suggest the purpose be revised to reflect this concept. It seems NAESB will be providing the business practices associate with the relief of congestion.

2. In order to develop appropriate measures and compliance elements for the requirements and hold the applicable reliability functions responsible for meeting these requirements, the team has removed Transmission Operator from the applicability list on the basis that the requirements in IRO-006-3 that apply to the Transmission Operators are either not applicable (Section 1.6.3, Attachment 1) or already covered by other standards (Sections 1.8.1 and 2.9.2, Attachment 1). Do you agree with the applicable entities defined in the standard? If not, please specify to which entities the standard should apply.

Yes

No

Comments:

We see that Attachment 1 contains references to and places requirements on the TOP which are not applicable or already covered by other standards. This amounts to double jeopardy to the TOP. It also is inappropriate to state that the standard does not apply to the TOP (Applicability section), but then place requirements on the TOP in Attachment 1 (Section 1.2.1, 1.8.1, and 2.9.2). We agree with the removal of the TOP from the Applicability section. However, we disagree with keeping the requirements on the TOP in Attachment 1. Please remove all references to the TOP in Attachment 1.

3. The intent of the revised standard is to capture the reliability requirements of the former TLR procedure following the NERC/NAESB split. Do you agree that the draft revisions to

**Comment Form — Draft Standard IRO-006-4 — Reliability Coordination —  
Transmission Loading Relief**

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the standard and Attachment 1 accomplished this objective? If not, please explain your answer.

Yes

No

Comments: The draft revisions do address the NERC/NAESB split.

4. Do you agree with the violation risk factors proposed in the standard? If not, please explain your answer.

Yes

No

Comments:

We suggest R1 have a VRF of HIGH as improper violation of this requirement by improper use or not use of procedure to alleviate SOL or IROL violation can have severe impact on reliability.

5. Do you agree with the time horizons proposed in the standard? The drafting team was given the following criteria to use in assigning a "time horizon." Note that time horizons are used as one component in determining the size of a sanction. More information about time horizons can be found in the Sanctions Guidelines.

- Long-term Planning — a planning horizon of one year or longer.
- Operations Planning — operating and resource plans from day-ahead up to and including seasonal.
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- Real-time Operations — actions required within one hour or less to preserve the reliability of the Bulk Electric System.
- Operations Assessment — follow-up evaluations and reporting of real time operations.

If not, please explain your answer.

Yes

No

Comments:

6. Do you agree with the measures proposed in the standard? If not, please explain your answer.

Yes

No

Comments:



**Comment Form — Draft Standard IRO-006-4 — Reliability Coordination —  
Transmission Loading Relief**

---

7. Do you agree with the compliance elements proposed in the standard? If not, please explain your answer.

Yes

No

Comments:

8. The drafting team is planning a joint NERC NAESB TLR operator's manual for the TLR procedure. What would your organization like to see contained in a joint manual?

Comments:

We suggest the manual contain Attachment 1 with the appropriate NAESB requirements (standards) interleaved in the proper locations.

9. Are you aware of any conflicts between the proposed standard and any regulatory function, rule/order, tariff, rate schedule, legislative requirement or agreement? If yes, please explain your answer.

Yes

No

Comments:

10. Do you have any concerns that would prevent you from voting to approve this draft standard? If yes, please explain your answer.

Yes

No

Comments:

We would like the suggestions contained herein to be included in the draft standard. We may also wish to see other changes made, depending on suggestions by other commenters.

11. Please provide any other comments you have (that you have not already provided in response to the above questions) regarding this draft standard.

Comments:

There is a comment added to R1.1 reflecting the FERC Order 693 paragraph 964 regarding the use of tools other than TLR to mitigate an actual IROL. That statement, being in R1.1, seems to apply only to the Eastern Interconnection. Please add that note to the other two Interconnections, or move the note so it applies to all three Interconnections.

Please better define the "Local" Procedure. Is it developed by the TOP? Is the curtailment of transactions allowed in "Local" Procedures? Is only transmission reconfiguration allowed? Is redispatch of designated network resources allowed in a "Local" Procedure?

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Transmission Loading Relief**

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We realize that better defining "Local Procedure" may not be related to NERC/NAESB split. However, it is important to not use any "Local Procedure" without proper description and disclosure.

M5 identifies specific INT standards, INT-001, INT-003, and INT-004. We suggest the references to specific INT standards be deleted. Some time in the future those specific standards may be retired and this standard would then need to be revised.

**Comment Form — Draft Standard IRO-006-4 — Reliability Coordination — Transmission Loading Relief**

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<b>Individual Commenter Information</b> (Complete this page for comments from one organization or individual.)		
Name:	Ron Falsetti	
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E-mail:	roin.falsetti@ieso.ca	
NERC Region	<input type="checkbox"/>	Registered Ballot Body Segment
<input type="checkbox"/> ERCOT	<input type="checkbox"/>	1 — Transmission Owners
<input type="checkbox"/> FRCC	<input checked="" type="checkbox"/>	2 — RTOs and ISOs
<input type="checkbox"/> MRO	<input type="checkbox"/>	3 — Load-serving Entities
<input checked="" type="checkbox"/> NPCC	<input type="checkbox"/>	4 — Transmission-dependent Utilities
<input type="checkbox"/> RFC	<input type="checkbox"/>	5 — Electric Generators
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<input type="checkbox"/> WECC	<input type="checkbox"/>	8 — Small Electricity End Users
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## Comment Form — Draft Standard IRO-006-4 — Reliability Coordination — Transmission Loading Relief

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The comment form is asking for comments ONLY on the changes to the draft NERC standard. The sections highlighted<sup>2</sup> in the mapping document for the draft standard are being recommended for retirement from the NERC TLR standard.

As part of the project plan for this effort, the drafting team envisions creating a joint operators' manual that will contain both the NERC and NAESB portions of the TLR procedure.

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## Comment Form — Draft Standard IRO-006-4 — Reliability Coordination — Transmission Loading Relief

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1. Do you agree that the new "Purpose" statement captures the intent of the standard? If not, please explain your answer.

The original purpose stated "Regardless of the process it uses, the Reliability Coordinator must direct its Balancing Authorities and Transmission Operators to return the transmission system to within its Interconnection Reliability Operating Limits as soon as possible, but no longer than 30 minutes. The Reliability Coordinator needs to direct Balancing Authorities and Transmission Operators to execute actions such as reconfiguration, redispatch, or load shedding until relief requested by the TLR process is achieved."

The new purpose states "The purpose of this standard is to provide a method to prevent and or manage congestion on the Bulk Electric System."

Yes

No

Comments:

2. In order to develop appropriate measures and compliance elements for the requirements and hold the applicable reliability functions responsible for meeting these requirements, the team has removed Transmission Operator from the applicability list on the basis that the requirements in IRO-006-3 that apply to the Transmission Operators are either not applicable (Section 1.6.3, Attachment 1) or already covered by other standards (Sections 1.8.1 and 2.9.2, Attachment 1). Do you agree with the applicable entities defined in the standard? If not, please specify to which entities the standard should apply.

Yes

No

Comments:

3. The intent of the revised standard is to capture the reliability requirements of the former TLR procedure following the NERC/NAESB split. Do you agree that the draft revisions to the standard and Attachment 1 accomplished this objective? If not, please explain your answer.

Yes

No

Comments:

4. Do you agree with the violation risk factors proposed in the standard? If not, please explain your answer.

Yes

No

Comments:

## Comment Form — Draft Standard IRO-006-4 — Reliability Coordination — Transmission Loading Relief

---

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- Real-time Operations — actions required within one hour or less to preserve the reliability of the Bulk Electric System.
- Operations Assessment — follow-up evaluations and reporting of real time operations.

If not, please explain your answer.

Yes

No

Comments:

6. Do you agree with the measures proposed in the standard? If not, please explain your answer.

Yes

No

Comments:

7. Do you agree with the compliance elements proposed in the standard? If not, please explain your answer.

Yes

No

Comments:

8. The drafting team is planning a joint NERC NAESB TLR operator’s manual for the TLR procedure. What would your organization like to see contained in a joint manual?

Comments: Following the split of IRO-006, a joint NERC/NAESB TLR operator's manual is required to allow system operator to have a one-stop shop for all the requirements - reliability and business practice, needed to implement an interconnection-wide TLR procedure.

The TLR operator's manual, therefore, should contain all the information in the pre-split IRO-006, and be made available to all operating entities through NERC.

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Transmission Loading Relief**

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9. Are you aware of any conflicts between the proposed standard and any regulatory function, rule/order, tariff, rate schedule, legislative requirement or agreement? If yes, please explain your answer.

Yes

No

Comments:

10. Do you have any concerns that would prevent you from voting to approve this draft standard? If yes, please explain your answer.

Yes

No

Comments:

11. Please provide any other comments you have (that you have not already provided in response to the above questions) regarding this draft standard.

Comments: None



**Comment Form — Draft Standard IRO-006-4 — Reliability Coordination — Transmission Loading Relief**

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Please use this form to submit comments on the first draft of the TLR procedure NERC/NAESB split for the Eastern Interconnection (IRO-006-4 — Reliability Coordination — Transmission Loading Relief – Attachment 1). Comments must be submitted by **June 14, 2007**. You must submit the completed form by e-mail to [sarcomm@nerc.net](mailto:sarcomm@nerc.net) with the words "**NERC/NAESB TLR Split**" in the subject line. If you have questions please contact Andy Rodriquez at [andy.rodriquez@nerc.net](mailto:andy.rodriquez@nerc.net) or 609-947-3885.

<b>Individual Commenter Information</b> (Complete this page for comments from one organization or individual.)		
Name:		
Organization:		
Telephone:		
E-mail:		
NERC Region		Registered Ballot Body Segment
<input type="checkbox"/> ERCOT	<input type="checkbox"/>	1 — Transmission Owners
<input type="checkbox"/> FRCC	<input type="checkbox"/>	2 — RTOs and ISOs
<input type="checkbox"/> MRO	<input type="checkbox"/>	3 — Load-serving Entities
<input type="checkbox"/> NPCC	<input type="checkbox"/>	4 — Transmission-dependent Utilities
<input type="checkbox"/> RFC	<input type="checkbox"/>	5 — Electric Generators
<input type="checkbox"/> SERC	<input type="checkbox"/>	6 — Electricity Brokers, Aggregators, and Marketers
<input type="checkbox"/> SPP	<input type="checkbox"/>	7 — Large Electricity End Users
<input type="checkbox"/> WECC	<input type="checkbox"/>	8 — Small Electricity End Users
<input type="checkbox"/> NA – Not Applicable	<input type="checkbox"/>	9 — Federal, State, Provincial Regulatory or other Government Entities
	<input type="checkbox"/>	10 - Regional Reliability Organizations, and Regional Entities

**Comment Form — Draft Standard IRO-006-4 — Reliability Coordination —  
Transmission Loading Relief**

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Group Comments (Complete this page if comments are from a group.)  
**Group Name:** NSRS  
**Lead Contact:** Robert Coish  
**Contact Organization:** MRO  
**Contact Segment:** 10  
**Contact Telephone:** 204-487-5479  
**Contact E-mail:** rgcoish@hydro.mb.ca

Additional Member Name	Additional Member Organization	Region*	Segment*
Joe Knight	Great River Energy	MRO	10
Terry Bilke	MISO	MRO	10
Mike Brytowski	Midwest Reliability Organizatio	MRO	10
David Rudolph	Basin Electric Power Cooperative	MRO	10
Pamela Oreschrick	Xcel Energy	MRO	10
Neal Balu	WPSR	MRO	10
Carol Gerou	Minnesota Power	MRO	10
Jim Haigh	WAPA	MRO	10

\*If more than one Region or Segment applies, indicate the best fit for the purpose of these comments. Regional acronyms and segment numbers are shown on the prior page.

## Comment Form — Draft Standard IRO-006-4 — Reliability Coordination — Transmission Loading Relief

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### Background Information

NERC and the North American Energy Standards Board (NAESB) last year finalized a procedure for coordinating the development of standards in areas that affect both reliability and business practices, such as power interchange and congestion management. This approach allows the reliability requirements to be developed through the NERC process and the business practices to be developed through the NAESB process, with the actual development work being done by a joint team sponsored by NERC and NAESB.

Thus the standards will be separate but closely integrated. This approach is more effective than previous efforts that assigned standards to either NERC or NAESB when the subject matter obviously contains both reliability and business practice elements.

On June 1–2, 2005, following an extensive joint process, the NERC NAESB TLR Subcommittee completed a review of and recommended split of both reliability and business practice requirements of the NERC TLR standard IRO-006.

NAESB completed its ratification of its respective [TLR business practices](#)<sup>1</sup> on April 10, 2006, with updates for an SPP regional difference and changes to TLR Levels 3b and 4 ratified on September 1, 2006.

Following completion of its SAR process, NERC formed a TLR Drafting Team in August 2006. The NERC TLR Drafting Team has been meeting jointly with the NAESB Wholesale Electric Quadrant (WEQ) Business Practices Subcommittee to complete the respective changes to the NERC TLR standard IRO-006 to document the previously agreed-upon NERC/NAESB split of the TLR requirements. In addition, the team has also developed measures, compliance elements and other standard elements to meet the requirements of the NERC Reliability Standards Development Procedure.

In conducting this work, the team attempted to retain the original IRO-006 requirements to the extent possible to avoid creating new elements that may precipitate lengthy debates hence delaying implementing the NERC/NAESB split. However, where in the judgment of the team the standard requirements as written were deemed to create difficulties in developing the necessary measures and compliance elements, the team modified the requirements to achieve those objectives.

The comment form is asking for comments ONLY on the changes to the draft NERC standard. The sections highlighted<sup>2</sup> in the mapping document for the draft standard are being recommended for retirement from the NERC TLR standard.

As part of the project plan for this effort, the drafting team envisions creating a joint operators' manual that will contain both the NERC and NAESB portions of the TLR procedure.

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<sup>1</sup> Please access [http://naesb.org/misc/fa\\_weq\\_r06002\\_attachment%202.pdf](http://naesb.org/misc/fa_weq_r06002_attachment%202.pdf) to review the NAESB TLR Business Practice Standards in conjunction with the proposed NERC TLR Reliability Standards to ensure that all relevant aspects of TLR standards are either included in the NERC proposal or in the NAESB business practices. Please note that the NAESB business practice standards are copyright protected. Should you need to obtain a copy of the NAESB standards for other purposes, please contact the NAESB office.

<sup>2</sup> In the mapping of the NERC/NAESB TLR split, the following key is being used: Yellow — recommended for transfer to a new Attachment 2 in future work on the standard, Gray — agreed as being part of the NAESB Business Practices, Blue — to be deleted as obsolete in future work on the standard.

## Comment Form — Draft Standard IRO-006-4 — Reliability Coordination — Transmission Loading Relief

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### Note that you do not have to answer all questions.

1. Do you agree that the new “Purpose” statement captures the intent of the standard? If not, please explain your answer.

The original purpose stated “Regardless of the process it uses, the Reliability Coordinator must direct its Balancing Authorities and Transmission Operators to return the transmission system to within its Interconnection Reliability Operating Limits as soon as possible, but no longer than 30 minutes. The Reliability Coordinator needs to direct Balancing Authorities and Transmission Operators to execute actions such as reconfiguration, redispatch, or load shedding until relief requested by the TLR process is achieved.”

The new purpose states “The purpose of this standard is to provide a method to prevent and or manage congestion on the Bulk Electric System.”

Yes

No

Comments:

2. In order to develop appropriate measures and compliance elements for the requirements and hold the applicable reliability functions responsible for meeting these requirements, the team has removed Transmission Operator from the applicability list on the basis that the requirements in IRO-006-3 that apply to the Transmission Operators are either not applicable (Section 1.6.3, Attachment 1) or already covered by other standards (Sections 1.8.1 and 2.9.2, Attachment 1). Do you agree with the applicable entities defined in the standard? If not, please specify to which entities the standard should apply.

Yes

No

Comments:

3. The intent of the revised standard is to capture the reliability requirements of the former TLR procedure following the NERC/NAESB split. Do you agree that the draft revisions to the standard and Attachment 1 accomplished this objective? If not, please explain your answer.

Yes

No

Comments:

4. Do you agree with the violation risk factors proposed in the standard? If not, please explain your answer.

Yes

No

## Comment Form — Draft Standard IRO-006-4 — Reliability Coordination — Transmission Loading Relief

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Comments: The Violation Risk Factors are not in line with impact on reliability of the requirements. The VRFs should be higher.

5. Do you agree with the time horizons proposed in the standard? The drafting team was given the following criteria to use in assigning a "time horizon." Note that time horizons are used as one component in determining the size of a sanction. More information about time horizons can be found in the Sanctions Guidelines.

- Long-term Planning — a planning horizon of one year or longer.
- Operations Planning — operating and resource plans from day-ahead up to and including seasonal.
- Same-day Operations — routine actions required within the timeframe of a day, but not real-time.
- Real-time Operations — actions required within one hour or less to preserve the reliability of the Bulk Electric System.
- Operations Assessment — follow-up evaluations and reporting of real time operations.

If not, please explain your answer.

Yes

No

Comments:

6. Do you agree with the measures proposed in the standard? If not, please explain your answer.

Yes

No

Comments:

7. Do you agree with the compliance elements proposed in the standard? If not, please explain your answer.

Yes

No

Comments:

8. The drafting team is planning a joint NERC NAESB TLR operator's manual for the TLR procedure. What would your organization like to see contained in a joint manual?

Comments: Business practice procedures and NERC Reliability Standards.

9. Are you aware of any conflicts between the proposed standard and any regulatory function, rule/order, tariff, rate schedule, legislative requirement or agreement? If yes, please explain your answer.

Yes

**Comment Form — Draft Standard IRO-006-4 — Reliability Coordination —  
Transmission Loading Relief**

---

No

Comments:

10. Do you have any concerns that would prevent you from voting to approve this draft standard? If yes, please explain your answer.

Yes

No

Comments:

11. Please provide any other comments you have (that you have not already provided in response to the above questions) regarding this draft standard.

Comments: Complete and approve the Joint NERC/NASB operators manual in a expeditious manner.

Regarding Requirement R1.1: The requirement needs to be rewritten somehow. It doesn't seem appropriate to me to list TLR as the first procedure and then go on to say it is an inappropriate procedure and list other more appropriate procedures. The drafting team should just change the list of procedures if they want to specify them and list TLR as the last procedure in the list if that is what they are saying. One MRO member submitted the following comment regarding violation severity levels: I question whether 2.4.2, 2.4.3 or 2.4.4 should be severe violations. How any of these actually could lead to system separation or collapse in and of themselves is not obvious to me. In addition I question the whole premise of how they are using this set of violation severity levels. They are all premised on a violation during one IROL incident. It seems to me that a violation of one step in a procedure to mitigate an IROL should not be what is considered, but a pattern of not following procedures or mitigation steps or IROL's not being mitigated in the 30 minutes allowed. Making one simple mistake in implementing a procedure in one IROL incident should not lead to sanctions.

**Comment Form — Draft Standard IRO-006-4 — Reliability Coordination — Transmission Loading Relief**

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Please use this form to submit comments on the first draft of the TLR procedure NERC/NAESB split for the Eastern Interconnection (IRO-006-4 — Reliability Coordination — Transmission Loading Relief – Attachment 1). Comments must be submitted by **June 14, 2007**. You must submit the completed form by e-mail to [sarcomm@nerc.net](mailto:sarcomm@nerc.net) with the words "**NERC/NAESB TLR Split**" in the subject line. If you have questions please contact Andy Rodriquez at [andy.rodriquez@nerc.net](mailto:andy.rodriquez@nerc.net) or 609-947-3885.

<b>Individual Commenter Information</b> (Complete this page for comments from one organization or individual.)		
Name:		
Organization:		
Telephone:		
E-mail:		
NERC Region		Registered Ballot Body Segment
<input type="checkbox"/> ERCOT	<input checked="" type="checkbox"/>	1 — Transmission Owners
<input type="checkbox"/> FRCC	<input type="checkbox"/>	2 — RTOs and ISOs
<input type="checkbox"/> MRO	<input checked="" type="checkbox"/>	3 — Load-serving Entities
<input type="checkbox"/> NPCC	<input type="checkbox"/>	4 — Transmission-dependent Utilities
<input type="checkbox"/> RFC	<input type="checkbox"/>	5 — Electric Generators
<input checked="" type="checkbox"/> SERC	<input type="checkbox"/>	6 — Electricity Brokers, Aggregators, and Marketers
<input type="checkbox"/> SPP	<input type="checkbox"/>	7 — Large Electricity End Users
<input type="checkbox"/> WECC	<input type="checkbox"/>	8 — Small Electricity End Users
<input type="checkbox"/> NA – Not Applicable	<input type="checkbox"/>	9 — Federal, State, Provincial Regulatory or other Government Entities
	<input type="checkbox"/>	10 - Regional Reliability Organizations, and Regional Entities

**Comment Form — Draft Standard IRO-006-4 — Reliability Coordination — Transmission Loading Relief**

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Group Comments (Complete this page if comments are from a group.)

**Group Name:** Southern Company -- Transmission

**Lead Contact:** Marc Butts

**Contact Organization:** Southern Company Services, Inc.

**Contact Segment:** 1

**Contact Telephone:** 205-257-4839

**Contact E-mail:** mmbutts@southernco.com

Additional Member Name	Additional Member Organization	Region*	Segment*
J. T. Wood	Southern Company Services, Inc.	SERC	1
Roman Carter	Southern Company Services, Inc.	SERC	1

\*If more than one Region or Segment applies, indicate the best fit for the purpose of these comments. Regional acronyms and segment numbers are shown on the prior page.



## Comment Form — Draft Standard IRO-006-4 — Reliability Coordination — Transmission Loading Relief

---

### Background Information

NERC and the North American Energy Standards Board (NAESB) last year finalized a procedure for coordinating the development of standards in areas that affect both reliability and business practices, such as power interchange and congestion management. This approach allows the reliability requirements to be developed through the NERC process and the business practices to be developed through the NAESB process, with the actual development work being done by a joint team sponsored by NERC and NAESB.

Thus the standards will be separate but closely integrated. This approach is more effective than previous efforts that assigned standards to either NERC or NAESB when the subject matter obviously contains both reliability and business practice elements.

On June 1–2, 2005, following an extensive joint process, the NERC NAESB TLR Subcommittee completed a review of and recommended split of both reliability and business practice requirements of the NERC TLR standard IRO-006.

NAESB completed its ratification of its respective [TLR business practices](#)<sup>1</sup> on April 10, 2006, with updates for an SPP regional difference and changes to TLR Levels 3b and 4 ratified on September 1, 2006.

Following completion of its SAR process, NERC formed a TLR Drafting Team in August 2006. The NERC TLR Drafting Team has been meeting jointly with the NAESB Wholesale Electric Quadrant (WEQ) Business Practices Subcommittee to complete the respective changes to the NERC TLR standard IRO-006 to document the previously agreed-upon NERC/NAESB split of the TLR requirements. In addition, the team has also developed measures, compliance elements and other standard elements to meet the requirements of the NERC Reliability Standards Development Procedure.

In conducting this work, the team attempted to retain the original IRO-006 requirements to the extent possible to avoid creating new elements that may precipitate lengthy debates hence delaying implementing the NERC/NAESB split. However, where in the judgment of the team the standard requirements as written were deemed to create difficulties in developing the necessary measures and compliance elements, the team modified the requirements to achieve those objectives.

The comment form is asking for comments ONLY on the changes to the draft NERC standard. The sections highlighted<sup>2</sup> in the mapping document for the draft standard are being recommended for retirement from the NERC TLR standard.

As part of the project plan for this effort, the drafting team envisions creating a joint operators' manual that will contain both the NERC and NAESB portions of the TLR procedure.

---

<sup>1</sup> Please access [http://naesb.org/misc/fa\\_weq\\_r06002\\_attachment%202.pdf](http://naesb.org/misc/fa_weq_r06002_attachment%202.pdf) to review the NAESB TLR Business Practice Standards in conjunction with the proposed NERC TLR Reliability Standards to ensure that all relevant aspects of TLR standards are either included in the NERC proposal or in the NAESB business practices. Please note that the NAESB business practice standards are copyright protected. Should you need to obtain a copy of the NAESB standards for other purposes, please contact the NAESB office.

<sup>2</sup> In the mapping of the NERC/NAESB TLR split, the following key is being used: Yellow — recommended for transfer to a new Attachment 2 in future work on the standard, Gray — agreed as being part of the NAESB Business Practices, Blue — to be deleted as obsolete in future work on the standard.

## Comment Form — Draft Standard IRO-006-4 — Reliability Coordination — Transmission Loading Relief

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### Note that you do not have to answer all questions.

1. Do you agree that the new "Purpose" statement captures the intent of the standard? If not, please explain your answer.

The original purpose stated "Regardless of the process it uses, the Reliability Coordinator must direct its Balancing Authorities and Transmission Operators to return the transmission system to within its Interconnection Reliability Operating Limits as soon as possible, but no longer than 30 minutes. The Reliability Coordinator needs to direct Balancing Authorities and Transmission Operators to execute actions such as reconfiguration, redispatch, or load shedding until relief requested by the TLR process is achieved."

The new purpose states "The purpose of this standard is to provide a method to prevent and or manage congestion on the Bulk Electric System."

Yes

No

Comments: The original purpose contained phrasing that sounded more like requirements - terms such as "... the Reliability Coordinator Must ..." and "... the Reliability Coordinator needs to ..." - than a clear, concise purpose for the standard. We feel the newly stated purpose accomplishes this.

2. In order to develop appropriate measures and compliance elements for the requirements and hold the applicable reliability functions responsible for meeting these requirements, the team has removed Transmission Operator from the applicability list on the basis that the requirements in IRO-006-3 that apply to the Transmission Operators are either not applicable (Section 1.6.3, Attachment 1) or already covered by other standards (Sections 1.8.1 and 2.9.2, Attachment 1). Do you agree with the applicable entities defined in the standard? If not, please specify to which entities the standard should apply.

Yes

No

Comments: We agree.

3. The intent of the revised standard is to capture the reliability requirements of the former TLR procedure following the NERC/NAESB split. Do you agree that the draft revisions to the standard and Attachment 1 accomplished this objective? If not, please explain your answer.

Yes

No

Comments: We agree the standard and its attachment seem to reflect all reliability components of the pre-split standard.

**Comment Form — Draft Standard IRO-006-4 — Reliability Coordination —  
Transmission Loading Relief**

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4. Do you agree with the violation risk factors proposed in the standard? If not, please explain your answer.

Yes

No

Comments: We find the proposed violation risk factors appropriate.

5. Do you agree with the time horizons proposed in the standard? The drafting team was given the following criteria to use in assigning a "time horizon." Note that time horizons are used as one component in determining the size of a sanction. More information about time horizons can be found in the Sanctions Guidelines.

- Long-term Planning — a planning horizon of one year or longer.
- Operations Planning — operating and resource plans from day-ahead up to and including seasonal.
- Same-day Operations — routine actions required within the timeframe of a day, but not real-time.
- Real-time Operations — actions required within one hour or less to preserve the reliability of the Bulk Electric System.
- Operations Assessment — follow-up evaluations and reporting of real time operations.

If not, please explain your answer.

Yes

No

Comments: We are in agreement with the proposed time horizons for this standard.

6. Do you agree with the measures proposed in the standard? If not, please explain your answer.

Yes

No

Comments: We agree with the proposed measures for this standard.

7. Do you agree with the compliance elements proposed in the standard? If not, please explain your answer.

Yes

No

Comments: We agree with the proposed compliance elements reflected in this standard.

**Comment Form — Draft Standard IRO-006-4 — Reliability Coordination —  
Transmission Loading Relief**

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8. The drafting team is planning a joint NERC NAESB TLR operator's manual for the TLR procedure. What would your organization like to see contained in a joint manual?

Comments: The joint NERC NAESB TLR Operator's Manual should essentially provide the operator with the same information he/she has in the pre-split version of the standard. The drafting team should work to format the joint manual in a way that follows a logical order and is easily understandable. The manual should contain references to the latest version of the applicable NERC Standards and NAESB Business Practices. A question for the Drafting Team i- how will the joint manual be maintained and updated?

9. Are you aware of any conflicts between the proposed standard and any regulatory function, rule/order, tariff, rate schedule, legislative requirement or agreement? If yes, please explain your answer.

Yes

No

Comments:

10. Do you have any concerns that would prevent you from voting to approve this draft standard? If yes, please explain your answer.

Yes

No

Comments:

11. Please provide any other comments you have (that you have not already provided in response to the above questions) regarding this draft standard.

Comments: We have no further comment at this time. We appreciate the work of the TLR Drafting Team and our opportunity to submit comments regarding the proposed standard.

**Comment Form — Draft Standard IRO-006-4 — Reliability Coordination — Transmission Loading Relief**

---

Please use this form to submit comments on the first draft of the TLR procedure NERC/NAESB split for the Eastern Interconnection (IRO-006-4 — Reliability Coordination — Transmission Loading Relief – Attachment 1). Comments must be submitted by **June 14, 2007**. You must submit the completed form by e-mail to [sarcomm@nerc.net](mailto:sarcomm@nerc.net) with the words "**NERC/NAESB TLR Split**" in the subject line. If you have questions please contact Andy Rodriquez at [andy.rodriquez@nerc.net](mailto:andy.rodriquez@nerc.net) or 609-947-3885.

<b>Individual Commenter Information</b> <b>(Complete this page for comments from one organization or individual.)</b>		
Name:		
Organization: Tennessee Valley Authority		
Telephone:		
E-mail:		
NERC Region		Registered Ballot Body Segment
<input type="checkbox"/> ERCOT	<input type="checkbox"/>	1 — Transmission Owners
<input type="checkbox"/> FRCC	<input type="checkbox"/>	2 — RTOs and ISOs
<input type="checkbox"/> MRO	<input type="checkbox"/>	3 — Load-serving Entities
<input type="checkbox"/> NPCC	<input type="checkbox"/>	4 — Transmission-dependent Utilities
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<input type="checkbox"/> SPP	<input type="checkbox"/>	7 — Large Electricity End Users
<input type="checkbox"/> WECC	<input type="checkbox"/>	8 — Small Electricity End Users
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## Comment Form — Draft Standard IRO-006-4 — Reliability Coordination — Transmission Loading Relief

---

### Background Information

NERC and the North American Energy Standards Board (NAESB) last year finalized a procedure for coordinating the development of standards in areas that affect both reliability and business practices, such as power interchange and congestion management. This approach allows the reliability requirements to be developed through the NERC process and the business practices to be developed through the NAESB process, with the actual development work being done by a joint team sponsored by NERC and NAESB.

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In conducting this work, the team attempted to retain the original IRO-006 requirements to the extent possible to avoid creating new elements that may precipitate lengthy debates hence delaying implementing the NERC/NAESB split. However, where in the judgment of the team the standard requirements as written were deemed to create difficulties in developing the necessary measures and compliance elements, the team modified the requirements to achieve those objectives.

The comment form is asking for comments ONLY on the changes to the draft NERC standard. The sections highlighted<sup>2</sup> in the mapping document for the draft standard are being recommended for retirement from the NERC TLR standard.

As part of the project plan for this effort, the drafting team envisions creating a joint operators' manual that will contain both the NERC and NAESB portions of the TLR procedure.

---

<sup>1</sup> Please access [http://naesb.org/misc/fa\\_weq\\_r06002\\_attachment%202.pdf](http://naesb.org/misc/fa_weq_r06002_attachment%202.pdf) to review the NAESB TLR Business Practice Standards in conjunction with the proposed NERC TLR Reliability Standards to ensure that all relevant aspects of TLR standards are either included in the NERC proposal or in the NAESB business practices. Please note that the NAESB business practice standards are copyright protected. Should you need to obtain a copy of the NAESB standards for other purposes, please contact the NAESB office.

<sup>2</sup> In the mapping of the NERC/NAESB TLR split, the following key is being used: Yellow — recommended for transfer to a new Attachment 2 in future work on the standard, Gray — agreed as being part of the NAESB Business Practices, Blue — to be deleted as obsolete in future work on the standard.

## Comment Form — Draft Standard IRO-006-4 — Reliability Coordination — Transmission Loading Relief

---

### Note that you do not have to answer all questions.

1. Do you agree that the new "Purpose" statement captures the intent of the standard? If not, please explain your answer.

The original purpose stated "Regardless of the process it uses, the Reliability Coordinator must direct its Balancing Authorities and Transmission Operators to return the transmission system to within its Interconnection Reliability Operating Limits as soon as possible, but no longer than 30 minutes. The Reliability Coordinator needs to direct Balancing Authorities and Transmission Operators to execute actions such as reconfiguration, redispatch, or load shedding until relief requested by the TLR process is achieved."

The new purpose states "The purpose of this standard is to provide a method to prevent and or manage congestion on the Bulk Electric System."

Yes

No

Comments:

2. In order to develop appropriate measures and compliance elements for the requirements and hold the applicable reliability functions responsible for meeting these requirements, the team has removed Transmission Operator from the applicability list on the basis that the requirements in IRO-006-3 that apply to the Transmission Operators are either not applicable (Section 1.6.3, Attachment 1) or already covered by other standards (Sections 1.8.1 and 2.9.2, Attachment 1). Do you agree with the applicable entities defined in the standard? If not, please specify to which entities the standard should apply.

Yes

No

Comments: In R1 of the standard it states that the Reliability Coordinator shall, "with its authority and at its discretion, select" one or more procedures to provide transmission loading relief. In Sections 1.1 and 1.2.1 of Attachment 1 to IRO-006 it states that the RC shall initiate a TLR at the request of the Transmission Operator (Section 1.1 Attachment 1) or if any Transmission Operator who operates a tie facility shall be allowed to request relief from its Reliability Coordinator (Section 1.2.1). Since requirement R1.1 states that the TLR procedure for use in the Eastern Interconnection is provided in Attachment 1 then we feel the Transmission Operator requesting their RC to implement the TLR procedure should be held accountable for requesting to use the procedure and therefore it should be applicable to the TOP.

3. The intent of the revised standard is to capture the reliability requirements of the former TLR procedure following the NERC/NAESB split. Do you agree that the draft revisions to the standard and Attachment 1 accomplished this objective? If not, please explain your answer.

Yes

No



## Comment Form — Draft Standard IRO-006-4 — Reliability Coordination — Transmission Loading Relief

---

Comments: Agree if this is viewed against the current posted version 3 of IRO\_006 but not against Version 0 of IRO-006.

4. Do you agree with the violation risk factors proposed in the standard? If not, please explain your answer.

Yes

No

Comments:

5. Do you agree with the time horizons proposed in the standard? The drafting team was given the following criteria to use in assigning a "time horizon." Note that time horizons are used as one component in determining the size of a sanction. More information about time horizons can be found in the Sanctions Guidelines.

- Long-term Planning — a planning horizon of one year or longer.
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- Same-day Operations — routine actions required within the timeframe of a day, but not real-time.
- Real-time Operations — actions required within one hour or less to preserve the reliability of the Bulk Electric System.
- Operations Assessment — follow-up evaluations and reporting of real time operations.

If not, please explain your answer.

Yes

No

Comments:

6. Do you agree with the measures proposed in the standard? If not, please explain your answer.

Yes

No

Comments:

7. Do you agree with the compliance elements proposed in the standard? If not, please explain your answer.

Yes

No

Comments: Needs more clarification to understand exact parameters

**Comment Form — Draft Standard IRO-006-4 — Reliability Coordination —  
Transmission Loading Relief**

---

8. The drafting team is planning a joint NERC NAESB TLR operator's manual for the TLR procedure. What would your organization like to see contained in a joint manual?

Comments: We would like to see one document that contains both the NERC requirements and NAESB Business Practices together. Would prefer this to be highlighted or different fonts for each so that it is easily distinguishable what sections belong to what group.

9. Are you aware of any conflicts between the proposed standard and any regulatory function, rule/order, tariff, rate schedule, legislative requirement or agreement? If yes, please explain your answer.

Yes

No

Comments:

10. Do you have any concerns that would prevent you from voting to approve this draft standard? If yes, please explain your answer.

Yes

No

Comments: We would like to see the conflict between Requirement 1 and Sections 1.1 and 1.2.1 of Attachment 1 resolved before we could approve this draft. ( see question 2)

11. Please provide any other comments you have (that you have not already provided in response to the above questions) regarding this draft standard.

Comments: None

**Comment Form — Draft Standard IRO-006-4 — Reliability Coordination — Transmission Loading Relief**

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Please use this form to submit comments on the first draft of the TLR procedure NERC/NAESB split for the Eastern Interconnection (IRO-006-4 — Reliability Coordination — Transmission Loading Relief – Attachment 1). Comments must be submitted by **June 14, 2007**. You must submit the completed form by e-mail to [sarcomm@nerc.net](mailto:sarcomm@nerc.net) with the words "**NERC/NAESB TLR Split**" in the subject line. If you have questions please contact Andy Rodriquez at [andy.rodriquez@nerc.net](mailto:andy.rodriquez@nerc.net) or 609-947-3885.

<b>Individual Commenter Information</b> (Complete this page for comments from one organization or individual.)		
Name:		
Organization:		
Telephone:		
E-mail:		
NERC Region		Registered Ballot Body Segment
<input type="checkbox"/> ERCOT	<input type="checkbox"/>	1 — Transmission Owners
<input type="checkbox"/> FRCC	<input checked="" type="checkbox"/>	2 — RTOs and ISOs
<input type="checkbox"/> MRO	<input type="checkbox"/>	3 — Load-serving Entities
<input type="checkbox"/> NPCC	<input type="checkbox"/>	4 — Transmission-dependent Utilities
<input type="checkbox"/> RFC	<input type="checkbox"/>	5 — Electric Generators
<input type="checkbox"/> SERC	<input type="checkbox"/>	6 — Electricity Brokers, Aggregators, and Marketers
<input type="checkbox"/> SPP	<input type="checkbox"/>	7 — Large Electricity End Users
<input type="checkbox"/> WECC	<input type="checkbox"/>	8 — Small Electricity End Users
<input type="checkbox"/> NA – Not Applicable	<input type="checkbox"/>	9 — Federal, State, Provincial Regulatory or other Government Entities
	<input type="checkbox"/>	10 - Regional Reliability Organizations, and Regional Entities

**Comment Form — Draft Standard IRO-006-4 — Reliability Coordination —  
Transmission Loading Relief**

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Group Comments (Complete this page if comments are from a group.)  
**Group Name:** ISO/RTO Council Standards Review Committee (SRC)  
**Lead Contact:** Charles Yeung  
**Contact Organization:** SPP  
**Contact Segment:** ISO/RTO  
**Contact Telephone:** 832-724-6142  
**Contact E-mail:** cyeung@SPP.ORG

<b>Additional Member Name</b>	<b>Additional Member Organization</b>	<b>Region*</b>	<b>Segment*</b>
Jim Castle	NYISO	NPCC	2
Alicia Daugherty	PJM	RFC	2
Ron Falsetti	IESO	NPCC	2
Matt Goldberg	ISO-NE	NPCC	2
Brent Kingsford	CAISO	WECC	2
Steve Myers	ERCOT	ERCT	2
Anita Lee	AESO	WECC	2
Bill Phillips	MISO	RFC+	2
		MRO+	
		SERC	

\*If more than one Region or Segment applies, indicate the best fit for the purpose of these comments. Regional acronyms and segment numbers are shown on the prior page.

## Comment Form — Draft Standard IRO-006-4 — Reliability Coordination — Transmission Loading Relief

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### Background Information

NERC and the North American Energy Standards Board (NAESB) last year finalized a procedure for coordinating the development of standards in areas that affect both reliability and business practices, such as power interchange and congestion management. This approach allows the reliability requirements to be developed through the NERC process and the business practices to be developed through the NAESB process, with the actual development work being done by a joint team sponsored by NERC and NAESB.

Thus the standards will be separate but closely integrated. This approach is more effective than previous efforts that assigned standards to either NERC or NAESB when the subject matter obviously contains both reliability and business practice elements.

On June 1–2, 2005, following an extensive joint process, the NERC NAESB TLR Subcommittee completed a review of and recommended split of both reliability and business practice requirements of the NERC TLR standard IRO-006.

NAESB completed its ratification of its respective [TLR business practices](#)<sup>1</sup> on April 10, 2006, with updates for an SPP regional difference and changes to TLR Levels 3b and 4 ratified on September 1, 2006.

Following completion of its SAR process, NERC formed a TLR Drafting Team in August 2006. The NERC TLR Drafting Team has been meeting jointly with the NAESB Wholesale Electric Quadrant (WEQ) Business Practices Subcommittee to complete the respective changes to the NERC TLR standard IRO-006 to document the previously agreed-upon NERC/NAESB split of the TLR requirements. In addition, the team has also developed measures, compliance elements and other standard elements to meet the requirements of the NERC Reliability Standards Development Procedure.

In conducting this work, the team attempted to retain the original IRO-006 requirements to the extent possible to avoid creating new elements that may precipitate lengthy debates hence delaying implementing the NERC/NAESB split. However, where in the judgment of the team the standard requirements as written were deemed to create difficulties in developing the necessary measures and compliance elements, the team modified the requirements to achieve those objectives.

The comment form is asking for comments ONLY on the changes to the draft NERC standard. The sections highlighted<sup>2</sup> in the mapping document for the draft standard are being recommended for retirement from the NERC TLR standard.

As part of the project plan for this effort, the drafting team envisions creating a joint operators' manual that will contain both the NERC and NAESB portions of the TLR procedure.

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<sup>1</sup> Please access [http://naesb.org/misc/fa\\_weq\\_r06002\\_attachment%202.pdf](http://naesb.org/misc/fa_weq_r06002_attachment%202.pdf) to review the NAESB TLR Business Practice Standards in conjunction with the proposed NERC TLR Reliability Standards to ensure that all relevant aspects of TLR standards are either included in the NERC proposal or in the NAESB business practices. Please note that the NAESB business practice standards are copyright protected. Should you need to obtain a copy of the NAESB standards for other purposes, please contact the NAESB office.

<sup>2</sup> In the mapping of the NERC/NAESB TLR split, the following key is being used: Yellow — recommended for transfer to a new Attachment 2 in future work on the standard, Gray — agreed as being part of the NAESB Business Practices, Blue — to be deleted as obsolete in future work on the standard.

## Comment Form — Draft Standard IRO-006-4 — Reliability Coordination — Transmission Loading Relief

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### Note that you do not have to answer all questions.

1. Do you agree that the new "Purpose" statement captures the intent of the standard? If not, please explain your answer.

The original purpose stated "Regardless of the process it uses, the Reliability Coordinator must direct its Balancing Authorities and Transmission Operators to return the transmission system to within its Interconnection Reliability Operating Limits as soon as possible, but no longer than 30 minutes. The Reliability Coordinator needs to direct Balancing Authorities and Transmission Operators to execute actions such as reconfiguration, redispatch, or load shedding until relief requested by the TLR process is achieved."

The new purpose states "The purpose of this standard is to provide a method to prevent and or manage congestion on the Bulk Electric System."

Yes

No

Comments:

2. In order to develop appropriate measures and compliance elements for the requirements and hold the applicable reliability functions responsible for meeting these requirements, the team has removed Transmission Operator from the applicability list on the basis that the requirements in IRO-006-3 that apply to the Transmission Operators are either not applicable (Section 1.6.3, Attachment 1) or already covered by other standards (Sections 1.8.1 and 2.9.2, Attachment 1). Do you agree with the applicable entities defined in the standard? If not, please specify to which entities the standard should apply.

Yes

No

Comments:

3. The intent of the revised standard is to capture the reliability requirements of the former TLR procedure following the NERC/NAESB split. Do you agree that the draft revisions to the standard and Attachment 1 accomplished this objective? If not, please explain your answer.

Yes

No

Comments:

4. Do you agree with the violation risk factors proposed in the standard? If not, please explain your answer.

Yes

No

Comments:

**Comment Form — Draft Standard IRO-006-4 — Reliability Coordination —  
Transmission Loading Relief**

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5. Do you agree with the time horizons proposed in the standard? The drafting team was given the following criteria to use in assigning a “time horizon.” Note that time horizons are used as one component in determining the size of a sanction. More information about time horizons can be found in the Sanctions Guidelines.

- Long-term Planning — a planning horizon of one year or longer.
- Operations Planning — operating and resource plans from day-ahead up to and including seasonal.
- Same-day Operations — routine actions required within the timeframe of a day, but not real-time.
- Real-time Operations — actions required within one hour or less to preserve the reliability of the Bulk Electric System.
- Operations Assessment — follow-up evaluations and reporting of real time operations.

If not, please explain your answer.

Yes

No

Comments:

6. Do you agree with the measures proposed in the standard? If not, please explain your answer.

Yes

No

Comments:

7. Do you agree with the compliance elements proposed in the standard? If not, please explain your answer.

Yes

No

Comments: One compliance element issue is that it is not clear how to interpret the number of interconnection wide violations by an RC for each TLR in the Eastern Interconnection (the Violation Severity Level is set by the number of violations). One way to interpret this is that for each TLR event, an RC may have multiple violations. The number of violations for that event establishes the Violation Severity Level for just that event. In this interpretation, the number of violations do not carry over from one event to another event. Another way to interpret this is the RC accumulates the number of violations for all events as it goes through the month until it reaches a total of 6 at which time it has a severe Violation Severity Level. It then resets for the same month such that future TLR violations could result in one or more violations. It is not clear which interpretation to apply. Another compliance element issue is that there is no distinction in the consequences of the violations. This means a minor infraction of one requirement that has no impact on reliability will be treated on an equal basis as a major infraction of another requirement that does have an impact on reliability when determining the violation count to establish the Violation Severity Level.

**Comment Form — Draft Standard IRO-006-4 — Reliability Coordination —  
Transmission Loading Relief**

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8. The drafting team is planning a joint NERC NAESB TLR operator's manual for the TLR procedure. What would your organization like to see contained in a joint manual?

Comments: We agree. This is in line with the correct steps to accomplish what FERC requested of NERC and NAESB. A common manual is the correct way to go on this. The split should be an administrative measure only, so that it is handled as quickly as possible. This would allow the members to quickly start the next phase, which is to do away with the Urgent Action SPP waiver and to change the threshold.

The combined procedure (NERC-NAESB) should be made available to all areas through NERC. We expect that NERC and NAESB will work out a process where NAESB is OK with their standard being included in the NERC version. The joint NERC-NAESB process allows for this, so the end result needs to be a jointly published document. Also, the NERC-NAESB fees need to include some sort of funding for updates to the NERC IDC. A common document will facilitate coordination between functional entities using one guiding procedure."

9. Are you aware of any conflicts between the proposed standard and any regulatory function, rule/order, tariff, rate schedule, legislative requirement or agreement? If yes, please explain your answer.

Yes

No

Comments:

10. Do you have any concerns that would prevent you from voting to approve this draft standard? If yes, please explain your answer.

Yes

No

Comments: See response to Question 7. This could possibly affect vote decisions.

11. Please provide any other comments you have (that you have not already provided in response to the above questions) regarding this draft standard.

Comments: We find IRO-006-4 a significant improvement over IRO-006-3, however we strongly support continued improvement of this standard. The following comments are intended for Phase III of the standard development.

IRO-006-4: The roles of the RC (as initiator or responder) are unclear and should be clarified.

IRO-006-4, Attachment 1: Should be reviewed to determine whether there is any portion that should become part of a standard. Attachment 1 largely is procedural in nature, but part(s) of it possibly should be rewritten in the form of a standard.

IRO-006-4, Attachment 1: Some of the assumptions made by IDC are fairly crude and can result in the inappropriate selection of interchange transactions to be curtailed.



**Comment Form — Draft Standard IRO-006-4 — Reliability Coordination —  
Transmission Loading Relief**

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IRO-006-4, Attachment 1: Should either specify requirements for IDC, or require after-the-fact analysis of IDC results upon request to identify and quantify deficiencies, or both.

## **Consideration of Comments on First Draft of Modifications to IRO-006 — Reliability Coordination – Transmission Loading Relief**

The TLR Standard Drafting Team thanks all commenters who submitted comments on Draft 1 of the modifications to IRO-006— Reliability Coordination – Transmission Loading Relief (TLR). This standard was posted for a 45-day public comment period from May 1 through June 14, 2007. The drafting team asked stakeholders to provide feedback on the standard through a special standard Comment Form. There were 11 sets of comments, including comments from 36 different people from more than 24 companies representing 9 of the 10 Industry Segments as shown in the table on the following pages.

Based on the comments received, the drafting team made the following minor changes to the standard, and is recommending the standard proceed to balloting:

- Clarified the purpose statement
- Returned the ‘Transmission Operator’ to the list of applicable functions
- Reduced the severity of non-compliance with R4 to “Lower” based on comments that indicated R4 is not clear and needs to be revised. Making the revision to R4 is outside the scope of work assigned to this phase of the project.

The drafting team was not able to resolve all issues. The following minority issues were not resolved by changes made to the standard:

- Some commenters indicated that the violation risk factors should be higher than proposed, but most commenters agreed with the proposed risk factors and these were not modified. The intent of this standard is to ensure compliance with a selected transmission relief procedure – there are other standards that require reliability coordinators to prevent or mitigate instances of exceeding IROLs.
- There were several suggestions for modifications to requirements and measures, and the drafting team did not adopt those suggestions with this phase of the project to improve IRO-006. The intent of this phase was to identify the requirements that should be in a NERC standard and separate these from the requirements that belong in a NAESB business practice. There are two other phases to this project that are aimed at making improvements to the requirements and field testing some modifications to the interchange distribution calculator that may eliminate the need for any Regional Variances. The drafting team has collected the suggestions for modification to requirements and will use those comments during the next phases of this project.
- There were several suggestions for modifications to the violation severity levels and most of these were not adopted because they would require modifications to the requirements which go beyond the scope of work assigned to this phase of the project. To ensure that the compliance monitors can interpret the requirements, the drafting is developing an audit guide that will assist in the evaluation of the application of the TLR procedure.

In this “Consideration of Comments” document stakeholder comments have been organized so that it is easier to see the responses associated with each question. All comments received on the standards can be viewed in their original format at:

<http://www.nerc.com/~filez/standards/Reliability-Coordination-Transmission-Loading-Relief.html>

If you feel that your comment has been overlooked, please let us know immediately. Our goal is to give every comment serious consideration in this process! If you feel there has been an error or omission, you can contact the Director of Standards, Gerry Adamski, at 609-452-8060 or at [gerry.adamski@nerc.net](mailto:gerry.adamski@nerc.net). In addition, there is a NERC Reliability Standards Appeals Process.<sup>1</sup>

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<sup>1</sup> The appeals process is in the Reliability Standards Development Procedure:  
<http://www.nerc.com/standards/newstandardsprocess.html>.

**Consideration of Comments – TLR – Reliability Standard IRO-006-4**

The Industry Segments are:

- 1 – Transmission Owners
- 2 – RTOs, ISOs
- 3 – Load-serving Entities
- 4 – Transmission-dependent Utilities
- 5 – Electric Generators
- 6 – Electricity Brokers, Aggregators, and Marketers
- 7 – Large Electricity End Users
- 8 – Small Electricity End Users
- 9 – Federal, State, Provincial Regulatory or other Government Entities
- 10 – Regional Reliability Organizations, Regional Entities

	Commenter	Organization	Industry Segment											
			1	2	3	4	5	6	7	8	9	10		
1.	Anita Lee (G6)	AESO		✓										
2.	Thad K. Ness	American Electric Power (AEP)	✓					✓	✓					
3.	David Rudolph (G3)	Basin Electric												✓
4.	Brent Kingsford (G6)	CAISO		✓										
5.	Greg Rowland	Duke Energy	✓		✓									
6.	Ed Davis (G2)	Entergy Services Inc.	✓											
7.	Jim Caseb(G2)	Entergy Services Inc.	✓											
8.	Narinder K. Saini (G2)	Entergy Services Inc.	✓											
9.	Steve Myers (I) (G6)	ERCOT		✓										✓
10.	Joe Knight (G3)	Great River Energy												✓
11.	Ron Falsetti (I) (G6)	IESO		✓										
12.	Matt Goldberg (G6)	ISO-NE		✓										
13.	Robert Coish (G3)	Manitoba Hydro	✓		✓	✓			✓					✓
14.	Mike Brytowski (G3)	Midwest Reliability Organization												✓
15.	Carol Gerou (G3)	Minnesota Power												✓
16.	Bill Phillips (G6)	MISO		✓										
17.	Terry Bilke (G3)	MISO												✓
18.	Jim Castle (G6)	NYISO		✓										
19.	Alicia Daugherty (G6)	PJM		✓										
20.	Bill Lohrman	Prague Power, LLC										✓		
21.	C. Robert Moseley (G1)	Public Service Commission of South Carolina											✓	
22.	David Wright (G1)	Public Service Commission of South Carolina											✓	
23.	Elizabeth Fleming	Public Service Commission											✓	

**Consideration of Comments – TLR – Reliability Standard IRO-006-4**

	Commenter	Organization	Industry Segment											
			1	2	3	4	5	6	7	8	9	10		
	(G1)	of South Carolina												
24.	G. O'Neal Hamilton (G1)	Public Service Commission of South Carolina											✓	
25.	John Howard (G1)	Public Service Commission of South Carolina											✓	
26.	Mignon Clyburn (G1)	Public Service Commission of South Carolina											✓	
27.	Philip Riley (G1)	Public Service Commission of South Carolina											✓	
28.	Randy Mitchell (G1)	Public Service Commission of South Carolina											✓	
29.	J. T. Wood (G4)	Southern Company -- Transmission	✓											
30.	Marc Butts (G4)	Southern Company -- Transmission	✓		✓									
31.	Roman Carter (G4)	Southern Company -- Transmission	✓											
32.	Charles Yeung (G6)	SPP		✓										
33.	Sue Mangum-Goins (G5)	Tennessee Valley Authority	✓											
34.	Stuart Goza (G5)	TVA	✓											
35.	Jim Haigh (G3)	WAPA												✓
36.	Neal Balu (G3)	WPSR												✓
37.	Pamela Orreschrick (G3)	Xcel Energy												✓

I – Indicates that individual comments were submitted in addition to comments submitted as part of a group

G1 – Public Service Commission of South Carolina

G2 – Entergy

G3 – MRO NSRS

G4 – Southern

G5 – TVA Reliability Coordinators

G6 – ISO/RTO Council

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**Consideration of Comments on 2<sup>nd</sup> Posting of Backup Facilities SAR**

1. Do you agree that the new "Purpose" statement captures the intent of the standard? If not, please explain your answer.

**Summary Consideration:** Although most commenter's agreed with the purpose as written, we are modifying it based on the comments made by Entergy, which are intended to clarify the purpose. We do not feel this is a substantial change. The new language is as follows: "To provide Interconnection-wide transmission loading relief procedures that can be used to prevent or manage potential or actual SOL and IROL violations to maintain reliability of the Bulk Electric System."

Question #1			
Commenter	Yes	No	Comment
American Electric Power	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<p>IRO-005-2 deals with current day operations. IRO-005-2 R3, R16, and R17 all deal with the IROL violation issue and taking appropriate action to relieve the violation within 30 minutes.</p> <p>IRO-005-2 R3: As portions of the transmission system approach or exceed SOLs or IROLs, the Reliability Coordinator shall work with its Transmission Operators and Balancing Authorities to evaluate and assess any additional Interchange Schedules that would violate those limits. If a potential or actual IROL violation cannot be avoided through proactive intervention, the Reliability Coordinator shall initiate control actions or emergency procedures to relieve the violation without delay, and no longer than 30 minutes. The Reliability Coordinator shall ensure all resources, including load shedding, are available to address a potential or actual IROL violation.</p> <p>IRO-005-2 R16: Each Reliability Coordinator shall confirm reliability assessment results and determine the effects within its own and adjacent Reliability Coordinator Areas. The Reliability Coordinator shall discuss options to mitigate potential or actual SOL or IROL violations and take actions as necessary to always act in the best interests of the Interconnection at all times.</p> <p>IRO-005-2 R17: When an IROL or SOL is exceeded, the Reliability Coordinator shall evaluate the local and wide-area impacts, both real-time and post-contingency, and determine if the actions being taken are appropriate and sufficient to return the system to within IROL in thirty minutes. If the actions being taken are not appropriate or sufficient, the Reliability Coordinator shall direct the Transmission Operator, Balancing Authority, Generator Operator, or Load-Serving Entity to return the system to within IROL or SOL.</p>
<p><b>Response:</b> We appreciate your comments. IRO-006 is not intending to replace these other requirements or create any "double jeopardy" situations. We will be working to clarify this in the Phase III effort.</p>			
Duke Energy	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Entergy	<input type="checkbox"/>	<input checked="" type="checkbox"/>	The purpose of this standard is to provide a method, as stated in R1, to prevent or relieve SOL or IROL violations to maintain the reliability of the bulk electric system. We

**Consideration of Comments on 2<sup>nd</sup> Posting of Backup Facilities SAR**

<b>Question #1</b>			
<b>Commenter</b>	<b>Yes</b>	<b>No</b>	<b>Comment</b>
			suggest the purpose be revised to reflect this concept. It seems NAESB will be providing the buisness practices associate with the relief of congestion.
<b>Response:</b> We will change the purpose to read "To provide Interconnection-wide transmission loading relief procedures that can be used to prevent or manage potential or actual SOL and IROL violations to maintain reliability of the Bulk Electric System."			
ERCOT	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
IESO	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
ISO/RTO Council	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
MRO	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Prague Power	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
PSC South Carolina	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Southern Transm.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	The original purpose contained phrasing that sounded more like requirements - terms such as "... the Reliability Coordiantor Must ..." and "... the Rliability Coordiantor needs to ..." - than a clear, concise purpose for the standard. We feel the newly stated purpose accomplishes this.
<b>Response:</b> We appreciate your comments.			
TVA	<input checked="" type="checkbox"/>	<input type="checkbox"/>	



**Consideration of Comments on 2<sup>nd</sup> Posting of Backup Facilities SAR**

2. In order to develop appropriate measures and compliance elements for the requirements and hold the applicable reliability functions responsible for meeting these requirements, the team has removed Transmission Operator from the applicability list on the basis that the requirements in IRO-006-3 that apply to the Transmission Operators are either not applicable (Section 1.6.3, Attachment 1) or already covered by other standards (Sections 1.8.1 and 2.9.2, Attachment 1). Do you agree with the applicable entities defined in the standard? If not, please specify to which entities the standard should apply.

**Summary Consideration:** To address concerns expressed by TVA and Entergy, we have added the Transmission Operator back into the standard. We have also rewritten the Attachment to address concerns about the role of the Transmission Operator in requesting TLR. We intend to re-evaluate this issue in our Phase III revisions.

Question #2			
Commenter	Yes	No	Comment
American Electric Power	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Duke Energy	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Entergy	<input type="checkbox"/>	<input checked="" type="checkbox"/>	We see that Attachment 1 contains references to and places requirements on the TOP which are not applicable or already covered by other standards. This amounts to double jeopardy to the TOP. It also is inappropriate to state that the standard does not apply to the TOP (Applicability section), but then place requirements on the TOP in Attachment 1 (Section 1.2.1, 1.8.1, and 2.9.2). We agree with the removal of the TOP from the Applicability section. However, we disagree with keeping the requirements on the TOP in Attachment 1. Please remove all references to the TOP in Attachment 1.
<b>Response:</b> To address these concerns, as well as those of TVA, we have added the Transmission Operator back into the standard. We have also rewritten the Attachment to address concerns about the role of the Transmission Operator in requesting TLR. We will also revisit this issue in Phase III.			
ERCOT	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
IESO	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
ISO/RTO Council	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
MRO	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Prague Power	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
PSC South Carolina	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Southern Transm.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	We agree.
TVA	<input type="checkbox"/>	<input checked="" type="checkbox"/>	In R1 of the standard it states that the Reliability Coordinator shall, "with its authority and at its discretion, select" one or more procedures to provide transmission loading relief.

**Consideration of Comments on 2<sup>nd</sup> Posting of Backup Facilities SAR**

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<b>Question #2</b>			
<b>Commenter</b>	<b>Yes</b>	<b>No</b>	<b>Comment</b>
			In Sections 1.1 and 1.2.1 of Attachment 1 to IRO-006 it states that the RC shall initiate a TLR at the request of the Transmission Operator (Section 1.1 Attachment 1) or if any Transmission Operator who operates a tie facility shall be allowed to request relief from its Reliability Coordinator (Section 1.2.1). Since requirement R1.1 states that the TLR procedure for use in the Eastern Interconnection is provided in Attachment 1 then we feel the Transmission Operator requesting their RC to implement the TLR procedure should be held accountable for requesting to use the procedure and therefore it should be applicable to the TOp.
<p><b>Response:</b> To address these concerns, as well as those of Entergy, we have added the Transmission Operator back into the standard. We have also rewritten the Attachment to address concerns about the role of the Transmission Operator in requesting TLR. We will also revisit this issue in Phase III.</p>			

**Consideration of Comments on 2<sup>nd</sup> Posting of Backup Facilities SAR**

3. The intent of the revised standard is to capture the reliability requirements of the former TLR procedure following the NERC/NAESB split. Do you agree that the draft revisions to the standard and Attachment 1 accomplished this objective? If not, please explain your answer.

**Summary Consideration:** Duke Energy identified several areas in the standard that can be improved or clarified. While we agree with many of Duke's suggestions, the intention of this work effort is primarily to separate Reliability Standards from business practices – not change them significantly. Accordingly, the majority of the suggestions will be deferred until our Phase III re-write. The remainder will be implemented by including them in the Joint Operator manual.

Question #3			
Commenter	Yes	No	Comment
American Electric Power	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Duke Energy	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<p>The portions of the Regional Differences (Section E) that describe how the impact of market flows on facilities are calculated should not be moved to NAESB. The amount of flow presented to the IDC for curtailment on a constrained facility (Flowgate) clearly has Reliability aspects.</p> <p>Also, while it is clear what the intent is, the objective has not been accomplished because there are some instances where information may need to be in both documents.</p> <p>Attachment 1 - Section 2 Transmission Loading Relief (TLR) Levels should have a statement for each level that indicates whether or not transactions will be impacted. (Example – for TLR Level 1 – No transactions will be impacted; Level 2 - Prevents all transactions less than priority 7 with TDF &gt; 5% from starting or increasing; etc.) A good guide for this can be found on the NERC site under IDC training – IDC TLR Matrix.</p> <p>Attachment 1 - Section 3.1 (Interchange Transaction Curtailment Order for use in TLR Procedures / Priority of Interchange Transactions) should not be moved to NAESB. Without this, there will be no reference to the curtailment order in the procedure.</p> <p>Additional comments:</p> <ul style="list-style-type: none"> <li>• Section 1.5.1 should not move to NAESB</li> <li>• Section 2.2.2 “However, the RC...on the Constrained Facility” should stay in IRO-004.</li> <li>• Section 2.2.3 “If the time in TLR Level 2...TLR Log” should stay in IRO-004.</li> <li>• Section 2.5.3 First sentence should move to NAESB.</li> <li>• Section 2.5.3 Reference to Section 4 in last sentence needs to be reviewed since</li> </ul>

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Question #3			
Commenter	Yes	No	Comment
			<p>Section 4 moves to NAESB.</p> <ul style="list-style-type: none"> <li>• Section 3.2 – 3.2.1.1 Stay in the IRO.</li> <li>• Section 4.1.4 Stay in the IRO.</li> <li>• Section 6 – 6.1 Need wording like section 7 – 7.1</li> <li>• Section 6.2 -6.2.6 Should move to NAESB</li> <li>• Section 7.4.1 – 7.4.3 Move to NAESB</li> <li>• Section 7.7 – 7.9, Appendix E and F should move to NAESB.</li> <li>• Attachment 1 - Section 1.7 Redispatch options should not be moved</li> <li>• Attachment 1 - Section 2. - Introduction – The last two sentences are “on path/off path discussion”. Similar discussion was moved.</li> <li>• Attachment 1 - Section 2.5.3 – the first sentence should be moved</li> </ul>
<p><b>Response:</b> This version of the standard is not affected by the description of the future changes to the Regional Differences section. At such time as the regional difference field test is completed, a more detailed analysis of the reliability components of the regional differences will be undertaken, and appropriate changes shall be made to the standard. We agree that the requirement to provide flow information to the IDC should be retained as a reliability requirement.</p> <p>We will include the information about transactions being curtailed in the Joint Operator manual.</p> <p>With regard to curtailment priority, we believe that the key element is the provision of relief, not the firmness of the transactions curtailed or re-dispatched to provide the relief. Curtailment order will be specified in NAESB business practices. The Joint Operator manual will address this as well.</p> <p>Section 1.5.1 has been incorporated into the Standard as requirement R3.</p> <p>Section 2.2.2 - We will incorporate into the Joint Operations manual.</p> <p>Section 2.2.3 – The requirement to log has been retained within section 1.7 of Attachment 1. The 30-minute guideline is business practice, and part of the NAESB standards. It will also be incorporated into the Joint Operations manual.</p> <p>Section 2.5.3 We will address the movement of this sentence in the Phase III work.</p> <p>Section 2.5.3 We agree, and have deleted the sentence referring to Section 4.</p> <p>Section 3.2 – 3.2.1.1. The process for curtailment of non-firm transactions is a NAESB business practice.</p> <p>Section 5.1.5 (NOTE: The original comment referred to a section that did not exist (4.1.4). The drafting team clarified with</p>			

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Question #3			
Commenter	Yes	No	Comment
			<p>the respondent that the correct section should be 5.1.5.). We will address this in the Phase III work.</p> <p>Section 6 – 6.1 The Section 6 summary is being retired, as it is a duplicate of work being sent to NAESB. Section 6.1 deals with reallocation, which is a business practice and part of the NAESB standards. Section 7 deals with actual curtailments, and is part of the NERC standards.</p> <p>Section 6.2 -6.2.6 As part of the Phase III work, we will re-evaluate whether this belongs in the IDC Reference Document or within the NAESB business practice standards.</p> <p>Section 7.4.1 – 7.4.3 We will address this in the Phase III work.</p> <p>Section 7.7 – 7.9 As part of the Phase III work, we will re-evaluate whether this belongs in the IDC Reference Document or within the NAESB business practice standards.</p> <p>Attachment 1 - Section 1.6.5 (this refers to an item that would have been 1.7 had it not been deleted in the redline) This is a remnant of the old NERC MRD project. NAESB will address any existing or future needs for redispatch options.</p> <p>Attachment 1 - Section 2. As part of the Phase III work, we will re-evaluate whether this reference belongs in the standard or should be removed.</p> <p>Attachment 1 - Section 2.5.3 We will address this in the Phase III work.</p>
Entergy	<input checked="" type="checkbox"/>	<input type="checkbox"/>	The draft revisions do address the NERC/NAESB split.
<b>Response:</b> The drafting team appreciates your confirmation.			
ERCOT	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
IESO	<input type="checkbox"/>	<input type="checkbox"/>	
ISO/RTO Council	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
MRO	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Prague Power	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
PSC South Carolina	<input checked="" type="checkbox"/>	<input type="checkbox"/>	

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<b>Question #3</b>			
<b>Commenter</b>	<b>Yes</b>	<b>No</b>	<b>Comment</b>
Southern Transm.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	We agree the standard and its attachment seem to reflect all reliability components of the pre-split standard.
<b>Response:</b> The drafting team appreciates your confirmation.			
TVA	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Agree if this is viewed against the current posted version 3 of IRO_006 but not against Version 0 of IRO-006.
<b>Response:</b> The intent was to view the modifications against the latest approved version of IRO-006, which is IRO-006-3.			

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4. Do you agree with the violation risk factors proposed in the standard? If not, please explain your answer.

**Summary Consideration:** While most commenters agreed with the proposed violation risk factors, some commenters suggested that the VRFs should be higher than proposed because failure to relieve an SOL or IROL can have an adverse impact on reliability. The Drafting Team believes that this standard describes some of the processes through which a Reliability Coordinator may obtain congestion relief. However, these are not the only ways in which an RC may do so, and this standard is not intended to require a specific process be followed, unless the RC chooses to implement an Interconnection-wide procedure. There are other standards that apply to the RC’s ability or failure to actually obtain relief in a timely manner. As such, the Drafting Team believes the risk factors of this standard are largely procedural, and merit a lower Violation Risk Factor.

<b>Question #4</b>			
<b>Commenter</b>	<b>Yes</b>	<b>No</b>	<b>Comment</b>
American Electric Power	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Duke Energy	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Entergy	<input type="checkbox"/>	<input checked="" type="checkbox"/>	We suggest R1 have a VRF of HIGH as improper violation of this requirement by improper use or not use of procedure to alleviate SOL or IROL violation can have severe impact on reliability.
<p><b>Response:</b> The Drafting Team believes that this standard describes some of the processes through which a Reliability Coordinator may obtain congestion relief. However, these are not the only ways in which an RC may do so, and this standard is not intended to require a specific process be followed, unless the RC chooses to implement an Interconnection-wide procedure. There are other standards that apply to the RC’s ability or failure to actually obtain relief in a timely manner. As such, the Drafting Team believes the risk factors of this standard are largely procedural, and merit a lower Violation Risk Factor.</p>			
ERCOT	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
IESO	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
ISO/RTO Council	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
MRO	<input type="checkbox"/>	<input checked="" type="checkbox"/>	The Violation Risk Factors are not in line with impact on reliability of the requirements. The VRFs should be higher.
<p><b>Response:</b> The Drafting Team believes that this standard describes some of the processes through which a Reliability Coordinator may obtain congestion relief. However, these are not the only ways in which an RC may do so, and this standard is not intended to require a specific process be followed, unless the RC chooses to implement an Interconnection-wide procedure. There are other standards that apply to the RC’s ability or failure to actually obtain relief in a timely manner. As such, the Drafting Team believes the risk factors of this standard are largely procedural, and merit a lower Violation Risk Factor.</p>			

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Question #4			
Commenter	Yes	No	Comment
Prague Power	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
PSC South Carolina	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Southern Transm.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	We find the proposed violation risk factors appropriate.
<b>Response:</b> <a href="#">The drafting team appreciates your confirmation.</a>			
TVA	<input checked="" type="checkbox"/>	<input type="checkbox"/>	



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5. Do you agree with the time horizons proposed in the standard? The drafting team was given the following criteria to use in assigning a “time horizon.” Note that time horizons are used as one component in determining the size of a sanction. More information about time horizons can be found in the Sanctions Guidelines. If not, please explain your answer.

**Summary Consideration:** All commenters agreed with the time horizons.

Question #5			
Commenter	Yes	No	Comment
American Electric Power	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Duke Energy	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Entergy	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
ERCOT	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
IESO	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
ISO/RTO Council	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
MRO	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Prague Power	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
PSC South Carolina	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Southern Transm.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	We are in agreement with the proposed time horizons for this standard.
<b>Response:</b> The drafting team appreciates your confirmation.			
TVA	<input checked="" type="checkbox"/>	<input type="checkbox"/>	

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6. Do you agree with the measures proposed in the standard? If not, please explain your answer.

**Summary Consideration:** The drafting team will address the majority of these comments in the Phase III scope of work.

Question #6			
Commenter	Yes	No	Comment
American Electric Power	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Duke Energy	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<p>M5 seems to be measuring compliance to other Standards. INT-001 and INT-003 has applicability for the BA and not the RC. And INT-004 has applicability for both the RC and BA. INT-004 has no measure or compliance for the RC. There should not be a requirement (R5) or measure (M5) that requires compliance to another standard.</p> <p>R3 needs to be split into two requirements, one that focuses on implementing a local procedure simultaneously with the Interconnection-wide procedure and another that states specifically, "Each Reliability Coordinator shall follow the curtailments as directed by the Interconnection-wide procedure." This requirement should have a Medium Violation Risk factor and a real time operations time horizon. This would be similar to R4, but for curtailing transactions that are within an Interconnection.</p> <p>M3 – Need to have clarity on just what is considered a procedure in this case.</p>
<p><b>Response:</b> Regarding R5 and M5, the Drafting Team recognizes that this Requirement can be improved. However, in this initial scope of work, we do not intend to change the requirement, as our goal is more the separation of responsibility, rather than changes to the standard. We will include this within the "Phase III" scope of work.</p> <p>Regarding R3, the Drafting Team agrees that this requirement should be restructured, and will include this within the "Phase III" scope of work.</p> <p>Regarding M3, the measure applies to any local procedure used in lieu of implementing curtailments as required by the Interconnection-wide procedure (as described in R3).</p>			
Entergy	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
ERCOT	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
IESO	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
ISO/RTO Council	<input checked="" type="checkbox"/>	<input type="checkbox"/>	

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Question #6			
Commenter	Yes	No	Comment
MRO	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Prague Power	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
PSC South Carolina	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Southern Transm.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	We agree with the proposed measures for this standard
<b>Response:</b> <a href="#">The drafting team appreciates your confirmation.</a>			
TVA	<input checked="" type="checkbox"/>	<input type="checkbox"/>	

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7. Do you agree with the compliance elements in the proposed standard? If not, please explain your answer.

**Summary Consideration:** We will be providing compliance auditors with guidelines to assist in the evaluation of the application of the TLR procedure. We have reduced the severity of non-compliance with R4 to "Lower." We believe the other areas commented on are appropriate as drafted. TLR Level 6 is effectively a statement of notification that the RC is initiating control actions or emergency procedures to relieve an IROL or other critical violation. TLR Level 6 does not define the procedures; it only makes reference to them. As such, being in a TLR Level 6 alone is not sufficient; taking the control actions or invoking the emergency procedures as described in other standards is required. We will evaluate TLR Level 6 during the Phase III work.

Question #7			
Commenter	Yes	No	Comment
American Electric Power	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<p>The Violation Severity Levels do not make sense, especially those for the Eastern Interconnection. What is the rationale for the selection of 2-3 procedural violations being moderate and 4-5 being high and 6 or more being severe? For ERCOT and the Western Interconnection, not following just one procedural requirement is a severe violation. Also, for the east, is the SDT stating that all the requirements in Attachment 1 are of equal weight, hence the 2-3, and 4-5, etc. division? The SDT needs to review these one more time.</p> <p>For 2.3.2, this should be moved to the lower category and made 2.1.3 once R4 is cleaned up. The requirement it references, R4, is unclear. Each Interconnection has their own Interconnection-wide procedure. So when curtailing an Interchange Transaction that crosses an Interconnection boundary, which Interconnection-wide procedure are the initiating and responding RC to use, the one in the initiating RC's interconnection or the one in the responding RC's interconnection?</p> <p>2.4.4 should be restated as follows: While attempting to mitigate an existing IROL violation in the Eastern Interconnection, the Reliability Coordinator only applied TLR Levels 5 and lower as the sole remedy for an existing IROL violation. In the situation under 2.4.4, the appropriate action for the RC to take is to issue a TLR Level 6 - Emergency Procedures, which provides for the RC to redispatch generation, reconfigure transmission, or reduce load to mitigate the critical condition, which an IROL violation is. See 2.9 of Attachment 1 to IRO-006-4 for reference.</p>
<p><b>Response:</b> We recognize the concern with the way the Violation Severity Levels are handled for the individual procedures. Until such time as the compliance elements are further clarified in Phase III, compliance auditors will be provided a set of guidelines to utilize in determining procedural violations. However, they will be given discretion in determining the actual violation severity level, based on their review of the facts relevant to the audit. A draft version of the guidelines will be</p>			

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Question #7			
Commenter	Yes	No	Comment
<p>posted for industry review.</p> <p>2.3.2 - We will move this to the Lower category, and consider options for rewriting the requirement in Phase III. The intention of 2.3.2, and the associated R4, is to require that an RC in one interconnection, when asked to respond to a request for relief based on an Interconnection-wide procedure in another interconnection, must comply with that request in such a way that the requirements of the invoked Interconnection-wide procedure are honored. Note that INT-007 ensures that schedules are curtailed in a coordinated fashion, by requiring the Interchange Authority confirm schedules are balanced.</p> <p>TLR Level 6 is effectively a statement of notification that the RC is initiating control actions or emergency procedures to relieve an IROL or other critical violation. TLR Level 6 does not define the procedures; it only makes reference to them. As such, being in a TLR Level 6 alone is not sufficient; taking the control actions or invoking the emergency procedures as described in other standards is required. We will evaluate TLR Level 6 during the Phase III work.</p>			
Duke Energy	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<p>Violation Severity Levels 2.4.2 and 2.4.3 should be moved from Severe to High because these violations may not adversely affect the effectiveness of TLR in mitigating the congestion on the constrained facility.</p> <p>Section 2.1.2 – the RC has no compliance obligation</p>
<p><b>Response:</b> Regarding 2.4.2 and 2.4.3, we believe that these may impact the effectiveness of TLR in mitigating congestion.</p> <p>Regarding 2.4.2: If a party attempts to utilize a procedure to which they are not a party, there is a chance that they will be unable to actually implement the procedure. For example, assume A, B, and C have a joint redispatch procedure in place. X is not party to the procedure. If X experiences an IROL, and calls upon A, B, and C to redispatch, A, B, and C may refuse because X is not party to the agreement. As such, valuable time may be lost, and the risk of the IROL elevated. As such, we believe this to be a Severe violation.</p> <p>Regarding 2.4.3: If a party attempts to utilize a local procedure in lieu of the interconnection-wide procedure without ERO approval, then the industry at large has been given no opportunity to verify that the local procedure will achieve the stated goals of providing relief. Without this review, it is possible the party implementing the local procedure can be putting the Interconnection in jeopardy. As such, we believe this to be a Severe violation.</p> <p>Regarding 2.1.2, we note that INT-004 applies to Reliability Coordinators. We will be reviewing R5 and its associated measures and compliance in Phase III.</p>			
Entergy	<input checked="" type="checkbox"/>	<input type="checkbox"/>	

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Question #7			
Commenter	Yes	No	Comment
ERCOT	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<p>The Violation Severity Levels seemingly could be interpreted in more than one way. This should be clarified before approval. Do the numbers apply per event or to a total by month? Also, there appears to be no differentiation between minor and major infractions.</p> <p>The severity level of high for 2.3.2 seems to be too high and it should be a moderate level violation. It seems inconsistent that within an interconnection several requirements may be violated (2.2) but in an across interconnection situation only 1 violation is required to be a high severity. The TLR will only be applicable to one Interconnection as there are no AC connections between interconnections. Therefore it should be treated the same with regard to severity as if it did not cross the boundary.</p>
<p><b>Response:</b> We recognize the concern with the way the Violation Severity Levels are handled for the individual procedures. Until such time as the compliance elements are further clarified in Phase III, compliance auditors will be provided a set of guidelines to utilize in determining procedural violations. However, they will be given discretion in determining the actual violation severity level, based on their review of the facts relevant to the audit. A draft version of the guidelines will be posted for industry review.</p> <p>2.3.2 - We will move this to the Lower category, and consider options for rewriting the requirement in Phase III. The intention of 2.3.2, and the associated R4, is to require that an RC in one interconnection, when asked to respond to a request for relief based on an Interconnection-wide procedure in another interconnection, must comply with that request in such a way that the requirements of the invoked Interconnection-wide procedure are honored. Note that INT-007 ensures that schedules are curtailed in a coordinated fashion, by requiring the Interchange Authority confirm schedules are balanced.</p>			
IESO	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
ISO/RTO Council	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<p>One compliance element issue is that it is not clear how to interpret the number of interconnection wide violations by an RC for each TLR in the Eastern Interconnection (the Violation Severity Level is set by the number of violations). One way to interpret this is that for each TLR event, an RC may have multiple violations. The number of violations for that event establishes the Violation Severity Level for just that event. In this interpretation, the number of violations do not carry over from one event to another event. Another way to interpret this is the RC accumulates the number of violations for all events as it goes through the month until it reaches a total of 6 at which time it has a severe Violation Severity Level. It then resets for the same month such that future TLR violations could result in one or more violations. It is not clear which interpretation to apply. Another compliance element issue is that there is no distinction in the</p>

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<b>Question #7</b>			
<b>Commenter</b>	<b>Yes</b>	<b>No</b>	<b>Comment</b>
			consequences of the violations. This means a minor infraction of one requirement that has no impact on reliability will be treated on an equal basis as a major infraction of another requirement that does have an impact on reliability when determining the violation count to establish the Violation Severity Level.
<p><b>Response:</b> We recognize the concern with the way the Violation Severity Levels are handled for the individual procedures. Until such time as the compliance elements are further clarified in Phase III, compliance auditors will be provided a set of guidelines to utilize in determining procedural violations. However, they will be given discretion in determining the actual violation severity level, based on their review of the facts relevant to the audit. A draft version of the guidelines will be posted for industry review.</p>			
MRO	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Prague Power	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
PSC South Carolina	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Southern Transm.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	We agree with the proposed compliance elements reflected in this standard.
<p><b>Response:</b> The drafting team appreciates your confirmation.</p>			
TVA	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Needs more clarification to understand exact parameters
<p><b>Response:</b> We recognize the concern with the way the Violation Severity Levels are handled for the individual procedures. Until such time as the compliance elements are further clarified in Phase III, compliance auditors will be provided a set of guidelines to utilize in determining procedural violations. However, they will be given discretion in determining the actual violation severity level, based on their review of the facts relevant to the audit. A draft version of the guidelines will be posted for industry review.</p>			

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8. The drafting team is planning a joint NERC NAESB TLR operator’s manual for the TLR procedure. What would your organization like to see contained in a joint manual?

**Summary Consideration:** The drafting team thanks commenters for their suggestions. This shall serve as the sole response to all suggestions for the joint manual.

<b>Question #8</b>	
<b>Commenter</b>	<b>Comment</b>
American Electric Power	No comment.
Duke Energy	We would like to see at least two things: 1) All the requirements that pertain to TLRs from both the IRO standard and the NAESB business practice in one place, and a concise summary of how and when to call a TLR and how to respond to it (sort of an operator’s guide).
Entergy	We suggest the manual contain Attachment 1 with the appropriate NAESB requirements (standards) interleaved in the proper locations.
ERCOT	The Reliability Standard should flow as it currently does. The attachment (manual) should flow so that the TLR process is logical for both Business and Reliability organizations to follow. It is recommended that both NERC and NAESB versions of the standard contain the complete joint procedure. This is so that the industry always has the correct complete version. The current version of the approved Business and Reliability Standard should be referred to by the procedure. The attachment (manual) containing the TLR procedure should highlight the Reliability steps so that they are distinguishable from the Business steps.
IESO	Following the split of IRO-006, a joint NERC/NAESB TLR operator’s manual is required to allow system operator to have a one-stop shop for all the requirements - reliability and business practice, needed to implement an interconnection-wide TLR procedure.  The TLR operator’s manual, therefore, should contain all the information in the pre-split IRO-006, and be made available to all operating entities through NERC.
ISO/RTO Council	We agree. This is in line with the correct steps to accomplish what FERC requested of NERC and NAESB. A common manual is the correct way to go on this. The split should be an administrative measure only, so that it is handled as quickly as possible. This would allow the members to quickly start the next phase, which is to do away with the Urgent Action SPP waiver and to change the threshold.  The combined procedure (NERC-NAESB) should be made available to all areas through NERC. We expect that NERC and NAESB will work out a process where NAESB is OK with their standard being included in the NERC version. The joint NERC-NAESB process allows for this, so the end result needs to be a jointly published document.



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<b>Question #8</b>	
<b>Commenter</b>	<b>Comment</b>
	Also, the NERC-NAESB fees need to include some sort of funding for updates to the NERC IDC. A common document will facilitate coordination between functional entities using one guiding procedure."
MRO	Business practice procedures and NERC Reliability Standards.
Prague Power	A consistent flow of interwoven NERC and NAESB TLR requirements, clearly delineated (e.g. different fonts or shading) as to which organization is responsible for the development and maintenance of the respective requirements.
PSC South Carolina	N/A for Public Service Commission of South Carolina
Southern Transm.	The joint NERC NAESB TLR Operator's Manual should essentially provide the operator with the same information he/she has in the pre-split version of the standard. The drafting team should work to format the joint manual in a way that follows a logical order and is easily understandable. The manual should contain references to the latest version of the applicable NERC Standards and NAESB Business Practices. A question for the Drafting Team i- how will the joint manual be maintained and updated?
<b>Response:</b> We believe that the joint operator manual will be maintained and updated through a coordinated process between NERC and NAESB. As such, there will be coordination to ensure changes are not made without understanding their full impact.	
TVA	We would like to see one document that contains both the NERC requirements and NAESB Business Practices together. Would prefer this to be highlighted or different fonts for each so that it is easily distinguishable what sections belong to what group.

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9. Are you aware of any conflicts between the proposed standard and any regulatory function, rule/order, tariff, rate schedule, legislative requirement or agreement? If yes, please explain your answer.

**Summary Consideration:** No commenters found any conflicts.

Question #9			
Commenter	Yes	No	Comment
American Electric Power	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Duke Energy	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Entergy	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
ERCOT	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
IESO	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
ISO/RTO Council	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
MRO	<input type="checkbox"/>	<input type="checkbox"/>	
Prague Power	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
PSC South Carolina	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Southern Transm.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
TVA	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

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10. Do you have any concerns that would prevent you from voting to approve this draft standard? If yes, please explain your answer.

**Summary Consideration:** We have addressed many of the suggestions, and will address the remainder in other documents or future versions of the standard.

<b>Question #10</b>			
<b>Commenter</b>	<b>Yes</b>	<b>No</b>	<b>Comment</b>
American Electric Power	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Yes, see our comments to Q#7 and Q#11.
<b>Response:</b> Please see our responses in questions 7 and 11.			
Entergy	<input checked="" type="checkbox"/>	<input type="checkbox"/>	We would like the suggestions contained herein to be included in the draft standard. We may also wish to see other changes made, depending on suggestions by other commenters.
<b>Response:</b> Please see our responses to your comments.			
ERCOT	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Only the concerns expressed with regard to Question 7 regarding Violation Severity Levels
<b>Response:</b> Please see our response in question 7.			
IESO	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
ISO/RTO Council	<input checked="" type="checkbox"/>	<input type="checkbox"/>	See response to Question 7. This could possibly affect vote decisions.
<b>Response:</b> Please see our response in question 7.			
Prague Power	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
PSC South Carolina	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Southern Transm.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
TVA	<input checked="" type="checkbox"/>	<input type="checkbox"/>	We would like to see the conflict between Requirement 1 and Sections 1.1 and 1.2.1 of Attachment 1 resolved before we could approve this draft. ( see question 2)
<b>Response:</b> Please see our response in question 2.			

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11. Please provide any other comments you have (that you have not already provided in response to the above questions) regarding this draft standard.

**Summary Consideration:** The majority of the comments received are more appropriate to be addressed in the Phase III effort. We are correcting the numbering error, clarifying R3, and making R1.1 and Attachment 1 1.2 consistent.

<b>Question #11</b>	
<b>Commenter</b>	<b>Comment</b>
American Electric Power	<p>For the Standard, IRO-006-4:</p> <p>R1.1 - Delete the following: "TLR procedure alone is an inappropriate and ineffective tool to mitigate an IROL violation. Other acceptable and more effective procedures to mitigate actual IROL violations include: reconfiguration, redispatch, or load shedding." This is an incorrect statement. The Eastern Interconnection TLR procedure includes TLR Level 6 - Emergency Procedures, which provides for the RC to redispatch generation, reconfigure transmission, or reduce load to mitigate the critical condition, which an IROL violation is. See 2.9 of Attachment 1 to IRO-006-4 for reference. TLR Level 6 is an often forgotten element of the TLR procedure, but it does exist and is perfect for the situation sited.</p> <p>For Attachment 1:</p> <p>1.2 - Delete the following: "However, the TLR procedure is an inappropriate and ineffective tool as a sole means to mitigate existing IROL violations due to the time required to implement the procedure. Reconfiguration, redispatch, and load shedding are more timely and effective in mitigating existing IROL violations." This is an incorrect statement for the reason sited above in R1.1. It is interesting to note that in 1.3 of Attachment 1 acknowledges our position by stating that "Furthermore, if a Reliability Coordinator deems that a transmission loading condition could jeopardize Bulk Electric System reliability, the Reliability Coordinator shall have the authority to enter TLR Level 6 directly, and immediately direct the Balancing Authorities or Transmission Operators to take such actions as redispatching generation, or reconfiguring transmission, or reducing load to mitigate the critical condition until Interchange Transactions can be reduced utilizing the TLR Procedure or other methods to return the system to a secure state." As TLR Level 6 is part of the TLR procedures, and TLR Level 6 is for directing immediate reconfiguration, redispatch, or load shedding, then the TLR procedure is an effective tool to mitigate IROL violations.</p> <p>3.0 TLR Level 0 - This is numbered incorrectly. It is part of section 2, thus should be numbered 2.10, and 3.0.1 should be numbered 2.10.1.</p>

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<b>Commenter</b>	<b>Comment</b>
	<p>Under the heading Requirements on pg. 7, 4.1 to 4.5 were part of former section 7, Interchange Transaction Curtailments During TLR Level 3B. If these requirements are to stay, then this heading should be used again, and they should be numbered section 3. However, we question why these remain. All but 4.5 appear to be related to the business practice side of TLR, thus they should go to NAESB.</p> <p>Appendix A - This is very out of date. NERC has not used the term OSL violation for years. This chart needs to be updated to the present terminology, using IROL and SOL, not OSL and Security Limit Violation.</p>
	<p><b>Response:</b> Regarding R1.1 and Attachment 1 Section 1.2: This language was included as required by FERC Order 693, paragraph 964. TLR Level 6 is effectively a statement of notification that the RC is initiating control actions or emergency procedures to relieve an IROL or other critical violation. TLR Level 6 does not define the procedures; it only makes reference to them. As such, being in a TLR Level 6 alone is not sufficient; taking the control actions or invoking the emergency procedures as described in other standards is required. We will evaluate TLR Level 6 during the Phase III work.</p> <p>Regarding Attachment 1 Section 3.0: We agree and have corrected the numbering.</p> <p>Section 4.1 – 4.5 We will address this in the Phase III work.</p> <p>Regarding Attachment 1 Appendix A: We will update the diagram and terminology in Phase III as appropriate.</p>
Duke Energy	<p>We are concerned that there is a lack of clarity between R1, R1.1 and R3 regarding the use of local procedures in response to a SOL or IROL violation. R1 states that the RC can select a local procedure at its discretion, and R1.1 recognizes that an Interconnection-wide TLR procedure used alone is an inappropriate and ineffective tool. However R3 states that the RC must have prior approval from the ERO to use a local procedure as a substitute for curtailments directed by the Interconnection-wide procedure. However it is unclear how prior approval can be obtained since the local procedure will be case-specific to the problem that initiates the Interconnection-wide procedure. Further, depending upon the resolution of this issue, M3 will need to be restated.</p> <p>Also, in general the standard drafting team needs to carefully review cross-references to assure that the reliability and business practices split is correctly implemented.</p> <p>B. Requirements:</p> <ul style="list-style-type: none"> <li>• R1.1. - The statement “inappropriate and ineffective tool” need to be clarified. If the reason is</li> </ul>

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Commenter	Comment
	<p>that the IDC does not respond fast enough, then say so (similar to statement in Attachment 1 – 1.2.)</p> <p><b>Response:</b> Regarding R1, R1.1, and R3: R1 is intended to tell the Reliability Coordinator that they may relieve congestion through the use of local procedures or Interconnection-wide procedures. R1.1 is intended to state that TLR is not robust enough to address existing IROs, and that more aggressive action should be taken by the RC through local procedures. R3 is intended to address a slightly different situation; if an Interconnection-wide procedure calls for an RC to take action, the RC must obey the request <i>unless they have been pre-authorized to take alternative actions</i>. One example might be a local procedure that rather than curtailing 20 transactions by 5MW each instead curtails a single 100MW transaction. This is acceptable as a local procedure, but if an RC wishes to do this instead of following the curtailments dictated by the Interconnection-wide procedure, they must obtain ERO approval of the substitution procedure in advance of the procedure being utilized in this fashion. We have modified the language of R3 to clarify this.</p> <p>We agree, and will do our best to ensure this is the case.</p> <p>Regarding R1.1, we have made the language consistent to explain the shortcomings of the procedure with regard to existing IROs.</p>
Entergy	<p>There is a comment added to R1.1 reflecting the FERC Order 693 paragraph 964 regarding the use of tools other than TLR to mitigate an actual IROL. That statement, being in R1.1, seems to apply only to the Eastern Interconnection. Please add that note to the other two Interconnections, or move the note so it applies to all three Interconnections.</p> <p>Please better define the "Local" Procedure. Is it developed by the TOP? Is the curtailment of transactions allowed in "Local" Procedures? Is only transmission reconfiguration allowed? Is redispatch of designated network resources allowed in a "Local" Procedure? We realize that better defining "Local Procedure" may not be related to NERC/NAESB split. However, it is important to not use any "Local Procedure" without proper description and disclosure.</p> <p>M5 identifies specific INT standards, INT-001, INT-003, and INT-004. We suggest the references to specific INT standards be deleted. Some time in the future those specific standards may be retired and this standard would then need to be revised.</p>
	<p><b>Response:</b> Regarding R1.1, this is intended to apply only to TLR and the Eastern Interconnection, and the requirement so states.</p> <p>Regarding the definition of "local procedure," these procedures may be developed in many different ways (by the TOp, by the RRO, by stakeholders, etc...) and approved by many different organizations (by state regulators, by the RRO, by the ERO, by FERC, etc...). We believe the term "local procedure" applies to any procedure, regardless of source or approval body, that is not one of the three Interconnection-wide procedures described. Note that we are not requiring disclosure or description of</p>

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	<p>local procedures, except in the case where a local procedure is desired to be used in lieu of curtailments (as described in R3), in which case it must be shared as part of the pre-authorization by the ERO.</p> <p>Regarding M5, we agree with your comments, and will improve this language with the Phase III work.</p>
ERCOT	ERCOT does not use the TLR process. The Drafting Team should consider whether this standard should include a Regional Variance for a Region that does not use TLR, or for a single-Region Interconnection that does not use TLR. Or, does the Drafting Team believe that updating the wording of Requirement R1.3 would be sufficient?
<b>Response:</b> The Drafting Team believes the language in R1 and R1.3 allows ERCOT to not implement TLR.	
ISO/RTO Council	<p>We find IRO-006-4 a significant improvement over IRO-006-3, however we strongly support continued improvement of this standard. The following comments are intended for Phase III of the standard development.</p> <p>IRO-006-4: The roles of the RC (as initiator or responder) are unclear and should be clarified.</p> <p>IRO-006-4, Attachment 1: Should be reviewed to determine whether there is any portion that should become part of a standard. Attachment 1 largely is procedural in nature, but part(s) of it possibly should rewritten in the form of a standard.</p> <p>IRO-006-4, Attachment 1: Some of the assumptions made by IDC are fairly crude and can result in the inappropriate selection of interchange transactions to be curtailed.</p> <p>IRO-006-4, Attachment 1: Should either specify requirements for IDC, or require after-the-fact analysis of IDC results upon request to identify and quantify deficiencies, or both.</p>
<b>Response:</b> The drafting team will consider these items in the Phase III scope of work.	
MRO	<p>Complete and approve the Joint NERC/NASB operators manual in a expeditious manner.</p> <p>Regarding Requirement R1.1: The requirement needs to be rewritten somehow. It doesn't seem appropriate to me to to list TLR as the first procedure and then go on to say it is an inappropriate procedure and list other more appropriate procedures. The drafting team should just change the list of procedures if they want to specify them and list TLR as the last procedure in the list if that is what they are saying.</p> <p>One MRO member submitted the following comment regarding violation severity levels: I question whether 2.4.2, 2.4.3 or 2.4.4 should be severe violations. How many of these actually could lead to</p>

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	<p>system separation or collapse in and of themselves is not obvious to me. In addition I question the whole premise of how they are using this set of violation severity levels. They are all premised on a violation during one IROL incident. It seems to me that a violation of one step in a procedure to mitigate an IROL should not be what is considered, but a pattern of not following procedures or mitigation steps or IROL's not being mitigated in the 30 minutes allowed. Making one simple mistake in implementing a procedure in one IROL incident should not lead to sanctions.</p>
	<p><b>Response:</b> Regarding the Joint Operators manual, it is our intent to post this document prior to implementation of the standard.</p> <p>Regarding R1.1, the intent is not to state that TLR is an inappropriate tool for managing congestion; rather, it is intended to say that if the system is in an insecure state, better choices exist to address the problem than TLR. There is not intended to be any ranking of the choices based on the order in which they are presented.</p> <p>Regarding 2.4.2: If a party attempts to utilize a procedure to which they are not a party, there is a chance that they will be unable to actually implement the procedure. For example, assume A, B, and C have a joint redispatch procedure in place. X is not party to the procedure. If X experiences a IROL, and calls upon A, B, and C to redispatch, A, B, and C may refuse because X is not party too the agreement. As such, valuable time may be lost, and the risk of the IROL elevated. As such, we believe this to be a Severe violation.</p> <p>Regarding 2.4.3: If a party attempts to utilize a local procedure in lieu of the Interconnection-wide procedure without ERO approval, then the industry at large has been given no opportunity to verify that the local procedure will achieve the stated goals of providing relief. Without this review, it is possible the party implementing the local procedure can be putting the interconnection in jeopardy. As such, we believe this to be a Severe violation.</p> <p>Regarding 2.4.4: FERC has directed, and the standard explicitly states, that TLR should not be used in this manner, due to the amount of time required to implement TLR. As such, using TLR as the sole remedy for an existing IROL will result in the security of the Interconnection being placed in jeopardy. As such, we believe this to be a Severe violation.</p> <p>Regarding the concern with the "one step" causing a severe violation, we recognize the concern with the way the Violation Severity Levels are handled for the individual procedures. Until such time as the compliance elements are further clarified in Phase III, compliance auditors will be provided a set of guidelines to utilize in determining procedural violations. However, they will be given discretion in determining the actual violation severity level, based on their review of the facts relevant to the audit. A draft version of the guidelines will be posted for industry review.</p>
Prague Power	n/a
Southern Transm.	We have no further comment at this time. We appreciate the work of the TLR Drafting Team and our



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	opportunity to submit comments regarding the proposed standard.
<b>Response:</b> We appreciate your support.	

## A. Introduction

1. **Title:** Reliability Coordination — Transmission Loading Relief (TLR)
2. **Number:** IRO-006-34
- ~~3. **Purpose:** Regardless of the process it uses, the Reliability Coordinator must direct its Balancing Authorities and Transmission Operators to return the transmission system to within its Interconnection Reliability Operating Limits as soon as possible, but no longer than 30 minutes. The Reliability Coordinator needs to direct Balancing Authorities and Transmission Operators to execute actions such as reconfiguration, redispach, or load shedding until relief requested by the TLR process is achieved.~~
3. **Purpose:** The purpose of this standard is to provide Interconnection-wide transmission loading relief procedures that can be used a method to prevent and/or manage congestion on potential or actual System Operating Limit (SOL) and Interconnection Reliability Operating Limit (IROL) violations to maintain reliability of the Bulk Electric System (BES).
4. **Applicability:**
  - 4.1. Reliability Coordinators.
  - 4.2. Transmission Operators.
  - 4.3. Balancing Authorities.
- ~~5. **Proposed Effective Date:**  
E.2 effectiveFor each Interconnection: first day of first quarter after all applicable regulatory approvals (for entities in that Interconnection) have been received (or the Reliability Standards otherwise become effective in those jurisdictions if regulatory approval is not required.) Effective upon BOT adoption.~~
- ~~5. Changes to TLR 3b and 4 for IRO-006-2 to be announced.~~

## B. Requirements

~~R1. A Reliability Coordinator shall take appropriate actions in accordance with established policies, procedures, authority, and expectations to relieve transmission loading.~~

R1. A Reliability Coordinator experiencing a potential or actual SOL or IROL violation within its Reliability Coordinator Area shall, with its authority and at its discretion, select ~~from either one or more procedures to provide transmission loading relief. These procedures can be~~ a “local” (Regional, Interregional, ~~or subregional, interregional, or sub-regional~~) transmission loading relief procedure or ~~an~~ one of the following Interconnection-wide procedure-s: [Violation Risk Factor: Medium] [Time Horizon: Real-time Operations]

This requirement simply states; the RC has the authority to act, the RC should know at what limits he/she needs to act, the RC has pre-identified regional, interregional and sub-regional TLR procedures.

R1.1. The Interconnection-wide Transmission Loading Relief (TLR) procedure for use in the Eastern Interconnection ~~is~~ provided in Attachment 1-IRO-006-0.4. The TLR

Comment: see FERC Order 693 paragraph 964 regarding recommendation for using tools other than TLR to mitigate an actual IROL.

procedure alone is an inappropriate and ineffective tool to mitigate an IROL violation due to the time required to implement the procedure. Other acceptable and more effective procedures to mitigate actual IROL violations include: reconfiguration, redispatch, or load shedding.

**R1.2.** The ~~equivalent~~ Interconnection-wide transmission loading relief procedure for use in the Western Interconnection is ~~the “WSCC Unscheduled Flow Mitigation Plan, WECC-IRO-STD-006-0”~~ provided at: [ftp://www.nerc.com/pub/sys/all\\_updl/standards/rrs/IRO-STD-006-0\\_17Jan07.pdf](ftp://www.nerc.com/pub/sys/all_updl/standards/rrs/IRO-STD-006-0_17Jan07.pdf). ~~[http://www.wecc.biz/documents/library/UFAS/UFAS\\_mitigation\\_plan\\_rev\\_2001-clean\\_8-8-03.pdf](http://www.wecc.biz/documents/library/UFAS/UFAS_mitigation_plan_rev_2001-clean_8-8-03.pdf)~~.

Note: the URL has changed.

**R1.3.** The Interconnection-wide transmission loading relief procedure for use in ERCOT is provided as Section 7 of the ERCOT Protocols, posted at: [http://www.ercot.com/mktrules/protocols/library/2007/02/February\\_1,\\_2007\\_Protocols.pdf](http://www.ercot.com/mktrules/protocols/library/2007/02/February_1,_2007_Protocols.pdf) ~~current.html~~.

**R2.** The Reliability Coordinator ~~may~~shall only use local transmission loading relief or congestion management procedures, ~~provided to which~~ the Transmission Operator experiencing the potential or actual SOL or IROL violation is a party ~~to those procedures.~~ *[Violation Risk Factor: Low] [Time Horizon: Operations Planning]*

**R3.** ~~A Reliability Coordinator may implement a local transmission loading relief or congestion management procedure simultaneously with an Interconnection-wide procedure. However, the~~ Each Reliability Coordinator with a relief obligation from an Interconnection-wide procedure shall follow the curtailments as directed by the Interconnection-wide procedure. A Reliability Coordinator desiring to use a local procedure as a substitute for curtailments as directed by the Interconnection-wide procedure shall ~~have such use approved~~obtain prior approval of the local procedure by from the ~~NERC Operating Committee. ERO.~~ *[Violation Risk Factor: Low] [Time Horizon: Operations Planning]*

~~**R5.** When implemented, all Reliability Coordinators shall comply with the provisions of the Interconnection-wide procedure including, for example, action by Reliability Coordinators in other Interconnections to curtail an Interchange Transaction that crosses an Interconnection boundary.~~

**R4.** When Interconnection-wide procedures are implemented to curtail Interchange Transactions that cross an Interconnection boundary, each Reliability Coordinator shall comply with the provisions of the Interconnection-wide procedure. *[Violation Risk Factor: Medium] [Time Horizon: Real-time Operations]*

**R5.** During the implementation of relief procedures, and up to the point that emergency action is necessary, Reliability Coordinators and Balancing Authorities shall comply with applicable Interchange scheduling standards. *[Violation Risk Factor: Medium] [Time Horizon: Real-time Operations]*

Comment: R5 will be reviewed during Phase 3 of the TLR drafting team work. See white paper for explanation of the three phases of changes to this standard.

## C. Measures

- ~~M1. If required, an investigation will be conducted to determine whether appropriate actions were taken in accordance with established policies, procedures, authority, and expectations to relieve transmission loading, including notifying appropriate Reliability Coordinators and operating entities to curtail Interchange Transactions.~~
- M1. Each Reliability Coordinator shall be capable of providing evidence (such as logs) that demonstrate when Eastern Interconnection, WECC, or ERCOT Interconnection-wide transmission loading relief procedures are implemented, the implementation follows the respective established procedure as specified in this standard (R1, R1.1, R1.2 and R1.3).
- M2. Each Reliability Coordinator shall be capable of providing evidence (such as written documentation) that the Transmission Operator experiencing the potential or existing SOL or IROL violations is a party to the local transmission loading relief or congestion management procedures when these procedures have been implemented (R2).
- M3. Each Reliability Coordinator shall be capable of providing evidence (such as NERC meeting minutes) that the local procedure has received prior approval by the ERO when such procedure is used as a substitute for curtailment as directed by the Interconnection-wide procedure (R3).
- M4. Each Reliability Coordinator shall be capable of providing evidence (such as logs) that the responding Reliability Coordinator complied with the provisions of the Interconnection-wide procedure as requested by the initiating Reliability Coordinator when requested to curtail an Interchange Transaction that crosses an Interconnection boundary (R4).
- M5. Each Reliability Coordinator and Balancing Authority shall be capable of providing evidence (such as Interchange Transaction Tags, operator logs, voice recordings or transcripts of voice recordings, electronic communications, computer printouts) that they have complied with applicable Interchange scheduling standards INT-001, INT-003, and INT-004 during the implementation of relief procedures, up to the point emergency action is necessary (R5).

## D. Compliance

### 1. Compliance Monitoring Process

~~The Regional Reliability Organization or NERC may initiate an investigation if there is a complaint that an entity has not implemented relief procedures in accordance with these requirements.~~

The Regional Entity shall have responsibility for compliance monitoring.

#### 1.1. Compliance Monitoring Responsibility

~~Not specified.~~

Regional Entity.

#### 1.2. Compliance Monitoring Period and Reset Time Frame

Compliance Monitoring Period: One calendar year.

Reset Period: One ~~month without a violation~~ calendar month.

### 1.3. Data Retention

~~One~~ The Reliability Coordinator shall maintain dataevidence for eighteen months for M1, M4, and M5.

The Reliability Coordinator shall maintain dataevidence for the duration the Transmission Operator is party to the procedure in effect plus one calendar year thereafter for M2.

The Reliability Coordinator shall maintain dataevidence for the approved duration of the procedure in effect plus one calendar year thereafter for M3.

### 1.4. Additional Compliance Information

~~Not specified.~~

## ~~2. Levels of Non-Compliance~~

~~2.1. Level 1: N/A.~~

~~2.2. Level 2: N/A.~~

~~2.3. Level 3: N/A.~~

~~3. Level 4: The Reliability Coordinator did not implement loading relief procedures in accordance with the standard.~~

Each Reliability Coordinator, Transmission Operator, and Balancing Authority shall demonstrate compliance through self-certification submitted to its Compliance Monitor annually and reporting by exception. The Compliance Monitor may also use scheduled on-site reviews every three years, and investigations upon complaint, to assess performance.

Each Reliability Coordinator, Transmission Operator, and Balancing Authority shall have the following available for its Compliance Monitor to inspect during a scheduled, on-site review or within 5 days of a request as part of an investigation upon complaint:

1.4.1 Operations logs, voice recordings or transcripts of voice recordings or other documentation providing the evidence of its compliance to all the requirements for all Interconnection-wide TLR procedures that it has implemented during the review period.

1.4.2 TLR reports.

**2. Violation Severity Levels**

**2.1. Lower. There shall be a lower violation severity level if any of the following conditions exist:**

2.1.1 For each TLR in the Eastern Interconnection, the Reliability Coordinator violated one (1) requirement of the applicable Interconnection-wide procedure (R1)

2.1.2 The Reliability Coordinators or Balancing Authorities did not comply with applicable Interchange scheduling standards during the implementation of the relief procedures, up to the point emergency action is necessary (R5).

2.1.3 When requested to curtail an Interchange Transaction that crosses an Interconnection boundary utilizing an Interconnection-wide procedure, the responding Reliability Coordinator did not comply with the provisions of the Interconnection-wide procedure as requested by the initiating Reliability Coordinator (R4).

**2.2. Moderate. There shall be a moderate violation severity level if any of the following conditions exist:**

2.2.1 For each TLR in the Eastern Interconnection, the Reliability Coordinator violated two (2) to three (3) requirements of the applicable Interconnection-wide procedure (R1).

**2.3. High. There shall be a high violation severity level if any of the following conditions exist:**

2.3.1 For each TLR in the Eastern Interconnection, the applicable Reliability Coordinator violated four (4) to five (5) requirements of the applicable Interconnection-wide procedure (R1).

When requested to curtail an Interchange Transaction that crosses an Interconnection boundary utilizing an Interconnection-wide procedure, the responding Reliability Coordinator did not comply with the provisions of

~~the Interconnection-wide procedure as requested by the initiating Reliability Coordinator (R4).~~

**2.4. Severe. There shall be a severe violation severity level if any of the following conditions exist:**

- 2.4.1 For each TLR in the Eastern Interconnection, the Reliability Coordinator violated six (6) or more of the requirements of the applicable Interconnection-wide procedure (R1).
- 2.4.2 A Reliability Coordinator implemented local transmission loading relief or congestion management procedures to relieve congestion but the Transmission Operator experiencing the congestion was not a party to those procedures (R2).
- 2.4.3 A Reliability Coordinator implemented local transmission loading relief or congestion management procedures as a substitute for curtailment as directed by the Interconnection-wide procedure but the local procedure had not received prior approval by from the ERO (R3).
- 2.4.4 While attempting to mitigate an existing IROL violation in the Eastern Interconnection, the Reliability Coordinator applied TLR as the sole remedy for an existing IROL violation.
- 2.4.5 While attempting to mitigate an existing constraint in the Western Interconnection using the “WSCC Unscheduled Flow Mitigation Plan”, the Reliability Coordinator did not follow the procedure correctly.
- 2.4.6 While attempting to mitigate an existing constraint in ERCOT using Section 7 of the ERCOT Protocols, the Reliability Coordinator did not follow the procedure correctly.

## E. Regional Differences

1. PJM/MISO Enhanced Congestion Management (Curtailment/Reload/Reallocation) Waiver approved March 25, 2004. To be retired upon completion of the field test, and in the interim the Regional Difference will be contained in both the NERC and NAESB standards.

This section on Regional Differences is highlighted for transfer to NAESB following completion of the MISO/PJM/SPP field test as described in the white paper.

2. Southwest Power Pool (SPP) Regional Difference – Enhanced Congestion Management (Curtailment/Reload/Reallocation). The SPP regional difference, which is equivalent to the PJM/MISO waiver, shall apply within the SPP region as follows:

This regional difference impacts actions on behalf of those SPP Balancing Authorities that are participating in the SPP market. This regional difference does not impact those Balancing Authorities for which SPP will continue to act as the Reliability Coordinator but that are not participating in the SPP market.

SPP shall calculate the impacts of SPP market flow on all facilities included in SPP's Coordinated Flowgate List. SPP shall conduct sensitivity studies to determine which external flowgates (outside SPP's footprint) are significantly impacted by the market flows of SPP's control zones (currently the balancing areas that exist today in the IDC). SPP shall perform studies to determine which external flowgates SPP will monitor and help control. An external flowgate selected by one of the studies will be considered a Coordinated Flowgate (CF).

In its calculation, SPP shall consider market flow impacts as the impacts of energy dispatched by the SPP market and self-dispatched energy serving load in the market footprint, but not tagged. SPP shall use a method equivalent to the PJM/MISO Market Flow Calculation methodology identified in the PJM/MISO waiver. Impacts of tagged transactions representing delivery of energy not dispatched by the SPP market and energy dispatched by the market but delivered outside the footprint will not be included in market flow.

SPP shall separate the market flow impacts for current hour and next hour into their appropriate priorities and shall provide those market flow impacts to the IDC. The market flows will be represented in the IDC and made available for curtailment under the appropriate TLR Levels. The market flow impacts will not be represented by conventional interchange transaction tags.

The SPP method will impact the following sections of the TLR Procedure:

**Network and Native Load (NNL) Calculations** — The SPP regional difference modifies Attachment 1-IRO-006-1 Section 5 “Parallel Flow Calculation Procedure for Reallocating or Curtailing Firm Transmission Service” within the SPP region.

Section 5 of Attachment 1-IRO-006-1 requires that the “Per Generator Method without Counter Flow” methodology be utilized to calculate the portion of parallel flows on any Constrained Facility due to Network Integration (NI) transmission service and service to Native Load (NL) of each balancing authority.



SPP shall use a “Market Flow Calculation” methodology to calculate the portion of parallel flows on all facilities included in the RTO’s “Coordinated Flowgate List” due to NI service or service to NL of each balancing authority.

The Market Flow Calculation differs from the Per Generator Method in the following ways:

- 5.- The contribution from all market area generators will be taken into account.
- 6.- In the Per Generator Method, only generators having a GLDF greater than 5% are included in the calculation. Additionally, generators are included only when the sum of the maximum generating capacity at a bus is greater than 20 MW. The market flow calculations will use all positively impacting flows down to 0% with no threshold. Counter flows will not be included in the market flow calculation.
- 7.- The contribution of all market area generators is based on the present output level of each individual unit.
- 8.- The contribution of the market area load is based on the present demand at each individual bus.

By expanding on the Per Generator Method, the market flow calculation evolves into a methodology very similar to the “Per Generator Method” method, while providing increased Interchange Distribution Calculator (IDC) granularity. Counter flows are also calculated and tracked in order to account for and recognize that the either the positive market flows may be reduced or counter flows may be increased to provide appropriate relief on a flowgate.

These NNL values will be provided to the IDC to be included and represented with the calculated NNL values of other Balancing Authorities for the purposes of identifying and obtaining required NNL relief across a flowgate in congestion under a TLR Level 5A/5B.

**Pro Rata Curtailment of Non-Firm Market Flow Impacts** — The SPP regional difference modifies Attachment 1-IRO-006-1 Appendix B “Transaction Curtailment Formula” within the SPP region.

Appendix B “Transaction Curtailment Formula” details the formula used to apply a weighted impact to each non-firm tagged Interchange Transaction (Priorities 1 thru 6) for the purposes of Curtailment by the IDC. For the purpose of Curtailment, the non-firm market flow impacts (Priorities 2 and 6) submitted to the IDC by SPP should be curtailed pro-rata as is done for Interchange Transaction using firm transmission service. This is because several of the values needed to assign a weighted impact using the process listed in Appendix B will not be available:

- 6.- Distribution Factor (no tag to calculate this value from)
- 7.- Impact on Interface value (cannot be calculated without Distribution Factor)
- 8.- Impact Weighting Factor (cannot be calculated without Distribution Factor)
- 9.- Weighted Maximum Interface Reduction (cannot be calculated without Distribution Factor)

~~10.-~~ Interface Reduction (cannot be calculated without Distribution Factor)

~~11.-~~ Transaction Reduction (cannot be calculated without Distribution Factor)

While the non-firm market flow impacts submitted to the IDC are to be curtailed pro rata, the impacting non-firm tagged Interchange Transactions could still use the existing processes to assign the weighted impact value.

**Assignment of Sub-Priorities** — The SPP regional difference modifies Attachment 1-IRO-006-1 Appendix E “How the IDC Handles Reallocation”, Section E2 “Timing Requirements”, within the SPP region.

Under the header “IDC Calculations and Reporting” in Section E2 of Appendix E to Attachment 1-IRO-006-1, the following requirement exists: “In a TLR Level 3a the Interchange Transactions using Non-firm Transmission Service in a given priority will be further divided into four sub-priorities, based on current schedule, current active schedule (identified by the submittal of a tag ADJUST message), next-hour schedule, and tag status. Solely for the purpose of identifying which Interchange Transactions to be loaded under a TLR 3a, various MW levels of an Interchange Transaction may be in different sub-priorities. The sub-priorities are shown in the following table:

Priority	Purpose	Explanation and Conditions
S1	To allow a flowing Interchange Transaction to maintain or reduce its current MW amount in accordance with its energy profile.	The MW amount is the lowest between currently flowing MW amount and the next-hour schedule. The currently flowing MW amount is determined by the e-tag ENERGY PROFILE and ADJUST tables. If the calculated amount is negative, zero is used instead.
S2	To allow a flowing Interchange Transaction that has been curtailed or halted by TLR to reload to the lesser of its current-hour MW amount or next-hour schedule in accordance with its energy profile.	The Interchange Transaction MW amount used is determined through the e-tag ENERGY PROFILE and ADJUST tables. If the calculated amount is negative, zero is used instead.
S3	To allow a flowing Transaction to increase from its current-hour schedule to its next-hour schedule in accordance with its energy profile.	The MW amounts used in this sub-priority is determined by the e-tag ENERGY PROFILE table. If the calculated amount is negative, zero is used instead.
S4	To allow a Transaction that had never started and was submitted to the Tag Authority after the TLR (level 2 or higher) has been declared	The Transaction would not be allowed to start until all other Interchange Transactions submitted prior to the TLR with the same

	to begin flowing (i.e., the Interchange Transaction never had an active MW and was submitted to the IDC after the first TLR Action of the TLR Event had been declared.)	priority have been (re)loaded. The MW amount used is the sub-priority is the next-hour schedule determined by the e-tag ENERGY PROFILE table.
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SPP shall use a “Market Flow Calculation” methodology to calculate the amount of energy flowing across all facilities included in the RTO’s “Coordinated Flowgate List” that is associated with the operation of the SPP market. This energy is identified as “market flow.”

These market flow impacts for current hour and next hour will be separated into their appropriate priorities and provided to the IDC by SPP. The market flows will then be represented and made available for curtailment under the appropriate TLR Levels.

Even though these market flow impacts (separated into appropriate priorities) will not be represented by conventional “tags,” the impacts and their desired levels will still be provided to the IDC for current hour and next hour. Therefore, for the purposes of reallocation, a sub-priority (S1 thru S4) should be assigned to these market flow impacts by the NERC IDC as follows, using comparable logic as would be used if the impacts were in fact tagged transactions.

Priority	Purpose	Explanation and Conditions
S1	To allow existing market flow to maintain or reduce its current MW amount.	The currently flowing MW amount is the amount of market flow existing after the RTO has recognized the constraint for which TLR has been called. If the calculated amount is negative, zero is used instead.
S2	To allow market flow that has been curtailed or halted by TLR to reload to its desired amount for the current-hour.	This is the difference between the current hour unconstrained market flow and the current market flow. If the current-hour unconstrained market flow is not available, the IDC will use the most recent market flow since the TLR was first issued or, if not available, the market flow at the time the TLR was first issued.
S3	To allow a market flow to increase to its next-hour desired amount.	This is the difference between the next hour and current hour unconstrained market flow.

To be retired upon completion of the field test, and in the interim the Regional Difference will be contained in both the NERC and NAESB standards.

**F. Associated Documents**

**Version History**

Version	Date	Action	Change Tracking
0	April 1, 2005	Effective Date	New
0	August 8, 2005	Removed “Proposed” from Effective Date	Errata
1	August 8, 2005	Revised Attachment 1	Revision
<u>3</u>	<u>February 26, 2007</u>	<u>Revised Purpose and Attachment 1 related to NERC NAESB split of the TLR procedure</u>	<u>Revision</u>

**PLEASE NOTE: items designated for inclusion in the NAESB TLR business practice following completion of the standard revision were deleted. Please see the mapped document to see which items were move to NAESB and what future changes are expected.**

## **Attachment 1-IRO-006**

### **Transmission Loading Relief Procedure — Eastern Interconnection**

#### **Purpose**

This standard defines procedures for curtailment and reloading of Interchange Transactions to relieve overloads on transmission facilities modeled in the Interchange Distribution Calculator.

This standard defines procedures for curtailment and reloading of Interchange Transactions to relieve overloads on transmission facilities modeled in the Interchange Distribution Calculator. This process is defined in the requirements below, and is depicted in Appendix A. Examples of curtailment calculations using these procedures are contained in Appendix B.

The flexibility for ISOs and RTOs to use redispatch is contained explicitly in the NAESB business

#### **Applicability**

This standard only applies to the Eastern Interconnection.

### **1. Transmission Loading Relief (TLR) Procedure**

**1.1. Initiation only by Reliability Coordinator.** A Reliability Coordinator shall be the only entity authorized to initiate the TLR Procedure and shall do so at 1) the Reliability Coordinator's own request, or 2) upon the request of a Transmission Operator..

**1.1.1. Requesting relief on transmission facilities.** Any Transmission Operator may request from its Reliability Coordinator relief on the transmission facilities it operates. A Reliability Coordinator shall review these requests for relief and determine the appropriate relief actions.

**1.2. Mitigating transmission constraints SOL and IROL violations.** A Reliability Coordinator may utilize the TLR Procedure to mitigate potential or actual existing System Operating Limit (SOL) violations or to prevent or mitigate Interconnection Reliability Operating Limit (IROL) violations on any transmission facility modeled in the IDC. However, the TLR procedure is an inappropriate and ineffective tool as a sole means to mitigate existing IROL violations due to the time required to implement the procedure. Reconfiguration, redispatch, and load shedding are more timely and effective in mitigating existing IROL violations

**1.2.1. Requesting relief on tie facilities.** Any Transmission Operator who operates the tie facility shall be allowed to request relief from its Reliability Coordinator.

**1.2.1.1. Interchange Transaction priority on tie facilities.** The priority of the Interchange Transaction(s) to be curtailed shall

be determined by the Transmission Service reserved on the Transmission Service Provider's system who requested the relief.

**1.3. Order Sequencing of TLR Levels and taking emergency action.** The Reliability Coordinator shall not be required to follow the TLR Levels in their numerical order sequence (Section 2, "TLR Levels"). Furthermore, if a Reliability Coordinator deems that a transmission loading condition could jeopardize Bulk Electric System reliability, the Reliability Coordinator shall have the authority to enter TLR Level 6 directly, and immediately direct the Balancing Authorities or Transmission Operators to take such actions as redispatching generation, or reconfiguring transmission, or reducing load to mitigate the critical condition until Interchange Transactions can be reduced utilizing the TLR Procedure or other methods to return the system to a secure state.

**1.4. Notification of TLR Procedure implementation.** The Reliability Coordinator initiating the use of the TLR Procedure shall notify other Reliability Coordinators and Balancing Authorities and Transmission Operators, and must post the initiation and progress of the TLR event on the appropriate NERC web page(s).

This notification is automated in the Interchange Distribution Calculator (IDC) and populates a message on the NERC RCIS.

**1.4.1. Notifying other Reliability Coordinators.** The Reliability Coordinator initiating the TLR Procedure shall inform all other Reliability Coordinators via the Reliability Coordinator Information System (RCIS) that the TLR Procedure has been implemented.

**1.4.1.1. Actions expected.** The Reliability Coordinator initiating the TLR Procedure shall indicate the actions expected to be taken by other Reliability Coordinators.

**1.4.2. Notifying Transmission Operators and Balancing Authorities.** The Reliability Coordinator shall notify Transmission Operators and Balancing Authorities in its Reliability Area when entering and leaving any TLR level.

This notification is automated in the Interchange Distribution Calculator (IDC) and populates a message on the

**1.4.3. Notifying Sink Balancing Authorities.** The Reliability Coordinator for the sink Balancing Authority shall be responsible for directing the Sink Balancing Authority to curtail the Interchange Transactions as specified by the Reliability Coordinator implementing the TLR Procedure.

**1.4.3.1. Notification order.** Within a Transmission Service Priority level, the Sink Balancing Authorities whose Interchange

Transactions have the largest impact on the Constrained Facilities shall be notified first if practicable.

1.4.4. Updates. At least once each hour, or when conditions change, the Reliability Coordinator implementing the TLR Procedure shall update all other Reliability Coordinators (via the RCIS). Transmission Operators and Balancing Authorities who have had Interchange Transactions impacted by the TLR will be updated by their Reliability Coordinator.

1.5. Obligations. All Reliability Coordinators shall comply with the request of the Reliability Coordinator who initiated the TLR Procedure, unless the initiating Reliability Coordinator agrees otherwise.

1.5.1. Use of TLR Procedure with “local” procedures. A Reliability Coordinator shall be allowed to implement a local transmission loading relief or congestion management procedure simultaneously with an Interconnection-wide procedure. However, the Reliability Coordinator shall be obligated to follow the curtailments as directed by the Interconnection-wide procedure. If the Reliability Coordinator desires to use a local procedure as a substitute for Curtailments as directed by the Interconnection-wide procedure, it may do so only if such use is approved by the NERC Operating Committee.

1.6. Consideration of Interchange Transactions. The administration of the TLR Procedure shall be guided by information obtained from the IDC.

1.6.1. Interchange Transactions not in the IDC. Reliability Coordinators shall also treat known Interchange Transactions that may not appear in the IDC in accordance with the procedures in this document.

1.6.2. Transmission elements not in IDC. When a Reliability Coordinator is faced with an overload on a transmission element that is not modeled in the IDC, the Reliability Coordinator shall use the best information available to curtail Interchange Transactions in order to operate the system in a reliable manner. The Reliability Coordinator shall use its best efforts to ensure that Interchange Transactions with a Transfer Distribution Factor of less than the Curtailment Threshold on the transmission element not modeled in the IDC are not curtailed.

1.6.3. Questionable IDC results. Any Reliability Coordinator (or Transmission Operator through its Reliability Coordinator) who believes the curtailment list from the IDC for a particular TLR event is incorrect shall use its best efforts to communicate those adjustments necessary to bring the curtailment list into conformance with the principles of this Procedure to the initiating Reliability Coordinator. Causes of questionable IDC results may include:

- Missing Interchange Transactions that are known to contribute to the Constraint.
- Significant change in transmission system topology.

- TDF matrix error.

Impacts of questionable IDC results may include:

- Curtailement that would have no effect on, or aggravate the constraint.
- Curtailement that would initiate a constraint elsewhere.

If other Reliability Coordinators are involved in the TLR event, all impacted Reliability Coordinators shall be in agreement before any adjustments to the Curtailement list are made.

**1.6.4. Curtailement that would cause a constraint elsewhere.** A Reliability Coordinator shall be allowed to exempt an Interchange Transaction from Curtailement if that Reliability Coordinator is aware that the Interchange Transaction Curtailement directed by the IDC would cause a constraint to occur elsewhere. This exemption shall only be allowed after the Reliability Coordinator has consulted with the Reliability Coordinator who initiated the Curtailement.

**1.7 Redispach options.** The Reliability Coordinator shall ensure that Interchange Transactions that are linked to redispach options are protected from Curtailement in accordance with the redispach provisions.

**Reallocation.** The Reliability Coordinator shall consider for Reallocation any Transactions of higher priority that meet the approved tag submission deadline during a TLR Level 3A. The Reliability Coordinator shall consider for Reallocation any Transaction using Firm Transmission Service that has met the approved tag submission deadline during a TLR Level 5A. Note Reallocations for Dynamic Schedules are as follows: If an Interchange Transaction is identified as a Dynamic Schedule and the transmission service is considered firm according to the constrained path method, then it will not be held by the IDC during TLR level 4 or lower. Adjustments to Dynamic Schedules in accordance with INT-004 R5 will not be held under TLR level 4 or lower.

**IDC updates.** Any Interchange Transaction adjustments or curtailments that result from using this Procedure must be entered into the IDC.

**Logging.** The Reliability Coordinator shall complete the NERC Transmission Loading Relief Procedure Log whenever it invokes TLR Level 2 or above, and send a copy of the log via email to NERC within two business days of the TLR event for posting on the NERC website.

Creation and distribution of the TLR Procedure Log is now automated in the IDC.

**1.8 TLR Event Review.** The Reliability Coordinator shall report the TLR event to the NERC Market Committee and Operating Reliability Subcommittee in accordance with TLR review processes established by NERC as required.



**1.8.1 Providing information.** Transmission Operators and Balancing Authorities within the Reliability Coordinator’s Area, and all other Reliability Coordinators, including Transmission Operators and Balancing Authorities within their respective Reliability Areas, shall provide information, as requested by the initiating Reliability Coordinator, in accordance with TLR review processes established by NERC.

**1.8.2 Market Committee reviews.** The Market Committee may conduct reviews of certain TLR events based on the size and number of Interchange Transactions that are affected, the frequency that the TLR Procedure is called for a particular Constrained Facility, or other factors.

The Market Committee no longer exists and this requirement will be removed in Phase 3.

**1.8.3 Operating Reliability Subcommittee reviews.** The Operating Reliability Subcommittee shall conduct reviews to ensure proper implementation and for “lessons learned.”

## 2. Transmission Loading Relief (TLR) Levels

### Introduction

This section describes the various levels of the TLR Procedure. The description of each level begins with the circumstances that define the TLR Level, followed by the procedures to be followed.

The decision that a Reliability Coordinator makes in selecting a particular TLR Level often depends on the transmission loading condition and whether the Interchange Transaction is using Non-firm Point-to-Point Transmission Service or Firm Point-to-Point Transmission Service. There are further considerations that depend on whether the Constrained Facility is on or off the Contract Path. It is important to note that an Interchange Transaction using Firm Point-to-Point Transmission Service on all Contract Path links is considered a “firm” Interchange Transaction even if the Constrained Facility is off the Contract Path.

### 2.1. TLR Level 1 — Notify Reliability Coordinators of potential SOL or IROL Violations

2.1.1. The Reliability Coordinator shall use the following circumstances to establish the need for TLR Level 1:

- The transmission system is secure.
- The Reliability Coordinator foresees a transmission or generation contingency or other operating problem within its Reliability Area that could cause one or more transmission facilities to approach or exceed their SOL or IROL.

2.1.2. Notification procedures. The Reliability Coordinator shall notify all Reliability Coordinators via the Reliability Coordinator Information System (RCIS) as soon as the condition is foreseen. All affected Reliability Coordinators shall check to ensure that Interchange Transactions are posted in the IDC.

### 2.2. TLR Level 2 — Hold transfers at present level to prevent SOL or IROL Violations

2.2.1. The Reliability Coordinator shall use the following circumstances to establish the need for entering TLR Level 2:

- The transmission system is secure.
- One or more transmission facilities are expected to approach, or are approaching, or are at their SOL or IROL.

2.3 Holding procedures. The Reliability Coordinator shall be allowed to hold the implementation of any additional Interchange Transactions that are at or above the Curtailment Threshold. However, the Reliability Coordinator should allow additional Interchange Transactions that flow across the Constrained Facility if their flow reduces the loading on the Constrained Facility or has a Transfer Distribution Factor less than the

Curtailment Threshold. All Interchange Transactions using Firm Point-to-Point Transmission Service shall be allowed to start.

TLR Level 2 is a transient state, which requires a quick decision to proceed to higher TLR Levels (3 and above) to allow Interchange Transactions to be implemented according to their transmission reservation priority. The time for being in TLR Level 2 should be no more than 30 minutes, with the understanding that there may be circumstances where this time may be exceeded. If the time in TLR Level 2 exceeds 30 minutes, the Reliability Coordinator shall document this action on the TLR Log.

**TLR Level 3a — Reallocation of Transmission Service by curtailing Interchange Transactions using Non-firm Point-to-Point Transmission Service to allow Interchange Transactions using higher priority Transmission Service**

**2.3.1.** The Reliability Coordinator shall use the following circumstances to establish the need for entering TLR Level 3a:

- The transmission system is secure.
- One or more transmission facilities are expected to approach, or are approaching, or are at their SOL or IROL.
- Transactions using Non-firm Point-to-Point Transmission Service are flowing that are at or above the Curtailment Threshold on those facilities.
- The Transmission Provider has previously approved a higher priority Point-to-Point Transmission Service reservation over which a Transmission Customer wishes to begin an Interchange Transaction.

**2.3.2.** **Reallocation procedures to allow Interchange Transactions using higher priority Point-to-Point Transmission Service to start. The Reliability Coordinator with the constraint shall give preference to those Interchange Transactions using Firm Point-to-Point Transmission Service, followed by those using higher priority Non-firm Point-to-Point Transmission Service as specified in Section 3. “Interchange Transaction Curtailment Order.” Interchange Transactions that have been held or curtailed as prescribed in this Section shall be reallocated (reloaded) according to their Transmission Service priorities when operating conditions permit as specified in Section 6. “Interchange Transaction Reallocation During TLR Level 3a and 5a.”**

**2.3.2.1.** The Reliability Coordinator shall displace Interchange Transactions with lower priority Transmission Service using Interchange Transactions having higher priority Non-firm or Firm Transmission Service.

**2.3.2.2.** The Reliability Coordinator shall not curtail Interchange Transactions using Non-firm Transmission Service to allow the start or increase of another Interchange Transaction having the same priority Non-firm Transmission Service.

2.3.2.3. If there are insufficient Interchange Transactions using Non-firm Point-to-Point Transmission Service that can be curtailed to allow for Interchange Transactions using Firm Point-to-Point Transmission Service to begin, the Reliability Coordinator shall proceed to TLR Level 5a.

2.3.2.4. The Reliability Coordinator shall reload curtailed Interchange Transactions prior to allowing the start of new or increased Interchange Transactions.

2.3.2.4.1. Interchange Transactions whose tags were submitted prior to the TLR Level 2 or Level 3a being called, but were subsequently held from starting, are considered to have been curtailed and thus would be reloaded the same time as the curtailed Interchange Transactions.

2.3.2.5. The Reliability Coordinator shall fill available transmission capability by reloading or starting eligible Transactions on a pro-rata basis.

2.3.2.6. The Reliability Coordinator shall consider transactions whose tags meet the approved tag submission deadline for Reallocation for the upcoming hour. Tags submitted after this deadline shall be considered for Reallocation the following hour.

#### 2.4. TLR Level 3b — Curtail Interchange Transactions using Non-Firm Transmission Service Arrangements to mitigate a SOL or IROL Violation

2.4.1. The Reliability Coordinator shall use the following circumstances to establish the need for entering TLR Level 3b:

- One or more transmission facilities are operating above their SOL or IROL, or
- Such operation is imminent and it is expected that facilities will exceed their reliability limit unless corrective action is taken, or
- One or more Transmission Facilities will exceed their SOL or IROL upon the removal from service of a generating unit or another transmission facility.
- Transactions using Non-firm Point-to-Point Transmission Service are flowing that are at or above the Curtailment Threshold on those facilities.

2.5 Curtailment procedures to mitigate an SOL or IROL. The Reliability Coordinator shall curtail Interchange Transactions using Non-firm Point-to-Point Transmission Service that are at or above the Curtailment Threshold as specified in Section 3, “Interchange Transaction Curtailment Order” in the current hour to mitigate an SOL or IROL as well as reallocating, in accordance with Section 6 of this document, to a determined flow for the top of the next hour.

The Reliability Coordinator shall allow Interchange Transactions using Firm Point-to-Point Transmission Service to start if they are submitted to the IDC within specific time limits as explained in Section 7 “Interchange Transaction Curtailments during TLR Level 3b.”

#### **TLR Level 4 — Reconfigure Transmission**

**2.5.1.** The Reliability Coordinator shall use the following circumstances to establish the need for entering TLR Level 4:

- One or more Transmission Facilities are above their SOL or IROL, or
- Such operation is imminent and it is expected that facilities will exceed their reliability limit unless corrective action is taken.

**2.5.2. Holding new Interchange Transactions.** The Reliability Coordinator shall hold all new Interchange Transactions using Non-firm Point-to-Point Transmission Service that are at or above the Curtailment Threshold during the period of the SOL or IROL Violation. The Reliability Coordinator shall allow Interchange Transactions using Firm Point-to-Point Transmission Service to start if they are submitted to the IDC by 25 minutes past the hour or the time at which the TLR Level 4 is called, whichever is later. See Appendix E, Section E2 – Timing Requirements.

**2.5.3. Reconfiguration procedures.** The issuance of a TLR Level 4 shall result in the curtailment, in the current hour and the next hour, of all Interchange Transactions using Non-firm Point-to-Point Transmission Service that are at or above the Curtailment Threshold that impact the Constrained Facilities. If a SOL or IROL violation is imminent or occurring, the Reliability Coordinator(s) shall request that the affected Transmission Operators reconfigure transmission on their system, or arrange for reconfiguration on other transmission systems, to mitigate the constraint. Specific details are explained in Section 4, “Principles for Mitigating Constraints On and Off the Contract Path”.

#### **2.6. TLR Level 5a — Reallocation of Transmission Service by curtailing Interchange Transactions using Firm Point-to-Point Transmission Service on a pro rata basis to allow additional Interchange Transactions using Firm Point-to-Point Transmission Service**

**2.6.1.** The Reliability Coordinator shall use the following circumstances to establish the need for entering TLR Level 5a:

- The transmission system is secure.
- One or more transmission facilities are at their SOL or IROL.
- All Interchange Transactions using Non-firm Point-to-Point Transmission Service that are at or above the Curtailment Threshold have been curtailed.

- The Transmission Provider has been requested to begin an Interchange Transaction using previously arranged Firm Transmission Service that would result in a SOL or IROL violation.
- No further transmission reconfiguration is possible or effective.

**2.6.2. Reallocation procedures to allow new Interchange Transactions using Firm Point-to-Point Transmission Service to start.** The Reliability Coordinator shall use the following three-step process for Reallocation of Interchange Transactions using Firm Point-to-Point Transmission Service:

**2.6.2.1. Step 1 — Identify available redispatch options.** The Reliability Coordinator shall assist the Transmission Operator(s) in identifying those known redispatch options that are available to the Transmission Customer that will mitigate the loading on the Constrained Facilities. If such redispatch options are deemed insufficient to mitigate loading on the Constrained Facilities, the Reliability Coordinator shall proceed to implement these options while proceeding to Steps 2 and 3 below.

**2.6.2.2. Step 2 —** The Reliability Coordinator shall calculate the percent of the overload on the Constrained Facility caused by both Firm Point-to-Point Transmission Service (at or above the Curtailment Threshold) and the Transmission Provider’s Network Integration Transmission Service and Native Load, as required by the Transmission Provider’s filed tariff. This is described in Section 5, “Parallel Flow Calculation Procedure for Reallocating or Curtailing Firm Transmission Service.”

**2.6.2.3. Step 3 — Curtail Interchange Transactions using Firm Transmission Service.** The Reliability Coordinator shall curtail or reallocate on a pro-rata basis (based on the MW level of the MW total to all such Interchange Transactions), those Interchange Transactions as calculated in Section 7.2.2 over the Constrained Facilities. (See also Section 6, “Interchange Transaction Reallocation during TLR 3a and 5a.”) The Reliability Coordinator shall assist the Transmission Provider in curtailing Transmission Service to Network Integration Transmission Service customers and Native Load if such curtailments are required by the Transmission Provider’s tariff. Available redispatch options will continue to be implemented.

**2.7. TLR Level 5b — Curtail Interchange Transactions using Firm Point-to-Point Transmission Service to mitigate an SOL or IROL violation**

**2.7.1.** The Reliability Coordinator shall use following circumstances to establish the need for entering TLR Level 5b:

- One or more Transmission Facilities are operating above their SOL or IROL, or

- Such operation is imminent, or
- One or more Transmission Facilities will exceed their SOL or IROL upon the removal from service of a generating unit or another transmission facility.
- All Interchange Transactions using Non-firm Point-to-Point Transmission Service that are at or above the Curtailment Threshold have been curtailed.
- No further transmission reconfiguration is possible or effective.

**2.8. Curtailment of Interchange Transactions Using Firm Transmission Service**

**2.8.1. The Reliability Coordinator shall direct the curtailment of Interchange Transactions using Firm Transmission Service that are at or above the Curtailment Threshold for the following TLR Levels:**

**2.8.1.1. TLR Level 5a. Enable additional Interchange Transactions using Firm Point-to-Point Transmission Service to be implemented after all Interchange Transactions using Non-firm Point-to-Point Service have been curtailed, or**

**2.8.1.2. TLR Level 5b. Mitigate a SOL or IROL violation that remains after all Interchange Transactions using Non-firm Transmission Service has been curtailed under TLR Level 3b, and following attempts to reconfigure transmission under TLR Level 4.**

**2.8.2. The Reliability Coordinator shall use the following three-step process for curtailment of Interchange Transactions using Firm Point-to-Point Transmission Service:**

**2.8.2.1. Step 1 — Identify available redispatch options.** The Reliability Coordinator shall assist the Transmission Operator(s) in identifying those known redispatch options that are available to the Transmission Customer that will mitigate the loading on the Constrained Facilities. If such redispatch options are deemed insufficient to mitigate loading on the Constrained Facilities, the Reliability Coordinator shall proceed to implement these options while proceeding to Steps 2 and 3 below.

**2.8.2.2. Step 2 — The Reliability Coordinator shall calculate the percent of the overload on the Constrained Facility caused by both Firm Point-to-Point Transmission Service (at or above the Curtailment Threshold) and the Transmission Provider's Network Integration**

formerly NERC section 3.3

Transmission Service and Native Load, as required by the Transmission Provider’s filed tariff. This is described in Section 5, “Parallel Flow Calculation Procedure for Reallocating or Curtailing Firm Transmission Service.”

**2.8.2.3. Step 3 — Curtailment of Interchange Transactions using Firm Transmission Service.** At this point, the Reliability Coordinator shall begin the process of curtailing Interchange Transactions as calculated in Section 2.7.2.2 over the Constrained Facilities using Firm Point-to-Point Transmission Service until the SOL or IROL violation has been mitigated. The Reliability Coordinator shall assist the Transmission Provider in curtailing Transmission Service to Network Integration Transmission Service customers and Native Load if such curtailments are required by the Transmission Providers’ tariff. Available redispatch options will continue to be implemented.

## **2.9. TLR Level 6 — Emergency Procedures**

**2.9.1** The Reliability Coordinator shall use following circumstances to establish the need for entering TLR Level 6:

- One or more Transmission Facilities are above their SOL or IROL.
- One or more Transmission Facilities will exceed their SOL or IROL upon the removal from service of a generating unit or another transmission facility.

**2.9.2 Implementing emergency procedures.** If the Reliability Coordinator deems that transmission loading is critical to Bulk Electric System reliability, the Reliability Coordinator shall immediately direct the Balancing Authorities and Transmission Operators in its Reliability Area to redispatch generation, or reconfigure transmission, or reduce load to mitigate the critical condition until Interchange Transactions can be reduced utilizing the TLR Procedures or other procedures to return the system to a secure state. All Balancing Authorities and Transmission Operators shall comply with all requests from their Reliability Coordinator.

## **32.10 TLR Level 0 — TLR concluded**

**32.10.1 Interchange Transaction restoration and notification procedures.** The Reliability Coordinator initiating the TLR Procedure shall notify all Reliability Coordinators within the Interconnection via the RCIS when the SOL or IROL violations are mitigated and the system is in a reliable state, allowing Interchange Transactions to be reestablished at its discretion. Those with the highest transmission priorities shall be reestablished first if possible.



Requirements

- 34.1 The Reliability Coordinator shall be allowed to call a TLR 3b at any time to help mitigate a SOL or IROL violation.
- 34.2 The Reliability Coordinator shall Reallocate Interchange Transactions using Non-firm Point-to-Point Transmission for the next hour to maintain the desired flow using Reallocation in accordance with the following timing specification:
- 34.2.1 If issued prior to XX: 25, Non-firm Interchange Transactions will be curtailed to meet the desired current hour relief
- 4.2.1.1 At XX: 25 a Reallocation will be performed to maintain the desired flow at the top of the following hour
- 34.2.2 If issued after XX: 25, Non firm Interchange Transactions will be curtailed to meet the desired current hour relief and a Reallocation will be performed to maintain the target flow identified for the current hour.
- 34.2.3 Transactions must be in the IDC by the Approved-tag Submission Deadline for Reallocation.
- 34.3 The IDC shall issue ADJUST Lists to the Generation and Load Balancing Authority Areas and the Purchasing-Selling Entity who submitted the tag. The ADJUST List will include: (recommended to be moved to Attachment 2)
- 34.3.1 Interchange Transactions using Non-firm Point-to-Point Transmission Service that are to be curtailed or held during current and next hours. (recommended to be moved to Attachment 2)
- 34.3.2 Interchange Transactions using Firm Point-to-Point Transmission Service that were entered after XX:25 or issuance of TLR 3b (see Case 3 in Appendix F). (recommended to be moved to Attachment 2)
- 43.4 The Sink Balancing Authority shall send the ADJUST Lists back to the IDC as soon as possible to ensure the most accurate calculations for actions subsequent to the TLR 3b being called. (recommend to be moved to Attachment 2)
- 43.5 The Reliability Coordinator will no longer be required to call a TLR Level 3a as soon as the SOL or IROL violation that caused the TLR 3b to be called has been mitigated due to the inherent next hour Reallocation that takes place for the top of the next hour in the TLR Level 3b. (recommend to be moved to Attachment 2)

1

### 3. Interchange Transaction Curtailment Order for use in TLR Procedures

#### 3.1. Priority of Interchange Transactions

3.1.1. Interchange Transaction curtailment priority shall be determined by the Transmission Service reserved over the constrained facility(ies) as follows:

##### Transmission Service Priorities

Priority 0. Next-hour Market Service — NX\*

Priority 1. Service over secondary receipt and delivery points — NS

Priority 2. Non-Firm Point-to-Point Hourly Service — NH

Priority 3. Non-Firm Point-to-Point Daily Service — ND

Priority 4. Non-Firm Point-to-Point Weekly Service — NW

Priority 5. Non-Firm Point-to-Point Monthly Service — NM

Priority 6. Network Integration Transmission Service from sources not designated as network resources — NN

Priority 7. Firm Point-to-Point Transmission Service — F and Network Integration Transmission Service from Designated Resources — FN

3.1.2. The curtailment priority for Interchange Transactions that do not have a Transmission Service reservation over the constrained facility(ies) shall be defined by the lowest priority of the individual reserved transmission segments.

#### 3.2. Curtailment of Interchange Transactions Using Non-firm Transmission Service

3.2.1. The Reliability Coordinator shall direct the curtailment of Interchange Transactions using Non-firm Transmission Service that are at or above the Curtailment Threshold for the following TLR Levels:

3.2.1.1. TLR Level 3a. Enable Interchange Transactions using a higher Transmission reservation priority to be implemented, or

3.2.1.2. TLR Level 3b. Mitigate an SOL or IROL violation.

#### 3.3. Curtailment of Interchange Transactions Using Firm Transmission Service

3.3.1. The Reliability Coordinator shall direct the curtailment of Interchange Transactions using Firm Transmission Service that are at or above the Curtailment Threshold for the following TLR Levels:

3.3.1.1. TLR Level 5a. Enable additional Interchange Transactions using Firm Point-to-Point Transmission Service to be implemented after all Interchange Transactions using Non-firm Point-to-Point Service have been curtailed, or

3.3.1.2. TLR Level 5b. Mitigate a SOL or IROL violation that remains after all Interchange Transactions using Non-firm Transmission Service has been curtailed under TLR Level 3b, and following attempts to reconfigure transmission under TLR Level 4.

#### 4. Mitigating Constraints On and Off the Contract Path during TLR

##### Introduction

Reserving Transmission Service for an Interchange Transaction along a Contract Path may not reflect the actual distribution of the power flows over the transmission network from generation source to load sink. Interchange Transactions arranged over a Contract Path may, therefore, overload transmission elements on other electrically parallel paths.

The curtailment priority of an Interchange Transaction depends on whether the Constrained Facility is on or off the Contract Path as detailed below.

##### 4.1. Constraints ON the Contract Path

4.1.1. The Reliability Coordinator initiating TLR shall consider the entire Interchange Transaction non-firm if the transmission link (i.e., a segment on the Contract Path) on the Constrained Facility is Non-firm Point-to-Point Transmission Service, even if other links in the Contract Path are firm. When the Constrained Facility is on the Contract Path, the Interchange Transaction takes on the Transmission Service Priority of the Transmission Service link with the Constrained Facility regardless of the Transmission Service Priority on the other links along the Contract Path.

**Discussion.** The Transmission Operator simply has to call its Reliability Coordinator, request the TLR Procedure be initiated, and allow the curtailments of all Interchange Transactions that are at or above the Curtailment Threshold to progress until the relief is realized. Firm Point-to-Point Transmission Service links elsewhere in the Contract Path do not obligate Transmission Providers providing Non-firm Point-to-Point Transmission Service to treat the transaction as firm. For curtailment purposes, the Interchange Transaction's priority will be the priority of the Transmission Service link with the Constrained Facility. (See Requirement 4.1.2 below.)

4.1.2. The Reliability Coordinator initiating TLR shall consider the entire Interchange Transaction firm if the transmission link on the Constrained Facility is Firm Point-to-Point Transmission Service, even if other links in the Contract Path are non-firm.

**Discussion.** The curtailment priority of an Interchange Transaction on a Contract Path link is not affected by the Transmission Service Priorities arranged with other links on the Contract Path. If the Constrained Facility is on a Firm Point-to-Point Transmission Service Contract Path link, then the curtailment priority of the Interchange Transaction is considered firm regardless of the Transmission Service arrangements elsewhere on the Contract Path. If the Transmission Provider provides its services under the FERC pro forma tariff, it may also be obligated to offer its Transmission Customer alternate receipt and delivery points, thus allowing the customer to curtail its Transmission Service over the Constrained Facilities.

**4.2. Constraints OFF the Contract Path**

**4.2.1.** The Reliability Coordinator initiating TLR shall consider the entire Interchange Transaction non-firm if none of the transmission links on the Contract Path are on the Constrained Facility and if any of the transmission links on the Contract Path are Non-firm Point-to-Point Transmission Service; the Interchange Transaction shall take on the lowest Transmission Service Priority of all Transmission Service links along the Contract Path.

**Discussion.** An Interchange Transaction arranged over a Contract Path where one or more individual links consist of Non-firm Point-to-Point Transmission Service is considered to be a non-firm Interchange Transaction for Constrained Facilities off the Contract Path. Sufficient Interchange Transactions that are at or above the Curtailment Threshold will be curtailed before any Interchange Transactions using Firm Point-to-Point Transmission Service are curtailed. The priority level for curtailment purposes will be the lowest level of Transmission Service arranged for on the Contract Path.

**4.2.2.** The Reliability Coordinator initiating TLR shall consider the entire Interchange Transaction firm if all of the transmission links on the Contract Path are Firm Point-to-Point Transmission Service, even if none of the transmission links are on the Constrained Facility and shall not be curtailed to relieve a Constraint off the Contract Path until all non-firm Interchange Transactions that are at or above the Curtailment Threshold have been curtailed.

**Discussion.** If the entire Contract Path is Firm Point-to-Point Transmission Service, then the TLR procedure will treat the Interchange Transaction as firm, even for Constraints off the Contract Path, and will not curtail that Interchange Transaction until all non-firm Interchange Transactions that are at or above the Curtailment Threshold have been curtailed. However, Transmission Providers off the Contract Path are not obligated to reconfigure their transmission system or provide other congestion management procedures unless special arrangements are in place. Because the Interchange Transaction is considered firm everywhere, the Reliability Coordinator may attempt to arrange for Transmission Operators to reconfigure transmission or provide other congestion management options or Balancing Authorities to redispatch, even if they are off the Contract Path, to try to avoid curtailing the Interchange Transaction that is using the Firm Point-to-Point Transmission Service.

## 5. Parallel Flow Calculation Procedure for Reallocating or Curtailing Firm Transmission Service during TLR

### Introduction

The provision of Point-to-Point Transmission Service, Network Integration Transmission Service and service to Native Load results in parallel flows on the transmission network of other Transmission Operators. When a transmission facility becomes constrained curtailment of Interchange Transactions is required to allow Interchange Transactions of higher priority to be scheduled (Reallocation) or to provide transmission loading relief (Curtailment). An Interchange Transaction is considered for Reallocation or Curtailment if its Transfer Distribution Factor (TDF) exceeds the TLR Curtailment Threshold.

In compliance with the Transmission Service Provider tariffs, Interchange Transactions using Non-firm Point-to-Point Transmission Service are curtailed first (TLR Level 3a and 3b), followed by transmission reconfiguration (TLR Level 4), and then the curtailment of Interchange Transactions using Firm Point-to-Point Transmission Service, Network Integration Transmission Service and service to Native Load (TLR Level 5a and 5b). Curtailment of Firm Point-to-Point Transmission Service shall be accompanied by the comparable curtailment of Network Integration Transmission Service and service to Native Load to the degree that these three Transmission Services contribute to the Constraint.

### 5.1. Requirements

A methodology, called the Per Generator Method without Counter Flow, or simply the Per Generator Method, has been programmed into the IDC to calculate the portion of parallel flows on any Constrained Facility due to service to Native Load of each Balancing Authority. The following requirements are necessary to assure comparable Reallocation or Curtailment of firm Transmission Service:

- 5.1.1. The Reliability Coordinator initiating a curtailment shall identify for curtailment all firm Transmission Services (i.e. Point-to-Point, Network Integration and service to Native Load) that contribute to the flow on any Constrained Facility by an amount greater than or equal to the Curtailment Threshold on a pro rata basis.
- 5.1.2. For Firm Point-to-Point Transmission Services, the Transfer Distribution Factors must be greater than or equal to the Curtailment Threshold.
- 5.1.3. For Network Integration Transmission Service and service to Native Load, the Generator-To-Load Distribution Factors must be greater than or equal to the Curtailment Threshold.
- 5.1.4. The Per Generator Method shall assign the amount of Constrained Facility relief that must be achieved by each Balancing Authority's Network Integration Transmission Service or service to Native Load. It shall not specify how the reduction will be achieved.
- 5.1.5. All Balancing Authorities in the Eastern Interconnection shall be obligated to achieve the amount of Constrained Facility relief assigned to them by the Per Generator Method.

5.1.6. The implementation of the Per Generator Method shall be based on transmission and generation information that is readily available.

**5.2. Calculation Method**

The calculation of the flow on a Constrained Facility due to Network Integration Transmission Service or service to Native Load shall be based on the Generation Shift Factors (GSFs) of a Balancing Authority's assigned generation and the Load Shift Factors (LSFs) of its native load, relative to the system swing bus. The GSFs shall be calculated from a single bus location in the IDC. The IDC shall report all generators assigned to native load for which the GLDF is greater than or equal to the Curtailment Threshold.

## 6. Interchange Transaction Reallocation During TLR Levels 3a and 5a

### Introduction

This section provides the details for implementing TLR Levels 3a and 5a, both of which provide a means for Reallocation of Transmission Service.

TLR Level 3a accomplishes Reallocation by curtailing Interchange Transactions using Non-firm Point-to-Point Transmission Service to allow Interchange Transactions using higher priority Non-firm or Firm Point-to-Point Transmission Service to start. (See **Requirement 2.3, “TLR Level 3a.”**) When a TLR Level 3a is in effect, Reliability Coordinators shall reallocate Interchange Transactions according to the Transactions’ Transmission Service Priorities. Reallocation also includes the orderly reloading of Transactions by priority when conditions permit curtailed Transactions to be reinstated.

TLR Level 5a accomplishes Reallocation by curtailing Interchange Transactions using Firm Point-to-Point Transmission Service on a pro-rata basis to allow new Interchange Transactions using Firm Point-to-Point Transmission Service to begin, also on a pro-rata basis. (See **Requirement 2.6, “TLR Level 5a.”**)

### 6.1. Requirements

The basic requirements for Transaction Reallocation are as follows:

- 6.1.1. When identifying transactions for Reallocation the Reliability Coordinator shall normally only involve Curtailments of Interchange Transactions using Non-firm Point-to-Point Transmission Service during TLR 3a. However, Reallocation may be used during TLR 5a to allow the implementation of additional Interchange Transactions using Firm Transmission Service on a pro-rata basis.
- 6.1.2. When identifying transactions for Reallocation, the Reliability Coordinator shall only consider those Interchange Transactions at or above the Curtailment Threshold for which a TLR 2 or higher is called.
- 6.1.3. When identifying transactions for Reallocation, the Reliability Coordinator shall displace Interchange Transactions utilizing lower priority Transmission Service with Interchange Transactions utilizing higher Transmission Service Priority.
- 6.1.4. When identifying transactions for Reallocation, the Reliability Coordinator shall not curtail Interchange Transactions using Non-firm Transmission Service to allow the start or increase of another transaction having the same Non-Firm Transmission Service Priority (marginal “bucket”).
- 6.1.5. When identifying transactions for Reallocation, the Reliability Coordinator shall reload curtailed Interchange Transactions prior to starting new or increasing existing Interchange Transactions.



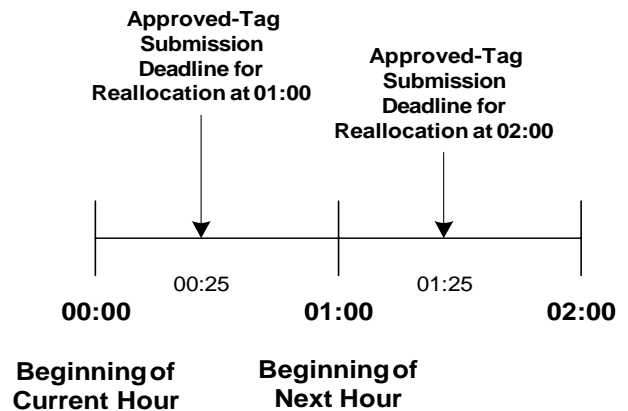
- 6.1.6. Interchange Transactions whose tags were submitted prior to the TLR 2 or 3a being called, but were subsequently held from starting because they failed to meet the approved tag submission deadline for Reallocation (see Section 6.2, “Communications and Timing Requirements”), shall be considered to have been curtailed and thus would be eligible for reload at the same time as the curtailed Interchange Transaction.
- 6.1.7. The Reliability Coordinator shall reload or start all eligible Transactions on a pro-rata basis.
- 6.1.8. Interchange Transactions whose tags meet the approved tag submission deadline for Reallocation (see Section 6.2, “Communications and Timing Requirements”) shall be considered for Reallocation for the upcoming hour. (However, Interchange Transactions using Firm Point-to-Point Transmission Service shall be allowed to start as scheduled.) Interchange Transactions whose tags are submitted to the IDC after the approved tag submission deadline for Reallocation shall be considered for Reallocation the following hour. This applies to Interchange Transactions using either Non-firm Point-to-Point Transmission Service or Firm Point-to-Point Transmission Service. If an Interchange Transaction using Firm Interchange Transaction is submitted after the approved tag submission deadline and after the TLR is declared, that Transaction shall be held and then allowed to start in the upcoming hour.

It should be noted that calling a TLR 3a does not necessarily mean that Interchange Transactions using Non-firm Transmission Service will always be curtailed the next hour. However, TLR Levels 3a and 5a trigger the approved tag submission deadline for Reallocation requirements and allow for a coordinated assessment of all Interchange Transactions tagged to start the upcoming hour.

**6.2. Communication and Timing Requirements**

The following timeline shall be utilized to support Reallocation decisions during TLR Levels 3a or 5a. See Figures 2 and 3 for a depiction of the Reallocation Time Line.

- 6.2.1. Time Convention. In this document, the beginning of the current hour shall be referenced as 00:00. The beginning of the next hour shall be referenced as 01:00. The end of the next hour shall be referenced as 02:00. See Figure 1.



**Figure 14 - Timeline showing Approved-tag Submission Deadline for Reallocation**

- 6.2.2. Approved tag submission deadline for Reallocation Reliability Coordinators shall consider all approved Tags for Interchange Transactions at or above the

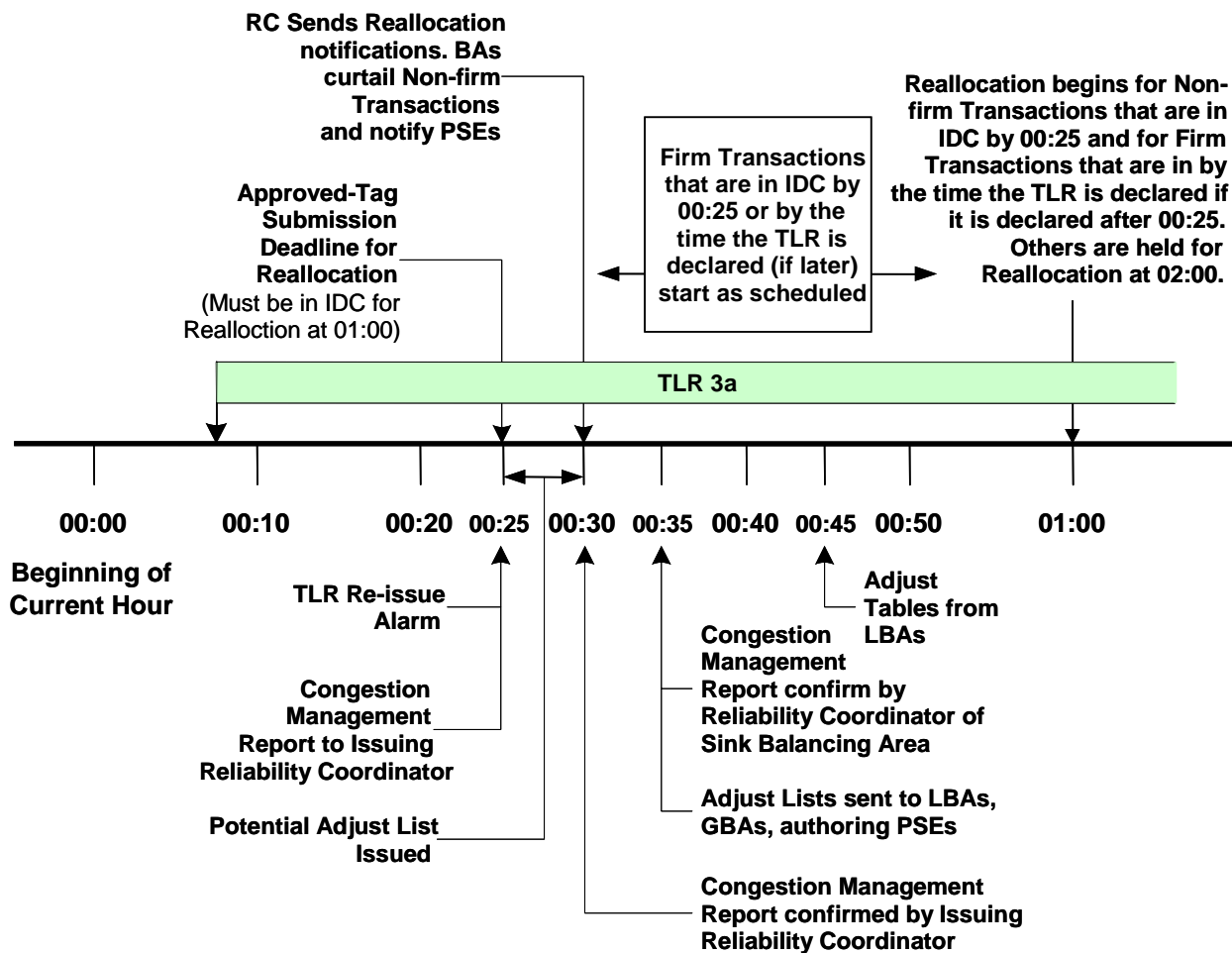
Curtailment Threshold that have been submitted to the IDC by 00:25 for Reallocation at 01:00. See Figure 1. However, Interchange Transactions using Firm Point-to-Point Transmission Service will be allowed to start as scheduled.

6.2.2.1. Reliability Coordinators shall consider all approved tags submitted to the IDC beyond these deadlines for Reallocation at 02:00 (for both Firm and Non-firm Point-to-Point Transmission Service). However, these Interchange Transactions will not be allowed to start or increase at 01:00.

6.2.2.2. The approved tag submission deadline for Reallocation shall cease to be in effect as soon as the TLR level is reduced to 1 or 0.

6.2.3. Off-hour Transactions. Interchange Transactions with a start time other than xx:00 shall be considered for Reallocation at xx+1:00. For example, an Interchange Transaction with a start time of 01:05 and whose Tag was submitted at 00:15 will be considered for Reallocation at 02:00.

6.2.4. Tag Evaluation Period. Balancing Authorities and Transmission Providers shall evaluate all tags submitted for Reallocation and shall communicate approval or rejection by 00:25.



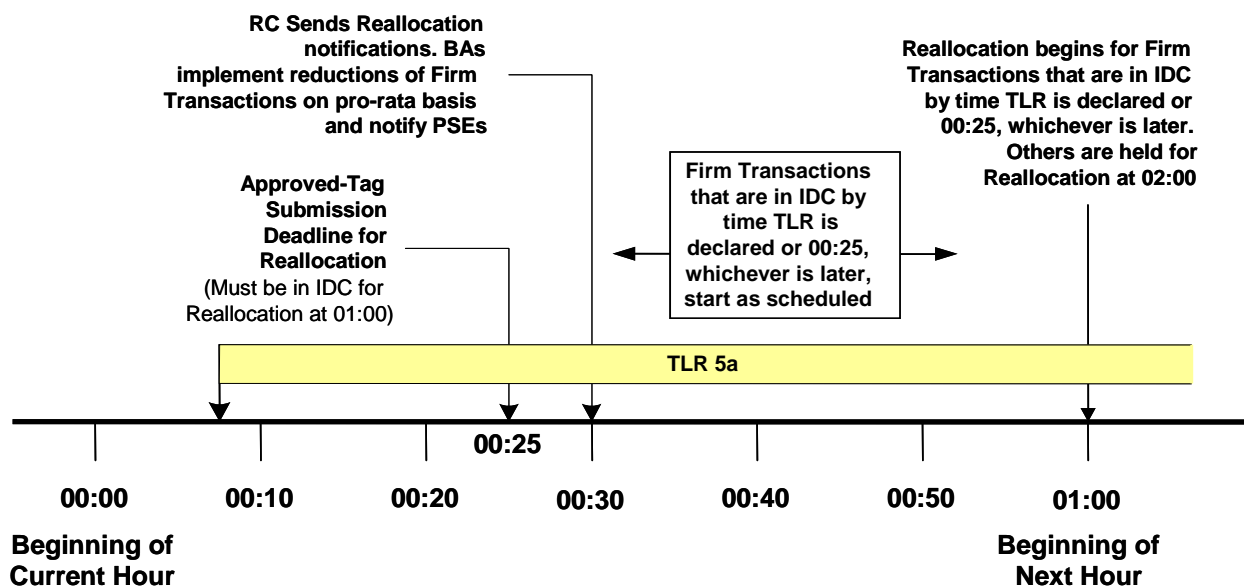
**Figure 2 — Reallocation Timing for TLR 3a Called at 00:08**

**6.2.5. Collective Scheduling Assessment Period.** At 00:25, the initiating Reliability Coordinator (the one who called and still has a TLR 3a or 5a in effect) shall run the IDC to obtain a three-part list of Interchange Transactions including their transaction status:

**6.2.5.1.** Interchange Transactions that may start, increase, or reload shall have a status of PROCEED, and

**6.2.5.2.** Interchange Transactions that must be curtailed or Interchange Transactions whose tags were submitted prior to the TLR 2 or higher being declared but were not permitted to start or increase shall have a status of CURTAILED, and

**6.2.5.3.** Interchange Transactions that are entered into the IDC after 00:25 shall have a status of HOLD and be considered for Reallocation at 02:00. Also, Interchange Transactions using Non-firm Point-to-Point Transmission Service submitted after TLR 2 or higher was declared (“post-tagged”) but have not been allowed to start shall retain the HOLD status until given permission to PROCEED or E-Tag expires. (Note: TLR Level 2 does not hold Interchange Transactions using Firm Point-to-Point Transmission Service).



**Figure 3 — Reallocation timing for TLR 5a called at 00:08.**

**6.2.5.4.** The initiating Reliability Coordinator shall communicate the list of Interchange Transactions to the appropriate sink Reliability Coordinators via the IDC, who shall in turn communicate the list to the Sink Balancing Authorities at 00:30 for appropriate actions to implement Interchange Transactions (CURTAIL, PROCEED or HOLD). The IDC will prompt the initiating Reliability Coordinator to input the necessary information

(i.e., maximum flowgate loading and curtailment requirement) into the IDC by 00:25.

6.2.5.5. Subsequent required reports before 01:00 shall allow the Reliability Coordinators to include those Interchange Transactions whose tags were submitted to the IDC after the Approved-Tag Submission Time for Reallocation and were given the HOLD status (not permitted to PROCEED). Transactions at or above the Curtailment Threshold that are not indicated as “PROCEED” on Reload/Reallocation Report shall not be permitted to start or increase the next hour.

**Discussion:** Note that TLR 2 does not initiate the approved tag submission deadline for Reallocation, but a TLR3a or 5a does. It is, however, important to recognize the time when a TLR 2 is called, where applicable, to determine the status of a held transaction – “CURTAILED” if tagged before the TLR was called but “HOLD” if tagged after the TLR was called.

6.2.5.6. In running the IDC, the Reliability Coordinator shall have an option to specify the maximum loading of the Constrained Facility by all Interchange Transactions using Point-to-Point Transmission Service.

**Discussion:** This allows the Reliability Coordinator to take into consideration SOLs or IROLs and changes in Transactions using other than Point-to-Point service taken under the Open Access Transmission Tariff. This option is needed to avoid loading the Constrained Facility to its limit with known Interchange Transactions while other factors push the facility into a SOL or IROL violation and hence triggering the declaration of a TLR 3b or 5b.

6.2.5.7. Notification of Interchange Transaction status shall be provided from the IDC to the Reliability Coordinators via an IDC Report. The Reliability Coordinators shall communicate this information to the Balancing Authorities and Transmission Operators.

Additional reporting and communications details on information posted from the IDC to the NERC TLR website are contained in Appendix E.

6.2.6. **Customer Preferences on Timing to Call TLR 3a or 5a.** Reliability Coordinators shall leave a TLR 2 and call a TLR 3a as soon as possible (but no later than 30 minutes) to initiate the Approved-Tag Submission Deadline and start reallocating Transactions. Nevertheless, recognizing the approved tag submission deadline for Reallocation, from a Transmission Customer perspective, it is preferable that the Reliability Coordinator call a TLR 3a within a certain time period to allow for tag preparation and submission. See Figure 4.

**Discussion:** A Reliability Coordinator calls a TLR 2 or 3a whenever it deems necessary to indicate that a transmission facility is approaching its SOL or IROL. It is envisioned, though not required, that a TLR 2 or 3a is preceded by a period of a TLR 1 declaration, hence Transmission Customers should normally have advance notice of a potential constraint. For example, a TLR 3a initiated during the period 01:00 to 01:25 would allow the Purchasing-Selling Entity to submit a Tag for entry into the IDC by the Approved-Tag Submission Deadline for

Reallocation at 02:00. See Figure 4. However, the preferred time period to declare a TLR 3a or 5a would be between 00:40 (when tags for Next Hour Market have been submitted) and 01:15. This will allow the Transmission Customers a range of 15 to 35 minutes to prepare and submit tags. (Note: In this situation, the Reliability Coordinator would need to reissue the TLR 3a at 01:00.)

It must be emphasized that the preferred time period is not a requirement, and should not in any way impede a Reliability Coordinator's ability to declare a TLR 3a, 3b, 4, 5a, or 5b whenever the need arises.

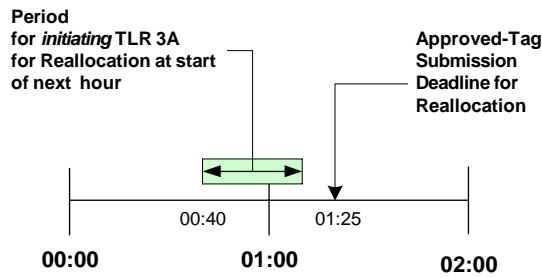


Figure 4. "Ideal" time for issuing TLR 3a for Reallocation at 02:00.

## 7. Interchange Transaction Curtailments During TLR Level 3b

### Introduction

This section provides the details for implementing TLR Level 3b, which curtails Interchange Transactions using Non-firm Point-to-Point Transmission Service to assist the Reliability Coordinator to recover from SOL or IROL violations.

TLR Level 3b curtails Interchange Transactions using Non-firm Point-to-Point Transmission Service that are at or above the Curtailment Threshold in the current hour while Reallocating to a determined flow for the top of the next hour (See Requirement 2.4, "TLR Level 3b.").

### Requirements

- 7.1. The Reliability Coordinator shall be allowed to call a TLR 3b at any time to help mitigate a SOL or IROL violation.
- 7.2. The Reliability Coordinator shall consider only those Interchange Transactions at or above the Curtailment Threshold for curtailment or holding.
- 7.3. The Reliability Coordinator shall curtail existing Interchange Transactions using Non-firm Point-to-Point Transmission Service as necessary to provide the required relief on the Constrained Facility for the current hour.
- 7.4. The Reliability Coordinator shall Reallocate Interchange Transactions using Non-firm Point-to-Point Transmission Service in accordance with Section 6 of this document for the next hour to maintain the desired flow using Reallocation in accordance with the following timing specification:
  - 7.4.1. If issued prior to XX: 25, Non-firm Interchange Transactions will be curtailed to meet the desired current hour relief

- 7.4.1.1. At XX: 25 a Reallocation will be performed to maintain the desired flow at the top of the following hour
- 7.4.2. If issued after XX: 25, Non firm Interchange Transactions will be curtailed to meet the desired current hour relief and a Reallocation will be performed to maintain the target flow identified for the current hour.
- 7.4.3. Transactions must be in the IDC by the Approved-tag Submission Deadline for Reallocation (see Requirement 6.2).
- 7.5. The Reliability Coordinator shall allow Interchange Transactions using Firm Point-to-Point Transmission Service to start as explained in Appendix F, “Considerations for Interchange Transactions using Firm Point-to-Point Transmission Service.”
- 7.6. The Reliability Coordinator shall progress to TLR Level 5b as necessary if there is still insufficient transmission capacity for Interchange Transactions using Firm Point-to-Point Transmission Service to start as scheduled after all Interchange Transactions using Non-firm Point-to-Point Transmission Service have been curtailed.
- 7.7. The IDC shall issue ADJUST Lists to the Generation and Load Balancing Authority Areas and the Purchasing-Selling Entity who submitted the tag. The ADJUST List will include:

  - 7.7.1. Interchange Transactions using Non-firm Point-to-Point Transmission Service that are to be curtailed or held during current and next hours.
  - 7.7.2. Interchange Transactions using Firm Point-to-Point Transmission Service that were entered after XX:25 or issuance of TLR 3b (see Case 3 in Appendix F).
- 7.8. The Sink Balancing Authority shall send the ADJUST Lists back to the IDC as soon as possible to ensure the most accurate calculations for actions subsequent to the TLR 3b being called.
- 7.9. The Reliability Coordinator will no longer be required to call a TLR Level 3a as soon as the SOL or IROL violation that caused the TLR 3b to be called has been mitigated due to the inherent next hour Reallocation that takes place for the top of the next hour in the TLR Level 3b.

Appendices for Transmission Loading Relief Standard

PLEASE NOTE: items designated for inclusion in the NAESB TLR business practice following completion of the standard revision were deleted from this version of the NERC standard. Please see the mapped document to see which requirements were moved to NAESB and what future changes are expected. Appendices B, D, G, and the sub-priority portions of E-2 have been moved to NAESB, The appendices below (A, C, E, F) will be renumbered in the final standard.

Appendix A. Transaction Management and Curtailment Process.

Appendix B. Transaction Curtailment Formula.

Appendix C. Sample NERC Transmission Loading Relief Procedure Log.

Appendix D. Examples for Parallel Flow Calculation Procedure for Reallocating or Curtailing Firm Transmission Service.

Appendix E. How the IDC Handles Reallocation.

Section E1: Summary of IDC Features that Support Transaction Reloading/Reallocation.

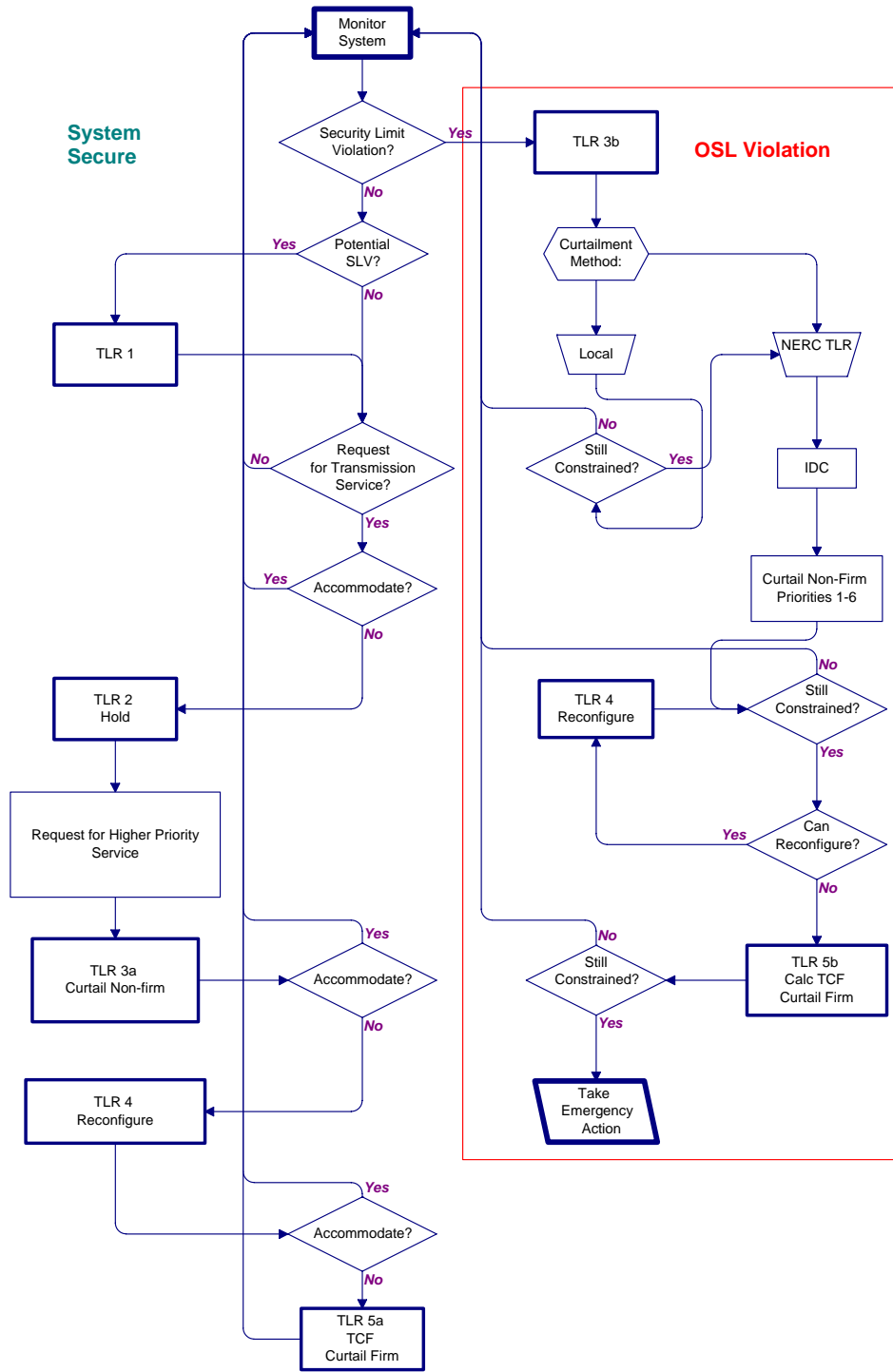
Section E2: Timing Requirements.

Appendix F. Considerations for Interchange Transactions using Firm Point-to-Point Transmission Service.

Appendix G. Examples of On-Path and Off-Path Mitigation.

**Appendix A. Transaction Management and Curtailment Process**

This flowchart depicts an overview of the Transaction Management and Curtailment process. Detailed decisions are not shown.





**Appendix B. Transaction Curtailment Formula**

**Example**

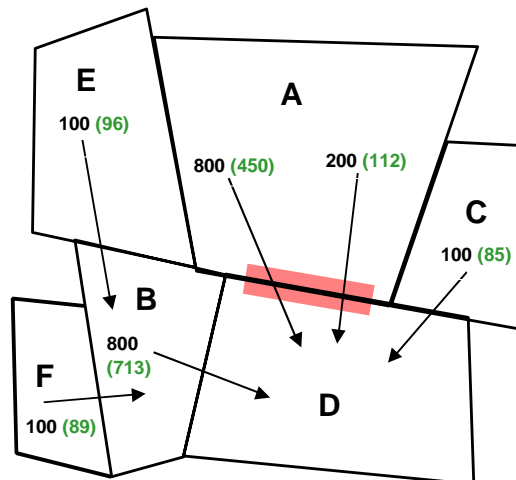
This example is based on the premise that a transaction should be curtailed in proportion to its Transfer Distribution Factor on the Constraints. Its effect on the interface is a combination of its size in MW and its effect based on its distribution factor.

<u>Column</u>	<u>Description</u>
<u>1. Initial Transaction</u>	<u>Interchange Transaction before the TLR Procedure is implemented.</u>
<u>2. Distribution Factor</u>	<u>Proportional effect of the Transaction over the constrained interface due to the physical arrangement and impedance of the transmission system.</u>
<u>3. Impact on the Interface</u>	<u>Result of multiplying the Transaction MW by the distribution factor. This yields the MW that flow through the constrained interface from the Transaction. Performing this calculation for each Transaction yields the total flow through the constrained interface from all the Interchange Transactions. In this case, 760 MW.</u>
<u>4. Impact Weighting Factor</u>	<u>“Normalization” of the total of the Distribution Factors in Column 2. Calculated by dividing the Distribution Factor for each Transaction by the total of the Distribution Factors.</u>
<u>5. Weighted Maximum Interface Reduction</u>	<u>Multiplying the Impact on the Interface from each Transaction by its Impact Weighting Factor yields a new proportion that is a combination of the MW Impact on the Interface and the Distribution Factor.</u>
<u>6. Interface Reduction</u>	<u>Multiplying the amount needed to reduce the flow over the constrained interface (280 MW) by the normalization of the Weighted Maximum Interface Reduction yields the actual MW reduction that each Transaction must contribute to achieve the total reduction.</u>
<u>7. Transaction Reduction</u>	<u>Now divide by the Distribution Factor to see how much the Transaction must be reduced to yield the result calculated in Column 7. Note that the reductions for the first two Interchange Transactions (A-D (1) and A-D (2) are in proportion to their size since their distribution factors are equal.</u>
<u>8. New Transaction Amount</u>	<u>Subtracting the Transaction Reduction from the Initial Transaction yields the New Transaction Amount.</u>
<u>9. Adjusted Impact on Interface</u>	<u>A check to ensure the new constrained interface MW flow has been reduced to the target amount.</u>



**Standard IRO-006-34 — Reliability Coordination — Transmission Loading Relief**

Allocation based on Weighted Impact									
Transaction ID	1 Initial Transaction	2 Distribution Factor	3 (1)*(2) Impact On Interface	4 (2)/(2TOT) Impact weighting factor	5 (3)*(4) Weighted Max Interface Reduction	6 (5)*(Relief Requested)/(5 Tot) Interface Reduction	7 (6)/(2) Transaction Reduction	8 (1)-(7) New Transaction Amount	9 (8)*(2) Adjusted Impact On Interface
<b>Example 1</b>									
A-D(1)	800	0.6	480	0.34	164.57	209.73	349.54	450.46	270.27
A-D(2)	200	0.6	120	0.34	41.14	52.43	87.39	112.61	67.57
B-D	800	0.15	120	0.09	10.29	13.11	87.39	712.61	106.89
C-D	100	0.2	20	0.11	2.29	2.91	14.56	85.44	17.09
E-B	100	0.05	5	0.03	0.14	0.18	3.64	96.36	4.82
F-B	100	0.15	15	0.09	1.29	1.64	10.92	89.08	13.36
	<b>2100</b>	<b>1.75</b>	<b>760</b>		<b>219.71</b>	<b>280.00</b>	<b>553.45</b>	<b>1546.55</b>	<b>480.00</b>
<b>Example 2</b>									
A-D(1)	1000	0.6	600	0.52	313.04	262.16	436.93	563.07	337.84
B-D	800	0.15	120	0.13	15.65	13.11	87.39	712.61	106.89
C-D	100	0.2	20	0.17	3.48	2.91	14.56	85.44	17.09
E-B	100	0.05	5	0.04	0.22	0.18	3.64	96.36	4.82
F-B	100	0.15	15	0.13	1.96	1.64	10.92	89.08	13.36
	<b>2100</b>	<b>1.15</b>	<b>760</b>		<b>334.35</b>	<b>280.00</b>	<b>553.45</b>	<b>1546.55</b>	<b>480.00</b>
<b>Example 3</b>									
A-D(1A)	200	0.6	120	0.17	20.28	52.43	87.39	112.61	67.57
A-D(1B)	200	0.6	120	0.17	20.28	52.43	87.39	112.61	67.57
A-D(1C)	200	0.6	120	0.17	20.28	52.43	87.39	112.61	67.57
A-D(1D)	200	0.6	120	0.17	20.28	52.43	87.39	112.61	67.57
A-D(2)	200	0.6	120	0.17	20.28	52.43	87.39	112.61	67.57
B-D	800	0.15	120	0.04	5.07	13.11	87.39	712.61	106.89
C-D	100	0.2	20	0.06	1.13	2.91	14.56	85.44	17.09
E-B	100	0.05	5	0.01	0.07	0.18	3.64	96.36	4.82
F-B	100	0.15	15	0.04	0.63	1.64	10.92	89.08	13.36
	<b>2100</b>	<b>3.55</b>	<b>760</b>		<b>108.31</b>	<b>280.00</b>	<b>553.45</b>	<b>1546.55</b>	<b>480.00</b>



**Board of Trustees Adoption: August 2, 2006 Draft 2: July 20, 2007**  
**Proposed Effective Date: E.2. effective upon effective Upon BOT adoption;**  
**Effective date for other changes to be announced.**

**Appendix C. Sample NERC Transmission Loading Relief Procedure Log**

SAVE FILE DIRECTORY:

**NERC TRANSMISSION LOADING RELIEF (TLR) PROCEDURE LOG**

FILE SAVED AS: .XLS

INCIDENT:	DATE:	IMPACTED RELIABILITY COORDINATOR:	ID NO.:
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**INITIAL CONDITIONS**

Limiting Flowgate (LIMIT):	Rating:	Contingent Flowgate (CONT.):	ODF:
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TLR Levels	Priorities
0: TLR Incident Canceled	NX Next Hour Market Service
1. Notify Reliability Coordinators of potential problems.	NS Service over secondary receipt and delivery points
2: Halt additional transactions that contribute to the overload	NH Hourly Service
3a and 3b: Curtail transactions using Non-firm Transmission Service	ND Daily Service
4. Reconfigure to continue firm transactions if needed.	NW Weekly Service
5a and 5b: Curtail Transactions using Firm Transmission Service.	NM Monthly Service
6: Implement emergency procedures.	NN Non-firm imports for native load and network customers from non-designated network resources
	F Firm Service

**TLR ACTIONS**

LEVEL	TIME	Priority	TLR 3,4 No. TX Curtail	TLR 3,5 MW Curtail	MW Flow			COMMENTS ABOUT ACTIONS
					Limiting Element Present	Cont. Element Post Cont.	Present	

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**Appendix D. Examples for Parallel Flow Calculation Procedure  
for Reallocating or Curtailing Firm Transmission Service**

The NERC “**Parallel Flow Calculation Procedure Reference Document**” provides additional information about the criteria used to include generators in the IDC calculation process.

**Example of Results of Calculation Method**

An example of the output of the IDC calculation of curtailment of firm Transmission Service is provided below for the specific Constrained Facility identified in the *Book of Flowgates* as Flowgate 1368. In this example, a total Firm Point-to-Point contribution to the Constrained Facility, as calculated by the IDC, is assumed to be 21.8 MW.

The table below presents a summary of each Balancing Authority’s responsibility to provide relief to the Constrained Facility due to its Network Integration Transmission Service and service to Native Load contribution to the Constrained Facility. In this example, Balancing Authority LAGN would be requested to curtail 17.3 MW of its total of 401.1 MW of flow contribution on the Constrained Facility. See the “**Parallel Flow Calculation Procedure Reference Document**” for additional details regarding the information illustrated in the table (e. g. Scaled P Max and Flowgate NNative Load MW).

In summary, Interchange transactions would be curtailed by a total of 21.8 MW and Network Integration Transmission Service and service to Native Load would be curtailed by a total of 178.2 MW by the five Balancing Authorities identified in the table. These curtailments would provide a total of 200.0 MW of relief to the Constrained Facility.

<u>Sink Reliability Coordinator</u>	<u>Service Point</u>	<u>Scaled P Max</u>	<u>Flowgate NNative Load MW</u>	<u>Current NNative Load Relief</u>	<u>NNative Load Responsibility</u>		<u>NNative Load Responsibility Acknowledgement</u>	
					<u>Inc/Dec</u>	<u>Current Hr</u>	<u>Acknowledge Time</u>	<u>Total MW Resp.</u>
<u>EES</u>	<u>EES</u>	<u>8429.7</u>	<u>2991.4</u>	<u>0.0</u>	<u>128.9</u>	<u>128.9</u>	<u>13:44</u>	<u>128.9</u>
<u>EES</u>	<u>LAGN</u>	<u>1514.0</u>	<u>718.6</u>	<u>0.0</u>	<u>31.0</u>	<u>31.0</u>	<u>13:44</u>	<u>31.0</u>
<u>SOCO</u>	<u>SOCO</u>	<u>5089.2</u>	<u>401.1</u>	<u>0.0</u>	<u>17.3</u>	<u>17.3</u>	<u>13:44</u>	<u>17.3</u>
<u>SWPP</u>	<u>CLEC</u>	<u>235.7</u>	<u>18.0</u>	<u>0.0</u>	<u>0.8</u>	<u>0.8</u>	<u>13:42</u>	<u>0.8</u>
<u>SWPP</u>	<u>LEPA</u>	<u>22.8</u>	<u>4.1</u>	<u>0.0</u>	<u>0.2</u>	<u>0.2</u>	<u>13:42</u>	<u>0.2</u>
<b><u>Total</u></b>				<b><u>0.0</u></b>				

### Appendix E. How the IDC Handles Reallocation

The IDC algorithms reflect the Reallocation and reloading principles in this Appendix, as well as the reporting requirements, and status display. The IDC will obtain the Tag Submittal Time from the Tag Authority and post the Reloading/Reallocation information to the NERC TLR website.

A summary of IDC features that support the Reallocation process is provided in Attachment E1. Details on the interface and display features are provided in Attachment E2. Refer to Version 1.7.095 NERC Transaction Information Systems Working Group (TISWG) *Electronic Tagging Functional Specification* for details about the E-Tag system.

#### E1. Summary of IDC Features that Support Transaction Reloading/Reallocation

The following is a summary of IDC features and E-Tag interface that support Reloading/Reallocation:

##### Information posted from IDC to NERC TLR website.

1. Restricted directions (all source/sink combinations that impact a Constrained Facility(ies) with TLR 2 or higher) will be posted to the NERC TLR website and updated as necessary.
2. TLR Constrained Facility status and Transfer Distribution Factors will continue to be posted to NERC TLR website.
3. Lowest priority of Interchange Transactions (marginal “bucket”) to be Reloaded/Reallocated next-hour on each TLR Constrained Facility will be posted on NERC TLR website. This will provide an indication to the market of priority of Interchange Transactions that may be Reloaded/Reallocated the following hours.

##### IDC Logic, IDC Report, and Timing

1. The Reliability Coordinator will run the IDC the Reloading/Reallocation report at approximately 00:26. The IDC will prompt the Reliability Coordinator to enter a maximum loading value. The IDC will alarm if the Reliability Coordinator does not enter this value and issue a report by 00:30 or change from TLR 3a Level. The Report will be distributed to Balancing Authorities and Transmission Operators at 00:30. This process repeats every hour as long as the approved tag submission deadline for Reallocation is in effect (or until the TLR level is reduced to 1 or 0).
2. For Interchange Transactions in the restricted directions, tags must be submitted to the IDC by the approved tag submission deadline for Reallocation to be considered for Reallocation next-hour. The time stamp by the Tag Authority is regarded the official tag submission time.
3. Tags submitted to IDC after the approved tag submission deadline for Reallocation will not be allowed to start or increase but will be considered for Reallocation the next hour.
4. Interchange Transactions in restricted directions that are not indicated as “PROCEED” on the Reload/Reallocation Report will not be permitted to start or increase next hour.

##### Reloading/Reallocation Transaction Status

Reloading/Reallocation status will be determined by the IDC for all Interchange Transactions. The Reloading/Reallocation status of each Interchange Transaction will be listed on IDC reports and NERC TLR website as appropriate. An Interchange Transaction is considered to be in a restricted direction if it

is at or above the Curtailment Threshold. Interchange Transactions below the Curtailment Threshold are unrestricted and free to flow subject to all applicable Reliability Standards and tariff rules.

1. **HOLD.** Permission has not been given for Interchange Transaction to start or increase and is waiting for the next Reloading/Reallocation evaluation for which it is a candidate. Interchange Transactions with E-tags submitted to the Tag Authority prior to TLR 2 or higher being declared (pre-tagged) will change to CURTAILED Status upon evaluation that does not permit them to start or increase. Transactions with E-tags submitted to Tag Authority after TLR 2 or higher was declared (post-tagged) will retain HOLD Status until given permission to proceed or E-Tag expires.
2. **CURTAILED.** Transactions for which E-Tags were submitted to Tag Authority prior to TLR 2 or higher being declared (pre-tagged) and ordered to be curtailed totally, curtailed partially, not permitted to start, or not permitted to increase. Interchange Transactions (pre-tagged or post-tagged) that were flowing and ordered to be reduced or totally curtailed. The Balancing Authority will indicate to the IDC through the E-Tag adjustment table the Interchange Transaction's curtailed values.
3. **PROCEED:** Interchange Transaction is flowing or has been permitted to flow as a result of Reloading/Reallocation evaluation. The Balancing Authority will indicate through the E-Tag adjustment table to IDC if Interchange Transaction will reload, start, or increase next-hour per Purchasing-Selling Entity's energy schedule as appropriate.

#### **Reallocation/Reloading Priorities**

1. Interchange Transaction candidates are ranked for loading and curtailment by priority as per Section 4, "Principles for Mitigating Constraints On and Off the Contract Path." This is called the "Constrained Path Method," or CPM. (secondary, hourly, daily, ... firm etc). Interchange Transactions are curtailed and loaded pro-rata within priority level per TLR algorithm.
2. Reloading/Reallocation of Interchange Transactions are prioritized first by priority per CPM. E-Tags must be submitted to the IDC by the approved tag submission deadline for Reallocation of the hour during which the Interchange Transaction is scheduled to start or increase to be considered for Reallocation.
3. During Reloading/Reallocation, Interchange Transactions using lower priority Transmission Service will be curtailed pro-rata to allow higher priority transactions to reload, increase, or start. Equal priority Interchange Transactions will not reload, start, or increase by pro-rata Curtailment of other equal priority Interchange Transactions.
4. Reloading of Interchange Transactions using Non-firm Transmission Service with CURTAILED Status will take precedence over starting or increasing of Interchange Transactions using Non-firm Transmission Service of the same priority with PENDING Statuses.
5. Interchange Transactions using Firm Point-to-Point Transmission Service will be allowed to start as scheduled under TLR 3a as long as their E-Tag was received by the IDC by the approved tag submission deadline for Reallocation of the hour during which the Interchange Transaction is due to start or increase, regardless of whether the E-tag was submitted to the Tag Authority prior to TLR 2 or higher being declared or not. If this is the initial issuance of the TLR 3a, Interchange Transactions using Firm Point-to-Point Transmission Service will be allowed to start as scheduled as long as their E-Tag was received by the IDC by the time the TLR is declared.

**Total Flow Value on a Constrained Facility for Next Hour**

1. The Reliability Coordinator will calculate the change in net flow on a Constrained Facility due to Reallocation for the next hour based on:
  - Present constrained facility loading, present level of Interchange Transactions, and Balancing Authorities NNative Load responsibility (TLR Level 5a) impacting the Constrained Facility,
  - SOLs or IROLs, known interchange impacts and Balancing Authority NNative Load responsibility (TLR Level 5a) on the Constrained Facility the next hour, and
  - Interchange Transactions scheduled to begin the next hour.
2. The Reliability Coordinator will enter a maximum loading value for the constrained facility into the IDC as part of issuing the Reloading/Reallocation report.
3. The Reliability Coordinator is allowed to call for TLR 3a or 5a when approaching a SOL or IROL to allow maximum transactional flow next hour, and to manage flows without violating transmission limits.
4. The simultaneous curtailment and Reallocation for a Constrained Facility is allowed. This reduces the flow over the Constrained Facility while allowing Interchange Transactions using higher priority Transmission Service to start or increase the next hour. This may be used to accommodate change in flow next-hour due to changes other than Point-to-Point Interchange Transactions while respecting the priorities of Interchange Transactions flowing and scheduled to flow the next hour. The intent is to reduce the need for using TLR 3b, which prevents new Interchange Transactions from starting or increasing the next hour.
5. The Reliability Coordinator must allow Interchange Transactions to be reloaded as soon as possible. Reloading must be in an orderly fashion to prevent a SOL or IROL violation from (re)occurring and requiring holding or curtailments in the restricted direction.



## E2. Timing Requirements

### TLR Levels 3a and 5a Issuing/Processing Time Requirement

- In order for the IDC to be reasonably certain that a TLR Level 3a or 5a re-allocation/reloading report in which all tags submitted by the approved tag submission deadline for Reallocation are included, the report must be generated no earlier than 00:25 to allow the 10-minute approval time for Transactions that start next hour.
- In order to allow a Reliability Coordinator to declare a TLR Level 3a or 5a at any time during the hour, the TLR declaration and Reallocation/Reloading report distribution will be treated as independent processes by the IDC. That is, a Reliability Coordinator may declare a TLR Level 3a or 5a at any time during the course of an hour. However, if a TLR Level 3a or 5a is declared for the next hour prior to 00:25 (see Figure 5 at right), the Reallocation/Reloading report that is generated will be made available to the issuing Reliability Coordinator only for previewing purposes, and cannot be distributed to the other Reliability Coordinators or the market. Instead, the issuing Reliability Coordinator will be reminded by an IDC alarm at 00:25 to generate a new Reallocation/Reloading report that will include all tags submitted prior to the approved tag submission deadline for Reallocation.
- A TLR Level 3a or 5a Reallocation/Reloading report must be confirmed by the issuing Reliability Coordinator prior to 00:30 in order to provide a minimum of 30 minutes for the Reliability Coordinators with tags sinking in its Reliability Area to coordinate the Reallocation and Reloading with the Sink Balancing Authorities. This provides only 5 minutes (from 00:25 to 00:30) for the issuing Reliability Coordinator to generate a Reallocation/Reloading report, review it, and approve it.
- The TLR declaration time will be recorded in the IDC for evaluating transaction sub-priorities for Reallocation/Reloading purposes (see Subpriority Table, in the **IDC Calculations and Reporting** section below).

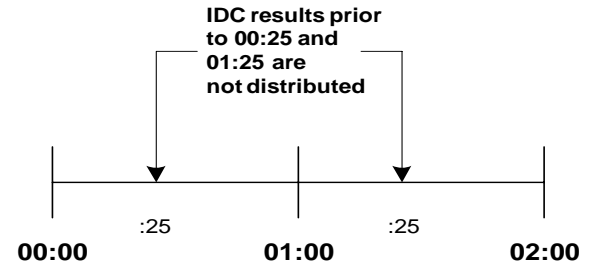


Figure 5 - IDC report may be run prior to 00:25, but results are not distributed.

### Re-Issuing of a TLR Level 2 or Higher

Each hour, the IDC will automatically remind the issuing Reliability Coordinator (via an IDC alarm) of a TLR level 2 or higher declared in the previous hour or earlier about re-issuing the TLR. The purpose of the reminder is to enable the Reliability Coordinator to Reallocate or reload currently halted or curtailed Interchange Transactions next hour. The reminder will be in the form of an alarm to the issuing Reliability Coordinator, and will take place at 00:25 so that, if the Reliability Coordinator re-issues the TLR as a TLR level 3a or 5a, all tags submitted prior to the approved tag submission deadline for Reallocation are available in the IDC.

### IDC Assistance with Next Hour Point-to-Point Transactions

In order to assist a Reliability Coordinator in determining the MW relief required on a Constrained Facility for the next hour for a TLR level 3a or 5a, the IDC will calculate and present the total MW impact of all currently flowing and scheduled Point-to-Point Transactions

for the next hour. In order to assist a Reliability Coordinator in determining the MW relief required on a Constrained Facility for the next hour during a TLR level 5a, the IDC will calculate and present the total MW impact of all currently flowing and scheduled Point-to-Point Transactions for the next hour as well as Balancing Authority with flows due to service to Network Customers and Native Load. The Reliability Coordinator will then be requested to provide the total incremental or decremental MW amount of flow through the Constrained Facility that can be allowed for the next hour. The value entered by the Reliability Coordinator and the IDC-calculated amounts will be used by the IDC to identify the relief/reloading amounts (delta incremental flow value) on the constrained facility. The IDC will determine the Transactions to be reloaded, reallocated, or curtailed to make room for the Transactions using higher priority Transmission Service. The following examples show the calculation performed by IDC to identify the “delta incremental flow:”

**Example 1**

<u>Flow to maintain on Facility</u>	<u>800 MW</u>
<u>Expected flow next hour from Transactions using Point-to-Point Transmission Service</u>	<u>950 MW</u>
<u>Contribution from flow next hour from service to Network customers and Native Load</u>	<u>-100 MW</u>
<u>Expected Net flow next hour on Facility</u>	<u>850 MW</u>
<u>Amount of Transactions using Point-to-Point Transmission Service to hold for Reallocation</u>	<u>850 MW – 800 MW = 50 MW</u>
<u>Amount to enter into IDC for Transactions using Point-to-Point Transmission Service</u>	<u>950 MW – 50 MW = 900 MW</u>

**Example 2**

<u>Flow to maintain on Facility</u>	<u>800 MW</u>
<u>Expected flow next hour from Transactions using Point-to-Point Transmission Service</u>	<u>950 MW</u>
<u>Contribution from flow next hour from service to Network customers and Native Load</u>	<u>50 MW</u>
<u>Expected Net flow next hour on Facility</u>	<u>1000 MW</u>
<u>Amount of Transactions using Point-to-Point Transmission Service to hold for Reallocation</u>	<u>1000 MW – 800 MW = 200 MW</u>
<u>Amount to enter into IDC for Transactions using Point-to-Point Transmission Service</u>	<u>950 MW – 200 MW = 750 MW</u>

**Example 3**

<u>Flow to maintain on Facility</u>	<u>800 MW</u>
<u>Expected flow next hour from Transactions using Point-</u>	<u>950 MW</u>

<u>to-Point Transmission Service</u>	
<u>Contribution from flow next hour from service to Network customers and Native Load</u>	<u>-200 MW</u>
<u>Expected Net flow next hour on Facility</u>	<u>750 MW</u>
<u>Amount of Transactions using Point-to-Point Transmission Service to hold for Reallocation</u>	<u>750 MW – 800 MW = -50 MW</u> <u>None are held</u>

For a TLR levels 3b or 5b the IDC will request the Reliability Coordinator to provide the MW requested relief amount on the Constrained Facility, and will not present the current and next hour MW impact of Point-to-Point transactions. The Reliability Coordinator-entered requested relief amount will be used by the IDC to determine the Interchange Transaction Curtailments and flows due to service to Network Customers and Native Load (TLR Level 5b) in order to reduce the SOL or IROL violation on the Constrained Facility by the requested amount.

**IDC Calculations and Reporting**

At the time the TLR report is processed, the IDC will use all candidate Interchange Transactions for Reallocation that met the approved tag submission deadline for Reallocation plus those Interchange Transactions that were curtailed or halted on the previous TLR action of the same TLR event. The IDC will calculate and present an Interchange Transactions Halt/Curtailment list that will include reload and Reallocation of Interchange Transactions. The Interchange Transactions are prioritized as follows:

1. All Interchange Transactions will be arranged by Transmission Service Priority according to the Constrained Path Method. These priorities range from 1 to 6 for the various non-firm Transmission Service products (TLR levels 3a and 3b). Interchange Transactions using Firm Transmission Service (priority 7) are used only in TLR levels 5a and 5b. Next-Hour Market Service is included at priority 0 (Recommended to be placed in Attachment 2).

Examples of Interchange Transactions using Non-firm Transmission Service sub-priority settings begin in the **Transaction Sub-priority Examples** following sections

2. In a TLR Level 3a the Interchange Transactions using Non-firm Transmission Service in a given priority will be further divided into four sub-priorities, based on current schedule, current active schedule (identified by the submittal of a tag ADJUST message), next-hour schedule, and tag status. Solely for the purpose of identifying which Interchange Transactions to be loaded under a TLR 3a, various MW levels of an Interchange Transaction may be in different sub-priorities. The sub-priorities are shown in the following table:

<u>Priority</u>	<u>Purpose</u>	<u>Explanation and Conditions</u>
<u>S1</u>	<u>To allow a flowing Interchange Transaction to maintain or reduce its current MW amount in accordance with its energy profile.</u>	<u>The MW amount is the lowest between currently flowing MW amount and the next-hour schedule. The currently flowing MW amount is determined by the e-tag ENERGY PROFILE and ADJUST tables. If the calculated amount is negative, zero is used instead.</u>
<u>S2</u>	<u>To allow a flowing Interchange Transaction that has been curtailed or halted by TLR to reload to the lesser of its current-hour MW amount or next-hour schedule in accordance with its energy profile.</u>	<u>The Interchange Transaction MW amount used is determined through the e-tag ENERGY PROFILE and ADJUST tables. If the calculated amount is negative, zero is used instead.</u>
<u>S3</u>	<u>To allow a flowing Transaction to increase from its current-hour schedule to its next-hour schedule in accordance with its energy profile.</u>	<u>The MW amounts used in this sub-priority is determined by the e-tag ENERGY PROFILE table. If the calculated amount is negative, zero is used instead.</u>
<u>S4</u>	<u>To allow a Transaction that had never started and was submitted to the Tag Authority after the TLR (level 2 or higher) has been declared to begin flowing (i.e., the Interchange Transaction never had an active MW and was submitted to the IDC after the first TLR Action of the TLR Event had been declared.)</u>	<u>The Transaction would not be allowed to start until all other Interchange Transactions submitted prior to the TLR with the same priority have been (re)loaded. The MW amount used is the sub-priority is the next-hour schedule determined by the e-tag ENERGY PROFILE table.</u>

Examples of Interchange Transactions using Non-firm Transmission Service sub-priority settings begin in the **Transaction Sub-priority Examples** following sections.

3. All Interchange Transactions using Firm Transmission Service will be put in the same priority group, and will be Curtailed/Reallocated pro-rata, independent of their current status (curtailed or halted) or time of submittal with respect to TLR issuance (TLR level 5a). Under a TLR 5a, all Interchange Transactions using Non-firm Transmission Service that is at or above the Curtailment Threshold will have been curtailed and hence sub-prioritizing is not required.

All Interchange Transactions processed in a TLR are assigned one of the following statuses:

PROCEED: The Interchange Transaction has started or is allowed to start to the next hour MW schedule amount.

CURTAILED: The Interchange Transaction has started and is curtailed due to the TLR, or it had not started but it was submitted prior to the TLR being declared (level 2 or higher).

HOLD: The Interchange Transaction had never started and it was submitted after the TLR being declared – the Interchange Transaction is held from starting next hour or the transaction had never started and it was submitted to the IDC after the Approved-Tag Submission Deadline – the Interchange Transaction is to be held from starting next hour and is not included in the Reallocation calculations until following hour.

Upon acceptance of the TLR Transaction Reallocation/reloading report by the issuing Reliability Coordinator, the IDC will generate a report to be sent to NERC that will include the PSE name and Tag ID of each Interchange Transaction in the IDC TLR report. The Interchange Transaction will be ranked according to its assigned status of HOLD, CURTAILED or PROCEED. The reloading/Reallocation report will be made available at NERC's public TLR website, and it is NERC's responsibility to format and publish the report.

#### **Tag Reloading for TLR Levels 1 and 0**

When a TLR Level 1 or 0 is issued, the Constrained Facility is no longer under SOL or IROL violation and all Interchange Transactions are allowed to flow. In order to provide the Reliability Coordinators with a view of the Interchange Transactions that were halted or curtailed on previous TLR actions (level 2 or higher) and are now available for reloading, the IDC provides such information in the TLR report.

#### **New Tag Alarming**

Those Interchange Transactions that are at or above the Curtailment Threshold and are *not* candidates for Reallocation because the tags for those Transactions were not submitted by the approved tag submission deadline for Reallocation will be flagged as HOLD and must not be permitted to start or increase during the next hour. To alert Reliability Coordinators of those Transactions required to be held, the IDC will generate a report (for viewing within the IDC only) at various times. The report will include a list of all HOLD Transactions. In order not to overwhelm the Reliability Coordinator with alarms, only those who issued the TLR and those whose Transactions sink within their Reliability Area will be alarmed. An alarm will be issued for a given tag only once and will be issued for all TLR levels for which halting new Transactions is required: TLR Level 2, 3a, 3b, 5a and 5b.

#### **Tag Adjustment**

The Interchange Transactions with statuses of HOLD, CURTAILED or PROCEED must be adjusted by a Tag Authority or Tag Approval entity. Without the tag adjustments, the IDC will assume that Interchange Transactions were not curtailed/held and are flowing at their specified schedule amounts.

1. Interchange Transactions marked as CURTAILED should be adjusted to a cap equal to, or at the request of the originating PSE, less than the reallocated amount (shown as the MW CAP on the IDC report). This amount may be zero if the Transaction is fully curtailed.
2. Interchange Transaction marked as PROCEED should be adjusted to reload (NULL or to its MW level in accordance with its Energy Profile in the adjusted MW in the E-Tag) if the

Interchange Transaction has been previously adjusted; otherwise, if the Interchange Transaction is flowing in full, the Tag Authority need not issue an adjust.

3. Interchange Transactions marked as HOLD should be adjusted to 0 MW.

### **Special Tag Status**

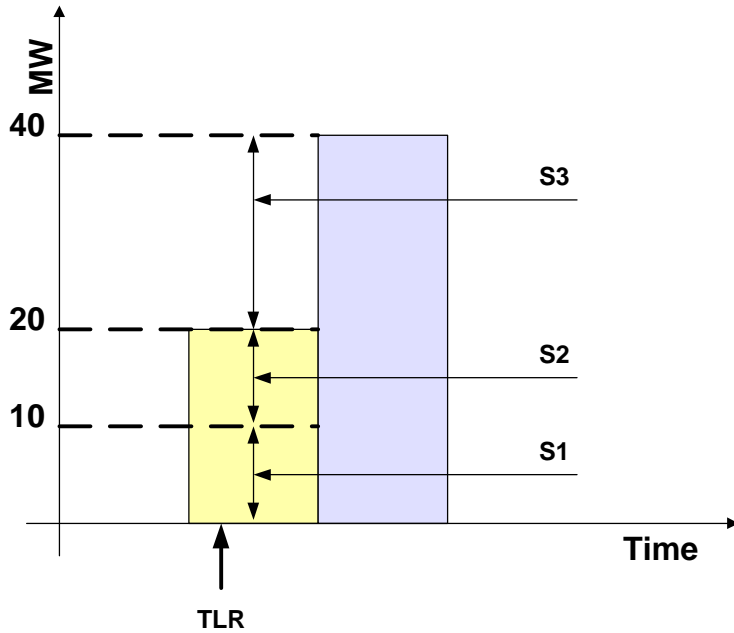
There are cases in which a tag may be marked with a composite state of ATTN REQD to indicate that tag Authority/Approval failed to communicate or there is an inconsistency between the validation software of different tag Authority/Approval entities. In this situation, the tag is no longer subject to passive approval and its status change to IMPLEMENT may take longer than 10 minutes. Under these circumstances, the IDC may have a tag that is issued prior to the Tag Submittal Deadline that will not be a candidate for Reallocation. Such tags, when approved by the Tag Authority, will be marked as HOLD and must be halted.

### **Transaction Sub-Priority Examples**

The following describes examples of Interchange Transactions using Non-firm Transmission Service sub-priority setting for an Interchange Transaction under different circumstances of current-hour and next-hour schedules and active MW flowing as modified by tag adjust table in E-Tag.

Example 1 – Transaction curtailed, next-hour Energy Profile is higher

<u>Energy Profile: Current hour</u>	<u>20 MW</u>
<u>Actual flow following curtailment: Current hour</u>	<u>10 MW</u>
<u>Energy Profile: Next hour</u>	<u>40 MW</u>

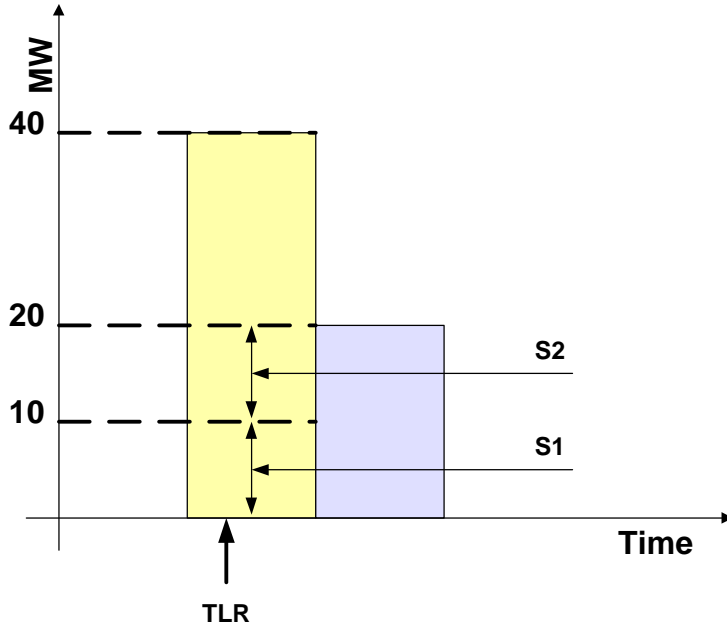


**Sub-priorities for Transaction MW:**

<u>Sub-Priority</u>	<u>MW Value</u>	<u>Explanation</u>
<u>S1</u>	<u>10 MW</u>	<u>Maintain current curtailed flow</u>
<u>S2</u>	<u>+10 MW</u>	<u>Reload to current hour Energy Profile</u>
<u>S3</u>	<u>+20 MW</u>	<u>Load to next hour Energy Profile</u>
<u>S4</u>		

**Example 2 – Transaction curtailed, next-hour Energy Profile is lower**

<u>Energy Profile: Current hour</u>	<u>40 MW</u>
<u>Actual flow following curtailment: Current hour</u>	<u>10 MW</u>
<u>Energy Profile: Next hour</u>	<u>20 MW</u>



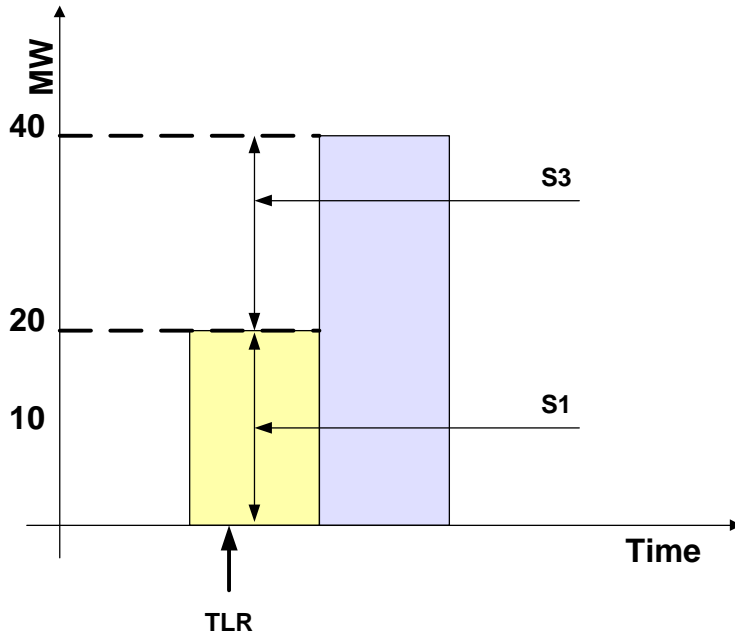
**Sub-priorities for Transaction MW:**

<u>Sub-Priority</u>	<u>MW Value</u>	<u>Explanation</u>
<u>S1</u>	<u>10 MW</u>	<u>Maintain current curtailed flow</u>
<u>S2</u>	<u>+10 MW</u>	<u>Reload to lesser of current and next-hour Energy Profile</u>
<u>S3</u>	<u>+0 MW</u>	<u>Next-hour Energy Profile is 20MW, so no change in MW value</u>
<u>S4</u>		



**Example 3 – Transaction not curtailed, next-hour Energy Profile is higher**

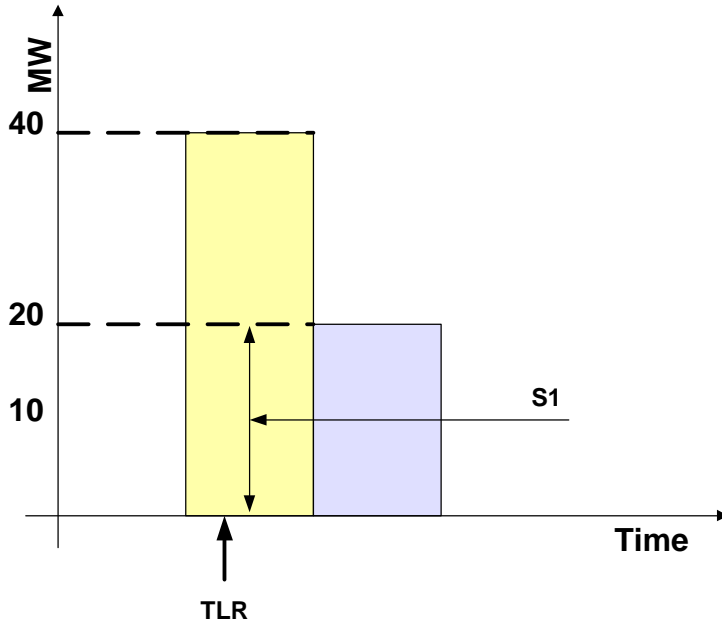
<u>Energy Profile: Current hour</u>	<u>20 MW</u>
<u>Actual flow following curtailment: Current hour</u>	<u>20 MW (no curtailment)</u>
<u>Energy Profile: Next hour</u>	<u>40 MW</u>



<u>Sub-Priority</u>	<u>MW Value</u>	<u>Explanation</u>
<u>S1</u>	<u>20 MW</u>	<u>Maintain current flow (not curtailed)</u>
<u>S2</u>	<u>+0 MW</u>	<u>Reload to lesser of current and next-hour Energy Profile</u>
<u>S3</u>	<u>+20 MW</u>	<u>Next-hour Energy Profile is 40MW</u>
<u>S4</u>		

**Example 4 – Transaction not curtailed, next-hour Energy Profile is lower**

<u>Energy Profile: Current hour</u>	<u>40 MW</u>
<u>Actual flow following curtailment: Current hour</u>	<u>40 MW (no curtailment)</u>
<u>Energy Profile: Next hour</u>	<u>20 MW</u>

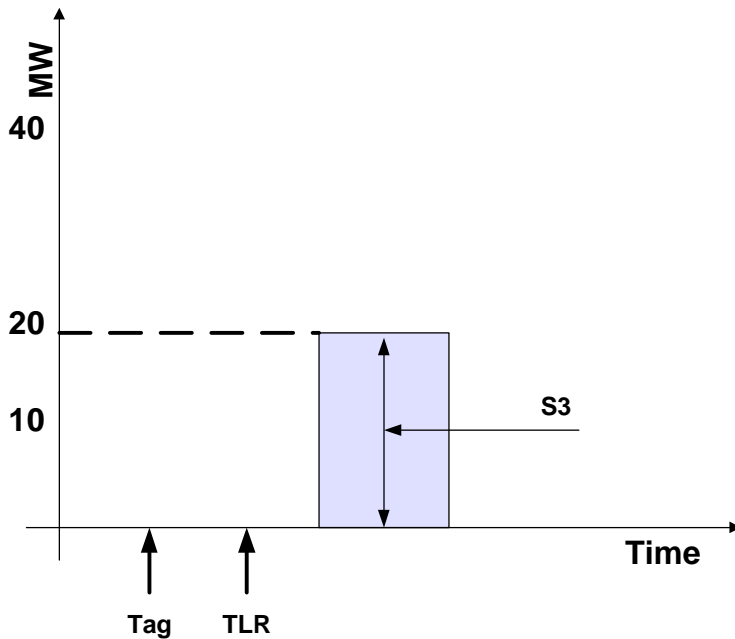


**Sub-priorities for Transaction MW:**

<u>Sub-Priority</u>	<u>MW Value</u>	<u>Explanation</u>
<u>S1</u>	<u>20 MW</u>	<u>Reduce flow to next-hour Energy Profile (20MW)</u>
<u>S2</u>	<u>+0 MW</u>	<u>Reload to lesser of current and next-hour Energy Profile</u>
<u>S3</u>	<u>+0 MW</u>	<u>Next-hour Energy Profile is 20MW</u>
<u>S4</u>		

**Example 5 — TLR Issued before Transaction was scheduled to start**

<u>Energy Profile: Current hour</u>	<u>0 MW</u>
<u>Actual flow following curtailment: Current hour</u>	<u>0 MW (Transaction scheduled to start <i>after</i> TLR initiated)</u>
<u>Energy Profile: Next hour</u>	<u>20 MW</u>



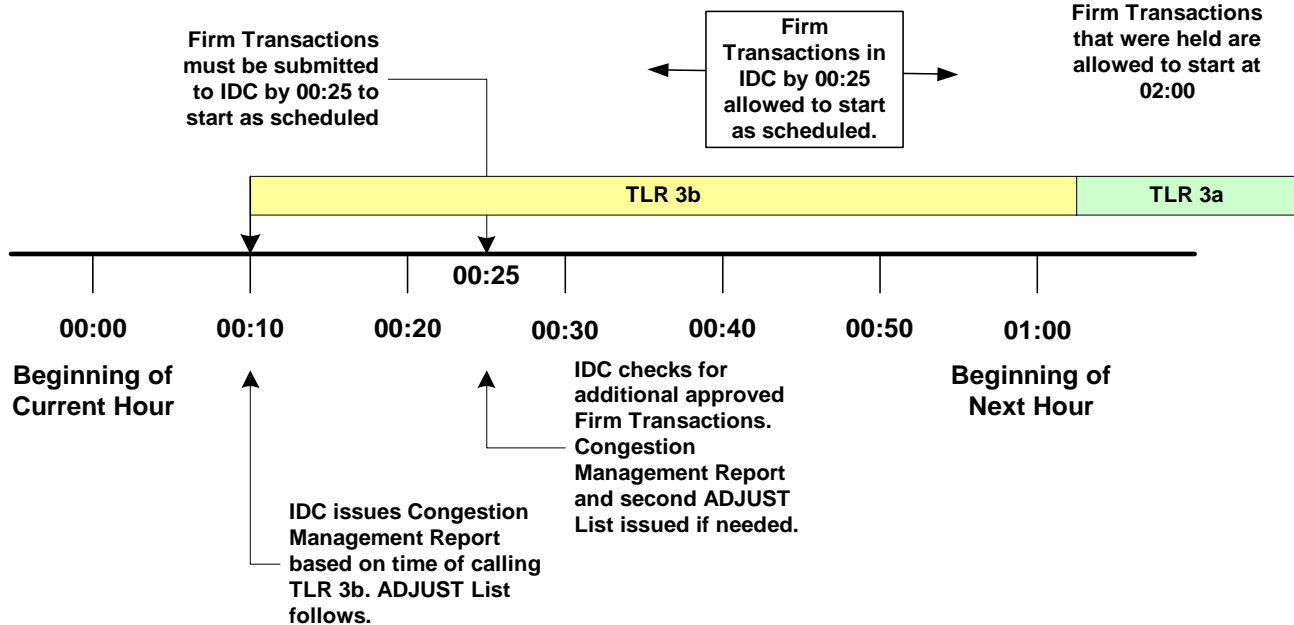
<u>Sub-Priority</u>	<u>MW Value</u>	<u>Explanation</u>
<u>S1</u>	<u>0 MW</u>	<u>Transaction was not allowed to start</u>
<u>S2</u>	<u>+0 MW</u>	<u>Transaction was not allowed to start</u>
<u>S3</u>	<u>+20 MW</u>	<u>Next-hour Energy Profile is 20MW</u>
<u>S4</u>	<u>+0</u>	<u>Tag submitted prior to TLR</u>

**Appendix F. Considerations for Interchange Transactions**

**Using Firm Point-to-Point Transmission Service**

The following cases explain the circumstances under which an Interchange Transaction using Firm Point-to-Point Transmission Service will be allowed to start as scheduled during a TLR 3b:

**Case 1: TLR 3b is called between 00:00 and 00:25 and the Interchange Transaction using Firm Point-to-Point Transmission Service is submitted to IDC by 00:25.**



The IDC will examine the current hour (00) and next hour (01) for all Interchange Transactions.

The IDC will issue an ADJUST List based upon the time the TLR 3b is called. The ADJUST List will include curtailments of Interchange Transactions using Non-firm Point-to-Point Transmission Service as necessary to allow room for those Interchange Transactions using Firm Point-to-Point Transmission Service to start as scheduled.

At 00:25, the IDC will check for additional Interchange Transactions using Firm Point-to-Point Transmission Service that were submitted to the IDC by that time and issue a second ADJUST List if those additional Interchange Transactions are found.

All existing or new Interchange Transactions using Non-firm Point-to-Point Transmission Service that are increasing or expected to start during the current hour or next hour will be placed on HALT or HOLD. There is no Reallocation of lower-priority Interchange Transactions using Non-firm Point-to-Point Transmission Service.

Interchange Transactions using Firm Point-to-Point Transmission Service that were submitted to the IDC by 00:25 will be allowed to start as scheduled.

**Standard IRO-006-34 — Reliability Coordination — Transmission Loading Relief**

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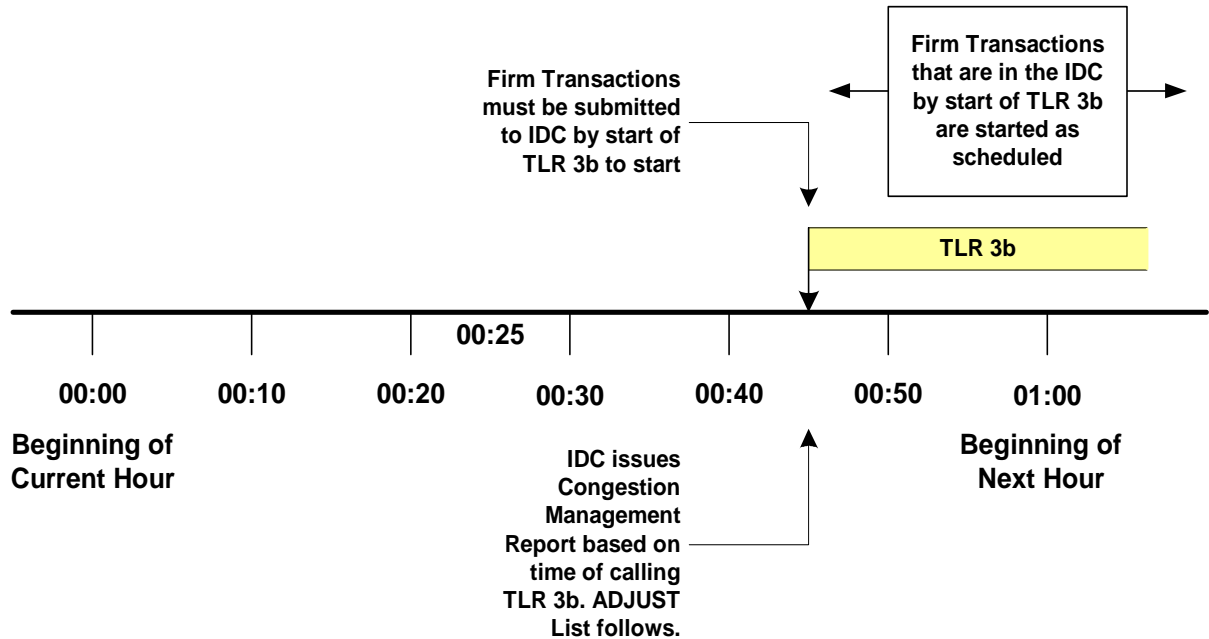
Interchange Transactions using Firm Point-to-Point Transmission Service that were submitted to the IDC after 00:25 will be held.

Once the SOL or IROL violation is mitigated, the Reliability Coordinator shall call a TLR Level 3a (or lower). If a TLR Level 3a is called:

Interchange Transactions using Firm Point-to-Point Transmission Service that were submitted to the IDC by 00:25 will be allowed to start as scheduled at 02:00.

Interchange Transactions using Non-firm Point-to-Point Transmission Service that were held may then be reallocated to start at 02:00.

**Case 2: TLR 3b is called after 00:25 and the Interchange Transaction using Firm Point-to-Point Transmission Service is submitted to the IDC no later than the time at which the TLR 3b is called.**



The IDC will examine the current hour (00) and next hour (01) for all Interchange Transactions.

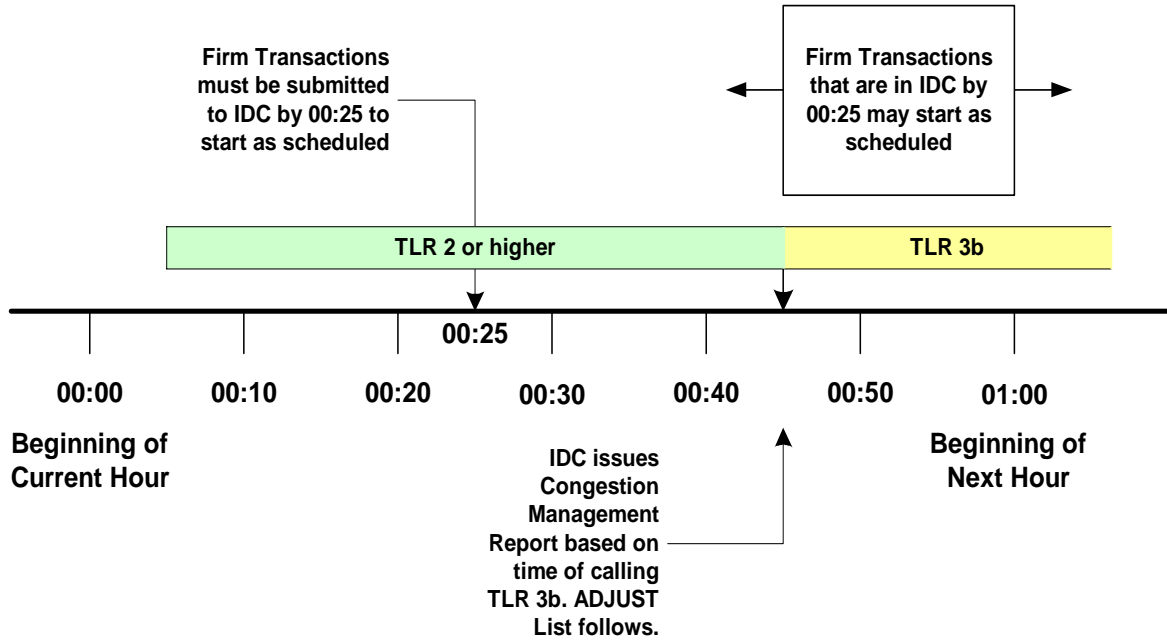
The IDC will issue an ADJUST List at the time the TLR 3b is called. The ADJUST List will include additional curtailments of Interchange Transactions using Non-firm Point-to-Point Transmission Service as necessary to allow room for those Interchange Transactions using Firm Point-to-Point Transmission Service to start at as scheduled.

All existing or new Interchange Transactions using Non-firm Point-to-Point Transmission Service that are increasing or expected to start during the current hour or next hour will be placed on HALT or HOLD. There is no Reallocation of lower-priority Interchange Transactions using Non-firm Point-to-Point Transmission Service.

Interchange Transactions using Firm Point-to-Point Transmission Service that were submitted to the IDC by the time the TLR 3b was called will be allowed to start at as scheduled.

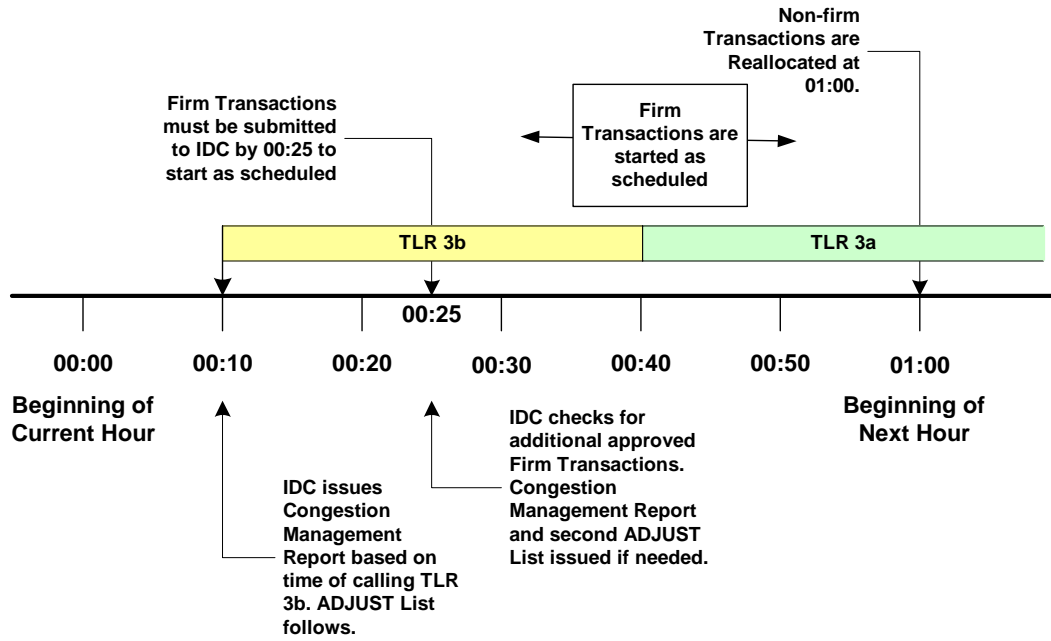
Interchange Transaction using Firm Point-to-Point Transmission Service that were submitted to the IDC after the TLR 3b was called will be held until the next issuance for TLR (either TLR 3b, 3a, or lower level).

Case 3. TLR 2 or higher is in effect, a TLR 3b is called after 00:25, and the Interchange Transaction using Firm Point-to-Point Transmission Service is submitted to the IDC by 00:25.



If a TLR 2 or higher has been issued and 3B is subsequently issued, then only those Interchange Transactions using Firm Point-to-Point Transmission Service that had been submitted to the IDC by 00:25 will be allowed to start as scheduled. All other Interchange Transactions are held.

Case 4. TLR 3b is called before 00:25 and the Interchange Transaction is submitted to the IDC by 00:25. TLR 3a is called at 00:40.



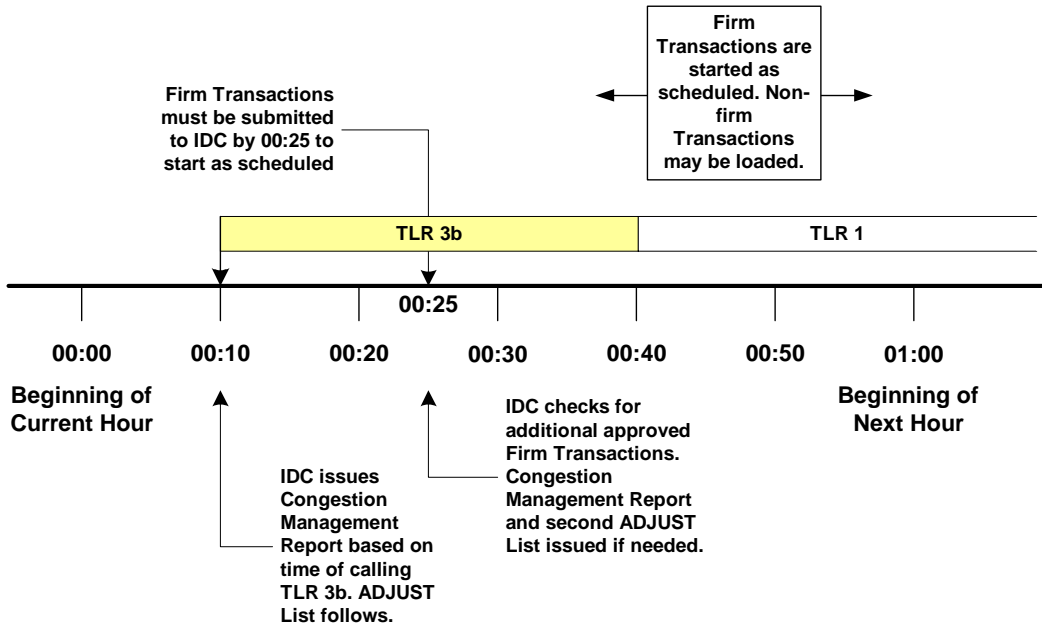
Same as Case 1, but TLR Level 3b ends at 00:40 and becomes TLR Level 3a.

All Interchange Transactions using Firm Point-to-Point Transmission Service will start as scheduled if in by the time the 3A is declared.

All Interchange Transactions using Non-firm Point-to-Point Transmission Service are reallocated at 01:00.



Case 5. TLR 3b is called before 00:25 and the Interchange Transaction is submitted to the IDC by 00:25. TLR 1 is called at 00:40.



Same as Case 1, but TLR Level 3b ends at 00:40 and becomes TLR Level 1.

All Interchange Transactions using Firm Point-to-Point Transmission Service will start as scheduled.

All Interchange Transactions using Non-firm Point-to-Point Transmission Service may be loaded immediately.

## Appendix G. Examples of On-Path and Off-Path Mitigation

### Examples

This section explains, by example, the obligations of the Transmission Service Providers on and off the Contract Path when calling for Transmission Loading Relief. (References to Principles refer to Requirement 4, “Mitigating Constraints On and Off the Contract Path during TLR,” on the preceding pages.) When Reallocating or curtailing Interchange Transactions using Firm Point-to-Point Transmission Service under TLR Level 5a or 5b, the Transmission Service Providers may be obligated to perform comparable curtailments of its Transmission Service to Network Integration and Native Load customers. See Requirement 5, “Parallel Flow Calculation Procedure for Reallocating or Curtailing Firm Transmission Service during TLR.”

### Scenario:

Interchange Transaction arranged from system A to system D, and assumed to be at or above the Curtailment Threshold.

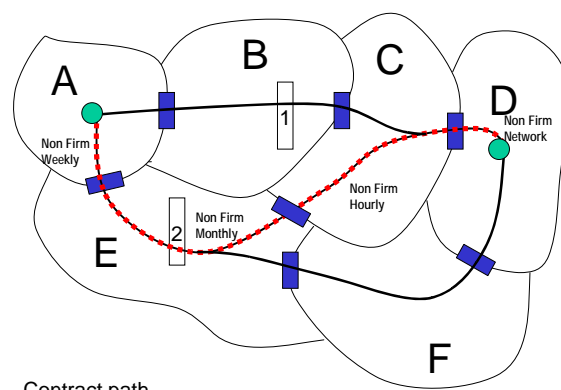
Contract path is A-E-C-D (except as noted).

Locations 1 and 2 denote Constraints.

Case 1: E is a non-firm Monthly path; C is non-firm Hourly; E has Constraint at #2

E may call its Reliability Coordinator for TLR to relieve overload at Constraint #2.

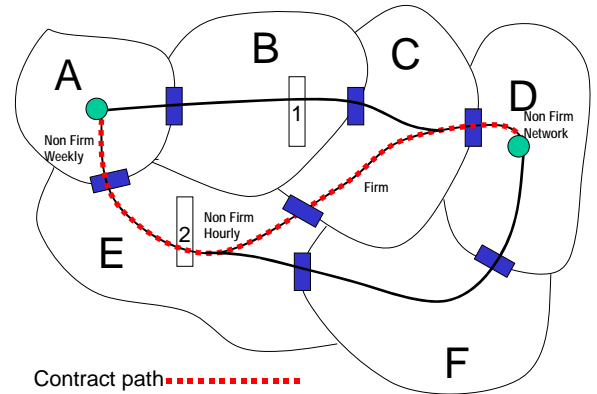
Interchange Transaction A-D may be curtailed by TLR action as though it was being served by



Non-firm Monthly Point-to-Point Transmission Service, even though it was using Non-firm Hourly Point-to-Point Transmission Service from C. That is, it takes on the priority of the link with the Constrained Facility along the Contract Path (Principle 1).

Case 2: E is a non-firm hourly path, C is firm; E has Constraint at #2

Although C is providing Firm Service, the Constraint is not on C's system; therefore E is not obligated to treat the Interchange Transaction as though it was being served by Firm Point-to-Point Transmission Service.



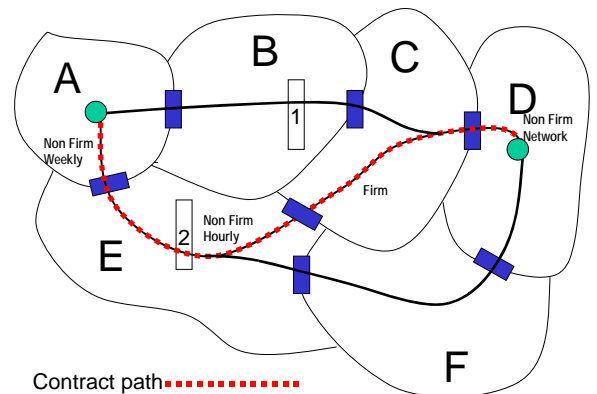
E may call its Reliability Coordinator for TLR to relieve overload at Constraint #2.

Interchange Transaction A-D may be curtailed by TLR action as though it was being served by Non-firm Hourly Point-to-Point Transmission Service, even though it was using firm service from C. That is, when the constraint is on the Contract Path, the Interchange Transaction takes on the priority of the link with the Constrained Facility (Principle 1).

**Case 3: E is a non-firm hourly path, C is firm, B has Constraint at #1**

**B may call its Reliability Coordinator for TLR to relieve overload at Constraint #1.**

**Interchange Transaction A-D may be curtailed by TLR action as though it was being served by Non-firm Hourly Transmission Service, even if it was using firm Transmission Service elsewhere on the path. When the constraint is off the Contract Path, the Interchange Transaction takes on the lowest priority reserved on the Contract Path (Principle 3).**



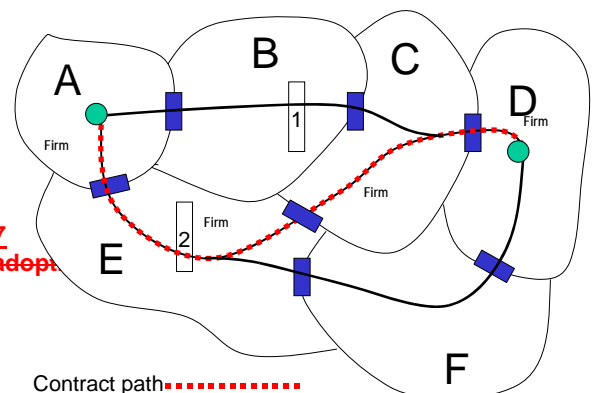
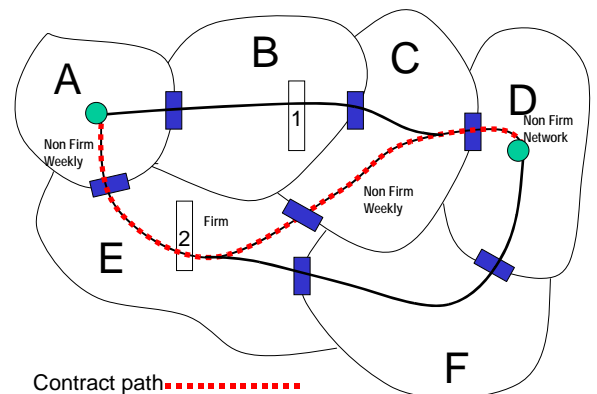
**Case 4: E is a firm path; A, D, and C are Non-firm; E has Constraint at #2**

**Interchange Transaction A – D is considered Firm priority for curtailment purposes.**

**E may then call its Reliability Coordinator for TLR, which would curtail all Interchange Transactions using Non-firm Point-to-Point Transmission Service first.**

**E is obligated to try to reconfigure transmission to mitigate Constraint #2 in E before E may curtail the Interchange Transaction as ordered by the TLR (Principle 2).**

**Case 5: The entire path (A-E-C-D) is firm; E has Constraint at #2**



Interchange Transaction A – D is considered Firm priority for curtailment purposes.

E may call its Reliability Coordinator for TLR, which would curtail all Interchange Transactions using Non-firm Point-to-Point Transmission Service first.

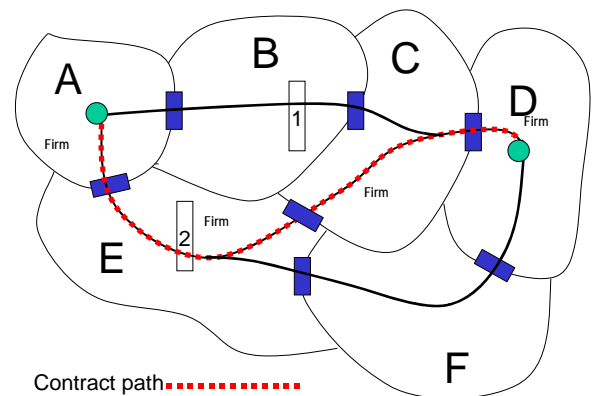
E is obligated to curtail Interchange Transactions using Non-firm Point-to-Point Transmission Service, and then reconfigure transmission on its system, or, if there is an agreement in place, arrange for reconfiguration or other congestion management options on another system, to mitigate Constraint #2 in E before the firm A-D transaction is curtailed (Principle 2).

A, C, D, may be requested by E to try to reconfigure transmission to mitigate Constraint #2 in E at E's expense (Principle 2).

Case 6: The entire path (A-E-C-D) is firm; B has Constraint at #1.

Interchange Transaction A – D is considered Firm priority for curtailment purposes.

B may call its Reliability Coordinator for TLR for all *non-firm* Interchange Transactions that



contribute to the overload at Constraint #1.

Following the curtailment of all non-firm Interchange Transactions, the Reliability Coordinator (ies) will determine which Transmission Operator(s) will reconfigure their transmission, if possible, to mitigate constraint #1 (Principle 4).

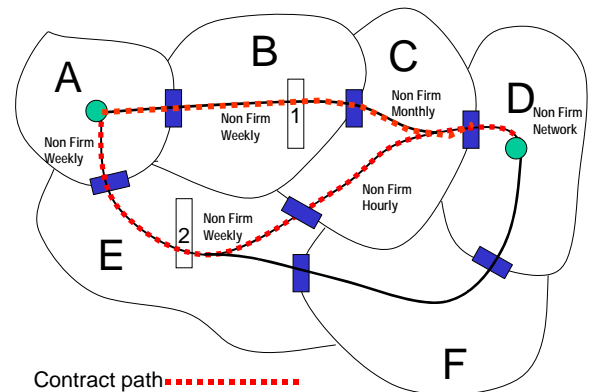
A-D transaction may be curtailed as a result. However, the A-D transaction is treated as a firm Interchange Transaction and will be curtailed only after non-firm Interchange Transactions. (Note: This means that the firm Contract Path is respected by all parties, including those not on the Contract Path.) (Principle 4)

**Case 7: Two A-to-D transactions using A-B-C-D and A-E-C-D;  
A and B are non-firm; B has Constraint at #1**

**B is not obligated to reconfigure transmission to mitigate  
Constraint at #1. (Principle 1)**

**B may call its Reliability Coordinator for TLR to relieve  
overload at Constraint #1.**

**If both A – D Interchange Transactions have the same  
Transfer Distribution Factors across Constraint #1, then they  
both are subject to curtailment. However, Interchange  
Transaction A – D using the A-B-C-D path is assigned a  
higher priority (priority NW on B),  
and would not be curtailed until  
after the Interchange Transaction  
using the path A-E-C-D (priority NH  
on the Contract Path as observed by  
B who is off the Contract Path).**



### **Standard Development Roadmap**

*This section is maintained by the drafting team during the development of the standard and will be removed when the standard becomes effective.*

#### **Development Steps Completed:**

1. SC authorized moving the SAR forward to standard drafting (December 5, 2006).
2. SC appointed the SDT (February 9, 2007).
3. SDT posted first draft of proposed changes and implementation plan for a 45-day comment period from May 1–June 14, 2007

#### **Proposed Action Plan and Description of Current Draft:**

This 30-day pre-ballot posting of IRO-006-4 and its associated implementation plan reflects the split of IRO-006 between NERC and NAESB so that business practices are moved into a NAESB business practice and the reliability requirements are retained in the revised IRO-006.

#### **Future Development Plan:**

<b>Anticipated Actions</b>	<b>Anticipated Date</b>
1. Post for 30-day pre-ballot period.	July 20–August 20 , 2007
2. Conduct first ballot.	August 20–29, 2007
3. Post response to comments on first ballot.	August 30, 2007
4. Conduct second ballot.	August 31–September 9, 2007
5. Post for 30-day period prior to board adoption.	To be determined
6. Board adoption date.	To be determined



**Definitions of Terms Used in Standard**

*This section includes all newly defined or revised terms used in the proposed standard. Terms already defined in the Reliability Standards Glossary of Terms are not repeated here. New or revised definitions listed below become approved when the proposed standard is approved. When the standard becomes effective, these defined terms will be removed from the individual standard and added to the Glossary.*

**There are no new or revised definitions proposed in this standard revision.**

## A. Introduction

1. **Title:** Reliability Coordination — Transmission Loading Relief (TLR)
2. **Number:** IRO-006-4
3. **Purpose:** To provide Interconnection-wide transmission loading relief procedures that can be used to prevent or manage potential or actual System Operating Limit (SOL) and Interconnection Reliability Operating Limit (IROL) violations to maintain reliability of the Bulk Electric System (BES).
4. **Applicability:**
  - 4.1. Reliability Coordinators.
  - 4.2. Transmission Operators.
  - 4.3. Balancing Authorities.
5. **Proposed Effective Date:** For each Interconnection: first day of first quarter after all applicable regulatory approvals (for entities in that Interconnection) have been received (or the Reliability Standards otherwise become effective in those jurisdictions if regulatory approval is not required.)

## B. Requirements

- R1.** A Reliability Coordinator experiencing a potential or actual SOL or IROL violation within its Reliability Coordinator Area shall, with its authority and at its discretion, select one or more procedures to provide transmission loading relief. These procedures can be a “local” (regional, interregional, or sub-regional) transmission loading relief procedure or one of the following Interconnection-wide procedures: [*Violation Risk Factor: Medium*] [*Time Horizon: Real-time Operations*]

This requirement simply states; the RC has the authority to act, the RC should know at what limits he/she needs to act, the RC has pre-identified regional, interregional and sub-regional TLR procedures.

- R1.1.** The Interconnection-wide Transmission Loading Relief (TLR) procedure for use in the Eastern Interconnection provided in Attachment 1-IRO-006-4. The TLR procedure alone is an inappropriate and ineffective tool to mitigate an IROL violation due to the time required to implement the procedure. Other acceptable and more effective procedures to mitigate actual IROL violations include: reconfiguration, redispatch, or load shedding.

Comment: see FERC Order 693 paragraph 964 regarding recommendation for using tools other than TLR to mitigate an actual IROL.

- R1.2.** The Interconnection-wide transmission loading relief procedure for use in the Western Interconnection is WECC-IRO-STD-006-0 provided at: [ftp://www.nerc.com/pub/sys/all\\_updl/standards/rrs/IRO-STD-006-0\\_17Jan07.pdf](ftp://www.nerc.com/pub/sys/all_updl/standards/rrs/IRO-STD-006-0_17Jan07.pdf).

- R1.3.** The Interconnection-wide transmission loading relief procedure for use in ERCOT is provided as Section 7 of the ERCOT Protocols, posted at:

Note: the URL has changed.

<http://www.ercot.com/mktrules/protocols/current.html>

- R2.** The Reliability Coordinator shall only use local transmission loading relief or congestion management procedures to which the Transmission Operator experiencing the potential or actual SOL or IROL violation is a party. [*Violation Risk Factor: Low*] [*Time Horizon: Operations Planning*]
- R3.** Each Reliability Coordinator with a relief obligation from an Interconnection-wide procedure shall follow the curtailments as directed by the Interconnection-wide procedure. A Reliability Coordinator desiring to use a local procedure as a substitute for curtailments as directed by the Interconnection-wide procedure shall obtain prior approval of the local procedure from the ERO. [*Violation Risk Factor: Low*] [*Time Horizon: Operations Planning*]
- R4.** When Interconnection-wide procedures are implemented to curtail Interchange Transactions that cross an Interconnection boundary, each Reliability Coordinator shall comply with the provisions of the Interconnection-wide procedure. [*Violation Risk Factor: Medium*] [*Time Horizon: Real-time Operations*]
- R5.** During the implementation of relief procedures, and up to the point that emergency action is necessary, Reliability Coordinators and Balancing Authorities shall comply with applicable Interchange scheduling standards. [*Violation Risk Factor: Medium*] [*Time Horizon: Real-time Operations*]

Comment: R5 will be reviewed during Phase 3 of the TLR drafting team work. See white paper for explanation of the three phases of changes to this standard.

### C. Measures

- M1.** Each Reliability Coordinator shall be capable of providing evidence (such as logs) that demonstrate when Eastern Interconnection, WECC, or ERCOT Interconnection-wide transmission loading relief procedures are implemented, the implementation follows the respective established procedure as specified in this standard (R1, R1.1, R1.2 and R1.3).
- M2.** Each Reliability Coordinator shall be capable of providing evidence (such as written documentation) that the Transmission Operator experiencing the potential or existing SOL or IROL violations is a party to the local transmission loading relief or congestion management procedures when these procedures have been implemented (R2).
- M3.** Each Reliability Coordinator shall be capable of providing evidence (such as NERC meeting minutes) that the local procedure has received prior approval by the ERO when such procedure is used as a substitute for curtailment as directed by the Interconnection-wide procedure (R3).
- M4.** Each Reliability Coordinator shall be capable of providing evidence (such as logs) that the responding Reliability Coordinator complied with the provisions of the Interconnection-wide procedure as requested by the initiating Reliability Coordinator when requested to curtail an Interchange Transaction that crosses an Interconnection boundary (R4).

- M5.** Each Reliability Coordinator and Balancing Authority shall be capable of providing evidence (such as Interchange Transaction Tags, operator logs, voice recordings or transcripts of voice recordings, electronic communications, computer printouts) that they have complied with applicable Interchange scheduling standards INT-001, INT-003, and INT-004 during the implementation of relief procedures, up to the point emergency action is necessary (R5).

## **D. Compliance**

### **1. Compliance Monitoring Process**

#### **1.1. Compliance Monitoring Responsibility**

Regional Entity.

#### **1.2. Compliance Monitoring Period and Reset Time Frame**

Compliance Monitoring Period: One calendar year.

Reset Period: One calendar month.

#### **1.3. Data Retention**

The Reliability Coordinator shall maintain evidence for eighteen months for M1, M4, and M5.

The Reliability Coordinator shall maintain evidence for the duration the Transmission Operator is party to the procedure in effect plus one calendar year thereafter for M2.

The Reliability Coordinator shall maintain evidence for the approved duration of the procedure in effect plus one calendar year thereafter for M3.

#### **1.4. Additional Compliance Information**

Each Reliability Coordinator, Transmission Operator, and Balancing Authority shall demonstrate compliance through self-certification submitted to its Compliance Monitor annually and reporting by exception. The Compliance Monitor may also use scheduled on-site reviews every three years, and investigations upon complaint, to assess performance.

Each Reliability Coordinator, Transmission Operator, and Balancing Authority shall have the following available for its Compliance Monitor to inspect during a scheduled, on-site review or within 5 days of a request as part of an investigation upon complaint:

**1.4.1** Operations logs, voice recordings or transcripts of voice recordings or other documentation providing the evidence of its compliance to all the requirements for all Interconnection-wide TLR procedures that it has implemented during the review period.

**1.4.2** TLR reports.

### **2. Violation Severity Levels**

**2.1. Lower.** There shall be a lower violation severity level if any of the following conditions exist:

- 2.1.1** For each TLR in the Eastern Interconnection, the Reliability Coordinator violated one (1) requirement of the applicable Interconnection-wide procedure (R1)
  - 2.1.2** The Reliability Coordinators or Balancing Authorities did not comply with applicable Interchange scheduling standards during the implementation of the relief procedures, up to the point emergency action is necessary (R5).
  - 2.1.3** When requested to curtail an Interchange Transaction that crosses an Interconnection boundary utilizing an Interconnection-wide procedure, the responding Reliability Coordinator did not comply with the provisions of the Interconnection-wide procedure as requested by the initiating Reliability Coordinator (R4).
- 2.2. Moderate. There shall be a moderate violation severity level if any of the following conditions exist:**
- 2.2.1** For each TLR in the Eastern Interconnection, the Reliability Coordinator violated two (2) to three (3) requirements of the applicable Interconnection-wide procedure (R1).
- 2.3. High. There shall be a high violation severity level if any of the following conditions exist:**
- 2.3.1** For each TLR in the Eastern Interconnection, the applicable Reliability Coordinator violated four (4) to five (5) requirements of the applicable Interconnection-wide procedure (R1).
- 2.4. Severe. There shall be a severe violation severity level if any of the following conditions exist:**
- 2.4.1** For each TLR in the Eastern Interconnection, the Reliability Coordinator violated six (6) or more of the requirements of the applicable Interconnection-wide procedure (R1).
  - 2.4.2** A Reliability Coordinator implemented local transmission loading relief or congestion management procedures to relieve congestion but the Transmission Operator experiencing the congestion was not a party to those procedures (R2).
  - 2.4.3** A Reliability Coordinator implemented local transmission loading relief or congestion management procedures as a substitute for curtailment as directed by the Interconnection-wide procedure but the local procedure had not received prior approval from the ERO (R3).
  - 2.4.4** While attempting to mitigate an existing IROL violation in the Eastern Interconnection, the Reliability Coordinator applied TLR as the sole remedy for an existing IROL violation.
  - 2.4.5** While attempting to mitigate an existing constraint in the Western Interconnection using the “WSCC Unscheduled Flow Mitigation Plan”, the Reliability Coordinator did not follow the procedure correctly.

**2.4.6** While attempting to mitigate an existing constraint in ERCOT using Section 7 of the ERCOT Protocols, the Reliability Coordinator did not follow the procedure correctly.

## E. Regional Differences

1. [PJM/MISO Enhanced Congestion Management](#) (Curtailment/Reload/Reallocation) Waiver approved March 25, 2004. To be retired upon completion of the field test, and in the interim the Regional Difference will be contained in both the NERC and NAESB standards.

This section on Regional Differences is highlighted for transfer to NAESB following completion of the MISO/PJM/SPP field test as described in the white paper.

2. Southwest Power Pool (SPP) Regional Difference – Enhanced Congestion Management (Curtailment/Reload/Reallocation). The SPP regional difference, which is equivalent to the PJM/MISO waiver, shall apply within the SPP region as follows:

This regional difference impacts actions on behalf of those SPP Balancing Authorities that are participating in the SPP market. This regional difference does not impact those Balancing Authorities for which SPP will continue to act as the Reliability Coordinator but that are not participating in the SPP market.

SPP shall calculate the impacts of SPP market flow on all facilities included in SPP's Coordinated Flowgate List. SPP shall conduct sensitivity studies to determine which external flowgates (outside SPP's footprint) are significantly impacted by the market flows of SPP's control zones (currently the balancing areas that exist today in the IDC). SPP shall perform studies to determine which external flowgates SPP will monitor and help control. An external flowgate selected by one of the studies will be considered a Coordinated Flowgate (CF).

In its calculation, SPP shall consider market flow impacts as the impacts of energy dispatched by the SPP market and self-dispatched energy serving load in the market footprint, but not tagged. SPP shall use a method equivalent to the PJM/MISO Market Flow Calculation methodology identified in the PJM/MISO waiver. Impacts of tagged transactions representing delivery of energy not dispatched by the SPP market and energy dispatched by the market but delivered outside the footprint will not be included in market flow.

SPP shall separate the market flow impacts for current hour and next hour into their appropriate priorities and shall provide those market flow impacts to the IDC. The market flows will be represented in the IDC and made available for curtailment under the appropriate TLR Levels. The market flow impacts will not be represented by conventional interchange transaction tags.

The SPP method will impact the following sections of the TLR Procedure:

**Network and Native Load (NNL) Calculations** — The SPP regional difference modifies Attachment 1-IRO-006-1 Section 5 “Parallel Flow Calculation Procedure for Reallocating or Curtailing Firm Transmission Service” within the SPP region.

Section 5 of Attachment 1-IRO-006-1 requires that the “Per Generator Method without Counter Flow” methodology be utilized to calculate the portion of parallel flows on any Constrained Facility due to Network Integration (NI) transmission service and service to Native Load (NL) of each balancing authority.

SPP shall use a “Market Flow Calculation” methodology to calculate the portion of parallel flows on all facilities included in the RTO’s “Coordinated Flowgate List” due to NI service or service to NL of each balancing authority.

The Market Flow Calculation differs from the Per Generator Method in the following ways:

- The contribution from all market area generators will be taken into account.
- In the Per Generator Method, only generators having a GLDF greater than 5% are included in the calculation. Additionally, generators are included only when the sum of the maximum generating capacity at a bus is greater than 20 MW. The market flow calculations will use all positively impacting flows down to 0% with no threshold. Counter flows will not be included in the market flow calculation.
- The contribution of all market area generators is based on the present output level of each individual unit.
- The contribution of the market area load is based on the present demand at each individual bus.

By expanding on the Per Generator Method, the market flow calculation evolves into a methodology very similar to the “Per Generator Method” method, while providing increased Interchange Distribution Calculator (IDC) granularity. Counter flows are also calculated and tracked in order to account for and recognize that the either the positive market flows may be reduced or counter flows may be increased to provide appropriate relief on a flowgate.

These NNL values will be provided to the IDC to be included and represented with the calculated NNL values of other Balancing Authorities for the purposes of identifying and obtaining required NNL relief across a flowgate in congestion under a TLR Level 5A/5B.

**Pro Rata Curtailment of Non-Firm Market Flow Impacts** — The SPP regional difference modifies Attachment 1-IRO-006-1 Appendix B “Transaction Curtailment Formula” within the SPP region.

Appendix B “Transaction Curtailment Formula” details the formula used to apply a weighted impact to each non-firm tagged Interchange Transaction (Priorities 1 thru 6) for the purposes of Curtailment by the IDC. For the purpose of Curtailment, the non-firm market flow impacts (Priorities 2 and 6) submitted to the IDC by SPP should be curtailed pro-rata as is done for Interchange Transaction using firm transmission service. This is because several of the values needed to assign a weighted impact using the process listed in Appendix B will not be available:

- Distribution Factor (no tag to calculate this value from)
- Impact on Interface value (cannot be calculated without Distribution Factor)
- Impact Weighting Factor (cannot be calculated without Distribution Factor)
- Weighted Maximum Interface Reduction (cannot be calculated without Distribution Factor)



- Interface Reduction (cannot be calculated without Distribution Factor)
- Transaction Reduction (cannot be calculated without Distribution Factor)

While the non-firm market flow impacts submitted to the IDC are to be curtailed pro rata, the impacting non-firm tagged Interchange Transactions could still use the existing processes to assign the weighted impact value.

**Assignment of Sub-Priorities** — The SPP regional difference modifies Attachment 1-IRO-006-1 Appendix E “How the IDC Handles Reallocation”, Section E2 “Timing Requirements”, within the SPP region.

Under the header “IDC Calculations and Reporting” in Section E2 of Appendix E to Attachment 1-IRO-006-1, the following requirement exists: “In a TLR Level 3a the Interchange Transactions using Non-firm Transmission Service in a given priority will be further divided into four sub-priorities, based on current schedule, current active schedule (identified by the submittal of a tag ADJUST message), next-hour schedule, and tag status. Solely for the purpose of identifying which Interchange Transactions to be loaded under a TLR 3a, various MW levels of an Interchange Transaction may be in different sub-priorities. The sub-priorities are shown in the following table:

Priority	Purpose	Explanation and Conditions
S1	To allow a flowing Interchange Transaction to maintain or reduce its current MW amount in accordance with its energy profile.	The MW amount is the lowest between currently flowing MW amount and the next-hour schedule. The currently flowing MW amount is determined by the e-tag ENERGY PROFILE and ADJUST tables. If the calculated amount is negative, zero is used instead.
S2	To allow a flowing Interchange Transaction that has been curtailed or halted by TLR to reload to the lesser of its current-hour MW amount or next-hour schedule in accordance with its energy profile.	The Interchange Transaction MW amount used is determined through the e-tag ENERGY PROFILE and ADJUST tables. If the calculated amount is negative, zero is used instead.
S3	To allow a flowing Transaction to increase from its current-hour schedule to its next-hour schedule in accordance with its energy profile.	The MW amounts used in this sub-priority is determined by the e-tag ENERGY PROFILE table. If the calculated amount is negative, zero is used instead.
S4	To allow a Transaction that had never started and was submitted to the Tag Authority after the TLR (level 2 or higher) has been declared	The Transaction would not be allowed to start until all other Interchange Transactions submitted prior to the TLR with the same

	to begin flowing (i.e., the Interchange Transaction never had an active MW and was submitted to the IDC after the first TLR Action of the TLR Event had been declared.)	priority have been (re)loaded. The MW amount used is the sub-priority is the next-hour schedule determined by the e-tag ENERGY PROFILE table.
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SPP shall use a “Market Flow Calculation” methodology to calculate the amount of energy flowing across all facilities included in the RTO’s “Coordinated Flowgate List” that is associated with the operation of the SPP market. This energy is identified as “market flow.”

These market flow impacts for current hour and next hour will be separated into their appropriate priorities and provided to the IDC by SPP. The market flows will then be represented and made available for curtailment under the appropriate TLR Levels.

Even though these market flow impacts (separated into appropriate priorities) will not be represented by conventional “tags,” the impacts and their desired levels will still be provided to the IDC for current hour and next hour. Therefore, for the purposes of reallocation, a sub-priority (S1 thru S4) should be assigned to these market flow impacts by the NERC IDC as follows, using comparable logic as would be used if the impacts were in fact tagged transactions.

Priority	Purpose	Explanation and Conditions
S1	To allow existing market flow to maintain or reduce its current MW amount.	The currently flowing MW amount is the amount of market flow existing after the RTO has recognized the constraint for which TLR has been called. If the calculated amount is negative, zero is used instead.
S2	To allow market flow that has been curtailed or halted by TLR to reload to its desired amount for the current-hour.	This is the difference between the current hour unconstrained market flow and the current market flow. If the current-hour unconstrained market flow is not available, the IDC will use the most recent market flow since the TLR was first issued or, if not available, the market flow at the time the TLR was first issued.
S3	To allow a market flow to increase to its next-hour desired amount.	This is the difference between the next hour and current hour unconstrained market flow.

To be retired upon completion of the field test, and in the interim the Regional Difference will be contained in both the NERC and NAESB standards.

## F. Associated Documents

### Version History

Version	Date	Action	Change Tracking
0	April 1, 2005	Effective Date	New
0	August 8, 2005	Removed “Proposed” from Effective Date	Errata
1	August 8, 2005	Revised Attachment 1	Revision
3	February 26, 2007	Revised Purpose and Attachment 1 related to NERC NAESB split of the TLR procedure	Revision

**PLEASE NOTE: items designated for inclusion in the NAESB TLR business practice following completion of the standard revision were deleted. Please see the mapped document to see which items were move to NAESB and what future changes are expected.**

## Attachment 1-IRO-006

### Transmission Loading Relief Procedure — Eastern Interconnection

#### Purpose

This standard defines procedures for curtailment and reloading of Interchange Transactions to relieve overloads on transmission facilities modeled in the Interchange Distribution Calculator.

#### Applicability

This standard only applies to the Eastern Interconnection.

#### 1. Transmission Loading Relief (TLR) Procedure

- 1.1. **Initiation only by Reliability Coordinator.** A Reliability Coordinator shall be the only entity authorized to initiate the TLR Procedure.
  - 1.1.1. **Requesting relief on transmission facilities.** Any Transmission Operator may request from its Reliability Coordinator relief on the transmission facilities it operates. A Reliability Coordinator shall review these requests for relief and determine the appropriate relief actions.
- 1.2. **Mitigating SOL and IROL violations.** A Reliability Coordinator may utilize the TLR Procedure to mitigate potential or existing System Operating Limit (SOL) violations or to prevent or mitigate Interconnection Reliability Operating Limit (IROL) violations on any transmission facility modeled in the IDC. However, the TLR procedure is an inappropriate and ineffective tool as a sole means to mitigate existing IROL violations due to the time required to implement the procedure. Reconfiguration, redispatch, and load shedding are more timely and effective in mitigating existing IROL violations
- 1.3. **Sequencing of TLR Levels and taking emergency action.** The Reliability Coordinator shall not be required to follow the TLR Levels in their numerical sequence (Section 2, “TLR Levels”). Furthermore, if a Reliability Coordinator deems that a transmission loading condition could jeopardize Bulk Electric System reliability, the Reliability Coordinator shall have the authority to enter TLR Level 6 directly, and immediately direct the Balancing Authorities or Transmission Operators to take such actions as redispatching generation, or reconfiguring transmission, or reducing load to mitigate the critical condition until Interchange Transactions can be reduced utilizing the TLR Procedure or other methods to return the system to a secure state.
- 1.4. **Notification of TLR Procedure implementation.** The Reliability Coordinator initiating the use of the TLR Procedure shall notify other Reliability Coordinators and Balancing Authorities and Transmission Operators, and must post the initiation and progress of the TLR event on the appropriate NERC web page(s).

- 1.4.1. Notifying other Reliability Coordinators.** The Reliability Coordinator initiating the TLR Procedure shall inform all other Reliability Coordinators via the Reliability Coordinator Information System (RCIS) that the TLR Procedure has been implemented.

  - 1.4.1.1. Actions expected.** The Reliability Coordinator initiating the TLR Procedure shall indicate the actions expected to be taken by other Reliability Coordinators.
- 1.4.2. Notifying Transmission Operators and Balancing Authorities.** The Reliability Coordinator shall notify Transmission Operators and Balancing Authorities in its Reliability Area when entering and leaving any TLR level.
- 1.4.3. Notifying Sink Balancing Authorities.** The Reliability Coordinator for the sink Balancing Authority shall be responsible for directing the Sink Balancing Authority to curtail the Interchange Transactions as specified by the Reliability Coordinator implementing the TLR Procedure.

  - 1.4.3.1. Notification order.** Within a Transmission Service Priority level, the Sink Balancing Authorities whose Interchange Transactions have the largest impact on the Constrained Facilities shall be notified first if practicable.
- 1.4.4. Updates.** At least once each hour, or when conditions change, the Reliability Coordinator implementing the TLR Procedure shall update all other Reliability Coordinators (via the RCIS). Transmission Operators and Balancing Authorities who have had Interchange Transactions impacted by the TLR will be updated by their Reliability Coordinator.
- 1.5. Obligations.** All Reliability Coordinators shall comply with the request of the Reliability Coordinator who initiated the TLR Procedure, unless the initiating Reliability Coordinator agrees otherwise.
- 1.6. Consideration of Interchange Transactions.** The administration of the TLR Procedure shall be guided by information obtained from the IDC.

  - 1.6.1. Interchange Transactions not in the IDC.** Reliability Coordinators shall also treat known Interchange Transactions that may not appear in the IDC in accordance with the procedures in this document.
  - 1.6.2. Transmission elements not in IDC.** When a Reliability Coordinator is faced with an overload on a transmission element that is not modeled in the IDC, the Reliability Coordinator shall use the best information available to curtail Interchange Transactions in order to operate the system in a reliable manner. The Reliability Coordinator shall use its best efforts to ensure that Interchange Transactions with a Transfer Distribution Factor of less than the Curtailment Threshold on the transmission element not modeled in the IDC are not curtailed.
  - 1.6.3. Questionable IDC results.** Any Reliability Coordinator who believes the curtailment list from the IDC for a particular TLR event is incorrect shall

use its best efforts to communicate those adjustments necessary to bring the curtailment list into conformance with the principles of this Procedure to the initiating Reliability Coordinator. Causes of questionable IDC results may include:

- Missing Interchange Transactions that are known to contribute to the Constraint.
- Significant change in transmission system topology.
- TDF matrix error.

Impacts of questionable IDC results may include:

- Curtailment that would have no effect on, or aggravate the constraint.
- Curtailment that would initiate a constraint elsewhere.

If other Reliability Coordinators are involved in the TLR event, all impacted Reliability Coordinators shall be in agreement before any adjustments to the Curtailment list are made.

**1.6.4. Curtailment that would cause a constraint elsewhere.** A Reliability Coordinator shall be allowed to exempt an Interchange Transaction from Curtailment if that Reliability Coordinator is aware that the Interchange Transaction Curtailment directed by the IDC would cause a constraint to occur elsewhere. This exemption shall only be allowed after the Reliability Coordinator has consulted with the Reliability Coordinator who initiated the Curtailment.

**1.7 Logging.** The Reliability Coordinator shall complete the NERC Transmission Loading Relief Procedure Log whenever it invokes TLR Level 2 or above, and send a copy of the log via email to NERC within two business days of the TLR event for posting on the NERC website.

**1.8 TLR Event Review.** The Reliability Coordinator shall report the TLR event to the Operating Reliability Subcommittee in accordance with TLR review processes established by NERC as required.

**1.8.1 Providing information.** Transmission Operators and Balancing Authorities within the Reliability Coordinator's Area, and all other Reliability Coordinators, including Transmission Operators and Balancing Authorities within their respective Reliability Areas, shall provide information, as requested by the initiating Reliability Coordinator, in accordance with TLR review processes established by NERC.

**1.8.2 Market Committee reviews.** The Market Committee may conduct reviews of certain TLR events based on the size and number of Interchange Transactions that are affected, the frequency that the TLR Procedure is called for a particular Constrained Facility, or other factors.

**1.8.3 Operating Reliability Subcommittee reviews.** The Operating Reliability Subcommittee shall conduct reviews to ensure proper implementation and for “lessons learned.”

## **2. Transmission Loading Relief (TLR) Levels**

### **Introduction**

This section describes the various levels of the TLR Procedure. The description of each level begins with the circumstances that define the TLR Level, followed by the procedures to be followed.

The decision that a Reliability Coordinator makes in selecting a particular TLR Level often depends on the transmission loading condition and whether the Interchange Transaction is using Non-firm Point-to-Point Transmission Service or Firm Point-to-Point Transmission Service. There are further considerations that depend on whether the Constrained Facility is on or off the Contract Path. It is important to note that an Interchange Transaction using Firm Point-to-Point Transmission Service on all Contract Path links is considered a “firm” Interchange Transaction even if the Constrained Facility is off the Contract Path.

### **2.1. TLR Level 1 — Notify Reliability Coordinators of potential SOL or IROL Violations**

**2.1.1.** The Reliability Coordinator shall use the following circumstances to establish the need for TLR Level 1:

- The transmission system is secure.
- The Reliability Coordinator foresees a transmission or generation contingency or other operating problem within its Reliability Area that could cause one or more transmission facilities to approach or exceed their SOL or IROL.

**2.1.2. Notification procedures.** The Reliability Coordinator shall notify all Reliability Coordinators via the Reliability Coordinator Information System (RCIS) as soon as the condition is foreseen. All affected Reliability Coordinators shall check to ensure that Interchange Transactions are posted in the IDC.

### **2.2. TLR Level 2 — Hold transfers at present level to prevent SOL or IROL Violations**

**2.2.1.** The Reliability Coordinator shall use the following circumstances to establish the need for entering TLR Level 2:

- The transmission system is secure.
- One or more transmission facilities are expected to approach, or are approaching, or are at their SOL or IROL.



**2.3 TLR Level 3a — Reallocation of Transmission Service by curtailing Interchange Transactions using Non-firm Point-to-Point Transmission Service to allow Interchange Transactions using higher priority Transmission Service**

**2.3.1.** The Reliability Coordinator shall use the following circumstances to establish the need for entering TLR Level 3a:

- The transmission system is secure.
- One or more transmission facilities are expected to approach, or are approaching, or are at their SOL or IROL.
- Transactions using Non-firm Point-to-Point Transmission Service are flowing that are at or above the Curtailment Threshold on those facilities.
- The Transmission Provider has previously approved a higher priority Point-to-Point Transmission Service reservation over which a Transmission Customer wishes to begin an Interchange Transaction.

**2.4. TLR Level 3b — Curtail Interchange Transactions using Non-Firm Transmission Service Arrangements to mitigate a SOL or IROL Violation**

**2.4.1.** The Reliability Coordinator shall use the following circumstances to establish the need for entering TLR Level 3b:

- One or more transmission facilities are operating above their SOL or IROL, or
- Such operation is imminent and it is expected that facilities will exceed their reliability limit unless corrective action is taken, or
- One or more Transmission Facilities will exceed their SOL or IROL upon the removal from service of a generating unit or another transmission facility.
- Transactions using Non-firm Point-to-Point Transmission Service are flowing that are at or above the Curtailment Threshold on those facilities.

**2.5 TLR Level 4 — Reconfigure Transmission**

**2.5.1.** The Reliability Coordinator shall use the following circumstances to establish the need for entering TLR Level 4:

- One or more Transmission Facilities are above their SOL or IROL, or
- Such operation is imminent and it is expected that facilities will exceed their reliability limit unless corrective action is taken.

**2.5.2. Reconfiguration procedures.** The issuance of a TLR Level 4 shall result in the curtailment, in the current hour and the next hour, of all Interchange Transactions using Non-firm Point-to-Point Transmission Service that are at or above the Curtailment Threshold that impact the Constrained

Facilities. If a SOL or IROL violation is imminent or occurring, the Reliability Coordinator(s) shall request that the affected Transmission Operators reconfigure transmission on their system, or arrange for reconfiguration on other transmission systems, to mitigate the constraint.

**2.6. TLR Level 5a — Reallocation of Transmission Service by curtailing Interchange Transactions using Firm Point-to-Point Transmission Service on a pro rata basis to allow additional Interchange Transactions using Firm Point-to-Point Transmission Service**

**2.6.1.** The Reliability Coordinator shall use the following circumstances to establish the need for entering TLR Level 5a:

- The transmission system is secure.
- One or more transmission facilities are at their SOL or IROL.
- All Interchange Transactions using Non-firm Point-to-Point Transmission Service that are at or above the Curtailment Threshold have been curtailed.
- The Transmission Provider has been requested to begin an Interchange Transaction using previously arranged Firm Transmission Service that would result in a SOL or IROL violation.
- No further transmission reconfiguration is possible or effective.

**2.7. TLR Level 5b — Curtail Interchange Transactions using Firm Point-to-Point Transmission Service to mitigate an SOL or IROL violation**

**2.7.1.** The Reliability Coordinator shall use following circumstances to establish the need for entering TLR Level 5b:

- One or more Transmission Facilities are operating above their SOL or IROL, or
- Such operation is imminent, or
- One or more Transmission Facilities will exceed their SOL or IROL upon the removal from service of a generating unit or another transmission facility.
- All Interchange Transactions using Non-firm Point-to-Point Transmission Service that are at or above the Curtailment Threshold have been curtailed.
- No further transmission reconfiguration is possible or effective.

**2.8. Curtailment of Interchange Transactions Using Firm Transmission Service**

**2.8.1.** The Reliability Coordinator shall direct the curtailment of Interchange Transactions using Firm Transmission Service that are at or above the Curtailment Threshold for the following TLR Levels:

**2.8.1.1. TLR Level 5a.** Enable additional Interchange Transactions using Firm Point-to-Point Transmission Service to be implemented after all Interchange Transactions using Non-firm Point-to-Point Service have been curtailed, or

**2.8.1.2. TLR Level 5b.** Mitigate a SOL or IROL violation that remains after all Interchange Transactions using Non-firm Transmission Service has been curtailed under TLR Level 3b, and following attempts to reconfigure transmission under TLR Level 4.

**2.9. TLR Level 6 — Emergency Procedures**

**2.9.1** The Reliability Coordinator shall use following circumstances to establish the need for entering TLR Level 6:

- One or more Transmission Facilities are above their SOL or IROL.
- One or more Transmission Facilities will exceed their SOL or IROL upon the removal from service of a generating unit or another transmission facility.

**2.9.2 Implementing emergency procedures.** If the Reliability Coordinator deems that transmission loading is critical to Bulk Electric System reliability, the Reliability Coordinator shall immediately direct the Balancing Authorities and Transmission Operators in its Reliability Area to redispatch generation, or reconfigure transmission, or reduce load to mitigate the critical condition until Interchange Transactions can be reduced utilizing the TLR Procedures or other procedures to return the system to a secure state. All Balancing Authorities and Transmission Operators shall comply with all requests from their Reliability Coordinator.

**2.10 TLR Level 0 — TLR concluded**

**2.10.1 Interchange Transaction restoration and notification procedures.** The Reliability Coordinator initiating the TLR Procedure shall notify all Reliability Coordinators within the Interconnection via the RCIS when the SOL or IROL violations are mitigated and the system is in a reliable state, allowing Interchange Transactions to be reestablished at its discretion. Those with the highest transmission priorities shall be reestablished first if possible.

**Requirements**

- 3.1** The Reliability Coordinator shall be allowed to call a TLR 3b at any time to help mitigate a SOL or IROL violation.
- 3.2** The Reliability Coordinator shall Reallocate Interchange Transactions using Non-firm Point-to-Point Transmission for the next hour to maintain the desired flow using Reallocation in accordance with the following timing specification:

- 3.2.1** If issued prior to XX: 25, Non-firm Interchange Transactions will be curtailed to meet the desired current hour relief
    - 4.2.1.1** At XX: 25 a Reallocation will be performed to maintain the desired flow at the top of the following hour
  - 3.2.2** If issued after XX: 25, Non firm Interchange Transactions will be curtailed to meet the desired current hour relief and a Reallocation will be performed to maintain the target flow identified for the current hour.
  - 3.2.3** Transactions must be in the IDC by the Approved-tag Submission Deadline for Reallocation.
- 3.3** The IDC shall issue ADJUST Lists to the Generation and Load Balancing Authority Areas and the Purchasing-Selling Entity who submitted the tag. The ADJUST List will include:
  - 3.3.1** Interchange Transactions using Non-firm Point-to-Point Transmission Service that are to be curtailed or held during current and next hours.
  - 3.3.2** Interchange Transactions using Firm Point-to-Point Transmission Service that were entered after XX:25 or issuance of TLR 3b (see Case 3 in Appendix F).
- 3.4** The Sink Balancing Authority shall send the ADJUST Lists back to the IDC as soon as possible to ensure the most accurate calculations for actions subsequent to the TLR 3b being called.
- 3.5** The Reliability Coordinator will no longer be required to call a TLR Level 3a as soon as the SOL or IROL violation that caused the TLR 3b to be called has been mitigated due to the inherent next hour Reallocation that takes place for the top of the next hour in the TLR Level 3b.

**Appendices for Transmission Loading Relief Standard**

**PLEASE NOTE: items designated for inclusion in the NAESB TLR business practice following completion of the standard revision were deleted from this version of the NERC standard. Please see the mapped document to see which requirements were moved to NAESB and what future changes are expected. Appendices B, D, G, and the sub-priority portions of E-2 have been moved to NAESB, The appendices below (A, C, E, F) will be renumbered in the final standard.**

Appendix A. Transaction Management and Curtailment Process.

Appendix C. Sample NERC Transmission Loading Relief Procedure Log.

Appendix E. How the IDC Handles Reallocation.

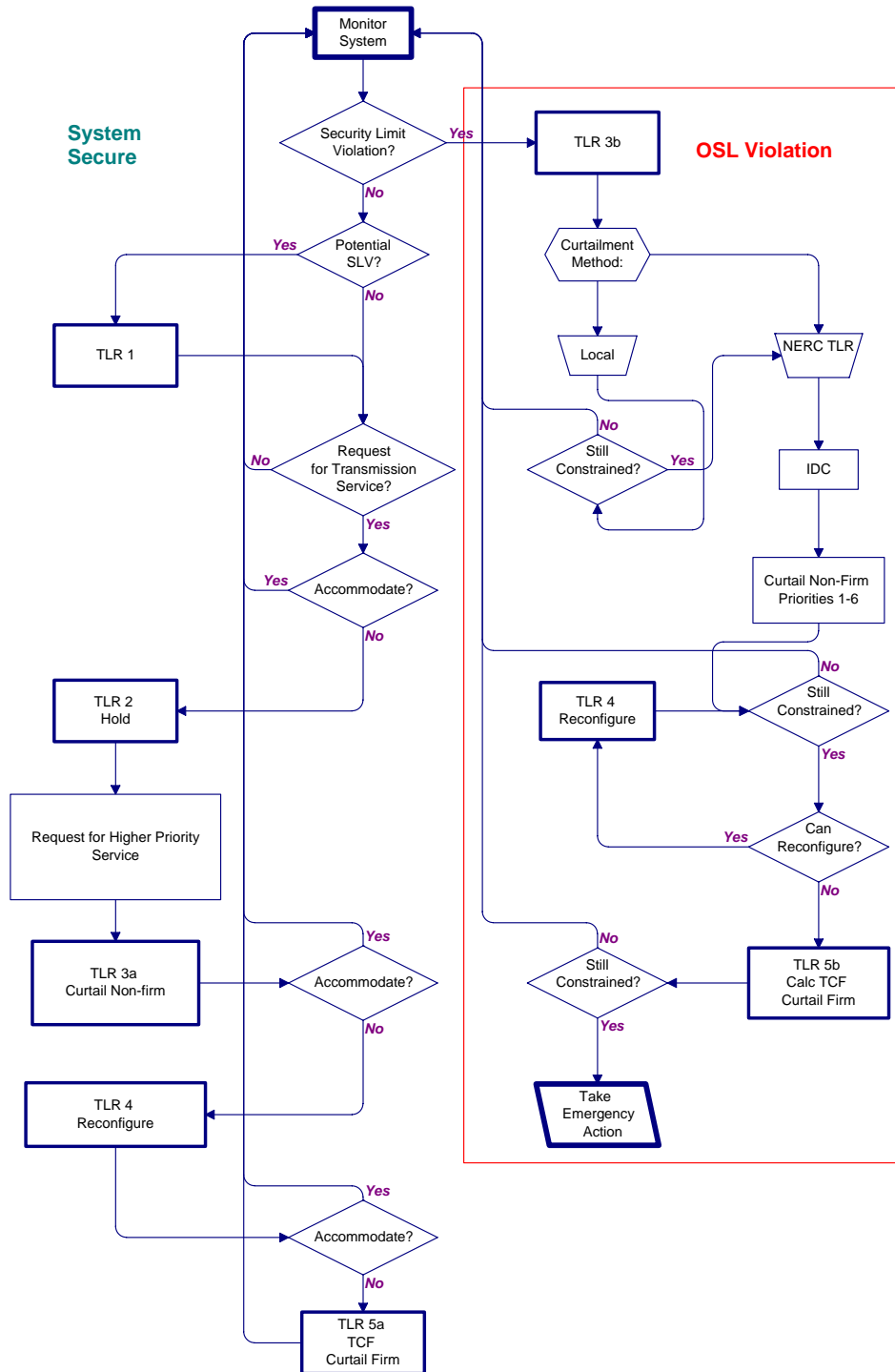
Section E1: Summary of IDC Features that Support Transaction Reloading/Reallocation.

Section E2: Timing Requirements.

Appendix F. Considerations for Interchange Transactions using Firm Point-to-Point Transmission Service.

Appendix A. Transaction Management and Curtailment Process

This flowchart depicts an overview of the Transaction Management and Curtailment process. Detailed decisions are not shown.





## **Appendix E. How the IDC Handles Reallocation**

The IDC algorithms reflect the Reallocation and reloading principles in this Appendix, as well as the reporting requirements, and status display. The IDC will obtain the Tag Submittal Time from the Tag Authority and post the Reloading/Reallocation information to the NERC TLR website.

A summary of IDC features that support the Reallocation process is provided in Attachment E1. Details on the interface and display features are provided in Attachment E2. Refer to Version 1.7.095 NERC Transaction Information Systems Working Group (TISWG) *Electronic Tagging Functional Specification* for details about the E-Tag system.

### **E1. Summary of IDC Features that Support Transaction Reloading/Reallocation**

The following is a summary of IDC features and E-Tag interface that support Reloading/Reallocation:

#### **Information posted from IDC to NERC TLR website.**

1. Restricted directions (all source/sink combinations that impact a Constrained Facility(ies) with TLR 2 or higher) will be posted to the NERC TLR website and updated as necessary.
2. TLR Constrained Facility status and Transfer Distribution Factors will continue to be posted to NERC TLR website.
3. Lowest priority of Interchange Transactions (marginal “bucket”) to be Reloaded/Reallocated next-hour on each TLR Constrained Facility will be posted on NERC TLR website. This will provide an indication to the market of priority of Interchange Transactions that may be Reloaded/Reallocated the following hours.

#### **IDC Logic, IDC Report, and Timing**

1. The Reliability Coordinator will run the IDC the Reloading/Reallocation report at approximately 00:26. The IDC will prompt the Reliability Coordinator to enter a maximum loading value. The IDC will alarm if the Reliability Coordinator does not enter this value and issue a report by 00:30 or change from TLR 3a Level. The Report will be distributed to Balancing Authorities and Transmission Operators at 00:30. This process repeats every hour as long as the approved tag submission deadline for Reallocation is in effect (or until the TLR level is reduced to 1 or 0).
2. For Interchange Transactions in the restricted directions, tags must be submitted to the IDC by the approved tag submission deadline for Reallocation to be considered for Reallocation next-hour. The time stamp by the Tag Authority is regarded the official tag submission time.
3. Tags submitted to IDC after the approved tag submission deadline for Reallocation will not be allowed to start or increase but will be considered for Reallocation the next hour.
4. Interchange Transactions in restricted directions that are not indicated as “PROCEED” on the Reload/Reallocation Report will not be permitted to start or increase next hour.

#### **Reloading/Reallocation Transaction Status**

Reloading/Reallocation status will be determined by the IDC for all Interchange Transactions. The Reloading/Reallocation status of each Interchange Transaction will be listed on IDC reports and NERC TLR website as appropriate. An Interchange Transaction is considered to be in a restricted direction if it



is at or above the Curtailment Threshold. Interchange Transactions below the Curtailment Threshold are unrestricted and free to flow subject to all applicable Reliability Standards and tariff rules.

1. **HOLD.** Permission has not been given for Interchange Transaction to start or increase and is waiting for the next Reloading/Reallocation evaluation for which it is a candidate. Interchange Transactions with E-tags submitted to the Tag Authority prior to TLR 2 or higher being declared (pre-tagged) will change to CURTAILED Status upon evaluation that does not permit them to start or increase. Transactions with E-tags submitted to Tag Authority after TLR 2 or higher was declared (post-tagged) will retain HOLD Status until given permission to proceed or E-Tag expires.
2. **CURTAILED.** Transactions for which E-Tags were submitted to Tag Authority prior to TLR 2 or higher being declared (pre-tagged) and ordered to be curtailed totally, curtailed partially, not permitted to start, or not permitted to increase. Interchange Transactions (pre-tagged or post-tagged) that were flowing and ordered to be reduced or totally curtailed. The Balancing Authority will indicate to the IDC through the E-Tag adjustment table the Interchange Transaction's curtailed values.
3. **PROCEED:** Interchange Transaction is flowing or has been permitted to flow as a result of Reloading/Reallocation evaluation. The Balancing Authority will indicate through the E-Tag adjustment table to IDC if Interchange Transaction will reload, start, or increase next-hour per Purchasing-Selling Entity's energy schedule as appropriate.

### Reallocation/Reloading Priorities

1. Interchange Transaction candidates are ranked for loading and curtailment by priority as per Section 4, "Principles for Mitigating Constraints On and Off the Contract Path." This is called the "Constrained Path Method," or CPM. (secondary, hourly, daily, ... firm etc). Interchange Transactions are curtailed and loaded pro-rata within priority level per TLR algorithm.
2. Reloading/Reallocation of Interchange Transactions are prioritized first by priority per CPM. E-Tags must be submitted to the IDC by the approved tag submission deadline for Reallocation of the hour during which the Interchange Transaction is scheduled to start or increase to be considered for Reallocation.
3. During Reloading/Reallocation, Interchange Transactions using lower priority Transmission Service will be curtailed pro-rata to allow higher priority transactions to reload, increase, or start. Equal priority Interchange Transactions will not reload, start, or increase by pro-rata Curtailment of other equal priority Interchange Transactions.
4. Reloading of Interchange Transactions using Non-firm Transmission Service with CURTAILED Status will take precedence over starting or increasing of Interchange Transactions using Non-firm Transmission Service of the same priority with PENDING Statuses.
5. Interchange Transactions using Firm Point-to-Point Transmission Service will be allowed to start as scheduled under TLR 3a as long as their E-Tag was received by the IDC by the approved tag submission deadline for Reallocation of the hour during which the Interchange Transaction is due to start or increase, regardless of whether the E-tag was submitted to the Tag Authority prior to TLR 2 or higher being declared or not. If this is the initial issuance of the TLR 3a, Interchange Transactions using Firm Point-to-Point Transmission Service will be allowed to start as scheduled as long as their E-Tag was received by the IDC by the time the TLR is declared.

**Total Flow Value on a Constrained Facility for Next Hour**

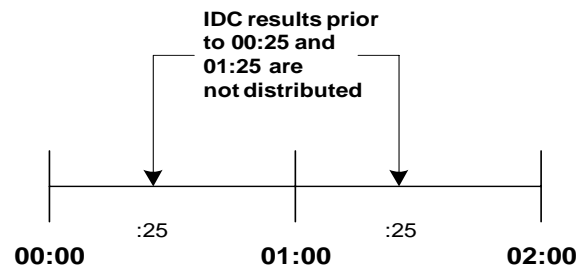
1. The Reliability Coordinator will calculate the change in net flow on a Constrained Facility due to Reallocation for the next hour based on:
  - Present constrained facility loading, present level of Interchange Transactions, and Balancing Authorities NNative Load responsibility (TLR Level 5a) impacting the Constrained Facility,
  - SOLs or IROLs, known interchange impacts and Balancing Authority NNative Load responsibility (TLR Level 5a) on the Constrained Facility the next hour, and
  - Interchange Transactions scheduled to begin the next hour.
2. The Reliability Coordinator will enter a maximum loading value for the constrained facility into the IDC as part of issuing the Reloading/Reallocation report.
3. The Reliability Coordinator is allowed to call for TLR 3a or 5a when approaching a SOL or IROL to allow maximum transactional flow next hour, and to manage flows without violating transmission limits.
4. The simultaneous curtailment and Reallocation for a Constrained Facility is allowed. This reduces the flow over the Constrained Facility while allowing Interchange Transactions using higher priority Transmission Service to start or increase the next hour. This may be used to accommodate change in flow next-hour due to changes other than Point-to-Point Interchange Transactions while respecting the priorities of Interchange Transactions flowing and scheduled to flow the next hour. The intent is to reduce the need for using TLR 3b, which prevents new Interchange Transactions from starting or increasing the next hour.
5. The Reliability Coordinator must allow Interchange Transactions to be reloaded as soon as possible. Reloading must be in an orderly fashion to prevent a SOL or IROL violation from (re)occurring and requiring holding or curtailments in the restricted direction.

**E2. Timing Requirements**

**TLR Levels 3a and 5a Issuing/Processing Time Requirement**

1. In order for the IDC to be reasonably certain that a TLR Level 3a or 5a re-allocation/reloading report in which all tags submitted by the approved tag submission deadline for Reallocation are included, the report must be generated no earlier than 00:25 to allow the 10-minute approval time for Transactions that start next hour.
2. In order to allow a Reliability Coordinator to declare a TLR Level 3a or 5a at any time during the hour, the TLR declaration and

Reallocation/Reloading report distribution will be treated as independent processes by the IDC. That is, a Reliability Coordinator may declare a TLR Level 3a or 5a at any time during the course of an hour. However, if a TLR Level 3a or 5a is declared for the next hour prior to 00:25 (see Figure 5 at right), the Reallocation/Reloading report that is generated will be made available to the issuing Reliability Coordinator only for previewing purposes, and cannot be distributed to the other Reliability Coordinators or the market.



**Figure 5 - IDC report may be run prior to 00:25, but results are not distributed.**

Instead, the issuing Reliability Coordinator will be reminded by an IDC alarm at 00:25 to generate a new Reallocation/Reloading report that will include all tags submitted prior to the approved tag submission deadline for Reallocation.

3. A TLR Level 3a or 5a Reallocation/Reloading report must be confirmed by the issuing Reliability Coordinator prior to 00:30 in order to provide a minimum of 30 minutes for the Reliability Coordinators with tags sinking in its Reliability Area to coordinate the Reallocation and Reloading with the Sink Balancing Authorities. This provides only 5 minutes (from 00:25 to 00:30) for the issuing Reliability Coordinator to generate a Reallocation/Reloading report, review it, and approve it.
4. The TLR declaration time will be recorded in the IDC for evaluating transaction sub-priorities for Reallocation/Reloading purposes (see Subpriority Table, in the **IDC Calculations and Reporting** section below).

**Re-Issuing of a TLR Level 2 or Higher**

Each hour, the IDC will automatically remind the issuing Reliability Coordinator (via an IDC alarm) of a TLR level 2 or higher declared in the previous hour or earlier about re-issuing the TLR. The purpose of the reminder is to enable the Reliability Coordinator to Reallocate or reload currently halted or curtailed Interchange Transactions next hour. The reminder will be in the form of an alarm to the issuing Reliability Coordinator, and will take place at 00:25 so that, if the Reliability Coordinator re-issues the TLR as a TLR level 3a or 5a, all tags submitted prior to the approved tag submission deadline for Reallocation are available in the IDC.

**IDC Assistance with Next Hour Point-to-Point Transactions**

In order to assist a Reliability Coordinator in determining the MW relief required on a Constrained Facility for the next hour for a TLR level 3a or 5a, the IDC will calculate and present the total MW impact of all currently flowing and scheduled Point-to-Point Transactions

for the next hour. In order to assist a Reliability Coordinator in determining the MW relief required on a Constrained Facility for the next hour during a TLR level 5a, the IDC will calculate and present the total MW impact of all currently flowing and scheduled Point-to-Point Transactions for the next hour as well as Balancing Authority with flows due to service to Network Customers and Native Load. The Reliability Coordinator will then be requested to provide the total incremental or decremental MW amount of flow through the Constrained Facility that can be allowed for the next hour. The value entered by the Reliability Coordinator and the IDC-calculated amounts will be used by the IDC to identify the relief/reloading amounts (delta incremental flow value) on the constrained facility. The IDC will determine the Transactions to be reloaded, reallocated, or curtailed to make room for the Transactions using higher priority Transmission Service. The following examples show the calculation performed by IDC to identify the “delta incremental flow:”

**Example 1**

Flow to maintain on Facility	800 MW
Expected flow next hour from Transactions using Point-to-Point Transmission Service	950 MW
Contribution from flow next hour from service to Network customers and Native Load	-100 MW
Expected Net flow next hour on Facility	850 MW
Amount of Transactions using Point-to-Point Transmission Service to hold for Reallocation	850 MW – 800 MW = 50 MW
Amount to enter into IDC for Transactions using Point-to-Point Transmission Service	950 MW – 50 MW = 900 MW

**Example 2**

Flow to maintain on Facility	800 MW
Expected flow next hour from Transactions using Point-to-Point Transmission Service	950 MW
Contribution from flow next hour from service to Network customers and Native Load	50 MW
Expected Net flow next hour on Facility	1000 MW
Amount of Transactions using Point-to-Point Transmission Service to hold for Reallocation	1000 MW – 800 MW = 200 MW
Amount to enter into IDC for Transactions using Point-to-Point Transmission Service	950 MW – 200 MW = 750 MW

**Example 3**

Flow to maintain on Facility	800 MW
Expected flow next hour from Transactions using Point-	950 MW

to-Point Transmission Service	
Contribution from flow next hour from service to Network customers and Native Load	-200 MW
Expected Net flow next hour on Facility	750 MW
Amount of Transactions using Point-to-Point Transmission Service to hold for Reallocation	750 MW – 800 MW = -50 MW None are held

For a TLR levels 3b or 5b the IDC will request the Reliability Coordinator to provide the MW requested relief amount on the Constrained Facility, and will not present the current and next hour MW impact of Point-to-Point transactions. The Reliability Coordinator-entered requested relief amount will be used by the IDC to determine the Interchange Transaction Curtailments and flows due to service to Network Customers and Native Load (TLR Level 5b) in order to reduce the SOL or IROL violation on the Constrained Facility by the requested amount.

***IDC Calculations and Reporting***

At the time the TLR report is processed, the IDC will use all candidate Interchange Transactions for Reallocation that met the approved tag submission deadline for Reallocation plus those Interchange Transactions that were curtailed or halted on the previous TLR action of the same TLR event. The IDC will calculate and present an Interchange Transactions Halt/Curtailment list that will include reload and Reallocation of Interchange Transactions. The Interchange Transactions are prioritized as follows:

1. All Interchange Transactions will be arranged by Transmission Service Priority according to the Constrained Path Method. These priorities range from 1 to 6 for the various non-firm Transmission Service products (TLR levels 3a and 3b). Interchange Transactions using Firm Transmission Service (priority 7) are used only in TLR levels 5a and 5b. Next-Hour Market Service is included at priority 0 (Recommended to be placed in Attachment 2).

Examples of Interchange Transactions using Non-firm Transmission Service sub-priority settings begin in the **Transaction Sub-priority Examples** following sections

2. All Interchange Transactions using Firm Transmission Service will be put in the same priority group, and will be Curtailed/Reallocated pro-rata, independent of their current status (curtailed or halted) or time of submittal with respect to TLR issuance (TLR level 5a). Under a TLR 5a, all Interchange Transactions using Non-firm Transmission Service that is at or above the Curtailment Threshold will have been curtailed and hence sub-prioritizing is not required.

All Interchange Transactions processed in a TLR are assigned one of the following statuses:

- PROCEED:** The Interchange Transaction has started or is allowed to start to the next hour MW schedule amount.
- CURTAILED:** The Interchange Transaction has started and is curtailed due to the TLR, or it had not started but it was submitted prior to the TLR being declared (level 2 or higher).

**HOLD:** The Interchange Transaction had never started and it was submitted after the TLR being declared – the Interchange Transaction is held from starting next hour or the transaction had never started and it was submitted to the IDC after the Approved-Tag Submission Deadline – the Interchange Transaction is to be held from starting next hour and is not included in the Reallocation calculations until following hour.

Upon acceptance of the TLR Transaction Reallocation/reloading report by the issuing Reliability Coordinator, the IDC will generate a report to be sent to NERC that will include the PSE name and Tag ID of each Interchange Transaction in the IDC TLR report. The Interchange Transaction will be ranked according to its assigned status of HOLD, CURTAILED or PROCEED. The reloading/Reallocation report will be made available at NERC's public TLR website, and it is NERC's responsibility to format and publish the report.

### **Tag Reloading for TLR Levels 1 and 0**

When a TLR Level 1 or 0 is issued, the Constrained Facility is no longer under SOL or IROL violation and all Interchange Transactions are allowed to flow. In order to provide the Reliability Coordinators with a view of the Interchange Transactions that were halted or curtailed on previous TLR actions (level 2 or higher) and are now available for reloading, the IDC provides such information in the TLR report.

### **New Tag Alarming**

Those Interchange Transactions that are at or above the Curtailment Threshold and are *not* candidates for Reallocation because the tags for those Transactions were not submitted by the approved tag submission deadline for Reallocation will be flagged as HOLD and must not be permitted to start or increase during the next hour. To alert Reliability Coordinators of those Transactions required to be held, the IDC will generate a report (for viewing within the IDC only) at various times. The report will include a list of all HOLD Transactions. In order not to overwhelm the Reliability Coordinator with alarms, only those who issued the TLR and those whose Transactions sink within their Reliability Area will be alarmed. An alarm will be issued for a given tag only once and will be issued for all TLR levels for which halting new Transactions is required: TLR Level 2, 3a, 3b, 5a and 5b.

### **Tag Adjustment**

The Interchange Transactions with statuses of HOLD, CURTAILED or PROCEED must be adjusted by a Tag Authority or Tag Approval entity. Without the tag adjustments, the IDC will assume that Interchange Transactions were not curtailed/held and are flowing at their specified schedule amounts.

1. Interchange Transactions marked as CURTAILED should be adjusted to a cap equal to, or at the request of the originating PSE, less than the reallocated amount (shown as the MW CAP on the IDC report). This amount may be zero if the Transaction is fully curtailed.
2. Interchange Transaction marked as PROCEED should be adjusted to reload (NULL or to its MW level in accordance with its Energy Profile in the adjusted MW in the E-Tag) if the Interchange Transaction has been previously adjusted; otherwise, if the Interchange Transaction is flowing in full, the Tag Authority need not issue an adjust.
3. Interchange Transactions marked as HOLD should be adjusted to 0 MW.

**Special Tag Status**

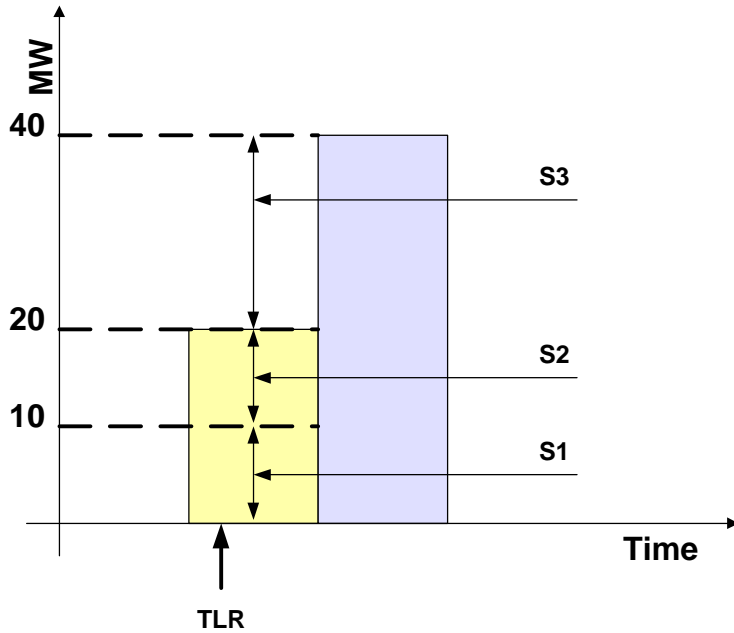
There are cases in which a tag may be marked with a composite state of ATTN\_REQD to indicate that tag Authority/Approval failed to communicate or there is an inconsistency between the validation software of different tag Authority/Approval entities. In this situation, the tag is no longer subject to passive approval and its status change to IMPLEMENT may take longer than 10 minutes. Under these circumstances, the IDC may have a tag that is issued prior to the Tag Submittal Deadline that will not be a candidate for Reallocation. Such tags, when approved by the Tag Authority, will be marked as HOLD and must be halted.

**Transaction Sub-Priority Examples**

The following describes examples of Interchange Transactions using Non-firm Transmission Service sub-priority setting for an Interchange Transaction under different circumstances of current-hour and next-hour schedules and active MW flowing as modified by tag adjust table in E-Tag.

Example 1 – Transaction curtailed, next-hour Energy Profile is higher

Energy Profile: Current hour	20 MW
Actual flow following curtailment: Current hour	10 MW
Energy Profile: Next hour	40 MW



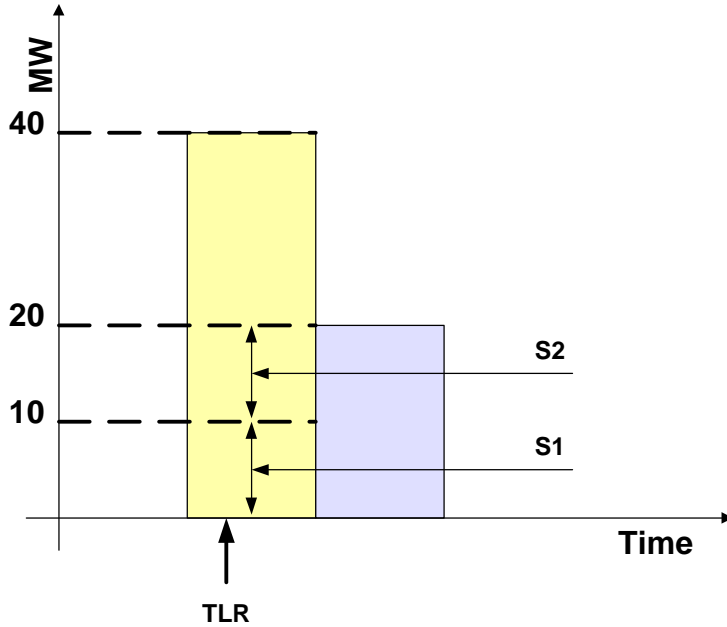
**Sub-priorities for Transaction MW:**

<i>Sub-Priority</i>	<i>MW Value</i>	<i>Explanation</i>
S1	10 MW	Maintain current curtailed flow
S2	+10 MW	Reload to current hour Energy Profile
S3	+20 MW	Load to next hour Energy Profile
S4		



**Example 2 – Transaction curtailed, next-hour Energy Profile is lower**

Energy Profile: Current hour	40 MW
Actual flow following curtailment: Current hour	10 MW
Energy Profile: Next hour	20 MW

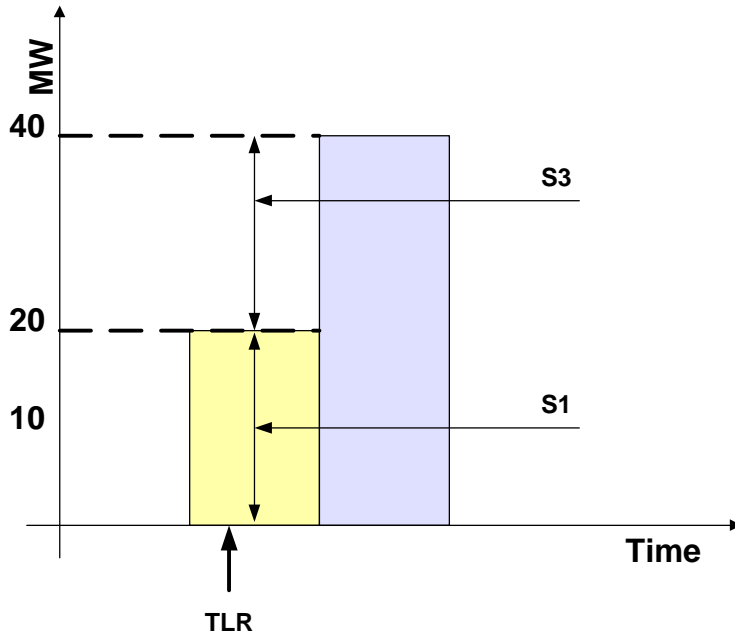


**Sub-priorities for Transaction MW:**

<i>Sub-Priority</i>	<i>MW Value</i>	<i>Explanation</i>
S1	10 MW	Maintain current curtailed flow
S2	+10 MW	Reload to <i>lesser</i> of current and next-hour Energy Profile
S3	+0 MW	Next-hour Energy Profile is 20MW, so no change in MW value
S4		

**Example 3 – Transaction not curtailed, next-hour Energy Profile is higher**

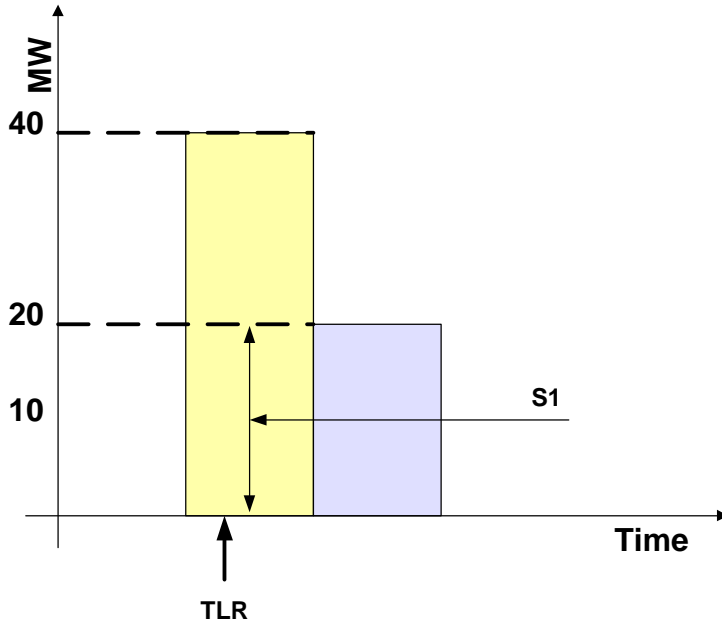
Energy Profile: Current hour	20 MW
Actual flow following curtailment: Current hour	20 MW (no curtailment)
Energy Profile: Next hour	40 MW



<i>Sub-Priority</i>	<i>MW Value</i>	<i>Explanation</i>
S1	20 MW	Maintain current flow (not curtailed)
S2	+0 MW	Reload to <i>lesser</i> of current and next-hour Energy Profile
S3	+20 MW	Next-hour Energy Profile is 40MW
S4		

**Example 4 – Transaction not curtailed, next-hour Energy Profile is lower**

Energy Profile: Current hour	40 MW
Actual flow following curtailment: Current hour	40 MW (no curtailment)
Energy Profile: Next hour	20 MW

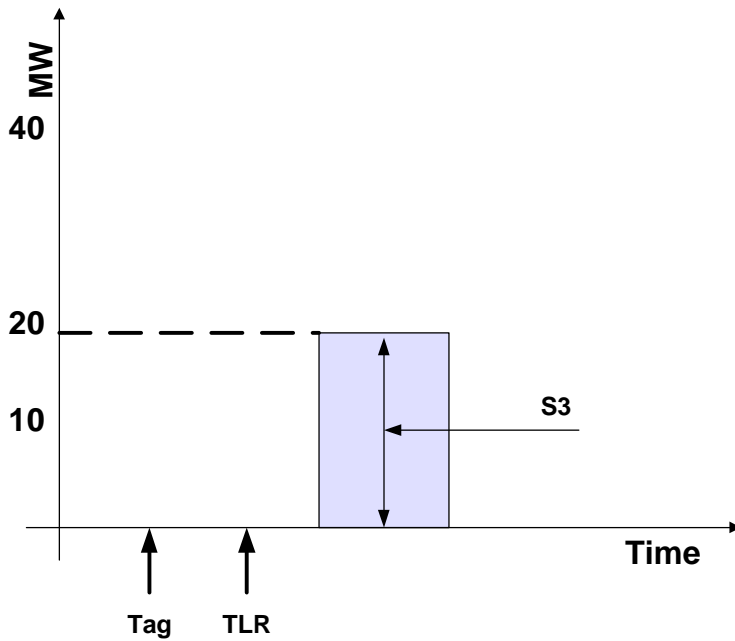


**Sub-priorities for Transaction MW:**

<i>Sub-Priority</i>	<i>MW Value</i>	<i>Explanation</i>
S1	20 MW	Reduce flow to next-hour Energy Profile (20MW)
S2	+0 MW	Reload to <i>lesser</i> of current and next-hour Energy Profile
S3	+0 MW	Next-hour Energy Profile is 20MW
S4		

**Example 5 — TLR Issued before Transaction was scheduled to start**

Energy Profile: Current hour	0 MW
Actual flow following curtailment: Current hour	0 MW (Transaction scheduled to start <i>after</i> TLR initiated)
Energy Profile: Next hour	20 MW



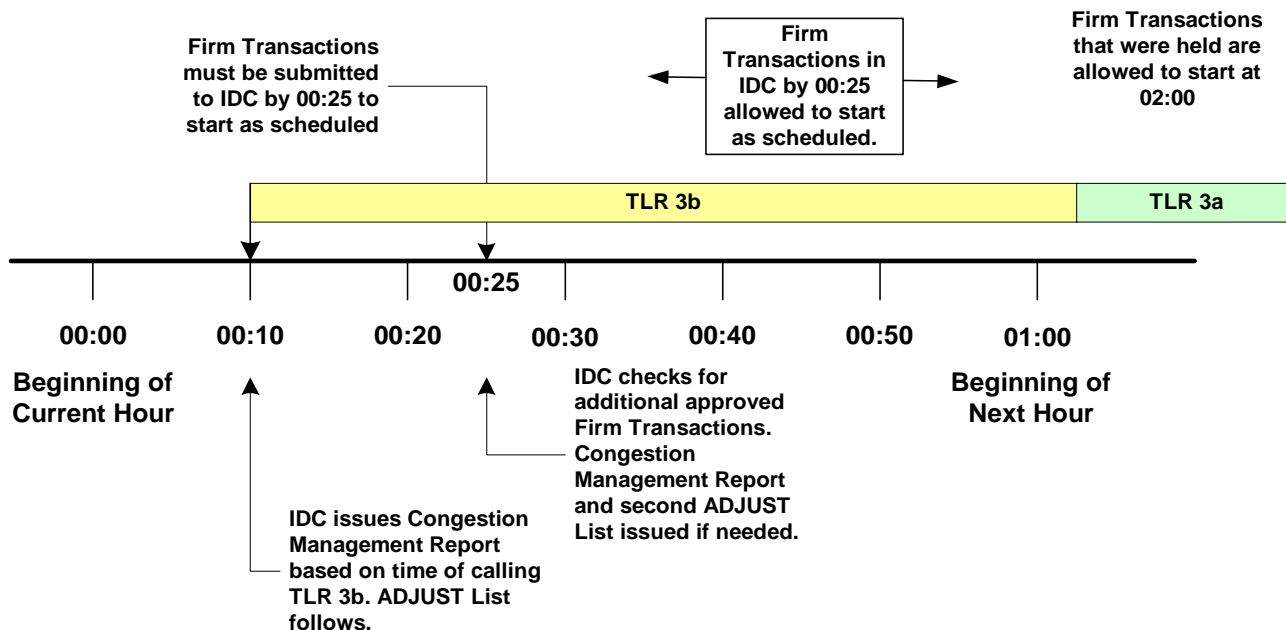
<i>Sub-Priority</i>	<i>MW Value</i>	<i>Explanation</i>
S1	0 MW	Transaction was not allowed to start
S2	+0 MW	Transaction was not allowed to start
S3	+20 MW	Next-hour Energy Profile is 20MW
S4	+0	Tag submitted prior to TLR

**Appendix F. Considerations for Interchange Transactions**

**Using Firm Point-to-Point Transmission Service**

The following cases explain the circumstances under which an Interchange Transaction using Firm Point-to-Point Transmission Service will be allowed to start as scheduled during a TLR 3b:

**Case 1: TLR 3b is called between 00:00 and 00:25 and the Interchange Transaction using Firm Point-to-Point Transmission Service is submitted to IDC by 00:25.**



The IDC will examine the current hour (00) and next hour (01) for all Interchange Transactions.

The IDC will issue an ADJUST List based upon the time the TLR 3b is called. The ADJUST List will include curtailments of Interchange Transactions using Non-firm Point-to-Point Transmission Service as necessary to allow room for those Interchange Transactions using Firm Point-to-Point Transmission Service to start as scheduled.

At 00:25, the IDC will check for additional Interchange Transactions using Firm Point-to-Point Transmission Service that were submitted to the IDC by that time and issue a second ADJUST List if those additional Interchange Transactions are found.

All existing or new Interchange Transactions using Non-firm Point-to-Point Transmission Service that are increasing or expected to start during the current hour or next hour will be placed on HALT or HOLD. There is no Reallocation of lower-priority Interchange Transactions using Non-firm Point-to-Point Transmission Service.

Interchange Transactions using Firm Point-to-Point Transmission Service that were submitted to the IDC by 00:25 will be allowed to start as scheduled.

## **Standard IRO-006-4 — Reliability Coordination — Transmission Loading Relief**

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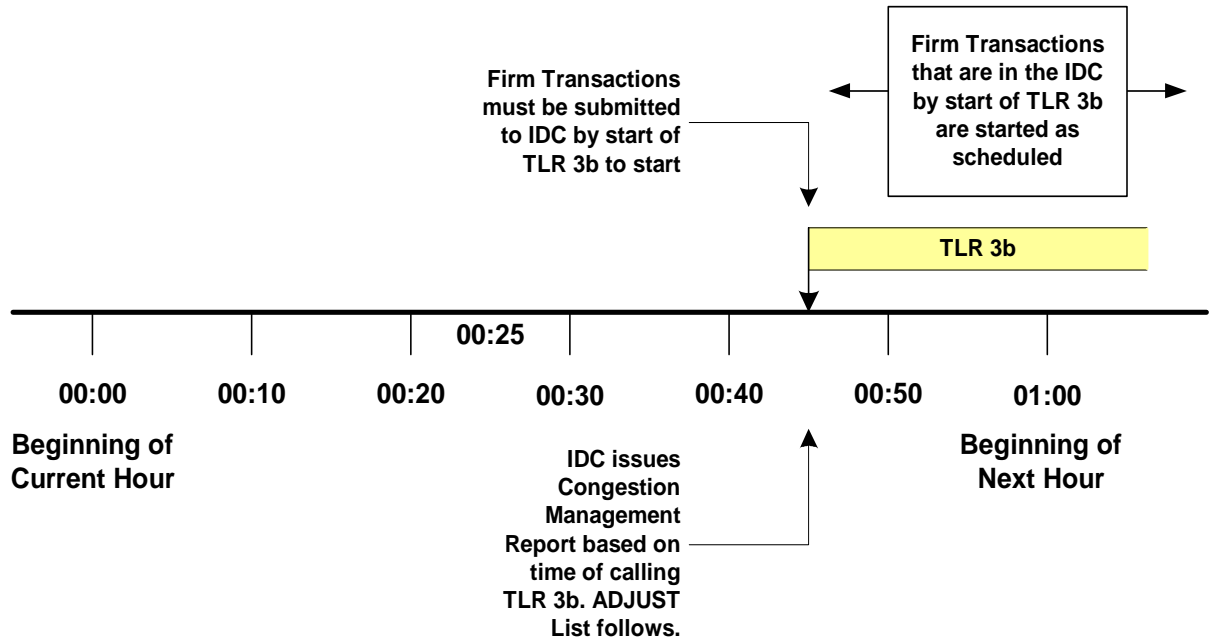
Interchange Transactions using Firm Point-to-Point Transmission Service that were submitted to the IDC after 00:25 will be held.

Once the SOL or IROL violation is mitigated, the Reliability Coordinator shall call a TLR Level 3a (or lower). If a TLR Level 3a is called:

Interchange Transactions using Firm Point-to-Point Transmission Service that were submitted to the IDC by 00:25 will be allowed to start as scheduled at 02:00.

Interchange Transactions using Non-firm Point-to-Point Transmission Service that were held may then be reallocated to start at 02:00.

**Case 2: TLR 3b is called after 00:25 and the Interchange Transaction using Firm Point-to-Point Transmission Service is submitted to the IDC no later than the time at which the TLR 3b is called.**



The IDC will examine the current hour (00) and next hour (01) for all Interchange Transactions.

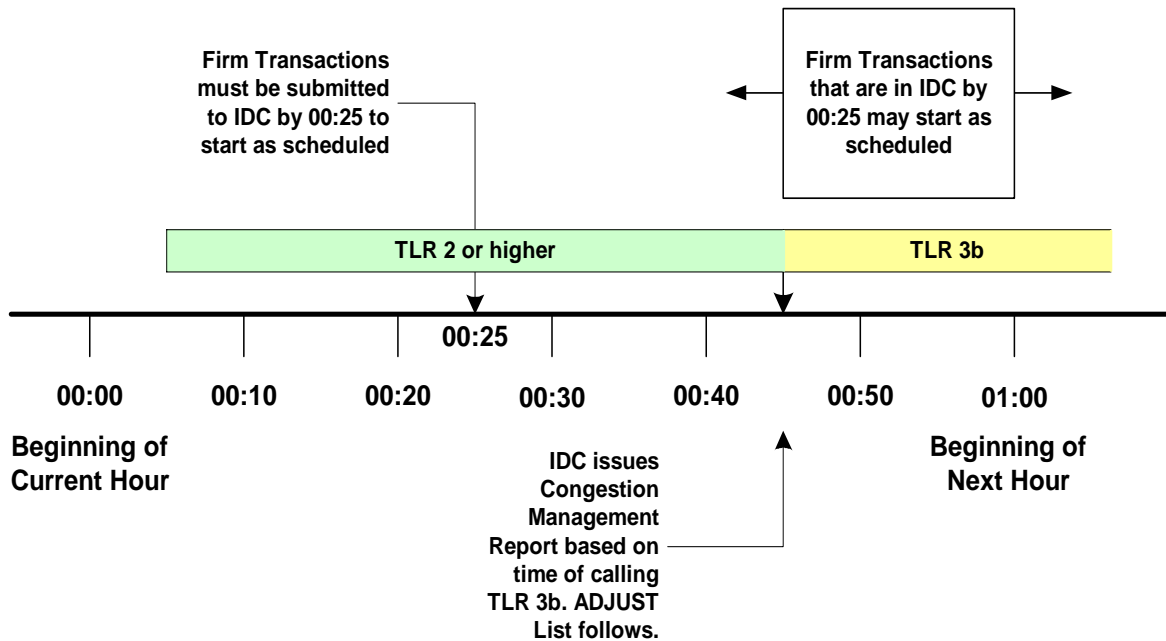
The IDC will issue an ADJUST List at the time the TLR 3b is called. The ADJUST List will include additional curtailments of Interchange Transactions using Non-firm Point-to-Point Transmission Service as necessary to allow room for those Interchange Transactions using Firm Point-to-Point Transmission Service to start at as scheduled.

All existing or new Interchange Transactions using Non-firm Point-to-Point Transmission Service that are increasing or expected to start during the current hour or next hour will be placed on HALT or HOLD. There is no Reallocation of lower-priority Interchange Transactions using Non-firm Point-to-Point Transmission Service.

Interchange Transactions using Firm Point-to-Point Transmission Service that were submitted to the IDC by the time the TLR 3b was called will be allowed to start at as scheduled.

Interchange Transaction using Firm Point-to-Point Transmission Service that were submitted to the IDC after the TLR 3b was called will be held until the next issuance for TLR (either TLR 3b, 3a, or lower level).

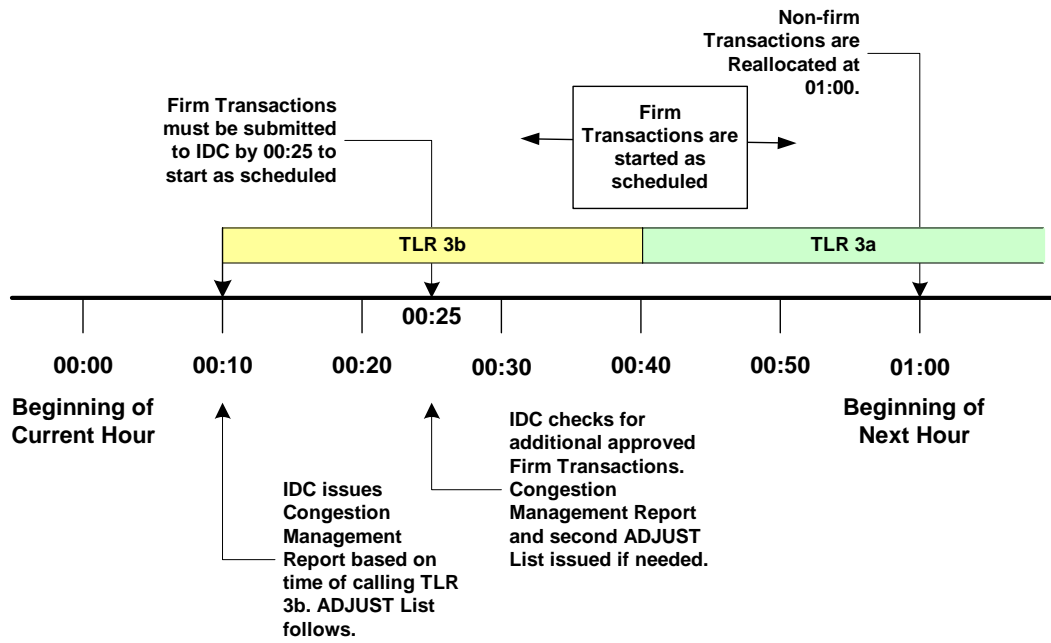
Case 3. TLR 2 or higher is in effect, a TLR 3b is called after 00:25, and the Interchange Transaction using Firm Point-to-Point Transmission Service is submitted to the IDC by 00:25.



If a TLR 2 or higher has been issued and 3B is subsequently issued, then only those Interchange Transactions using Firm Point-to-Point Transmission Service that had been submitted to the IDC by 00:25 will be allowed to start as scheduled. All other Interchange Transactions are held.



Case 4. TLR 3b is called before 00:25 and the Interchange Transaction is submitted to the IDC by 00:25. TLR 3a is called at 00:40.

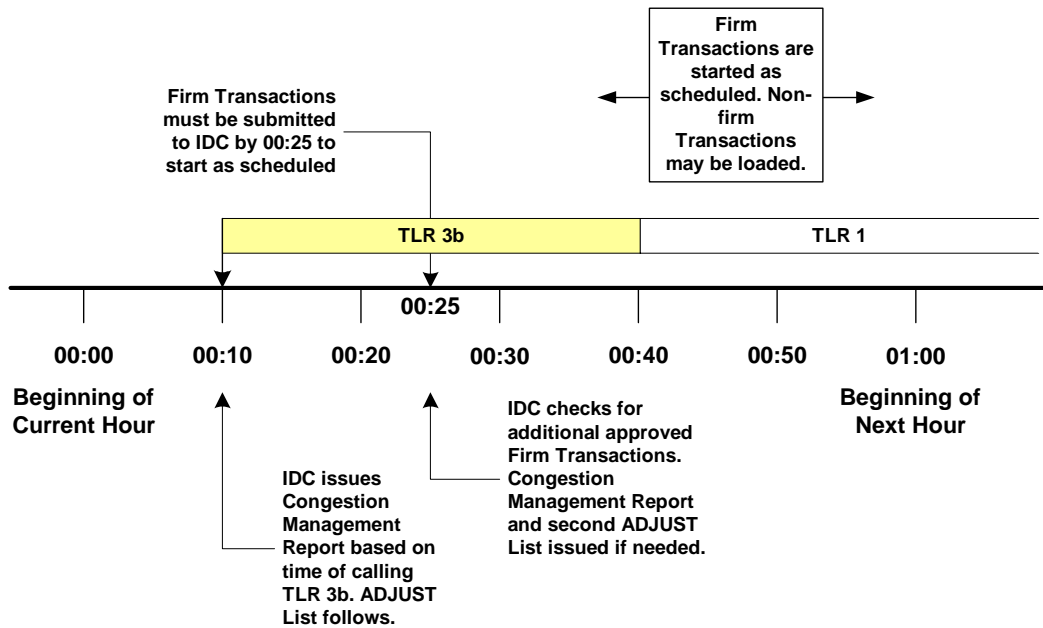


Same as Case 1, but TLR Level 3b ends at 00:40 and becomes TLR Level 3a.

All Interchange Transactions using Firm Point-to-Point Transmission Service will start as scheduled if in by the time the 3A is declared.

All Interchange Transactions using Non-firm Point-to-Point Transmission Service are reallocated at 01:00.

Case 5. TLR 3b is called before 00:25 and the Interchange Transaction is submitted to the IDC by 00:25. TLR 1 is called at 00:40.



Same as Case 1, but TLR Level 3b ends at 00:40 and becomes TLR Level 1.

All Interchange Transactions using Firm Point-to-Point Transmission Service will start as scheduled.

All Interchange Transactions using Non-firm Point-to-Point Transmission Service may be loaded immediately.

### **Standard Development Roadmap**

*This section is maintained by the drafting team during the development of the standard and will be removed when the standard becomes effective.*

#### **Development Steps Completed:**

1. SC authorized moving the SAR forward to standard drafting (December 5, 2006).
2. SC appointed the SDT (February 9, 2007).
3. SDT posted first draft of proposed changes and implementation plan for a 45-day comment period from May 1–June 14, 2007

#### **Proposed Action Plan and Description of Current Draft:**

This 30-day pre-ballot posting of IRO-006 and its associated implementation plan reflects consideration of the comments received during the May 1–June 14, 2007 comment period.

#### **Future Development Plan:**

<b>Anticipated Actions</b>	<b>Anticipated Date</b>
1. Post for 30-day pre-ballot period.	June 29–July 28, 2007
2. Conduct first ballot.	July 29–August 7, 2007
3. Post response to comments on first ballot.	August 21, 2007
4. Conduct second ballot.	August 22–31, 2007
5. Post for 30-day period prior to board adoption.	June 29–July 28
6. Board adoption date.	September 3, 2007

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Proposed Effective Date: Effective Upon BOT adoption.

**Definitions of Terms Used in Standard**

*This section includes all newly defined or revised terms used in the proposed standard. Terms already defined in the Reliability Standards Glossary of Terms are not repeated here. New or revised definitions listed below become approved when the proposed standard is approved. When the standard becomes effective, these defined terms will be removed from the individual standard and added to the Glossary.*

**| There are no new or revised definitions proposed in this standard revision.**

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Proposed Effective Date: Effective  
Upon BOT adoption.

**| Draft 2: June 22, 2007**

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A. Introduction

- 1. Title: Reliability Coordination — Transmission Loading Relief (TLR)
- 2. Number: IRO-006-4
- 3. Purpose: The purpose of this standard is to provide **Interconnection-wide transmission loading relief procedures that can be used to prevent or manage potential or actual SOL and IROL violations to maintain reliability of the Bulk Electric System.**
- 4. Applicability:
  - 4.1. Reliability Coordinators.
  - 4.2. Transmission Operators.
  - 4.3. Balancing Authorities.
- 5. Proposed Effective Date: **First** day of first quarter after BOT adoption.

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B. Requirements

R1. A Reliability Coordinator experiencing a potential or actual SOL or IROL violation within its Reliability Coordinator Area shall, with its authority and at its discretion, select one or more procedures to provide transmission loading relief. These procedures can be a “local” (regional, interregional, or sub-regional) transmission loading relief procedure or one of the following Interconnection-wide procedures: [Violation Risk Factor: Medium] [Time Horizon: Real-time Operations]

This requirement simply states; the RC has the authority to act, the RC should know at what limits he/she needs to act, the RC has pre-identified regional, interregional and sub-regional TLR procedures.

R1.1. The Interconnection-wide Transmission Loading Relief (TLR) procedure for use in the Eastern Interconnection provided in Attachment 1-IRO-006-4. The TLR procedure alone is an inappropriate and ineffective tool to mitigate an IROL violation due to the time required to implement the procedure. Other acceptable and more effective procedures to mitigate actual IROL violations include: reconfiguration, redispatch, or load shedding.

Comment: see FERC Order 693 paragraph 964 regarding recommendation for using tools other than TLR to mitigate an actual IROL.

R1.2. The Interconnection-wide transmission loading relief procedure for use in the Western Interconnection is WECC-IRO-STD-006-0 provided at: [ftp://www.nerc.com/pub/sys/all\\_updl/standards/rrs/IRO-STD-006-0\\_17Jan07.pdf](ftp://www.nerc.com/pub/sys/all_updl/standards/rrs/IRO-STD-006-0_17Jan07.pdf).

Deleted: is the “WSCC Unscheduled Flow Mitigation Plan.”

Field Code Changed

R1.3. The Interconnection-wide transmission loading relief procedure for use in ERCOT is provided as Section 7 of the ERCOT Protocols, posted at:

Note: the URL has changed.

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<http://www.ercot.com/mktrules/protocols/current.html>

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Proposed Effective Date: Effective Upon BOT adoption.

- R2. The Reliability Coordinator shall only use local transmission loading relief or congestion management procedures to which the Transmission Operator experiencing the potential or actual SOL or IROL violation is a party. [Violation Risk Factor: Low] [Time Horizon: Operations Planning]
- R3. ~~Each Reliability Coordinator with a relief obligation from an Interconnection-wide procedure shall follow the curtailments as directed by the Interconnection-wide procedure. A Reliability Coordinator desiring to use a local procedure as a substitute for curtailments as directed by the Interconnection-wide procedure shall obtain prior approval of the local procedure from the ERO.~~ [Violation Risk Factor: Low] [Time Horizon: Operations Planning]
- R4. When Interconnection-wide procedures are implemented to curtail Interchange Transactions that cross an Interconnection boundary, each Reliability Coordinator shall comply with the provisions of the Interconnection-wide procedure. [Violation Risk Factor: Medium] [Time Horizon: Real-time Operations]
- R5. During the implementation of relief procedures, and up to the point that emergency action is necessary, Reliability Coordinators and Balancing Authorities shall comply with applicable Interchange scheduling standards. [Violation Risk Factor: Medium] [Time Horizon: Real-time Operations]

Comment: R5 will be reviewed during Phase 3 of the TLR drafting team work. See white paper for explanation of the three phases of changes to this standard.

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- Deleted: may implement
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C. Measures

- M1. Each Reliability Coordinator shall be capable of providing evidence (such as logs) that demonstrate when Eastern Interconnection, WECC, or ERCOT Interconnection-wide transmission loading relief procedures are implemented, the implementation follows the respective established procedure as specified in this standard (R1, R1.1, R1.2 and R1.3).
- M2. Each Reliability Coordinator shall be capable of providing evidence (such as written documentation) that the Transmission Operator experiencing the potential or existing SOL or IROL violations is a party to the local transmission loading relief or congestion management procedures when these procedures have been implemented (R2).
- M3. Each Reliability Coordinator shall be capable of providing evidence (such as NERC meeting minutes) that the local procedure has received prior approval by the ERO when such procedure is used as a substitute for curtailment as directed by the Interconnection-wide procedure (R3).
- M4. Each Reliability Coordinator shall be capable of providing evidence (such as logs) that the responding Reliability Coordinator complied with the provisions of the Interconnection-wide procedure as requested by the initiating Reliability Coordinator when requested to curtail an Interchange Transaction that crosses an Interconnection boundary (R4).
- M5. Each Reliability Coordinator and Balancing Authority shall be capable of providing evidence (such as Interchange Transaction Tags, operator logs, voice recordings or transcripts of voice recordings, electronic communications, computer printouts) that

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they have complied with applicable Interchange scheduling standards INT-001, INT-003, and INT-004 during the implementation of relief procedures, up to the point emergency action is necessary (R5).

**D. Compliance**

**1. Compliance Monitoring Process**

**1.1. Compliance Monitoring Responsibility**

Regional Entity.

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**1.2. Compliance Monitoring Period and Reset Time Frame**

Compliance Monitoring Period: One calendar year.

Reset Period: One month without a violation.

**1.3. Data Retention**

The Reliability Coordinator shall maintain evidence for eighteen months for M1, M4, and M5.

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The Reliability Coordinator shall maintain evidence for the duration the Transmission Operator is party to the procedure in effect plus one calendar year thereafter for M2.

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The Reliability Coordinator shall maintain evidence for the approved duration of the procedure in effect plus one calendar year thereafter for M3.

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**1.4. Additional Compliance Information**

Each Reliability Coordinator and Balancing Authority shall demonstrate compliance through self-certification submitted to its Compliance Monitor annually and reporting by exception. The Compliance Monitor may also use scheduled on-site reviews every three years, and investigations upon complaint, to assess performance.

Each Reliability Coordinator and Balancing Authority shall have the following available for its Compliance Monitor to inspect during a scheduled, on-site review or within 5 days of a request as part of an investigation upon complaint:

**1.4.1** Operations logs, voice recordings or transcripts of voice recordings or other documentation providing the evidence of its compliance to all the requirements for all Interconnection-wide TLR procedures that it has implemented during the review period.

**1.4.2** TLR reports.

**2. Violation Severity Levels**

**2.1. Lower. There shall be a lower violation severity level if any of the following conditions exist:**

**2.1.1** For each TLR in the Eastern Interconnection, the Reliability Coordinator violates one (1) requirement of the applicable Interconnection-wide procedure (R1)

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2.1.2 The Reliability Coordinators or Balancing Authorities did not comply with applicable Interchange scheduling standards during the implementation of the relief procedures, up to the point emergency action is necessary (R5).

2.1.3 When requested to curtail an Interchange Transaction that crosses an Interconnection boundary utilizing an Interconnection-wide procedure, the responding Reliability Coordinator did not comply with the provisions of the Interconnection-wide procedure as requested by the initiating Reliability Coordinator (R4).

Deleted: <#>Moderate. ¶  
<#>For each TLR in the Eastern Interconnection, the Reliability Coordinator violates two (2) to three (3) requirements of the applicable Interconnection-wide procedure (R1). ¶  
<#>High. There shall be a high violation severity level if any of the following conditions exist: ¶  
<#>For each TLR in the Eastern Interconnection, the applicable Reliability Coordinator violates four (4) to five (5) requirements of the applicable Interconnection-wide procedure (R1). ¶

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2.2. **Moderate. There shall be a moderate violation severity level if any of the following conditions exist:**

2.2.1 For each TLR in the Eastern Interconnection, the Reliability Coordinator violated two (2) to three (3) requirements of the applicable Interconnection-wide procedure (R1).

2.3. **High. There shall be a high violation severity level if any of the following conditions exist:**

2.3.1 For each TLR in the Eastern Interconnection, the applicable Reliability Coordinator violated four (4) to five (5) requirements of the applicable Interconnection-wide procedure (R1).

2.4. **Severe. There shall be a severe violation severity level if any of the following conditions exist:**

2.4.1 For each TLR in the Eastern Interconnection, the Reliability Coordinator violated six (6) or more of the requirements of the applicable Interconnection-wide procedure (R1).

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2.4.2 A Reliability Coordinator implemented local transmission loading relief or congestion management procedures to relieve congestion but the Transmission Operator experiencing the congestion was not a party to those procedures (R2).

2.4.3 A Reliability Coordinator implemented local transmission loading relief or congestion management procedures as a substitute for curtailment as directed by the Interconnection-wide procedure but the local procedure had not received prior approval from the ERO (R3).

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2.4.4 While attempting to mitigate an existing IROL violation in the Eastern Interconnection, the Reliability Coordinator applied TLR as the sole remedy for an existing IROL violation.

2.4.5 While attempting to mitigate an existing constraint in the Western Interconnection using the “WSCC Unscheduled Flow Mitigation Plan”, the Reliability Coordinator did not follow the procedure correctly.

2.4.6 While attempting to mitigate an existing constraint in ERCOT using Section 7 of the ERCOT Protocols, the Reliability Coordinator did not follow the procedure correctly.

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## E. Regional Differences

1. **PJM/MISO Enhanced Congestion Management** (Curtailment/Reload/Reallocation) Waiver approved March 25, 2004. To be retired upon completion of the field test, and in the interim the Regional Difference will be contained in both the NERC and NAESB standards.

This section on Regional Differences is highlighted for transfer to NAESB following completion of the MISO/PJM/SPP field test as described in the white paper.

2. Southwest Power Pool (SPP) Regional Difference – Enhanced Congestion Management (Curtailment/Reload/Reallocation). The SPP regional difference, which is equivalent to the PJM/MISO waiver, shall apply within the SPP region as follows:

This regional difference impacts actions on behalf of those SPP Balancing Authorities that are participating in the SPP market. This regional difference does not impact those Balancing Authorities for which SPP will continue to act as the Reliability Coordinator but that are not participating in the SPP market.

SPP shall calculate the impacts of SPP market flow on all facilities included in SPP's Coordinated Flowgate List. SPP shall conduct sensitivity studies to determine which external flowgates (outside SPP's footprint) are significantly impacted by the market flows of SPP's control zones (currently the balancing areas that exist today in the IDC). SPP shall perform studies to determine which external flowgates SPP will monitor and help control. An external flowgate selected by one of the studies will be considered a Coordinated Flowgate (CF).

In its calculation, SPP shall consider market flow impacts as the impacts of energy dispatched by the SPP market and self-dispatched energy serving load in the market footprint, but not tagged. SPP shall use a method equivalent to the PJM/MISO Market Flow Calculation methodology identified in the PJM/MISO waiver. Impacts of tagged transactions representing delivery of energy not dispatched by the SPP market and energy dispatched by the market but delivered outside the footprint will not be included in market flow.

SPP shall separate the market flow impacts for current hour and next hour into their appropriate priorities and shall provide those market flow impacts to the IDC. The market flows will be represented in the IDC and made available for curtailment under the appropriate TLR Levels. The market flow impacts will not be represented by conventional interchange transaction tags.

The SPP method will impact the following sections of the TLR Procedure:

**Network and Native Load (NNL) Calculations** — The SPP regional difference modifies Attachment 1-IRO-006-1 Section 5 “Parallel Flow Calculation Procedure for Reallocating or Curtailing Firm Transmission Service” within the SPP region.

Section 5 of Attachment 1-IRO-006-1 requires that the “Per Generator Method without Counter Flow” methodology be utilized to calculate the portion of parallel flows on any Constrained Facility due to Network Integration (NI) transmission service and service to Native Load (NL) of each balancing authority.

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SPP shall use a “Market Flow Calculation” methodology to calculate the portion of parallel flows on all facilities included in the RTO’s “Coordinated Flowgate List” due to NI service or service to NL of each balancing authority.

The Market Flow Calculation differs from the Per Generator Method in the following ways:

- The contribution from all market area generators will be taken into account.
- In the Per Generator Method, only generators having a GLDF greater than 5% are included in the calculation. Additionally, generators are included only when the sum of the maximum generating capacity at a bus is greater than 20 MW. The market flow calculations will use all positively impacting flows down to 0% with no threshold. Counter flows will not be included in the market flow calculation.
- The contribution of all market area generators is based on the present output level of each individual unit.
- The contribution of the market area load is based on the present demand at each individual bus.

By expanding on the Per Generator Method, the market flow calculation evolves into a methodology very similar to the “Per Generator Method” method, while providing increased Interchange Distribution Calculator (IDC) granularity. Counter flows are also calculated and tracked in order to account for and recognize that the either the positive market flows may be reduced or counter flows may be increased to provide appropriate relief on a flowgate.

These NNL values will be provided to the IDC to be included and represented with the calculated NNL values of other Balancing Authorities for the purposes of identifying and obtaining required NNL relief across a flowgate in congestion under a TLR Level 5A/5B.

**Pro Rata Curtailment of Non-Firm Market Flow Impacts** — The SPP regional difference modifies Attachment 1-IRO-006-1 Appendix B “Transaction Curtailment Formula” within the SPP region.

Appendix B “Transaction Curtailment Formula” details the formula used to apply a weighted impact to each non-firm tagged Interchange Transaction (Priorities 1 thru 6) for the purposes of Curtailment by the IDC. For the purpose of Curtailment, the non-firm market flow impacts (Priorities 2 and 6) submitted to the IDC by SPP should be curtailed pro-rata as is done for Interchange Transaction using firm transmission service. This is because several of the values needed to assign a weighted impact using the process listed in Appendix B will not be available:

- Distribution Factor (no tag to calculate this value from)
- Impact on Interface value (cannot be calculated without Distribution Factor)
- Impact Weighting Factor (cannot be calculated without Distribution Factor)
- Weighted Maximum Interface Reduction (cannot be calculated without Distribution Factor)

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- Interface Reduction (cannot be calculated without Distribution Factor)
- Transaction Reduction (cannot be calculated without Distribution Factor)

While the non-firm market flow impacts submitted to the IDC are to be curtailed pro rata, the impacting non-firm tagged Interchange Transactions could still use the existing processes to assign the weighted impact value.

**Assignment of Sub-Priorities** — The SPP regional difference modifies Attachment 1-IRO-006-1 Appendix E “How the IDC Handles Reallocation”, Section E2 “Timing Requirements”, within the SPP region.

Under the header “IDC Calculations and Reporting” in Section E2 of Appendix E to Attachment 1-IRO-006-1, the following requirement exists: “In a TLR Level 3a the Interchange Transactions using Non-firm Transmission Service in a given priority will be further divided into four sub-priorities, based on current schedule, current active schedule (identified by the submittal of a tag ADJUST message), next-hour schedule, and tag status. Solely for the purpose of identifying which Interchange Transactions to be loaded under a TLR 3a, various MW levels of an Interchange Transaction may be in different sub-priorities. The sub-priorities are shown in the following table:

Priority	Purpose	Explanation and Conditions
S1	To allow a flowing Interchange Transaction to maintain or reduce its current MW amount in accordance with its energy profile.	The MW amount is the lowest between currently flowing MW amount and the next-hour schedule. The currently flowing MW amount is determined by the e-tag ENERGY PROFILE and ADJUST tables. If the calculated amount is negative, zero is used instead.
S2	To allow a flowing Interchange Transaction that has been curtailed or halted by TLR to reload to the lesser of its current-hour MW amount or next-hour schedule in accordance with its energy profile.	The Interchange Transaction MW amount used is determined through the e-tag ENERGY PROFILE and ADJUST tables. If the calculated amount is negative, zero is used instead.
S3	To allow a flowing Transaction to increase from its current-hour schedule to its next-hour schedule in accordance with its energy profile.	The MW amounts used in this sub-priority is determined by the e-tag ENERGY PROFILE table. If the calculated amount is negative, zero is used instead.
S4	To allow a Transaction that had never started and was submitted to the Tag Authority after the TLR (level 2 or higher) has been declared	The Transaction would not be allowed to start until all other Interchange Transactions submitted prior to the TLR with the same

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	to begin flowing (i.e., the Interchange Transaction never had an active MW and was submitted to the IDC after the first TLR Action of the TLR Event had been declared.)	priority have been (re)loaded. The MW amount used is the sub-priority is the next-hour schedule determined by the e-tag ENERGY PROFILE table.
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SPP shall use a “Market Flow Calculation” methodology to calculate the amount of energy flowing across all facilities included in the RTO’s “Coordinated Flowgate List” that is associated with the operation of the SPP market. This energy is identified as “market flow.”

These market flow impacts for current hour and next hour will be separated into their appropriate priorities and provided to the IDC by SPP. The market flows will then be represented and made available for curtailment under the appropriate TLR Levels.

Even though these market flow impacts (separated into appropriate priorities) will not be represented by conventional “tags,” the impacts and their desired levels will still be provided to the IDC for current hour and next hour. Therefore, for the purposes of reallocation, a sub-priority (S1 thru S4) should be assigned to these market flow impacts by the NERC IDC as follows, using comparable logic as would be used if the impacts were in fact tagged transactions.

Priority	Purpose	Explanation and Conditions
S1	To allow existing market flow to maintain or reduce its current MW amount.	The currently flowing MW amount is the amount of market flow existing after the RTO has recognized the constraint for which TLR has been called. If the calculated amount is negative, zero is used instead.
S2	To allow market flow that has been curtailed or halted by TLR to reload to its desired amount for the current-hour.	This is the difference between the current hour unconstrained market flow and the current market flow. If the current-hour unconstrained market flow is not available, the IDC will use the most recent market flow since the TLR was first issued or, if not available, the market flow at the time the TLR was first issued.
S3	To allow a market flow to increase to its next-hour desired amount.	This is the difference between the next hour and current hour unconstrained market flow.

To be retired upon completion of the field test, and in the interim the Regional Difference will be contained in both the NERC and NAESB standards.

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## F. Associated Documents

### Version History

Version	Date	Action	Change Tracking
0	April 1, 2005	Effective Date	New
0	August 8, 2005	Removed “Proposed” from Effective Date	Errata
1	August 8, 2005	Revised Attachment 1	Revision
3	February 26, 2007	Revised Purpose and Attachment 1 related to NERC NAESB split of the TLR procedure	Revision

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PLEASE NOTE: items designated for inclusion in the NAESB TLR business practice following completion of the standard revision were deleted. Please see the mapped document to see which items were move to NAESB and what future changes are expected.

Attachment 1-IRO-006

Transmission Loading Relief Procedure — Eastern Interconnection

Purpose

This standard defines procedures for curtailment and reloading of Interchange Transactions to relieve overloads on transmission facilities modeled in the Interchange Distribution Calculator.

Applicability

This standard only applies to the Eastern Interconnection.

1. Transmission Loading Relief (TLR) Procedure

1.1. **Initiation only by Reliability Coordinator.** A Reliability Coordinator shall be the only entity authorized to initiate the TLR Procedure.

The flexibility for ISOs and RTOs to use redispatch is contained explicitly in the NAESB business practice.

1.1.1. **Requesting relief on transmission facilities.** Any Transmission Operator may request from its Reliability Coordinator relief on the transmission facilities it operates. A Reliability Coordinator shall review these requests for relief and determine the appropriate relief actions.

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1.2. **Mitigating SOL and IROL violations.** A Reliability Coordinator may utilize the TLR Procedure to mitigate potential or existing System Operating Limit (SOL) violations or to prevent or mitigate Interconnection Reliability Operating Limit (IROL) violations on any transmission facility modeled in the IDC. However, the TLR procedure is an inappropriate and ineffective tool as a sole means to mitigate existing IROL violations due to the time required to implement the procedure. Reconfiguration, redispatch, and load shedding are more timely and effective in mitigating existing IROL violations

1.3. **Sequencing of TLR Levels and taking emergency action.** The Reliability Coordinator shall not be required to follow the TLR Levels in their numerical sequence (Section 2, “TLR Levels”). Furthermore, if a Reliability Coordinator deems that a transmission loading condition could jeopardize Bulk Electric System reliability, the Reliability Coordinator shall have the authority to enter TLR Level 6 directly, and immediately direct the Balancing Authorities or Transmission Operators to take such actions as redispatching generation, or reconfiguring transmission, or reducing load to mitigate the critical condition until Interchange Transactions can be reduced utilizing the TLR Procedure or other methods to return the system to a secure state.

1.4. **Notification of TLR Procedure implementation.** The Reliability Coordinator initiating the use of the TLR

This notification is automated in the Interchange Distribution Calculator (IDC) and populates a message on the NERC RCIS.

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Procedure shall notify other Reliability Coordinators and Balancing Authorities and Transmission Operators, and must post the initiation and progress of the TLR event on the appropriate NERC web page(s).

**1.4.1. Notifying other Reliability Coordinators.** The Reliability Coordinator initiating the TLR Procedure shall inform all other Reliability Coordinators via the Reliability Coordinator Information System (RCIS) that the TLR Procedure has been implemented.

**1.4.1.1. Actions expected.** The Reliability Coordinator initiating the TLR Procedure shall indicate the actions expected to be taken by other Reliability Coordinators.

**1.4.2. Notifying Transmission Operators and Balancing Authorities.** The Reliability Coordinator shall notify Transmission Operators and Balancing Authorities in its Reliability Area when entering and leaving any TLR level.

This notification is automated in the Interchange Distribution Calculator (IDC) and populates a message on the

**1.4.3. Notifying Sink Balancing Authorities.** The Reliability Coordinator for the sink Balancing Authority shall be responsible for directing the Sink Balancing Authority to curtail the Interchange Transactions as specified by the Reliability Coordinator implementing the TLR Procedure.

**1.4.3.1. Notification order.** Within a Transmission Service Priority level, the Sink Balancing Authorities whose Interchange Transactions have the largest impact on the Constrained Facilities shall be notified first if practicable.

**1.4.4. Updates.** At least once each hour, or when conditions change, the Reliability Coordinator implementing the TLR Procedure shall update all other Reliability Coordinators (via the RCIS), Transmission Operators and Balancing Authorities who have had Interchange Transactions impacted by the TLR will be updated by their Reliability Coordinator.

**1.5. Obligations.** All Reliability Coordinators shall comply with the request of the Reliability Coordinator who initiated the TLR Procedure, unless the initiating Reliability Coordinator agrees otherwise.

**1.6. Consideration of Interchange Transactions.** The administration of the TLR Procedure shall be guided by information obtained from the IDC.

**1.6.1. Interchange Transactions not in the IDC.** Reliability Coordinators shall also treat known Interchange Transactions that may not appear in the IDC in accordance with the procedures in this document.

**1.6.2. Transmission elements not in IDC.** When a Reliability Coordinator is faced with an overload on a transmission element that is not modeled in

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the IDC, the Reliability Coordinator shall use the best information available to curtail Interchange Transactions in order to operate the system in a reliable manner. The Reliability Coordinator shall use its best efforts to ensure that Interchange Transactions with a Transfer Distribution Factor of less than the Curtailment Threshold on the transmission element not modeled in the IDC are not curtailed.

**1.6.3. Questionable IDC results.** Any Reliability Coordinator who believes the curtailment list from the IDC for a particular TLR event is incorrect shall use its best efforts to communicate those adjustments necessary to bring the curtailment list into conformance with the principles of this Procedure to the initiating Reliability Coordinator. Causes of questionable IDC results may include:

- Missing Interchange Transactions that are known to contribute to the Constraint.
- Significant change in transmission system topology.
- TDF matrix error.

Impacts of questionable IDC results may include:

- Curtailment that would have no effect on, or aggravate the constraint.
- Curtailment that would initiate a constraint elsewhere.

If other Reliability Coordinators are involved in the TLR event, all impacted Reliability Coordinators shall be in agreement before any adjustments to the Curtailment list are made.

**1.6.4. Curtailment that would cause a constraint elsewhere.** A Reliability Coordinator shall be allowed to exempt an Interchange Transaction from Curtailment if that Reliability Coordinator is aware that the Interchange Transaction Curtailment directed by the IDC would cause a constraint to occur elsewhere. This exemption shall only be allowed after the Reliability Coordinator has consulted with the Reliability Coordinator who initiated the Curtailment.

**1.7 Logging.** The Reliability Coordinator shall complete the NERC Transmission Loading Relief Procedure Log whenever it invokes TLR Level 2 or above, and send a copy of the log via email to NERC within two business days of the TLR event for posting on the NERC website.

Creation and distribution of the TLR Procedure Log is now automated in the IDC.

**1.8 TLR Event Review.** The Reliability Coordinator shall report the TLR event to the Operating Reliability Subcommittee in accordance with TLR review processes established by NERC as required.

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**1.8.1 Providing information.** Transmission Operators and Balancing Authorities within the Reliability Coordinator’s Area, and all other Reliability Coordinators, including Transmission Operators and Balancing Authorities within their respective Reliability Areas, shall provide information, as requested by the initiating Reliability Coordinator, in accordance with TLR review processes established by NERC.

**1.8.2 Market Committee reviews.** The Market Committee may conduct reviews of certain TLR events based on the size and number of Interchange Transactions that are affected, the frequency that the TLR Procedure is called for a particular Constrained Facility, or other factors.

The Market Committee no longer exists and this requirement will be removed in Phase 3.

**1.8.3 Operating Reliability Subcommittee reviews.** The Operating Reliability Subcommittee shall conduct reviews to ensure proper implementation and for “lessons learned.”

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## 2. Transmission Loading Relief (TLR) Levels

### Introduction

This section describes the various levels of the TLR Procedure. The description of each level begins with the circumstances that define the TLR Level, followed by the procedures to be followed.

The decision that a Reliability Coordinator makes in selecting a particular TLR Level often depends on the transmission loading condition and whether the Interchange Transaction is using Non-firm Point-to-Point Transmission Service or Firm Point-to-Point Transmission Service. There are further considerations that depend on whether the Constrained Facility is on or off the Contract Path. It is important to note that an Interchange Transaction using Firm Point-to-Point Transmission Service on all Contract Path links is considered a “firm” Interchange Transaction even if the Constrained Facility is off the Contract Path.

#### 2.1. TLR Level 1 — Notify Reliability Coordinators of potential SOL or IROL Violations

2.1.1. The Reliability Coordinator shall use the following circumstances to establish the need for TLR Level 1:

- The transmission system is secure.
- The Reliability Coordinator foresees a transmission or generation contingency or other operating problem within its Reliability Area that could cause one or more transmission facilities to approach or exceed their SOL or IROL.

2.1.2. **Notification procedures.** The Reliability Coordinator shall notify all Reliability Coordinators via the Reliability Coordinator Information System (RCIS) as soon as the condition is foreseen. All affected Reliability Coordinators shall check to ensure that Interchange Transactions are posted in the IDC.

#### 2.2. TLR Level 2 — Hold transfers at present level to prevent SOL or IROL Violations

2.2.1. The Reliability Coordinator shall use the following circumstances to establish the need for entering TLR Level 2:

- The transmission system is secure.
- One or more transmission facilities are expected to approach, or are approaching, or are at their SOL or IROL.

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**2.3 TLR Level 3a — Reallocation of Transmission Service by curtailing Interchange Transactions using Non-firm Point-to-Point Transmission Service to allow Interchange Transactions using higher priority Transmission Service**

2.3.1. The Reliability Coordinator shall use the following circumstances to establish the need for entering TLR Level 3a:

- The transmission system is secure.
- One or more transmission facilities are expected to approach, or are approaching, or are at their SOL or IROL.
- Transactions using Non-firm Point-to-Point Transmission Service are flowing that are at or above the Curtailment Threshold on those facilities.
- The Transmission Provider has previously approved a higher priority Point-to-Point Transmission Service reservation over which a Transmission Customer wishes to begin an Interchange Transaction.

**2.4. TLR Level 3b — Curtail Interchange Transactions using Non-Firm Transmission Service Arrangements to mitigate a SOL or IROL Violation**

2.4.1. The Reliability Coordinator shall use the following circumstances to establish the need for entering TLR Level 3b:

- One or more transmission facilities are operating above their SOL or IROL, or
- Such operation is imminent and it is expected that facilities will exceed their reliability limit unless corrective action is taken, or
- One or more Transmission Facilities will exceed their SOL or IROL upon the removal from service of a generating unit or another transmission facility.
- Transactions using Non-firm Point-to-Point Transmission Service are flowing that are at or above the Curtailment Threshold on those facilities.

**2.5 TLR Level 4 — Reconfigure Transmission**

2.5.1. The Reliability Coordinator shall use the following circumstances to establish the need for entering TLR Level 4:

- One or more Transmission Facilities are above their SOL or IROL, or
- Such operation is imminent and it is expected that facilities will exceed their reliability limit unless corrective action is taken.

2.5.2. **Reconfiguration procedures.** The issuance of a TLR Level 4 shall result in the curtailment, in the current hour and the next hour, of all Interchange Transactions using Non-firm Point-to-Point Transmission Service that are at or above the Curtailment Threshold that impact the Constrained

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Facilities. If a SOL or IROL violation is imminent or occurring, the Reliability Coordinator(s) shall request that the affected Transmission Operators reconfigure transmission on their system, or arrange for reconfiguration on other transmission systems, to mitigate the constraint.

**2.6. TLR Level 5a — Reallocation of Transmission Service by curtailing Interchange Transactions using Firm Point-to-Point Transmission Service on a pro rata basis to allow additional Interchange Transactions using Firm Point-to-Point Transmission Service**

**2.6.1.** The Reliability Coordinator shall use the following circumstances to establish the need for entering TLR Level 5a:

- The transmission system is secure.
- One or more transmission facilities are at their SOL or IROL.
- All Interchange Transactions using Non-firm Point-to-Point Transmission Service that are at or above the Curtailment Threshold have been curtailed.
- The Transmission Provider has been requested to begin an Interchange Transaction using previously arranged Firm Transmission Service that would result in a SOL or IROL violation.
- No further transmission reconfiguration is possible or effective.

**2.7. TLR Level 5b — Curtail Interchange Transactions using Firm Point-to-Point Transmission Service to mitigate an SOL or IROL violation**

**2.7.1.** The Reliability Coordinator shall use following circumstances to establish the need for entering TLR Level 5b:

- One or more Transmission Facilities are operating above their SOL or IROL, or
- Such operation is imminent, or
- One or more Transmission Facilities will exceed their SOL or IROL upon the removal from service of a generating unit or another transmission facility.
- All Interchange Transactions using Non-firm Point-to-Point Transmission Service that are at or above the Curtailment Threshold have been curtailed.
- No further transmission reconfiguration is possible or effective.

**2.8. Curtailment of Interchange Transactions Using Firm Transmission Service**

**2.8.1.** The Reliability Coordinator shall direct the curtailment of Interchange Transactions using Firm

formerly NERC section 3.3

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Transmission Service that are at or above the Curtailment Threshold for the following TLR Levels:

**2.8.1.1. TLR Level 5a.** Enable additional Interchange Transactions using Firm Point-to-Point Transmission Service to be implemented after all Interchange Transactions using Non-firm Point-to-Point Service have been curtailed, or

**2.8.1.2. TLR Level 5b.** Mitigate a SOL or IROL violation that remains after all Interchange Transactions using Non-firm Transmission Service has been curtailed under TLR Level 3b, and following attempts to reconfigure transmission under TLR Level 4.

**2.9. TLR Level 6 — Emergency Procedures**

**2.9.1** The Reliability Coordinator shall use following circumstances to establish the need for entering TLR Level 6:

- One or more Transmission Facilities are above their SOL or IROL.
- One or more Transmission Facilities will exceed their SOL or IROL upon the removal from service of a generating unit or another transmission facility.

**2.9.2 Implementing emergency procedures.** If the Reliability Coordinator deems that transmission loading is critical to Bulk Electric System reliability, the Reliability Coordinator shall immediately direct the Balancing Authorities and Transmission Operators in its Reliability Area to redispach generation, or reconfigure transmission, or reduce load to mitigate the critical condition until Interchange Transactions can be reduced utilizing the TLR Procedures or other procedures to return the system to a secure state. All Balancing Authorities and Transmission Operators shall comply with all requests from their Reliability Coordinator.

**2.10 TLR Level 0 — TLR concluded**

**2.10.1 Interchange Transaction restoration and notification procedures.** The Reliability Coordinator initiating the TLR Procedure shall notify all Reliability Coordinators within the Interconnection via the RCIS when the SOL or IROL violations are mitigated and the system is in a reliable state, allowing Interchange Transactions to be reestablished at its discretion. Those with the highest transmission priorities shall be reestablished first if possible.

**Requirements**

**3.1** The Reliability Coordinator shall be allowed to call a TLR 3b at any time to help mitigate a SOL or IROL violation.

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- 3.2** The Reliability Coordinator shall Reallocate Interchange Transactions using Non-firm Point-to-Point Transmission for the next hour to maintain the desired flow using Reallocation in accordance with the following timing specification:
  - 3.2.1** If issued prior to XX: 25, Non-firm Interchange Transactions will be curtailed to meet the desired current hour relief
    - 3.2.1.1** At XX: 25 a Reallocation will be performed to maintain the desired flow at the top of the following hour
  - 3.2.2** If issued after XX: 25, Non firm Interchange Transactions will be curtailed to meet the desired current hour relief and a Reallocation will be performed to maintain the target flow identified for the current hour.
  - 3.2.3** Transactions must be in the IDC by the Approved-tag Submission Deadline for Reallocation.
- 3.3** The IDC shall issue ADJUST Lists to the Generation and Load Balancing Authority Areas and the Purchasing-Selling Entity who submitted the tag. The ADJUST List will include: (recommended to be moved to Attachment 2)
  - 3.3.1** Interchange Transactions using Non-firm Point-to-Point Transmission Service that are to be curtailed or held during current and next hours. (recommended to be moved to Attachment 2)
  - 3.3.2** Interchange Transactions using Firm Point-to-Point Transmission Service that were entered after XX:25 or issuance of TLR 3b (see Case 3 in Appendix F). (recommended to be moved to Attachment 2)
- 3.4** The Sink Balancing Authority shall send the ADJUST Lists back to the IDC as soon as possible to ensure the most accurate calculations for actions subsequent to the TLR 3b being called. (recommend to be moved to Attachment 2)
- 3.5** The Reliability Coordinator will no longer be required to call a TLR Level 3a as soon as the SOL or IROL violation that caused the TLR 3b to be called has been mitigated due to the inherent next hour Reallocation that takes place for the top of the next hour in the TLR Level 3b. (recommend to be moved to Attachment 2)

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**Appendices for Transmission Loading Relief Standard**

**PLEASE NOTE: items designated for inclusion in the NAESB TLR business practice following completion of the standard revision were deleted from this version of the NERC standard. Please see the mapped document to see which requirements were moved to NAESB and what future changes are expected. Appendices B, D, G, and the sub-priority portions of E-2 have been moved to NAESB, The appendices below (A, C, E, F) will be renumbered in the final standard.**

Appendix A. Transaction Management and Curtailment Process.

Appendix C. Sample NERC Transmission Loading Relief Procedure Log.

Appendix E. How the IDC Handles Reallocation.

Section E1: Summary of IDC Features that Support Transaction Reloading/Reallocation.

Section E2: Timing Requirements.

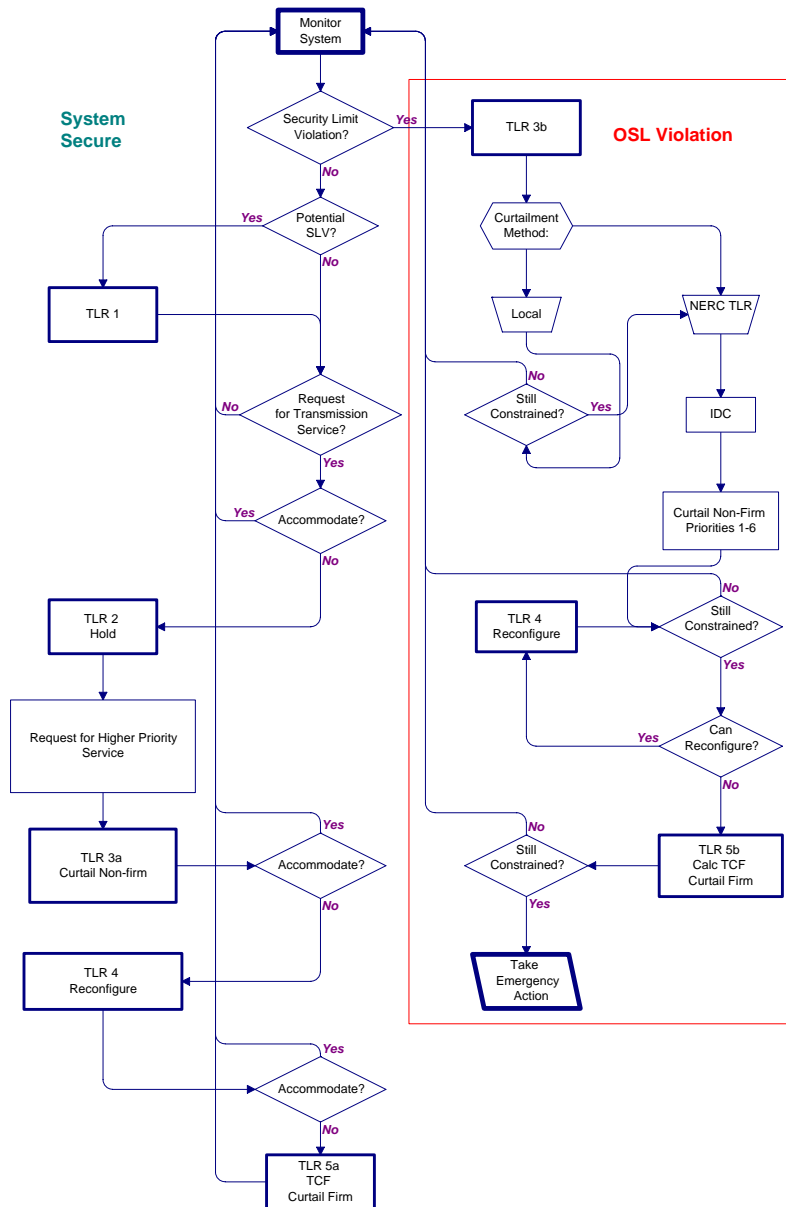
Appendix F. Considerations for Interchange Transactions using Firm Point-to-Point Transmission Service.

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**Appendix A. Transaction Management and Curtailment Process**

This flowchart depicts an overview of the Transaction Management and Curtailment process. Detailed decisions are not shown.



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## **Appendix E. How the IDC Handles Reallocation**

The IDC algorithms reflect the Reallocation and reloading principles in this Appendix, as well as the reporting requirements, and status display. The IDC will obtain the Tag Submittal Time from the Tag Authority and post the Reloading/Reallocation information to the NERC TLR website.

A summary of IDC features that support the Reallocation process is provided in Attachment E1. Details on the interface and display features are provided in Attachment E2. Refer to Version 1.7.095 NERC Transaction Information Systems Working Group (TISWG) *Electronic Tagging Functional Specification* for details about the E-Tag system.

### **E1. Summary of IDC Features that Support Transaction Reloading/Reallocation**

The following is a summary of IDC features and E-Tag interface that support Reloading/Reallocation:

#### **Information posted from IDC to NERC TLR website.**

1. Restricted directions (all source/sink combinations that impact a Constrained Facility(ies) with TLR 2 or higher) will be posted to the NERC TLR website and updated as necessary.
2. TLR Constrained Facility status and Transfer Distribution Factors will continue to be posted to NERC TLR website.
3. Lowest priority of Interchange Transactions (marginal “bucket”) to be Reloaded/Reallocated next-hour on each TLR Constrained Facility will be posted on NERC TLR website. This will provide an indication to the market of priority of Interchange Transactions that may be Reloaded/Reallocated the following hours.

#### **IDC Logic, IDC Report, and Timing**

1. The Reliability Coordinator will run the IDC the Reloading/Reallocation report at approximately 00:26. The IDC will prompt the Reliability Coordinator to enter a maximum loading value. The IDC will alarm if the Reliability Coordinator does not enter this value and issue a report by 00:30 or change from TLR 3a Level. The Report will be distributed to Balancing Authorities and Transmission Operators at 00:30. This process repeats every hour as long as the approved tag submission deadline for Reallocation is in effect (or until the TLR level is reduced to 1 or 0).
2. For Interchange Transactions in the restricted directions, tags must be submitted to the IDC by the approved tag submission deadline for Reallocation to be considered for Reallocation next-hour. The time stamp by the Tag Authority is regarded the official tag submission time.
3. Tags submitted to IDC after the approved tag submission deadline for Reallocation will not be allowed to start or increase but will be considered for Reallocation the next hour.
4. Interchange Transactions in restricted directions that are not indicated as “PROCEED” on the Reload/Reallocation Report will not be permitted to start or increase next hour.

#### **Reloading/Reallocation Transaction Status**

Reloading/Reallocation status will be determined by the IDC for all Interchange Transactions. The Reloading/Reallocation status of each Interchange Transaction will be listed on IDC reports and NERC TLR website as appropriate. An Interchange Transaction is considered to be in a restricted direction if it

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is at or above the Curtailment Threshold. Interchange Transactions below the Curtailment Threshold are unrestricted and free to flow subject to all applicable Reliability Standards and tariff rules.

1. **HOLD.** Permission has not been given for Interchange Transaction to start or increase and is waiting for the next Reloading/Reallocation evaluation for which it is a candidate. Interchange Transactions with E-tags submitted to the Tag Authority prior to TLR 2 or higher being declared (pre-tagged) will change to CURTAILED Status upon evaluation that does not permit them to start or increase. Transactions with E-tags submitted to Tag Authority after TLR 2 or higher was declared (post-tagged) will retain HOLD Status until given permission to proceed or E-Tag expires.
2. **CURTAILED.** Transactions for which E-Tags were submitted to Tag Authority prior to TLR 2 or higher being declared (pre-tagged) and ordered to be curtailed totally, curtailed partially, not permitted to start, or not permitted to increase. Interchange Transactions (pre-tagged or post-tagged) that were flowing and ordered to be reduced or totally curtailed. The Balancing Authority will indicate to the IDC through the E-Tag adjustment table the Interchange Transaction's curtailed values.
3. **PROCEED:** Interchange Transaction is flowing or has been permitted to flow as a result of Reloading/Reallocation evaluation. The Balancing Authority will indicate through the E-Tag adjustment table to IDC if Interchange Transaction will reload, start, or increase next-hour per Purchasing-Selling Entity's energy schedule as appropriate.

#### **Reallocation/Reloading Priorities**

1. Interchange Transaction candidates are ranked for loading and curtailment by priority as per Section 4, "Principles for Mitigating Constraints On and Off the Contract Path." This is called the "Constrained Path Method," or CPM. (secondary, hourly, daily, ... firm etc). Interchange Transactions are curtailed and loaded pro-rata within priority level per TLR algorithm.
2. Reloading/Reallocation of Interchange Transactions are prioritized first by priority per CPM. E-Tags must be submitted to the IDC by the approved tag submission deadline for Reallocation of the hour during which the Interchange Transaction is scheduled to start or increase to be considered for Reallocation.
3. During Reloading/Reallocation, Interchange Transactions using lower priority Transmission Service will be curtailed pro-rata to allow higher priority transactions to reload, increase, or start. Equal priority Interchange Transactions will not reload, start, or increase by pro-rata Curtailment of other equal priority Interchange Transactions.
4. Reloading of Interchange Transactions using Non-firm Transmission Service with CURTAILED Status will take precedence over starting or increasing of Interchange Transactions using Non-firm Transmission Service of the same priority with PENDING Statuses.
5. Interchange Transactions using Firm Point-to-Point Transmission Service will be allowed to start as scheduled under TLR 3a as long as their E-Tag was received by the IDC by the approved tag submission deadline for Reallocation of the hour during which the Interchange Transaction is due to start or increase, regardless of whether the E-tag was submitted to the Tag Authority prior to TLR 2 or higher being declared or not. If this is the initial issuance of the TLR 3a, Interchange Transactions using Firm Point-to-Point Transmission Service will be allowed to start as scheduled as long as their E-Tag was received by the IDC by the time the TLR is declared.

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**Total Flow Value on a Constrained Facility for Next Hour**

1. The Reliability Coordinator will calculate the change in net flow on a Constrained Facility due to Reallocation for the next hour based on:
  - Present constrained facility loading, present level of Interchange Transactions, and Balancing Authorities NNative Load responsibility (TLR Level 5a) impacting the Constrained Facility,
  - SOLs or IROLs, known interchange impacts and Balancing Authority NNative Load responsibility (TLR Level 5a) on the Constrained Facility the next hour, and
  - Interchange Transactions scheduled to begin the next hour.
2. The Reliability Coordinator will enter a maximum loading value for the constrained facility into the IDC as part of issuing the Reloading/Reallocation report.
3. The Reliability Coordinator is allowed to call for TLR 3a or 5a when approaching a SOL or IROL to allow maximum transactional flow next hour, and to manage flows without violating transmission limits.
4. The simultaneous curtailment and Reallocation for a Constrained Facility is allowed. This reduces the flow over the Constrained Facility while allowing Interchange Transactions using higher priority Transmission Service to start or increase the next hour. This may be used to accommodate change in flow next-hour due to changes other than Point-to-Point Interchange Transactions while respecting the priorities of Interchange Transactions flowing and scheduled to flow the next hour. The intent is to reduce the need for using TLR 3b, which prevents new Interchange Transactions from starting or increasing the next hour.
5. The Reliability Coordinator must allow Interchange Transactions to be reloaded as soon as possible. Reloading must be in an orderly fashion to prevent a SOL or IROL violation from (re)occurring and requiring holding or curtailments in the restricted direction.

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E2. Timing Requirements

**TLR Levels 3a and 5a Issuing/Processing Time Requirement**

1. In order for the IDC to be reasonably certain that a TLR Level 3a or 5a re-allocation/reloading report in which all tags submitted by the approved tag submission deadline for Reallocation are included, the report must be generated no earlier than 00:25 to allow the 10-minute approval time for Transactions that start next hour.
2. In order to allow a Reliability Coordinator to declare a TLR Level 3a or 5a at any time during the hour, the TLR declaration and Reallocation/Reloading report distribution will be treated as independent processes by the IDC. That is, a Reliability Coordinator may declare a TLR Level 3a or 5a at any time during the course of an hour. However, if a TLR Level 3a or 5a is declared for the next hour prior to 00:25 (see Figure 5 at right), the Reallocation/Reloading report that is generated will be made available to the issuing Reliability Coordinator only for previewing purposes, and cannot be distributed to the other Reliability Coordinators or the market. Instead, the issuing Reliability Coordinator will be reminded by an IDC alarm at 00:25 to generate a new Reallocation/Reloading report that will include all tags submitted prior to the approved tag submission deadline for Reallocation.
3. A TLR Level 3a or 5a Reallocation/Reloading report must be confirmed by the issuing Reliability Coordinator prior to 00:30 in order to provide a minimum of 30 minutes for the Reliability Coordinators with tags sinking in its Reliability Area to coordinate the Reallocation and Reloading with the Sink Balancing Authorities. This provides only 5 minutes (from 00:25 to 00:30) for the issuing Reliability Coordinator to generate a Reallocation/Reloading report, review it, and approve it.
4. The TLR declaration time will be recorded in the IDC for evaluating transaction sub-priorities for Reallocation/Reloading purposes (see Subpriority Table, in the **IDC Calculations and Reporting** section below).

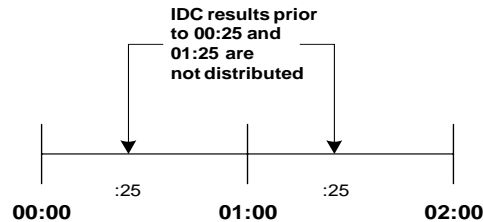


Figure 5 - IDC report may be run prior to 00:25, but results are not distributed.

**Re-Issuing of a TLR Level 2 or Higher**

Each hour, the IDC will automatically remind the issuing Reliability Coordinator (via an IDC alarm) of a TLR level 2 or higher declared in the previous hour or earlier about re-issuing the TLR. The purpose of the reminder is to enable the Reliability Coordinator to Reallocate or reload currently halted or curtailed Interchange Transactions next hour. The reminder will be in the form of an alarm to the issuing Reliability Coordinator, and will take place at 00:25 so that, if the Reliability Coordinator re-issues the TLR as a TLR level 3a or 5a, all tags submitted prior to the approved tag submission deadline for Reallocation are available in the IDC.

**IDC Assistance with Next Hour Point-to-Point Transactions**

In order to assist a Reliability Coordinator in determining the MW relief required on a Constrained Facility for the next hour for a TLR level 3a or 5a, the IDC will calculate and present the total MW impact of all currently flowing and scheduled Point-to-Point Transactions

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for the next hour. In order to assist a Reliability Coordinator in determining the MW relief required on a Constrained Facility for the next hour during a TLR level 5a, the IDC will calculate and present the total MW impact of all currently flowing and scheduled Point-to-Point Transactions for the next hour as well as Balancing Authority with flows due to service to Network Customers and Native Load. The Reliability Coordinator will then be requested to provide the total incremental or decremental MW amount of flow through the Constrained Facility that can be allowed for the next hour. The value entered by the Reliability Coordinator and the IDC-calculated amounts will be used by the IDC to identify the relief/reloading amounts (delta incremental flow value) on the constrained facility. The IDC will determine the Transactions to be reloaded, reallocated, or curtailed to make room for the Transactions using higher priority Transmission Service. The following examples show the calculation performed by IDC to identify the “delta incremental flow:”

**Example 1**

Flow to maintain on Facility	800 MW
Expected flow next hour from Transactions using Point-to-Point Transmission Service	950 MW
Contribution from flow next hour from service to Network customers and Native Load	-100 MW
Expected Net flow next hour on Facility	850 MW
Amount of Transactions using Point-to-Point Transmission Service to hold for Reallocation	850 MW – 800 MW = 50 MW
Amount to enter into IDC for Transactions using Point-to-Point Transmission Service	950 MW – 50 MW = 900 MW

**Example 2**

Flow to maintain on Facility	800 MW
Expected flow next hour from Transactions using Point-to-Point Transmission Service	950 MW
Contribution from flow next hour from service to Network customers and Native Load	50 MW
Expected Net flow next hour on Facility	1000 MW
Amount of Transactions using Point-to-Point Transmission Service to hold for Reallocation	1000 MW – 800 MW = 200 MW
Amount to enter into IDC for Transactions using Point-to-Point Transmission Service	950 MW – 200 MW = 750 MW

**Example 3**

Flow to maintain on Facility	800 MW
Expected flow next hour from Transactions using Point-	950 MW

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to-Point Transmission Service	
Contribution from flow next hour from service to Network customers and Native Load	-200 MW
Expected Net flow next hour on Facility	750 MW
Amount of Transactions using Point-to-Point Transmission Service to hold for Reallocation	750 MW – 800 MW = -50 MW None are held

For a TLR levels 3b or 5b the IDC will request the Reliability Coordinator to provide the MW requested relief amount on the Constrained Facility, and will not present the current and next hour MW impact of Point-to-Point transactions. The Reliability Coordinator-entered requested relief amount will be used by the IDC to determine the Interchange Transaction Curtailments and flows due to service to Network Customers and Native Load (TLR Level 5b) in order to reduce the SOL or IROL violation on the Constrained Facility by the requested amount.

***IDC Calculations and Reporting***

At the time the TLR report is processed, the IDC will use all candidate Interchange Transactions for Reallocation that met the approved tag submission deadline for Reallocation plus those Interchange Transactions that were curtailed or halted on the previous TLR action of the same TLR event. The IDC will calculate and present an Interchange Transactions Halt/Curtailment list that will include reload and Reallocation of Interchange Transactions. The Interchange Transactions are prioritized as follows:

1. All Interchange Transactions will be arranged by Transmission Service Priority according to the Constrained Path Method. These priorities range from 1 to 6 for the various non-firm Transmission Service products (TLR levels 3a and 3b). Interchange Transactions using Firm Transmission Service (priority 7) are used only in TLR levels 5a and 5b. Next-Hour Market Service is included at priority 0 (Recommended to be placed in Attachment 2).

Examples of Interchange Transactions using Non-firm Transmission Service sub-priority settings begin in the **Transaction Sub-priority Examples** following sections

2. All Interchange Transactions using Firm Transmission Service will be put in the same priority group, and will be Curtailed/Reallocated pro-rata, independent of their current status (curtailed or halted) or time of submittal with respect to TLR issuance (TLR level 5a). Under a TLR 5a, all Interchange Transactions using Non-firm Transmission Service that is at or above the Curtailment Threshold will have been curtailed and hence sub-prioritizing is not required.

All Interchange Transactions processed in a TLR are assigned one of the following statuses:

- PROCEED: The Interchange Transaction has started or is allowed to start to the next hour MW schedule amount.
- CURTAILED: The Interchange Transaction has started and is curtailed due to the TLR, or it had not started but it was submitted prior to the TLR being declared (level 2 or higher).

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**HOLD:** The Interchange Transaction had never started and it was submitted after the TLR being declared – the Interchange Transaction is held from starting next hour or the transaction had never started and it was submitted to the IDC after the Approved-Tag Submission Deadline – the Interchange Transaction is to be held from starting next hour and is not included in the Reallocation calculations until following hour.

Upon acceptance of the TLR Transaction Reallocation/reloading report by the issuing Reliability Coordinator, the IDC will generate a report to be sent to NERC that will include the PSE name and Tag ID of each Interchange Transaction in the IDC TLR report. The Interchange Transaction will be ranked according to its assigned status of HOLD, CURTAILED or PROCEED. The reloading/Reallocation report will be made available at NERC’s public TLR website, and it is NERC’s responsibility to format and publish the report.

**Tag Reloading for TLR Levels 1 and 0**

When a TLR Level 1 or 0 is issued, the Constrained Facility is no longer under SOL or IROL violation and all Interchange Transactions are allowed to flow. In order to provide the Reliability Coordinators with a view of the Interchange Transactions that were halted or curtailed on previous TLR actions (level 2 or higher) and are now available for reloading, the IDC provides such information in the TLR report.

**New Tag Alarming**

Those Interchange Transactions that are at or above the Curtailment Threshold and are *not* candidates for Reallocation because the tags for those Transactions were not submitted by the approved tag submission deadline for Reallocation will be flagged as HOLD and must not be permitted to start or increase during the next hour. To alert Reliability Coordinators of those Transactions required to be held, the IDC will generate a report (for viewing within the IDC only) at various times. The report will include a list of all HOLD Transactions. In order not to overwhelm the Reliability Coordinator with alarms, only those who issued the TLR and those whose Transactions sink within their Reliability Area will be alarmed. An alarm will be issued for a given tag only once and will be issued for all TLR levels for which halting new Transactions is required: TLR Level 2, 3a, 3b, 5a and 5b.

**Tag Adjustment**

The Interchange Transactions with statuses of HOLD, CURTAILED or PROCEED must be adjusted by a Tag Authority or Tag Approval entity. Without the tag adjustments, the IDC will assume that Interchange Transactions were not curtailed/held and are flowing at their specified schedule amounts.

1. Interchange Transactions marked as CURTAILED should be adjusted to a cap equal to, or at the request of the originating PSE, less than the reallocated amount (shown as the MW CAP on the IDC report). This amount may be zero if the Transaction is fully curtailed.
2. Interchange Transaction marked as PROCEED should be adjusted to reload (NULL or to its MW level in accordance with its Energy Profile in the adjusted MW in the E-Tag) if the Interchange Transaction has been previously adjusted; otherwise, if the Interchange Transaction is flowing in full, the Tag Authority need not issue an adjust.
3. Interchange Transactions marked as HOLD should be adjusted to 0 MW.

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**Special Tag Status**

There are cases in which a tag may be marked with a composite state of ATTN\_REQD to indicate that tag Authority/Approval failed to communicate or there is an inconsistency between the validation software of different tag Authority/Approval entities. In this situation, the tag is no longer subject to passive approval and its status change to IMPLEMENT may take longer than 10 minutes. Under these circumstances, the IDC may have a tag that is issued prior to the Tag Submittal Deadline that will not be a candidate for Reallocation. Such tags, when approved by the Tag Authority, will be marked as HOLD and must be halted.

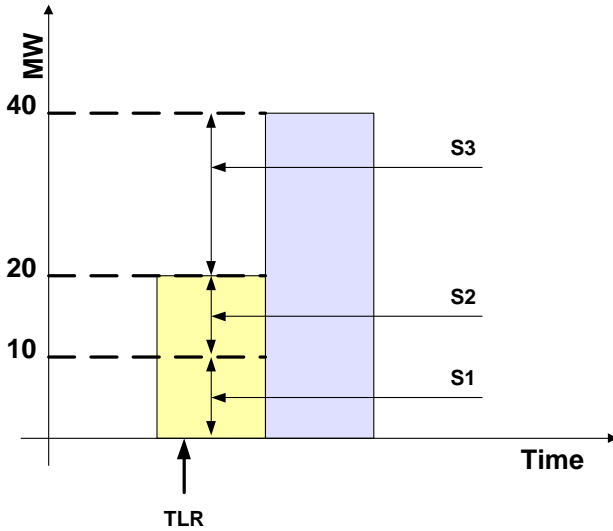
**Transaction Sub-Priority Examples**

The following describes examples of Interchange Transactions using Non-firm Transmission Service sub-priority setting for an Interchange Transaction under different circumstances of current-hour and next-hour schedules and active MW flowing as modified by tag adjust table in E-Tag.

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Example 1 – Transaction curtailed, next-hour Energy Profile is higher

Energy Profile: Current hour	20 MW
Actual flow following curtailment: Current hour	10 MW
Energy Profile: Next hour	40 MW



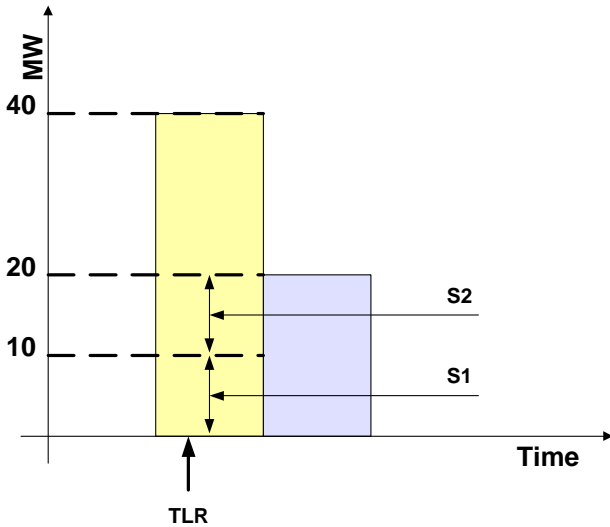
**Sub-priorities for Transaction MW:**

<i>Sub-Priority</i>	<i>MW Value</i>	<i>Explanation</i>
S1	10 MW	Maintain current curtailed flow
S2	+10 MW	Reload to current hour Energy Profile
S3	+20 MW	Load to next hour Energy Profile
S4		

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Example 2 – Transaction curtailed, next-hour Energy Profile is lower

Energy Profile: Current hour	40 MW
Actual flow following curtailment: Current hour	10 MW
Energy Profile: Next hour	20 MW



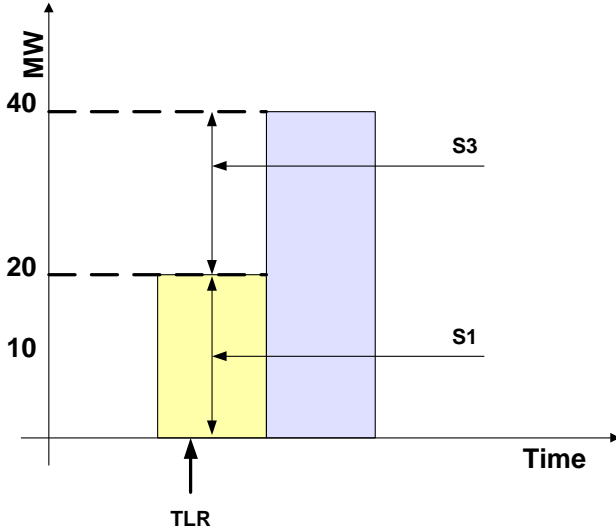
Sub-priorities for Transaction MW:

Sub-Priority	MW Value	Explanation
S1	10 MW	Maintain current curtailed flow
S2	+10 MW	Reload to <i>lesser</i> of current and next-hour Energy Profile
S3	+0 MW	Next-hour Energy Profile is 20MW, so no change in MW value
S4		

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Example 3 – Transaction not curtailed, next-hour Energy Profile is higher

Energy Profile: Current hour	20 MW
Actual flow following curtailment: Current hour	20 MW (no curtailment)
Energy Profile: Next hour	40 MW

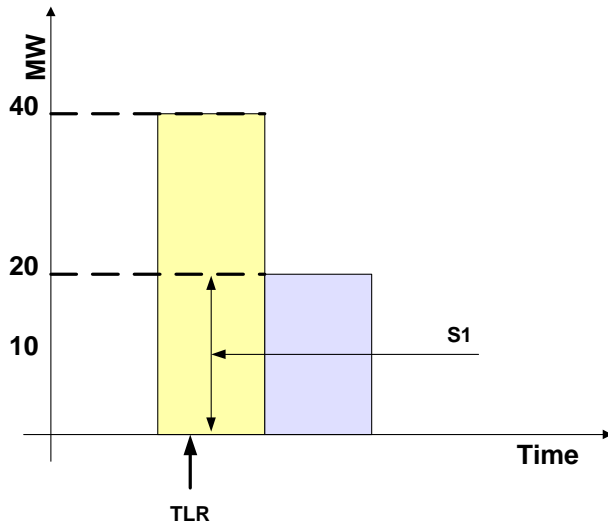


Sub-Priority	MW Value	Explanation
S1	20 MW	Maintain current flow (not curtailed)
S2	+0 MW	Reload to <i>lesser</i> of current and next-hour Energy Profile
S3	+20 MW	Next-hour Energy Profile is 40MW
S4		

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**Example 4 – Transaction not curtailed, next-hour Energy Profile is lower**

Energy Profile: Current hour	40 MW
Actual flow following curtailment: Current hour	40 MW (no curtailment)
Energy Profile: Next hour	20 MW



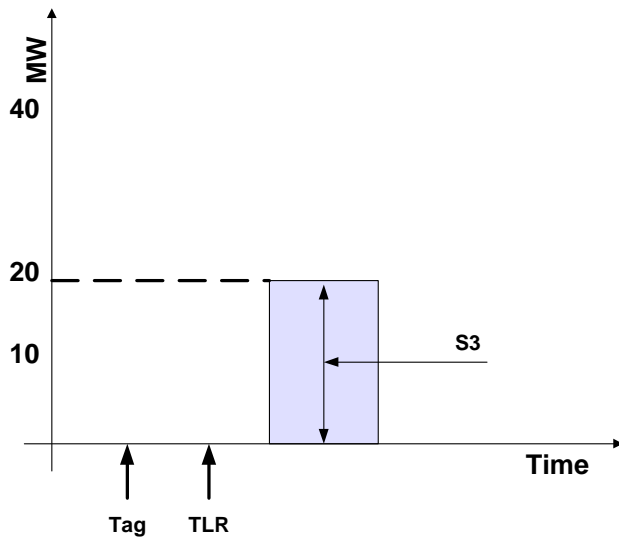
**Sub-priorities for Transaction MW:**

<i>Sub-Priority</i>	<i>MW Value</i>	<i>Explanation</i>
S1	20 MW	Reduce flow to next-hour Energy Profile (20MW)
S2	+0 MW	Reload to <i>lesser</i> of current and next-hour Energy Profile
S3	+0 MW	Next-hour Energy Profile is 20MW
S4		

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Example 5 — TLR Issued before Transaction was scheduled to start

Energy Profile: Current hour	0 MW
Actual flow following curtailment: Current hour	0 MW (Transaction scheduled to start <i>after</i> TLR initiated)
Energy Profile: Next hour	20 MW



Sub-Priority	MW Value	Explanation
S1	0 MW	Transaction was not allowed to start
S2	+0 MW	Transaction was not allowed to start
S3	+20 MW	Next-hour Energy Profile is 20MW
S4	+0	Tag submitted prior to TLR

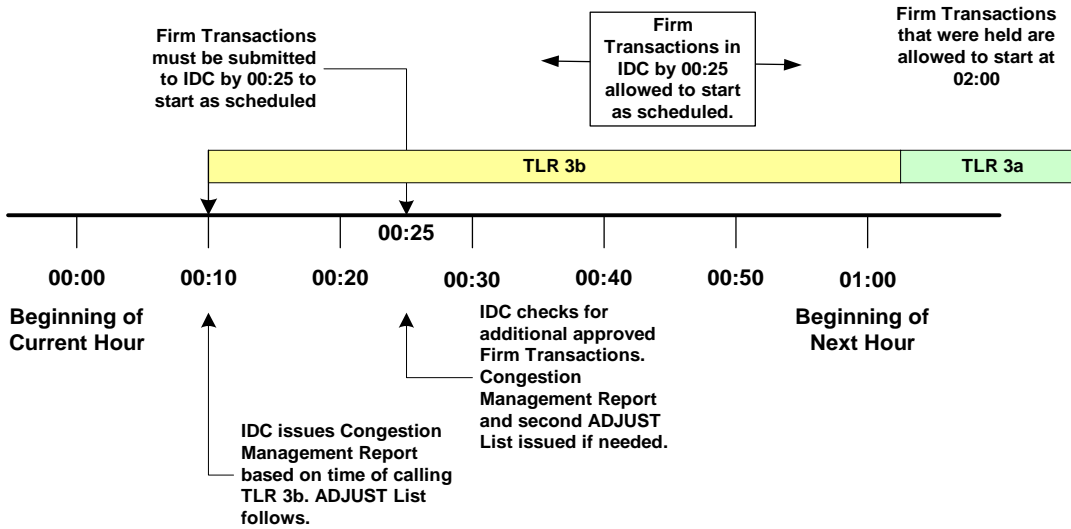
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Appendix F. Considerations for Interchange Transactions

Using Firm Point-to-Point Transmission Service

The following cases explain the circumstances under which an Interchange Transaction using Firm Point-to-Point Transmission Service will be allowed to start as scheduled during a TLR 3b:

**Case 1: TLR 3b is called between 00:00 and 00:25 and the Interchange Transaction using Firm Point-to-Point Transmission Service is submitted to IDC by 00:25.**



The IDC will examine the current hour (00) and next hour (01) for all Interchange Transactions.

The IDC will issue an ADJUST List based upon the time the TLR 3b is called. The ADJUST List will include curtailments of Interchange Transactions using Non-firm Point-to-Point Transmission Service as necessary to allow room for those Interchange Transactions using Firm Point-to-Point Transmission Service to start as scheduled.

At 00:25, the IDC will check for additional Interchange Transactions using Firm Point-to-Point Transmission Service that were submitted to the IDC by that time and issue a second ADJUST List if those additional Interchange Transactions are found.

All existing or new Interchange Transactions using Non-firm Point-to-Point Transmission Service that are increasing or expected to start during the current hour or next hour will be placed on HALT or HOLD. There is no Reallocation of lower-priority Interchange Transactions using Non-firm Point-to-Point Transmission Service.

Interchange Transactions using Firm Point-to-Point Transmission Service that were submitted to the IDC by 00:25 will be allowed to start as scheduled.

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Interchange Transactions using Firm Point-to-Point Transmission Service that were submitted to the IDC after 00:25 will be held.

Once the SOL or IROL violation is mitigated, the Reliability Coordinator shall call a TLR Level 3a (or lower). If a TLR Level 3a is called:

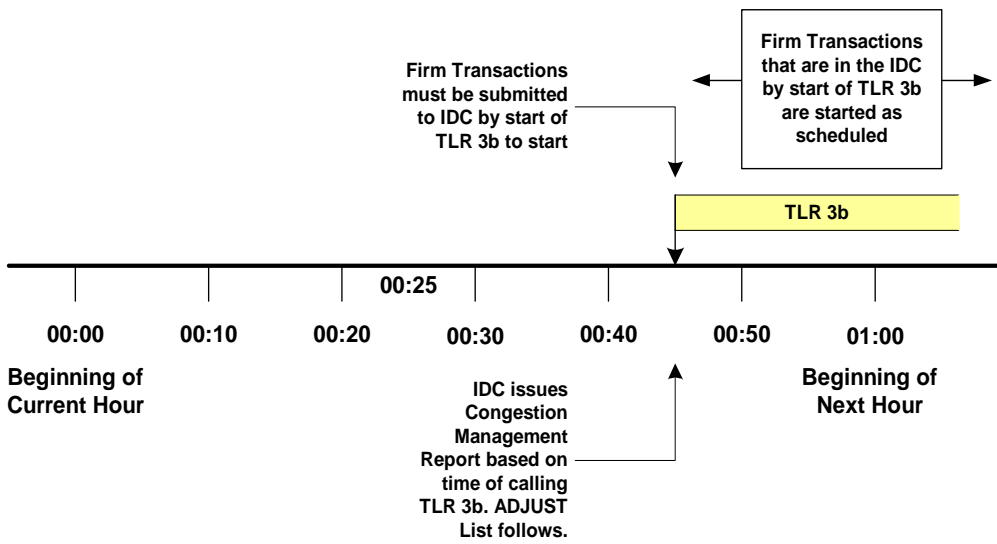
Interchange Transactions using Firm Point-to-Point Transmission Service that were submitted to the IDC by 00:25 will be allowed to start as scheduled at 02:00.

Interchange Transactions using Non-firm Point-to-Point Transmission Service that were held may then be reallocated to start at 02:00.

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Proposed Effective Date: Effective Upon BOT adoption.



Case 2: TLR 3b is called after 00:25 and the Interchange Transaction using Firm Point-to-Point Transmission Service is submitted to the IDC no later than the time at which the TLR 3b is called.



The IDC will examine the current hour (00) and next hour (01) for all Interchange Transactions.

The IDC will issue an ADJUST List at the time the TLR 3b is called. The ADJUST List will include additional curtailments of Interchange Transactions using Non-firm Point-to-Point Transmission Service as necessary to allow room for those Interchange Transactions using Firm Point-to-Point Transmission Service to start at as scheduled.

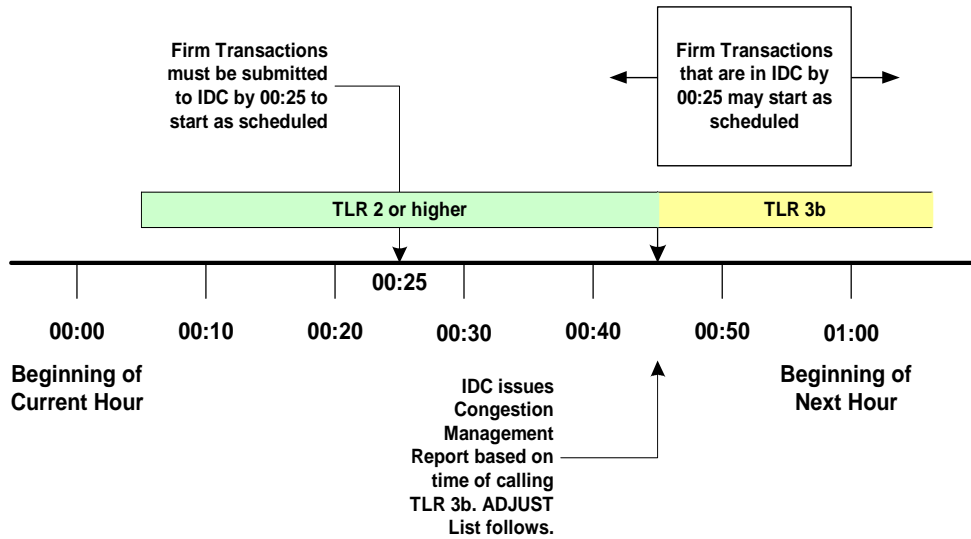
All existing or new Interchange Transactions using Non-firm Point-to-Point Transmission Service that are increasing or expected to start during the current hour or next hour will be placed on HALT or HOLD. There is no Reallocation of lower-priority Interchange Transactions using Non-firm Point-to-Point Transmission Service.

Interchange Transactions using Firm Point-to-Point Transmission Service that were submitted to the IDC by the time the TLR 3b was called will be allowed to start at as scheduled.

Interchange Transaction using Firm Point-to-Point Transmission Service that were submitted to the IDC after the TLR 3b was called will be held until the next issuance for TLR (either TLR 3b, 3a, or lower level).

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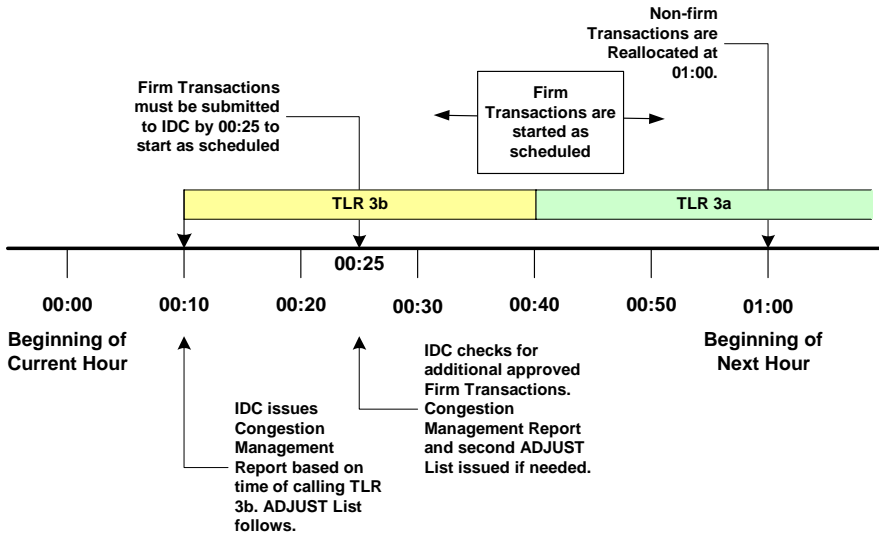
Case 3. TLR 2 or higher is in effect, a TLR 3b is called after 00:25, and the Interchange Transaction using Firm Point-to-Point Transmission Service is submitted to the IDC by 00:25.



If a TLR 2 or higher has been issued and 3B is subsequently issued, then only those Interchange Transactions using Firm Point-to-Point Transmission Service that had been submitted to the IDC by 00:25 will be allowed to start as scheduled. All other Interchange Transactions are held.

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Case 4. TLR 3b is called before 00:25 and the Interchange Transaction is submitted to the IDC by 00:25. TLR 3a is called at 00:40.



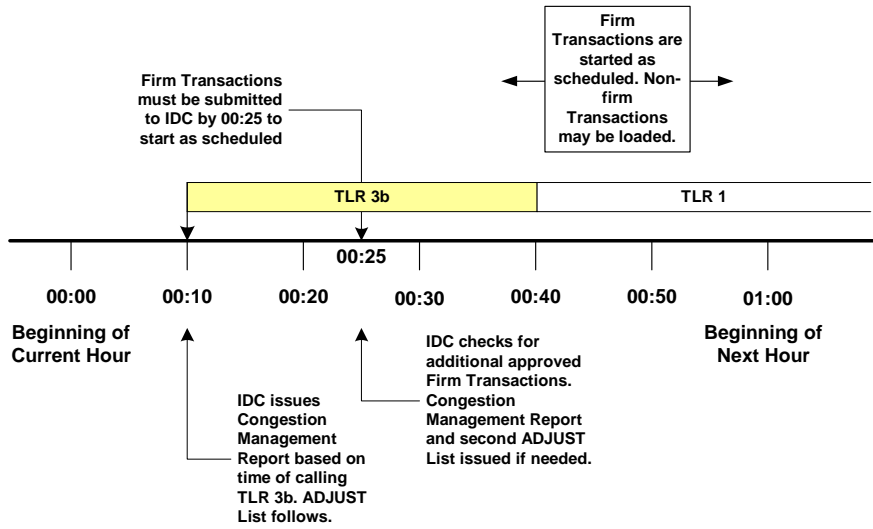
Same as Case 1, but TLR Level 3b ends at 00:40 and becomes TLR Level 3a.

All Interchange Transactions using Firm Point-to-Point Transmission Service will start as scheduled if in by the time the 3A is declared.

All Interchange Transactions using Non-firm Point-to-Point Transmission Service are reallocated at 01:00.

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Case 5. TLR 3b is called before 00:25 and the Interchange Transaction is submitted to the IDC by 00:25. TLR 1 is called at 00:40.



Same as Case 1, but TLR Level 3b ends at 00:40 and becomes TLR Level 1.

All Interchange Transactions using Firm Point-to-Point Transmission Service will start as scheduled.

All Interchange Transactions using Non-firm Point-to-Point Transmission Service may be loaded immediately.

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Upon BOT adoption.

July 20, 2007

TO: REGISTERED BALLOT BODY

Ladies and Gentlemen:

**Announcement**  
**Pre-ballot Window and Ballot Pool for IRO-006-4 — Reliability Coordination —**  
**Transmission Loading Relief Open July 20, 2007**

The Standards Committee (SC) announces the following standards action:

**Pre-ballot Window and Ballot Pool for IRO-006-4 — Reliability Coordination —**  
**Transmission Loading Relief (Project 2006-08 — Phase I) both Open July 20, 2007**

Project 2006-08 includes three phases of revisions to [IRO-006-4](#) — Reliability Coordination – Transmission Loading Relief. The first phase of revisions included working with NAESB to remove all business practices from IRO-006 and then to add measures and compliance elements to support the remaining reliability-related requirements. Future phases of the project will address a broader range of improvements.

Stakeholders are being asked to review the initial set of proposed revisions to the standard, including revisions to Attachment 1, which is the Eastern Interconnection Transmission Loading Procedure, to determine whether or not the reliability objectives associated with the original standard have been maintained. For details on the proposed changes, the following documents are posted:

- The proposed reliability standard (both in redline and in clean formats)
- The proposed implementation plan
- A White Paper that provides an overview of the approach the TLR Standard Drafting Team took in completing the first phase of modifications to the standard
- A draft of the Joint Operator Manual to provide operators an integrated view of both the NERC and NAESB standards
- A Violation Severity Guideline to assist entities in assessing compliance with IRO-006-4, Attachment 1
- A reference<sup>1</sup> to the approved NAESB business practices (to show where commercial aspects will be covered)
- An annotated markup of the last approved version of IRO-006 (highlighting how each part of the standard was divided).

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<sup>1</sup> Please access [http://naesb.org/misc/fa\\_weq\\_r06002\\_attachment%202.pdf](http://naesb.org/misc/fa_weq_r06002_attachment%202.pdf) to review the NAESB TLR Business Practice Standards in conjunction with the proposed NERC TLR Reliability Standards to ensure that all relevant aspects of TLR standards are either included in the NERC proposal or in the NAESB business practices. Please note that the NAESB business practice standards are copyright protected. Should you need to obtain a copy of the NAESB standards for other purposes, please contact the NAESB office.

REGISTERED BALLOT BODY

July 20, 2007

Page Two

Note that the ballot is asking for approval of IRO-006-4 and the associated implementation plan. All other materials are posted for reference only and the ballot will not be asking for approval of these documents.

A new [ballot pool](#) to vote on the initial set of modifications to this standard and its implementation plan has been formed and will remain open up until **8 a.m. (EDT) Monday, August 20, 2007**. During the pre-ballot window, members of the ballot pool may communicate with one another by using their “ballot pool list server.” The list server for this ballot pool is: [bp\\_iro\\_006-4\\_tlr\\_in@nerc.com](mailto:bp_iro_006-4_tlr_in@nerc.com)

The initial ballot for this standard will begin at **8 a.m. (EDT) on Monday, August 20, 2007**.

**Standards Development Process**

The [Reliability Standards Development Procedure](#) contains all the procedures governing the standards development process. The success of the NERC standards development process depends on stakeholder participation. We extend our thanks to all those who participate. If you have any questions, please contact me at 813-468-5998 or [maureen.long@nerc.net](mailto:maureen.long@nerc.net).

Sincerely,

*Maureen E. Long*

cc: Registered Ballot Body Registered Users  
Standards Mailing List  
NERC Roster

**Violation Severity Level Guideline for  
 IRO-006-4 Attachment 1**

These guidelines are intended to assist regional entities in evaluating TLR performance. They are not intended to mandate any specific requirements upon compliance or penalty assessment. Reliability Coordinators are expected to review each TLR event and self-report to their regional entity all occurrences of requirement violations.

Evaluation of the violation of IRO-006 Attachment 1 by regional entities will be based on a sample of the TLRs experienced within a month. A sample will consist of ten TLR events during the month. This sample will be made up of the following:

- Up to five TLR events with a known problem. A known problem is defined as a TLR 5 or TLR 6 event, TLR used when an IROL violation occurred or where there was a deviation from the Interconnection-wide procedure.
- The remainder to be made up of randomly selected TLR events.
- If the total number for TLR events is less than ten, then all TLR events should be used.

Each TLR event in the sample will be reviewed for violations of the Attachment 1 requirements using the level of importance described in Appendix A for each violation. The levels of importance indicate how a violation of that requirement would impact reliability. Each violation will be assigned a violation score as described below:

- Low - Contributes 0.25 to a violation (these are mainly administrative issues not associated with reliability).
- Medium - Contributes 0.5 to a violation.
- High - Contributes 1 to a violation.

The sum of all violation scores will be rounded to the closest whole number (the default is to round up for values ending in .5) for each TLR event, and that total violation score will be used to determine the Violation Severity Level as described below. However, at no point will the score round down to zero; if any violation occurs, the minimum Violation Severity Level is 1.

<b>VSL</b>	<b>Number of Accumulated Violations Based on All TLR Events in Reset Period</b>
Lower	One violation of applicable Interconnection-wide procedure.
Moderate	Two to three violations of applicable Interconnection-wide procedure.
High	Four to five violations of applicable Interconnection-wide procedure.
Severe	Six or more violations of applicable Interconnection-wide procedure.



## Appendix A

### NERC TLR Standard Non-Compliance Criteria

The requirements described in IRO-006 Attachment 1 are assigned a level of importance with a higher number of violations allowed for low level of importance areas (minor infractions) and a lower number of violations allowed for a high level of importance areas (major infractions).

#### 1.0 TLR Procedure

##### 1.1 Initiation Only by RC – Not a requirement

1.1.1 Requesting relief on transmission facilities. – Not a requirement

##### 1.2 Mitigating SOL & IROL Violations – High (if TLR was used as the sole means to mitigate an existing IROL)

##### 1.3 Sequencing – High (if the entity doesn't have authority to directed Balancing Authorities and Transmission Operators during Level 6)

##### 1.4 Notification of TLR Procedure Implementation

1.4.1 Notifying Other Reliability Coordinators – Low (this process is now automated)

1.4.1.1 Actions Expected – High (notification of expected actions)

1.4.2 Notifying Transmission Operators and Balancing Authorities – Low (this process is now automated)

1.4.3 Notifying Link Balancing Authorities – High (sink Reliability Coordinator is responsible to notify sink Balancing Authority to curtail)

1.4.3.1 Notification Order – Not requirement

1.4.4 Updates – Low (this process is now automated)

##### 1.5 Obligations – High

##### 1.6 Consideration of Interchange Transactions – Not requirement

1.6.1 Interchange Transactions Not in the IDC – Medium

1.6.2 Transmission Elements Not in IDC – Medium

1.6.3 Questionable IDC Results – Medium

1.6.4 Curtailment that Would Cause a Constraint Elsewhere – High (responding Reliability Coordinator fails to notify initiating Reliability Coordinator that a transaction curtailment will cause a constraint to occur elsewhere)

##### 1.7 Logging – Low (log creation is automated in IDC)

##### 1.8 TLR Event Review – Low

1.8.1 Providing Information – Low

1.8.2 Market Committee Review – Not a requirement

1.8.3 Operating Reliability Subcommittee Review – Low

#### 2.0 Transmission Loading Relief (TLR) Levels

##### 2.1 TLR Level 1

2.1.1 Medium (if a TLR is called without the condition present)

2.1.2 Notification Procedures – Low (IDC does automatic notification)

##### 2.2 TLR Level 2

2.2.1 Medium (if a TLR is called without the condition present)

##### 2.3 TLR Level 3a

2.3.1 – Medium (if a TLR is called without the condition present)

##### 2.4 TLR Level 3b

- 2.4.1 Medium (if a TLR is called without the condition present)
- 2.5 TLR Level 4 – Reconfigure Transmission
  - 2.5.1 Medium (if a TLR is called without the condition present)
  - 2.5.2 Reconfiguration Procedures – Medium (if reconfiguration is not requested)
- 2.6 TLR Level 5a
  - 2.6.1 Medium (if a TLR is called without the condition present)
- 2.7 TLR Level 5b
  - 2.7.1 Medium (if a TLR is called without the condition present)
- 2.8 Curtailment of Interchange Transactions Using Firm Transmission Service
  - 2.8.1 High
    - 2.8.1.1 TLR Level 5a – High
    - 2.8.1.2 TLR Level 5b – High
- 2.9 TLR Level 6
  - 2.9.1 Medium (if a TLR is called without the condition present)
  - 2.9.2 Implementing Emergency Procedures – High
- 2.10 TLR Level 0 – TLR Concluded
  - 2.10.1 Interchange Transaction Restoration and Notification Procedure – Low (IDC does automatic notification)
- 3.1 Not a requirement
- 3.2 Medium
- 3.3 Not a requirement
- 3.4 Medium
- 3.5 Not a requirement

5

**[TITLE SHEET]**

10

**Joint  
NERC/NAESB  
System Operator's  
Transmission Loading Relief (TLR)  
Reference Manual**

15

20

## **{Temporary Sheet}**

### **To The Reader:**

25 We have compiled this draft of the joint reference manual in a form we feel is complete for the purpose of posting with NERC Standard IRO-006-4. We have gone to great length to ensure that all present reliability and commercial components of the TLR process have been incorporated into this manual.

30 The structure of the manual is described in the Preface. Where necessary, we have inserted introductory or “flow”/transition language into the manual and have shown that language in red text. The manual is organized in the following manner:

- Title Sheet
- Table of Contents (to be completed once we finalize the document for publication)
- Preface
- 35 • Tab 1 -(To Be) Annotated Flowchart of Transaction Management and Curtailment Process
- Tab 2 - Requirements
- Tab 3 - Procedures (Attachment 1)
- Tab 4 - Glossary / Definitions of Terms Used
- 40 • Tab 5 - IDC Reference Document
- Tab 6 - NAESB Appendices
- Tab 7 - NERC Appendices

45 Following the July 20th posting, the Drafting Team will work to put the joint manual into a final “finished” form that can be published. To get the manual to its published form, the Drafting Team will continue working on formatting, pagination, Table of Contents, etc as well as a few enhancements that could not be completed prior to posting.

TLR Drafting Team

50

## **[TABLE OF CONTENTS]**

The Table of Contents will be added once the organization and content of the manual is final

55

## [PREFACE]

### Preface

60

#### Manual Objectives

- Understand overall TLR procedure - both reliability and commercial aspects
- Understand different levels of curtailment and associated reloading of interchange transactions
- Understand how to implement TLR procedure
- Understand the severity of violations for non-compliance

65

#### 70 Background and Purpose

In accordance with a decision made by the NERC Version 0 Drafting Team (SDT) and the NAESB Business Practice Subcommittee (BPS) in August of 2004, the TLR procedure was divided into two documents representing the aspects of IRO-006 that are reliability-related and those aspects that are commercial in nature and are related to how the process is implemented equally and without bias to all parties involved.

75

This effort resulted in two documents - (1) NERC Document IRO-006 which defines the procedures for curtailing interchange transactions to relieve overloads on the transmission facilities modeled in the Interchange Distribution Calculator (IDC) and (2) the NAESB TLR Business Practice for the Eastern Interconnection that defines the commercial aspects of how curtailments and reloading of interchange transactions will be carried out.

80

Due to former industry concerns that the elements of this standard are extremely co-dependent, it was determined that a Joint Operator Manual would be created to merge the two documents together to provide an integrated view of both the NERC and NAESB standards. The purpose of this document is to assist the operator in obtaining a better understanding of the overall TLR process whether it is reliability (NERC) or a commercial aspect (NAESB).

85

90

#### Operator Manual Structure

The operator manual is a combination of NERC and NAESB standards. It is developed from the NERC Reliability Standard IRO-006-4 and the NAESB Business Practice (Version 0). NERC standards are represented in black, non-italicized text, while the NAESB Standards are represented in blue, italicized text.

95

The “actual” wording for each representative standard has been taken and inserted into the document along with its respective standards numbering. However, some wording has been added in order to assist the reader in delineating from one aspect of the standard to another (reliability to commercial) and to allow the text to flow in a more understandable format.

100

105 This operator manual is not intended to replace the NERC-approved reliability standards or the NAESB-approved Business Practice Standards. It has been created to simplify the TLR process for system operators by combining all aspects of the process into one easy reference. The document may also simplify any operator training efforts on the overall TLR process.

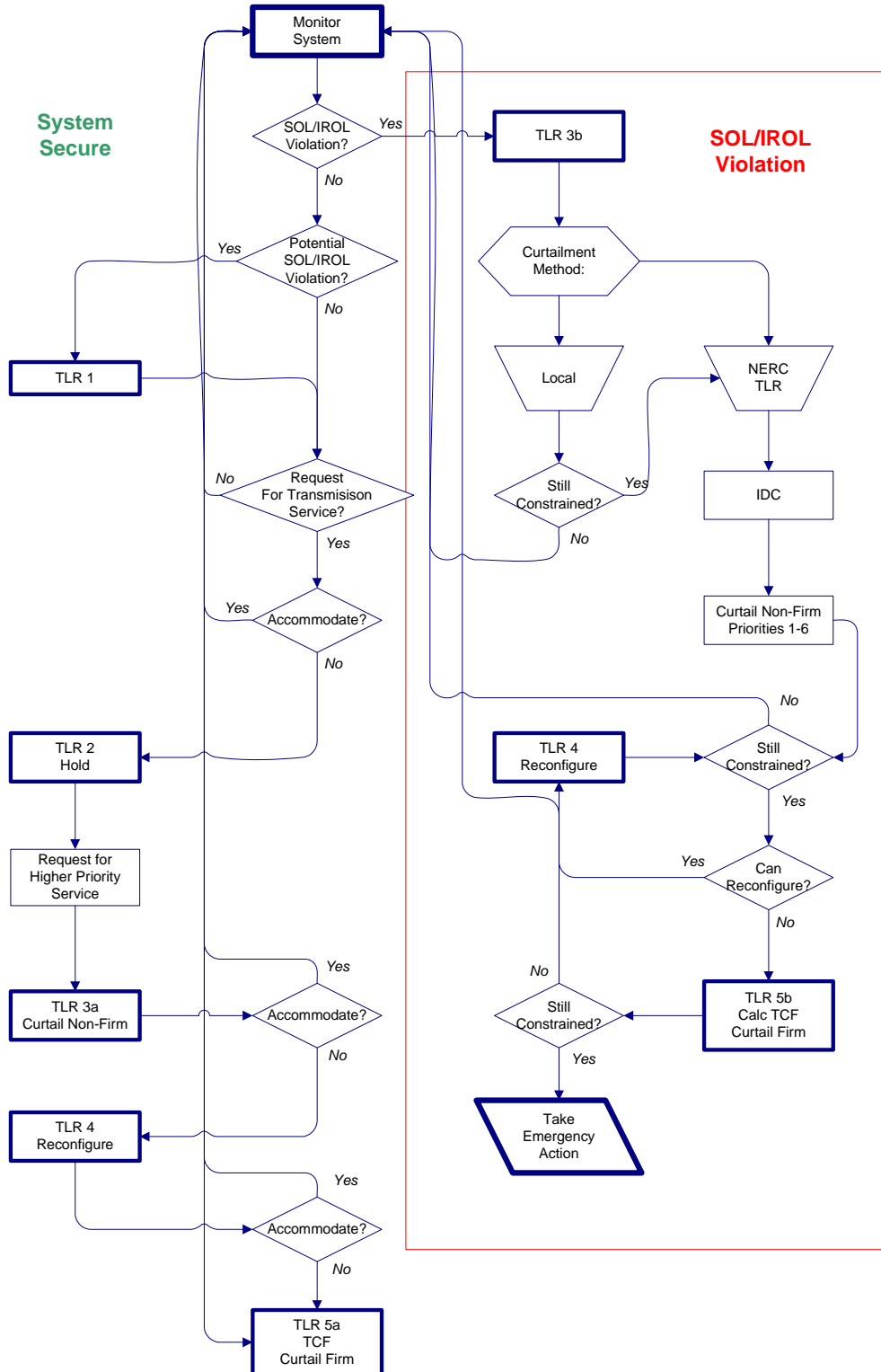
### **Future Maintenance of the Manual and Standards**

110

The joint operator manual will be maintained through an established Joint Standards Development Process between NERC and NAESB so that anytime one party considers making a change to their respective document, a joint meeting will be held to discuss implications and modifications, if any, which would be required to both standards. Upon receipt of either organization receiving a request for a change, the organization will invoke the Joint Standards Development Process and contact the other organization group to convene a meeting to address how the potential changes being requested might impact the two aspects of the standard - reliability and/or commercial. This process will allow the groups to work jointly on the request and ensure that both standards will stay in lock-step with each other.

120

**[TAB 1 – (To Be) ANNOTATED FLOWCHART OF TRANSACTION MANAGEMENT AND CURTAILMENT PROCESS]**





## [TAB 2 – REQUIREMENTS]

### Requirements:

#### Requirement 1 -

130 A Reliability Coordinator experiencing a potential or actual SOL or IROL violation within its Reliability Coordinator Area shall, with its authority and at its discretion, select one or more procedures to provide transmission loading relief. These procedures can be a “local” (regional, interregional, or sub-regional) transmission loading relief procedure or one of the following Interconnection-wide procedures:

[Violation Risk Factor: Medium]

135 [Time Horizon: Real-time Operations]

#### Requirement 1.1 –

140 The Interconnection-wide Transmission Loading Relief (TLR) procedure for use in the Eastern Interconnection is provided in Attachment 1-IRO-006-4. The TLR procedure alone is an inappropriate and ineffective tool to mitigate an IROL violation. Other acceptable and more effective procedures to mitigate actual IROL violations include: reconfiguration, re-dispatch, or load shedding.

#### Requirement 1.2

145 The Interconnection-wide transmission loading relief procedure for use in the Western Interconnection is the “WSCC Unscheduled Flow Mitigation Plan,” provided at: [http://www.wecc.biz/documents/library/UFAS/UFAS\\_mitigation\\_plan\\_rev\\_2001-clean\\_8-8-03.pdf](http://www.wecc.biz/documents/library/UFAS/UFAS_mitigation_plan_rev_2001-clean_8-8-03.pdf).

#### Requirement 1.3 -

150 The Interconnection-wide transmission loading relief procedure for use in ERCOT is provided as Section 7 of the ERCOT Protocols, posted at: <http://www.ercot.com/mktrules/protocols/current.html>

#### Requirement 2

155 The Reliability Coordinator shall only use local transmission loading relief or congestion management procedures to which the Transmission Operator experiencing the potential or actual SOL or IROL violation is a party.

[Violation Risk Factor: Low]

160 [Time Horizon: Operations Planning]

#### Requirement 3 –

165 A Reliability Coordinator may implement a local transmission loading relief or congestion management procedure simultaneously with an Interconnection-wide procedure. However, each Reliability Coordinator shall follow the curtailments as directed by the Interconnection-wide procedure. A Reliability Coordinator desiring to use a local procedure as a substitute for curtailments as directed by the Interconnection-wide procedure shall obtain prior approval by the ERO.

[Violation Risk Factor: Low]

170 [Time Horizon: Operations Planning]

**Requirement 4 –**

175 When Interconnection-wide procedures are implemented to curtail Interchange Transactions that cross an Interconnection boundary, each Reliability Coordinator shall comply with the provisions of the Interconnection-wide procedure.

[Violation Risk Factor: Medium]

[Time Horizon: Real-time Operations]

**Requirement 5 –**

180 During the implementation of relief procedures, and up to the point that emergency action is necessary, Reliability Coordinators and Balancing Authorities shall comply with applicable Interchange scheduling standards.

[Violation Risk Factor: Medium]

[Time Horizon: Real-time Operations]

185

**Measures:**

**Measure 1 -**

190 Each Reliability Coordinator shall be capable of providing evidence (such as logs) that demonstrate when Eastern Interconnection, WECC, or ERCOT Interconnection-wide transmission loading relief procedures are implemented, the implementation follows the respective established procedure as specified in this standard (R1, R1.1, R1.2 and R1.3).

**Measure 2 -**

195 Each Reliability Coordinator shall be capable of providing evidence (such as written documentation) that the Transmission Operator experiencing the potential or existing SOL or IROL violations is a party to the local transmission loading relief or congestion management procedures when these procedures have been implemented (R2).

**Measure 3 -**

200 Each Reliability Coordinator shall be capable of providing evidence (such as NERC meeting minutes) that the local procedure has received prior approval by the ERO when such procedure is used as a substitute for curtailment as directed by the Interconnection-wide procedure (R3).

**Measure 4 -**

205 Each Reliability Coordinator shall be capable of providing evidence (such as logs) that the responding Reliability Coordinator complied with the provisions of the Interconnection-wide procedure as requested by the initiating Reliability Coordinator when requested to curtail an Interchange Transaction that crosses an Interconnection boundary (R4).

210

**Measure 5 -**

215 Each Reliability Coordinator and Balancing Authority shall be capable of providing evidence (such as Interchange Transaction Tags, operator logs, voice recordings or transcripts of voice recordings, electronic communications, computer printouts) that they have complied with applicable Interchange scheduling standards INT-001, INT-003, and INT-004 during the implementation of relief procedures, up to the point emergency action is necessary (R5).

**Compliance:**

220 1. Compliance Monitoring Process -  
The Regional Entity shall have responsibility for compliance monitoring.

1.1 Compliance Monitoring Responsibility:  
Regional Entity.

225

1.2 Compliance Monitoring Period and Reset Time Frame  
Compliance Monitoring Period: One calendar year.  
Reset Period: One month without a violation.

230

1.3 Data Retention

The Reliability Coordinator shall maintain data for eighteen months for M1, M4, and M5.

The Reliability Coordinator shall maintain data for the duration the Transmission Operator is party to the procedure in effect plus one calendar year thereafter for M2.

235

The Reliability Coordinator shall maintain data for the approved duration of the procedure in effect plus one calendar year thereafter for M3.

1.4 Additional Compliance Information

240

Each Reliability Coordinator and Balancing Authority shall demonstrate compliance through self-certification submitted to its Compliance Monitor annually and reporting by exception. The Compliance Monitor may also use scheduled on-site reviews every three years, and investigations upon complaint, to assess performance.

245

Each Reliability Coordinator and Balancing Authority shall have the following available for its Compliance Monitor to inspect during a scheduled, on-site review or within 5 days of a request as part of an investigation upon complaint:

250

1.4.1 Operations logs, voice recordings or transcripts of voice recordings or other documentation providing the evidence of its compliance to all the requirements for all Interconnection-wide TLR procedures that it has implemented during the review period.

1.4.2 TLR reports.

2. Violation Severity Levels -

255

2.1 Lower. There shall be a lower violation severity level if any of the following conditions exist:

2.1.1 For each TLR in the Eastern Interconnection, the Reliability Coordinator violates one (1) requirement of the applicable Interconnection-wide procedure (R1)

260

2.1.2 The Reliability Coordinators or Balancing Authorities did not comply with applicable Interchange scheduling standards during the implementation of the relief procedures, up to the point emergency action is necessary (R5).

2.2 Moderate.

265 2.2.1 For each TLR in the Eastern Interconnection, the Reliability Coordinator violates two (2) to three (3) requirements of the applicable Interconnection-wide procedure (R1).

2.3 High. There shall be a high violation severity level if any of the following conditions exist:

270 2.3.1 For each TLR in the Eastern Interconnection, the applicable Reliability Coordinator violates four (4) to five (5) requirements of the applicable Interconnection-wide procedure (R1).

275 2.3.2 When requested to curtail an Interchange Transaction that crosses an Interconnection boundary utilizing an Interconnection-wide procedure, the responding Reliability Coordinator did not comply with provisions of the Interconnection-wide procedure as requested by the initiating Reliability Coordinator (R4).

2.4 Severe. There shall be a severe violation severity level if any of the following conditions exist:

280 2.4.1 For each TLR in the Eastern Interconnection, the Reliability Coordinator violates six (6) or more of the requirements of the applicable Interconnection-wide procedure (R1).

285 2.4.2 A Reliability Coordinator implemented local transmission loading relief or congestion management procedures to relieve congestion but the Transmission Operator experiencing the congestion was not a party to those procedures (R2).

290 2.4.3 A Reliability Coordinator implemented local transmission loading relief or congestion management procedures as a substitute for curtailment as directed by the Interconnection-wide procedure but the local procedure had not received prior approval by the ERO (R3).

295 2.4.4 While attempting to mitigate an existing IROL violation in the Eastern Interconnection, the Reliability Coordinator applied TLR as the sole remedy for an existing IROL violation.

295 2.4.5 While attempting to mitigate an existing constraint in the Western Interconnection using the “WSCC Unscheduled Flow Mitigation Plan”, the Reliability Coordinator did not follow the procedure correctly.

295 2.4.6 While attempting to mitigate an existing constraint in ERCOT using Section 7 of the ERCOT Protocols, the Reliability Coordinator did not follow the procedure correctly.

## [TAB 3 – PROCEDURES (ATTACHMENT 1)]

### 300 **Transmission Loading Relief (TLR) Procedures – Eastern Interconnection:**

#### **Purpose**

305 This document defines procedures for curtailment and reloading of Interchange Transactions to relieve overloads on transmission facilities modeled in the Interchange Distribution Calculator. This process is defined in the requirements shown under Tab 2 - Requirements, and is depicted in NERC Appendix A – Transaction Management and Curtailment Process. Examples of curtailment calculations using these procedures are contained in NAESB Appendix C – Transaction Curtailment Formula.

#### 310 **Applicability**

This standard only applies to the Eastern Interconnection.

### **1. Transmission Loading Relief (TLR) Procedures**

315 **1.1. Initiation only by Reliability Coordinator.** A Reliability Coordinator shall be the only entity authorized to initiate the TLR Procedure and shall do so at 1) the Reliability Coordinator's own request, or 2) upon the request of a Transmission Operator.

320 **1.1.1 Curtailment Threshold.** The curtailment threshold to be utilized by the Reliability Coordinator for curtailments in the Eastern Interconnection is specified in [*Section 3.10 of the NAESB Transmission Loading Relief Business Practice Standard – Curtailment Threshold*].

*3.10 The Curtailment Threshold for the Eastern Interconnection shall be 0.05 (5%).*

325 **1.2. Mitigating transmission constraints.** A Reliability Coordinator may utilize the TLR Procedure to mitigate potential or existing System Operating Limit (SOL) violations or to prevent Interconnection Reliability Operating Limit (IROL) violations on any transmission facility modeled in the IDC. However, the TLR procedure is an inappropriate and ineffective tool as a sole means to mitigate existing IROL violations. Effective alternatives to the use of the TLR procedure in situations involving an existing IROL violation include: reconfiguration, re-dispatch, and load shedding outside the TLR process.

330 **1.2.1. Requesting relief on tie facilities.** Any Transmission Operator who operates the tie facility shall be allowed to request relief from its Reliability Coordinator.

335 **1.2.1.1 Interchange Transaction Priority on Tie Facilities** as used for curtailment purposes shall be determined by the Transmission Service reserved on the Transmission Service Provider's system who requested the relief in accordance with [*Section 2.1, and its sub-parts, of the NAESB Transmission Loading Relief Business Practice Standard - Priority of Interchange Transactions.*]

340 **2.1** *The Reliability Coordinator shall recognize the Interchange Transaction priority determined by the Transmission Service reserved as follows:*

*2.1.1 Priority 0. Next-hour Market Service – NX (if offered by Transmission Service Provider)*

- 345 *2.1.2 Priority 1. Service over secondary receipt and delivery points – NS*
- 2.1.3 Priority 2. Non-Firm Point-to-point Hourly Service – NH*
- 2.1.4 Priority 3. Non-Firm Point-to-point Daily Service – ND*
- 350 *2.1.5 Priority 4. Non-Firm Point-to-point Weekly Service – NW*
- 2.1.6 Priority 5. Non-Firm Point-to-point Monthly Service – NM*
- 2.1.7 Priority 6. Network Integration Transmission Service from sources not designated as network resources – NN*
- 355 *2.1.8 Priority 7. Firm Point-to-point Transmission Service - (F) and Network Integration Transmission Service from Designated Resources – (FN)*

360 **1.3. Order of TLR Levels and taking emergency action.** The Reliability Coordinator shall not be required to follow the TLR Levels [Shown in Procedures (Attachment 1) – NERC Section 2) in their numerical order. Furthermore, if a Reliability Coordinator deems that a transmission loading condition could jeopardize Bulk Electric System reliability, the Reliability Coordinator shall have the authority to enter TLR Level 6 directly, and immediately direct the Balancing Authorities or Transmission Operators to take such actions as re-dispatching generation, or reconfiguring transmission, or reducing load to mitigate the critical condition until Interchange Transactions can be reduced utilizing the TLR Procedure or other methods to return the system to a secure state.

365 **1.4. Notification of TLR Procedure implementation.** The Reliability Coordinator initiating the use of the TLR Procedure shall notify other Reliability Coordinators and Balancing Authorities and Transmission Operators, and must post the initiation and progress of the TLR event on the appropriate NERC web page(s).

370 **1.4.1. Notifying other Reliability Coordinators.** The Reliability Coordinator initiating the TLR Procedure shall inform all other Reliability Coordinators via the Reliability Coordinator Information System (RCIS) that the TLR Procedure has been implemented.

375 **1.4.1.1. Actions expected.** The Reliability Coordinator initiating the TLR Procedure shall indicate the actions expected to be taken by other Reliability Coordinators.

**1.4.2. Notifying Transmission Operators and Balancing Authorities.** The Reliability Coordinator shall notify Transmission Operators and Balancing Authorities in its Reliability Area when entering and leaving any TLR level.

380 **1.4.3. Notifying Balancing Authorities.** The Reliability Coordinator for the sink Balancing Authority shall be responsible for directing the Sink Balancing Authority to curtail the Interchange Transactions as specified by the Reliability Coordinator implementing the TLR Procedure.

385 **1.4.3.1. Notification order.** Within a Transmission Service Priority level, the Sink Balancing Authorities whose Interchange Transactions have the largest impact on the Constrained Facilities shall be notified first if practicable.

390 **1.4.4. Updates.** At least once each hour, or when conditions change, the Reliability Coordinator implementing the TLR Procedure shall update all other Reliability Coordinators (via the RCIS). Transmission Operators and Balancing Authorities who have had Interchange Transactions impacted by the TLR will be updated by their Reliability Coordinator.

395 **1.5. Obligations.** All Reliability Coordinators shall comply with the request of the Reliability Coordinator who initiated the TLR Procedure, unless the initiating Reliability Coordinator agrees otherwise.

**1.5.1. Use of TLR Procedure with “local” procedures.** *[Sections 1.1, 1.2, and 1.2.1 of the NAESB Transmission Loading Relief Business Practice Standard]* shall apply in the use of TLR Procedure with “local” procedures.

400 **1.1 Use of Interconnection-wide TLR procedures.** *All Reliability Coordinators shall be obligated to follow the transmission loading relief procedures associated with the appropriate Interconnection-wide TLR procedure for their Interconnection.*

**1.2 Use of local procedures.** *A Reliability Coordinator shall be allowed to implement a local transmission loading relief or congestion management procedure simultaneously with the Interconnection-wide TLR procedure.*

405 **1.2.1** *The Reliability Coordinator shall revert back to the Interconnection-wide TLR procedure in the event local procedures do not adequately alleviate the Interconnection Reliability Operating Limits (IROL) or System Operating Limits (SOL) violation.*

410 **1.5.2 Commercial Notifications.** Commercial notifications shall be implemented in accordance with *[Section 1.5 of the NAESB Transmission Loading Relief Business Practice Standard]*

415 **1.5** *The Reliability Coordinator shall simultaneously notify all parties affected by the invocation of a local congestion management procedure or the Interconnection-wide TLR procedure, using the notification method as specified by NERC (e.g. – the Reliability Coordinator Information System or successor).*

**1.6. Consideration of Interchange Transactions.** The administration of the TLR Procedure shall be guided by information obtained from the IDC.

420 **1.6.1. Interchange Transactions not in the IDC.** Reliability Coordinators shall also treat known Interchange Transactions that may not appear in the IDC in accordance with the procedures in this document.

**1.6.2. Transmission elements not in IDC.** When a Reliability Coordinator is faced with an overload on a transmission element that is not modeled in the IDC, the Reliability Coordinator shall use the best information available to curtail Interchange Transactions in order to operate the system in a reliable manner. The Reliability Coordinator shall use its best efforts to ensure that Interchange Transactions with a Transfer Distribution Factor of less than the Curtailment Threshold on the transmission element not modeled in the IDC are not curtailed.

425

430 **1.6.3. Questionable IDC results.** Any Reliability Coordinator (or Transmission Operator through its Reliability Coordinator) who believes the curtailment list from the IDC for a particular TLR event is incorrect shall use its best efforts to communicate those adjustments necessary to bring the curtailment list into conformance with the principles of this Procedure to the initiating Reliability Coordinator. Causes of questionable IDC results may include:

435

- Missing Interchange Transactions that are known to contribute to the Constraint.
- Significant change in transmission system topology.
- TDF matrix error.

440 Impacts of questionable IDC results may include:

- Curtailment that would have no effect on, or aggravate the constraint.
- Curtailment that would initiate a constraint elsewhere.

If other Reliability Coordinators are involved in the TLR event, all impacted Reliability Coordinators shall be in agreement before any adjustments to the Curtailment list are made.

**1.6.4. Curtailment that would cause a constraint elsewhere.** A Reliability Coordinator shall be allowed to exempt an Interchange Transaction from Curtailment if that Reliability Coordinator is aware that the Interchange Transaction Curtailment directed by the IDC would cause a constraint to occur elsewhere. This exemption shall only be allowed after the Reliability Coordinator has consulted with the Reliability Coordinator who initiated the Curtailment.

**1.6.5. Re-Dispatch Options** are implemented according to [**Sections 1.3, 1.3.1, 1.3.1.1 and 1.3.2 of the NAESB Transmission Loading Relief Business Practice Standard**]

**1.3 Market-based congestion management or re-dispatch procedures.**  
*Regulatory-approved market-based congestion management or re-dispatch procedures shall be allowed as a supplement to, or substitute for, the Interconnection-wide TLR procedure.*

**1.3.1** *The Reliability Coordinator shall ensure that transactions associated with Point-to-point Transmission Service, Network Integration Transmission Service, and Transmission Service associated with Native Load, having been identified as linked with a Regulatory-approved Market-based congestion management procedure, are protected from curtailment to the extent that the Regulatory-approved Market-based congestion management procedure allows.*

**1.3.1.1** *The Interchange Transaction shall retain its original transmission service priority for purposes of curtailment when the transmission service is not reserved on the Constrained Facility or Flowgate.*

**1.3.2** *The Reliability Coordinator shall revert back to the Interconnection-wide TLR procedure in the event Market-based procedures do not adequately alleviate the IROL or SOL violations.*

**1.6.6. Reallocation.** The Reliability Coordinator shall consider for Reallocation any Transactions of higher priority that meet the approved tag submission deadline during a TLR Level 3A. The Reliability Coordinator shall consider for Reallocation any Transaction using Firm Transmission Service that has met the approved tag submission deadline during a TLR Level 5A. Note Reallocations for Dynamic Schedules are as follows: If an Interchange Transaction is identified as a Dynamic Schedule and the transmission service is considered firm according to the constrained path method, then it will not be held by the IDC during TLR level 4 or lower. Adjustments to Dynamic Schedules, in accordance with the current version of INT-004, will not be held under TLR level 4 or lower.

Reallocation is implemented according to **Sections 3.3, 3.3.1, 3.3.1.2 and 3.6 of the NAESB Transmission Loading Relief Business Practice Standard and is described in the individual TLR level descriptions in Section 2 of this Reference Manual.**



Reallocation is implemented *for Dynamic Schedules for Levels 4 and Lower* in accordance with [Sections 3.2.5, 3.3.1.2, 3.4.1.2 and 3.5.2.1 of the NAESB Transmission Loading Relief Business Practice Standard]

490 **1.6.7 Parallel Flow Calculation Procedure for Reallocating or Curtailing Firm Transmission Service.** The Reliability Coordinator shall use the Per Generator Method to calculate parallel flows when reallocating interchange Transactions as described in [Sections 3.11 through 3.11.2.8 of the NAESB Transmission Loading Relief Business Practice Standard]

495 3.11 *The Reliability Coordinator initiating a curtailment shall identify for curtailment all firm transmission services (i.e. PTP, NI, and service to NL) that contribute to the flow on any Constrained Facility or Flowgate by an amount greater than or equal to the Curtailment Threshold on a pro rata basis.*

500 3.11.1 *The Reliability Coordinator shall use Transfer Distribution Factors (TDF's) to calculate the portion of parallel flows on any Constrained Facility or Flowgate due to Interchange Transactions using Firm Transmission Service.*

505 3.11.1.1 *Only those Interchange Transactions with TDF's greater than or equal to the Curtailment Threshold shall be considered.*

510 3.11.2 *The Reliability Coordinator shall use the Per Generator Method to calculate the portion of parallel flows on any Constrained Facility or Flowgates due to Network Integrated (NI) transmission service customers and service to Native Load (NL) customers for each Balancing Authority (See NAESB Appendix B for examples).*

515 3.11.2.1 *The Reliability Coordinator shall assign the amount of Constrained Facility or Flowgate relief that must be achieved by each NI transmission service or NL customers within a given Balancing Authority.*

520 3.11.2.1.1 *For each NI transmission service or NL customer, the Reliability Coordinator shall determine the amount of flow contributing to the Constrained Facility or Flowgate from those generators assigned to that customer using Generator-to-Load Distribution Factors (GLDFs) for those generators.*

525 3.11.2.1.2 *The GLDF for each generator shall determine the impact that generator has on the Constrained Facility or Flowgate.*

530 3.11.2.1.3 *The sum of the contributions to the Constrained Facility or Flowgate from all generators assigned to the NI transmission service or NL customer shall be the amount of relief assigned to that customer.*

3.11.2.1.4 *The Reliability Coordinator shall not specify how the reduction will be achieved.*

3.11.2.2 *GLDFs shall be calculated for each NI transmission service and NL customer as the Generation Shift Factors*

- 535 (GSFs) of the NI transmission service or NL customer's  
assigned generation minus its Load Shift Factors (LSFs).
- 3.11.2.2.1 GSFs shall be calculated from a single bus  
in the study case.
- 3.11.2.2.2 LSFs shall be calculated by scaling load.
- 540 3.11.2.2.3 The GLDFs must be greater than or equal to  
the Curtailment Threshold to be considered.
- 3.11.2.2.4 GLDFs whose contributions are counter to  
the constraint (i.e. counter flow) shall be  
ignored for the purposes of the calculation.
- 545 3.11.2.3 Each generator shall be assigned to a given NI  
transmission service or NL customer within a Balancing  
Authority Area for the purposes of calculating their  
contribution to a given constraint. Exceptions may  
include special cases where generators are only included  
550 for case modeling purposes.
- 3.11.2.4 For a given generator bus, all generators modeled at  
that bus shall be assumed online and operating at their  
maximum MVA value except as noted otherwise in this  
procedure.
- 555 3.11.2.4.1 At the time of calculation, daily operating  
reliability information will be used to update  
the calculation for transmission line outages,  
generator outage or derate information, and  
daily load forecasts as appropriate.
- 560 3.11.2.4.2 Only those generator buses whose aggregate  
modeled capacity exceeds 20MW shall be  
considered. Generator buses whose  
aggregate modeled capacity does not exceed  
20MW shall be excluded.
- 565 3.11.2.5 Generators shall be assigned to a given NI transmission  
service or NL customer based upon the customer's  
controlling interest in the facility and may include partial  
facilities or facilities from Balancing Authority Areas  
external to the customer's host Balancing Authority.
- 570 3.11.2.6 If the total amount of generation from the generation  
facilities assigned to a given NI transmission service or  
NL customer exceed the total load for that customer, the  
generation shall be scaled down to match that  
customer's total load.
- 575 3.11.2.7 If the total amount of generation from the generation  
facilities assigned to a given NI transmission service or  
NL customer is less than the total load for that customer,  
it shall be assumed that the imports necessary to meet  
total load are being scheduled on Point-to-point  
580 Transmission Service. Generation shall not be scaled to  
meet load in this instance.

3.11.2.8 *All NI transmission service and NL customers in the Eastern Interconnection, working with their respective Balancing Authorities, shall be obligated to achieve the amount of relief assigned to them by the Reliability Coordinator via the Per Generator Method.*

585

**1.7 IDC updates.** Any Interchange Transaction adjustments or curtailments that result from using this Procedure must be entered into the IDC.

590

**1.8 Logging.** The Reliability Coordinator shall complete the NERC Transmission Loading Relief Procedure Log (automatically performed by the IDC) whenever it invokes TLR Level 2 or above, and send a copy of the log via email to NERC (automatically performed by the IDC) within two business days of the TLR event for posting on the NERC website.

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**1.8.1 Access to procedure logs.** Access to procedure logs shall be implemented according to *[Section 1.6 of the NAESB Transmission Loading Relief Business Practice Standard]*

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*1.6 The Reliability Coordinator shall ensure that NERC TLR logs specifying the details associated with the initiation of TLR level 2 or higher and/or the invocation of the Interconnection-wide TLR procedure are available, subject to applicable confidentiality requirements, to all market participants, regardless of the procedure used to achieve that relief.*

605

**1.9 TLR Event Review.** The Reliability Coordinator shall report the TLR event to the NERC Market Committee and Operating Reliability Subcommittee in accordance with TLR review processes established by NERC as required. [Note: References to the NERC Market Committee (only) will be removed as the Market Committee no longer exists]

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**1.9.1. Providing information.** Transmission Operators and Balancing Authorities within the Reliability Coordinator’s Area, and all other Reliability Coordinators, including Transmission Operators and Balancing Authorities within their respective Reliability Areas, shall provide information, as requested by the initiating Reliability Coordinator, in accordance with TLR review processes established by NERC.

615

**1.9.2. Market Committee reviews.** The Market Committee may conduct reviews of certain TLR events based on the size and number of Interchange Transactions that are affected, the frequency that the TLR Procedure is called for a particular Constrained Facility, or other factors. [Note: References to the NERC Market Committee (only) will be removed as the Market Committee no longer exists]

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**1.9.3. Operating Reliability Subcommittee reviews.** The Operating Reliability Subcommittee shall conduct reviews to ensure proper implementation and for “lessons learned.”

625

**1.10 Interchange Transaction priority when Transmission Service IS reserved on the Constrained Facility(ies) or Flowgate(s)** shall be implemented according to *[Sections 2.2, 2.2.1, 2.2.1.1, 2.2.1.2 of the NAESB Transmission Loading Relief Business Practice Standard]*. For specific examples of On Path / Off Path Mitigation please see NAESB Appendix A - Mitigating Constraints On and Off the Contract Path during TLR.

**2.2 Interchange Transaction priority when Transmission Service is reserved on the Constrained Facility(ies) or Flowgate(s).** *The Reliability Coordinator shall use the following procedure to establish the priority of an Interchange*

630 Transaction when Transmission Service is reserved on a Contract Path that includes the Constrained Facility(ies) or Flowgate(s): (See NAESB Appendix A for examples)

635 2.2.1 The Reliability Coordinator shall assign priority to the Interchange Transaction based upon the Transmission Service priority of the Transmission Service link with the Constrained Facility or Flowgate regardless of the Transmission Service priority on the other links along the Contract Path.

640 2.2.1.1 The Reliability Coordinator shall consider the entire Interchange Transaction Non-Firm if the transmission link (i.e. a segment on the Contract Path) on the Constrained Facility or Flowgate is Non-Firm Transmission Service, even if other links in the Contract Path are Firm.

645 2.2.1.2 The Reliability Coordinator shall consider the entire Interchange Transaction Firm if the transmission link on the Constrained Facility or Flowgate is Firm Transmission Service, even if other links in the Contract Path are Non-Firm.

650 1.11 Interchange Transaction priority when Transmission Service IS NOT reserved on the Constrained Facility(ies) or Flowgate(s) shall be implemented according to [Sections 2.3, 2.3.1, 2.3.1.1, 2.3.1.2 of the NAESB Transmission Loading Relief Business Practice Standard]. For specific examples of On Path / Off Path Mitigation please see NAESB Appendix A - Mitigating Constraints On and Off the Contract Path during TLR.

655 2.3 Interchange Transaction priority when Transmission Service is not reserved on the Constrained Facility(ies) or Flowgate(s). The Reliability Coordinator shall use the following procedure to establish the priority of an Interchange Transaction when Transmission Service is reserved on a Contract Path that does not include the Constrained Facility or Flowgate: (See NAESB Appendix A for examples)

660 2.3.1 The Reliability Coordinator shall assign priority to the Interchange Transaction based upon the lowest Transmission Service priority of all Transmission Service links along the Contract Path.

665 2.3.1.1 The Reliability Coordinator shall consider the entire Interchange Transaction Non-Firm if any of the transmission links on the Contract Path are Non-Firm Transmission Service.

670 2.3.1.2 The Reliability Coordinator shall consider the entire Interchange Transaction Firm if all of the transmission links on the Contract Path are Firm Transmission Service, even if none of the transmission links are on the Constrained Facility or Flowgate, and shall not be curtailed to relieve a Constraint off the Contract Path until all Non-Firm Interchange Transactions that are at or above the Curtailment Threshold have been curtailed.

675 1.12 Sub-priorities during Reallocation shall be implemented according to [Sections 2.4, 2.4.1, 2.4.2, 2.4.3 and 2.4.4 of the NAESB Transmission Loading Relief Business Practice Standard – Sub-priorities during Reallocation]. Please see descriptions located under TLR Level 3A for greater detail on Sub-Priorities.

680 **2.4 Sub-priorities during Reallocation.** *During Reallocation, the Reliability Coordinator shall utilize the following sub-priorities as established in the IDC, listed from highest priority to lowest priority, within each Non-Firm Transmission Service priority for determining how pending Interchange Transactions with equal or higher priority Transmission Service shall be loaded:*

685 **2.4.1 Sub-priority S1.** *Sub-priority S1 shall be assigned to that portion of an Interchange Transaction that is already flowing.*

690 **2.4.2 Sub-priority S2.** *Sub-priority S2 shall be assigned to that portion of an Interchange Transaction that has been curtailed or held by the Interconnection-wide TLR procedure.*

695 **2.4.3 Sub-priority S3.** *Sub-priority S3 shall be assigned to that incremental portion of an already flowing Interchange Transaction that is scheduled to increase from its current hour schedule in the upcoming hour in accordance with its energy profile, or schedules submitted prior to the implementation of the Interconnection-wide TLR procedure.*

**2.4.4 Sub-priority S4.** *Sub-priority S4 shall be assigned to a new or revised Interchange Transaction that is submitted after the Interconnection-wide TLR procedure has been declared.*

## 2. Transmission Loading Relief (TLR) Levels

### Introduction

700 This section describes the various levels of the TLR Procedure. The description of each  
level begins with the circumstances that define the TLR Level, followed by the procedures  
to be followed. The decision that a Reliability Coordinator makes in selecting a particular  
TLR Level often depends on the transmission loading condition and whether the  
Interchange Transaction is using Non-firm Point-to- Point Transmission Service or Firm  
705 Point-to-Point Transmission Service. There are further considerations that depend on  
whether the Constrained Facility is on or off the Contract Path. It is important to note that  
an Interchange Transaction using Firm Point-to-Point Transmission Service on all Contract  
Path links is considered a “firm” Interchange Transaction even if the Constrained Facility is  
off the Contract Path.

### 710 2.1. TLR Level 1 — Notify Reliability Coordinators of potential SOL or IROL

#### Violations

715 2.1.1. The Reliability Coordinator shall use the following circumstances to establish the  
need for TLR Level 1:

- The transmission system is secure.
- The Reliability Coordinator foresees a transmission or generation  
contingency or other operating problem within its Reliability Area that could  
cause one or more transmission facilities to approach or exceed their SOL or  
IROL.

720 2.1.2. **Notification procedures.** The Reliability Coordinator shall notify all Reliability  
Coordinators via the Reliability Coordinator Information System (RCIS) as soon  
as the condition is foreseen. All affected Reliability Coordinators shall check to  
ensure that Interchange Transactions are posted in the IDC.

725 2.1.3 **Treatment of Interchange Transactions during TLR Level 1.** The treatment  
of Interchange Transactions during TLR Level 1 is prescribed by [*Section 3.1 of  
the NAESB Transmission Loading Relief Business Practice Standard – Eastern  
Interconnection Procedure for Physical Curtailment of Interchange  
Transactions*]

730 3.1 *When a Reliability Coordinator has initiated a TLR level 1 (Notify all  
Reliability Coordinators of potential SOL or IROL Violations), the Reliability  
Coordinator shall take no action against any Interchange Transaction.*

**2.2. TLR Level 2 — Hold transfers at present level to prevent SOL or IROL Violations**

**2.2.1.** The Reliability Coordinator shall use the following circumstances to establish the need for entering TLR Level 2:

735

- The transmission system is secure.
- One or more transmission facilities are expected to approach, or are approaching, or are at their SOL or IROL.

**2.2.2. Holding Procedures.** Holding procedures shall be implemented during TLR Level 2 according to [Sections 3.2.2, 3.2.3, 3.2.4 and 3.2.5 of the NAESB Transmission Loading Relief Business Practice Standard]

740

**3.2.2** *The Reliability Coordinator shall hold the implementation of any additional Interchange Transactions using Non-Firm Transmission Service that are at or above the Curtailment Threshold.*

745

**3.2.3** *The Reliability Coordinator shall allow additional Interchange Transactions that flow across the Constrained Facility or Flowgate to be initiated if their flow reduces the loading on the Constrained Facility or Flowgate or has a Transfer Distribution Factor (TDF) less than the Curtailment Threshold.*

750

**3.2.4** *The Reliability Coordinator shall allow all Interchange Transactions using Firm Transmission Service to be initiated.*

755

**3.2.5** *If an Interchange Transaction is identified as a Dynamic Schedule and the Transmission Service is considered Firm according to the constrained path method, then it will not be held by the IDC during TLR level 4 or lower. Adjustments to Dynamic Schedules in accordance with the current version of NERC INT-004 will not be held under TLR level 4 or lower.*

**2.2.3.** *When a Reliability Coordinator has initiated a TLR level 2 (Hold transfers at present level to prevent SOL or IROL Violations), the Reliability Coordinator shall ensure the following actions as prescribed in [Sections 3.2.1, 3.2.1.1, and 3.2.1.2 of the NAESB Transmission Loading Relief Business Practice Standard]*

760

**3.2.1** *The Reliability Coordinator should ensure that TLR level 2 is a transient state so that Interchange Transactions are properly initiated according to their transmission reservation priority.*

765

**3.2.1.1** *The Reliability Coordinator should make best efforts possible to ensure that TLR level 2 does not exceed 30 minutes in duration.*

**3.2.1.2** *If TLR level 2 exceeds 30 minutes in duration, the Reliability Coordinator shall document this action on the NERC TLR log.*

770

**2.3. TLR Level 3A — Reallocation of Transmission Service by curtailing Interchange Transactions using Non-firm Point-to-Point Transmission Service to allow Interchange Transactions using higher priority Transmission Service**

**2.3.1.** The Reliability Coordinator shall use the following circumstances to establish the need for entering TLR Level 3A:

775

- The transmission system is secure.
- One or more transmission facilities are expected to approach, or are approaching, or are at their SOL or IROL.
- Transactions using Non-firm Point-to-Point Transmission Service are flowing that are at or above the Curtailment Threshold on those facilities.
- The Transmission Provider has previously approved a higher priority Point-to-Point Transmission Service reservation over which a Transmission Customer wishes to begin an Interchange Transaction.

780

**2.3.2. TLR Level 3A** accomplishes Reallocation by curtailing Interchange Transactions using Non-firm Point-to-Point Transmission Service to allow Interchange Transactions using higher priority Non-firm or Firm Point-to-Point Transmission Service to start. When a TLR Level 3A is in effect, Reliability Coordinators shall reallocate Interchange Transactions according to the Transmission Service Priorities of the relevant Interchange Transactions. Reallocation also includes the orderly reloading of Transactions by priority when conditions permit curtailed Transactions to be reinstated. *[Section 3.3.2.2 of the NAESB Transmission Loading Relief Business Practice Standard]* states that “*The Reliability Coordinator shall only consider those Interchange Transactions at or above the Curtailment Threshold for which the Interconnection-wide TLR procedure is called.*”

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790

Reallocation of Interchange Transactions shall take place according to *[Sections 3.3 – 3.3.1.2 of the NAESB Transmission Loading Relief Business Practice Standard]*, as described below

795

**3.3 TLR level 3A.** *When a Reliability Coordinator has initiated a TLR level 3A (Reallocation of Transmission Service by curtailing Interchange Transactions using Non-Firm Transmission Service to allow Interchange Transactions using higher priority Transmission Service to start), the Reliability Coordinator shall take the following actions:*

800

**3.3.1** *The Reliability Coordinator shall allow those Interchange Transactions using Firm Transmission Service that have been submitted prior to the NERC-approved tag submission deadline for Reallocation (as found in the current version of NERC IRO-006) to be initiated as scheduled.*

805

**3.3.1.1** *The Reliability Coordinator shall hold an Interchange Transaction using Firm Transmission Service if the Interchange Transaction is submitted after the NERC-approved tag submission deadline for Reallocation during TLR level 3A, but shall allow the transaction to start in the following hour.*

810

**3.3.1.2** *Reallocations for Dynamic Schedules are as follows: If an Interchange Transaction is identified as a Dynamic Schedule and the Transmission Service is considered Firm according to the constrained path method, then it will not be held by the IDC during TLR level 4 or lower. Adjustments to Dynamic Schedules in accordance with the current version of NERC INT-004 will not be held under TLR level 4 or lower.*

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820 NAESB Business Practice Standards found within NERC Sections 2.3.2.1,  
2.3.2.2, 2.3.2.3, 2.3.2.4, 2.3.2.5 and 2.3.2.6 shall apply to TLR Level 3A

**2.3.2.1. [Sections 3.3.2 and 3.3.2.3 of the NAESB Transmission Loading Relief  
Business Practice Standard]**

825 **3.3.2** *The Reliability Coordinator with the constraint shall consider for  
curtailment those Interchange Transactions using lower priority  
Non-Firm Transmission Service as specified in Requirement 2,  
“Interchange Transaction Priorities for use with Interconnection-  
wide TLR procedures” to allow higher priority Transmission  
Service schedules to start.*

830 **3.3.2.3** *The Reliability Coordinator shall displace Interchange  
Transactions utilizing lower priority Transmission Service with  
Interchange Transactions utilizing higher priority Non-Firm or  
Firm Transmission Service.*

**2.3.2.2. [Section 3.3.2.4 of the NAESB Transmission Loading Relief Business  
Practice Standard]**

835 **3.3.2.4** *The Reliability Coordinator shall not curtail Interchange  
Transactions using Non-Firm Transmission Service to allow the  
initiation or increase of another transaction having the same  
Non-Firm Transmission Service priority.*

**2.3.2.3. [Section 3.3.2.5 of the NAESB Transmission Loading Relief Business  
Practice Standard]**

840 **3.3.2.5** *If all Interchange Transactions using Non-Firm Transmission  
Service have been curtailed and there are additional requests to  
allow Interchange Transactions using Firm Transmission Service  
to begin that cannot be accommodated without violating an  
SOL/IROL, the Reliability Coordinator shall initiate TLR level 4  
or level 5A, as appropriate.*

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**2.3.2.4. [Sections 3.3.2.6 of the NAESB Transmission Loading Relief Business  
Practice Standard]**

850 **3.3.2.6** *The Reliability Coordinator shall reload curtailed Interchange  
Transactions prior to starting new or increasing existing  
Interchange Transactions.*

**2.3.2.4.1 [Sections 3.3.2.6.1 of the NAESB Transmission Loading Relief  
Business Practice Standard]**

855 **3.3.2.6.1** *Interchange Transactions that were submitted prior  
to the initiation of the Interconnection-wide TLR  
procedure but were subsequently held from starting  
because they failed to meet the NERC-approved tag  
submission deadline for Reallocation during TLR  
level 3A or were held over from a TLR level 2, shall  
be considered to have been curtailed and thus would  
be eligible for reload at the same time as the  
curtailed Interchange Transaction.*

860

**2.3.2.5. [Sections 3.3.3 and 3.3.3.1 of the NAESB Transmission Loading Relief  
Business Practice Standard]**

865 **3.3.3** *The Reliability Coordinator shall consider for Reallocation and/or  
reload Interchange Transactions that have been held or curtailed*

*as prescribed in this business practice standard according to their Transmission Service priorities when operating conditions permit.*

870

**3.3.3.1** *The Reliability Coordinator shall fill available transmission capability by reloading or starting eligible Transactions using the Sub-priorities assigned in Requirements 2.4.1 through 2.4.4. In case all of the transactions in a sub-priority cannot be reloaded, the transactions in that sub-priority shall be loaded based on a pro rata basis by allocating the remaining available transmission capability in proportion to the scheduled amount.*

875

**2.3.2.6** *[Sections 3.3.2.1 and 3.3.2.1.1 of the NAESB Transmission Loading Relief Business Practice Standard]*

880

**3.3.2.1** *The Reliability Coordinator shall consider only those Interchange Transactions that have been submitted prior to the NERC-approved tag submission deadline for Reallocation during TLR level 3A for the upcoming hour.*

885

**3.3.2.1.1** *Interchange Transactions submitted after this deadline shall be considered for Reallocation for the following hour. This applies to Interchange Transactions using either Non-firm Transmission Service or Firm Transmission Service. If an Interchange Transaction using Firm Transmission Service is submitted after the NERC-approved tag submission deadline and after the TLR is declared, that Transaction shall be held and then allowed to start in the upcoming hour.*

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**2.3.2.7** *Sub-Priority Consideration in TLR 3A shall be implemented as described in [Sections 3.3.5, 3.3.5.1, 3.3.5.2, 3.3.5.3 and 3.3.5.4 of the NAESB Transmission Loading Relief Business Practice Standard] and depicted in the Sub-Priority Table that follows.*

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**3.3.5** *In considering transactions using Non-Firm Transmission Service for curtailment and/or Reallocation, the Reliability Coordinator shall consider transaction sub-priorities as follows:*

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**3.3.5.1** *Interchange Transactions with sub-priority S1 shall be allowed to continue flowing at the lesser of its current hour MW level or the MW level specified in the schedule for the upcoming hour. For calculated values less than zero, zero shall be used.*

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**3.3.5.2** *Interchange Transactions with sub-priority S2 shall be allowed to reload to the lesser of its current hour MW level or the MW level specified in the schedule for the upcoming hour. For calculated values less than zero, zero shall be used.*

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**3.3.5.3** *Interchange Transactions with sub-priority S3 shall be allowed to increase from its current hour MW level to the MW level specified in its schedule for the upcoming hour. For calculated values less than zero, zero shall be used.*

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**3.3.5.4** *Interchange Transactions with sub-priority S4 shall be allowed to start once all other Interchange Transactions*

*with the same Transmission Service priority submitted prior to the initiation of the Interconnection-wide TLR procedure have been (re-)loaded.*

<b>Priority</b>	<b>Purpose</b>	<b>Explanation and Conditions</b>
S1	To allow a flowing Interchange Transaction to maintain or reduce its current MW amount in accordance with its energy profile.	The MW amount is the lowest between currently flowing MW amount and the next-hour schedule. The currently flowing MW amount is determined by the e-tag ENERGY PROFILE and ADJUST tables. If the calculated amount is negative, zero is used instead.
S2	To allow a flowing Interchange Transaction that has been curtailed or halted by TLR to reload to the <i>lesser</i> of its current-hour MW amount or next-hour schedule in accordance with its energy profile.	The Interchange Transaction MW amount used is determined through the e-tag ENERGY PROFILE and ADJUST tables. If the calculated amount is negative, zero is used instead.
S3	To allow a flowing Transaction to increase from its current-hour schedule to its next-hour schedule in accordance with its energy profile.	The MW amounts used in this sub-priority is determined by the e-tag ENERGY PROFILE table. If the calculated amount is negative, zero is used instead.
S4	To allow a Transaction that had never started and was submitted to the Tag Authority after the TLR (level 2 or higher) has been declared to begin flowing (i.e., the Interchange Transaction never had an active MW and was submitted to the IDC <i>after</i> the first TLR Action of the TLR Event had been declared.)	The Transaction would not be allowed to start until all other Interchange Transactions submitted prior to the TLR with the same priority have been (re)loaded. The MW amount used <del>is the</del> in this sub-priority is the next-hour schedule determined by the e-tag ENERGY PROFILE table.

**2.4. TLR Level 3B — Curtail Interchange Transactions using Non-Firm Transmission Service Arrangements to mitigate a SOL or IROL Violation**

**2.4.1.** The Reliability Coordinator shall use the following circumstances to establish the need for entering TLR Level 3B:

- 925 • One or more transmission facilities are operating above their SOL or IROL,  
or
- Such operation is imminent and it is expected that facilities will exceed their reliability limit unless corrective action is taken, or
- 930 • One or more Transmission Facilities will exceed their SOL or IROL upon the removal from service of a generating unit or another transmission facility.
- Transactions using Non-firm Point-to-Point Transmission Service are flowing that are at or above the Curtailment Threshold on those facilities.

**2.4.2. Curtailment Procedures to mitigate an SOL or IROL.** *[The Introduction to Section 3.4 of the NAESB Transmission Loading Relief Business Practice Standard] states, “When a Reliability Coordinator has initiated a TLR level 3B (curtail Interchange Transactions using Non-Firm Transmission Service arrangements to mitigate a SOL or IROL violation), the Reliability Coordinator shall take the following actions” according to [Sections 3.4.1, 3.4.1.1, 3.4.1.2, 3.4.2, 3.4.3 and 3.4.4 of the NAESB Transmission Loading Relief Business Practice Standard]*

**3.4.1** *The Reliability Coordinator shall allow Interchange Transactions using Firm Transmission Service to start if they are submitted prior to the NERC-approved tag submission deadline during TLR level 3B.*

**3.4.1.1** *The Reliability Coordinator shall only consider those Interchange Transactions at or above the Curtailment Threshold for which the Interconnection-wide TLR procedure is called.*

**3.4.1.2** *Reallocations for Dynamic Schedules are as follows: If an Interchange Transaction is identified as a Dynamic Schedule and the Transmission Service is considered Firm according to the constrained path method, then it will not be held by the IDC during TLR level 4 or lower. Adjustments to Dynamic Schedules in accordance with the current version of NERC INT-004 will not be held under TLR level 4 or lower.*

**3.4.2** *To mitigate a SOL or IROL in the current hour, the Reliability Coordinator shall curtail Interchange Transactions using Non-Firm Transmission Service that are at or above the Curtailment Threshold as defined in Section 3.10 and use the Interchange Transaction priorities as specified in Requirement 2 “Interchange Transaction Priorities for use with Interconnection-wide TLR procedures.”*

**3.4.3** *To continue mitigation of the SOL or IROL for the beginning of the next hour, the Reliability Coordinator shall curtail additional Interchange Transactions using Non-Firm Transmission Service to provide transmission capacity for Interchange Transactions using Firm Transmission Service or Interchange Transaction using higher priority Non-Firm Transmission Service utilizing the Reallocation procedures as specified in Requirement 3.3.*

**3.4.4** *If all Interchange Transactions using Non-Firm Transmission Service have been curtailed and there are additional requests to allow Interchange Transactions using Firm Transmission Service to begin that cannot be*

970 *accommodated without violating an SOL/IROL, the Reliability Coordinator shall initiate TLR level 4, level 5A, or level 5B as appropriate.*

**2.4.3 Interchange Transaction Curtailments During TLR 3B**

975 TLR Level 3B curtails Interchange Transactions using Non-firm Point-to-Point Transmission Service that are at or above the Curtailment Threshold in the current hour while Reallocating to a determined flow for the top of the next hour.

**2.4.3.1** The Reliability Coordinator shall Reallocate Interchange Transactions using Non-firm Point-to-Point Transmission Service in accordance with Section 6 of this document for the next hour to maintain the desired flow using Reallocation in accordance with the following timing specification:

980 **2.4.3.1.1** If issued prior to XX: 25, Non-firm Interchange Transactions will be curtailed to meet the desired current hour relief

**2.4.3.1.1.1** At XX: 25 a Reallocation will be performed to maintain the desired flow at the top of the following hour

985 **2.4.3.1.2** If issued after XX: 25, Non firm Interchange Transactions will be curtailed to meet the desired current hour relief and a Reallocation will be performed to maintain the target flow identified for the current hour.

990 **2.4.3.1.3** Transactions must be in the IDC by the Approved-tag Submission Deadline for Reallocation (see IDC Reference Document).

## 2.5. TLR Level 4 — Reconfigure Transmission

995           **2.5.1.** The Reliability Coordinator shall use the following circumstances to establish the need for entering TLR Level 4:

- One or more Transmission Facilities are above their SOL or IROL, or
- Such operation is imminent and it is expected that facilities will exceed their reliability limit unless corrective action is taken.

1000           **2.5.2. Holding new Interchange Transactions.** The holding of new Interchange Transactions shall be performed as described in [*Sections 3.5, 3.5.1, 3.5.2 and 3.5.2.1 of the NAESB Transmission Loading Relief Business Practice Standard*]

*3.5 When a Reliability Coordinator has initiated a TLR level 4 (Reconfigure Transmission), the Reliability Coordinator shall take the following actions:*

1005           **3.5.1** *The Reliability Coordinator shall hold (not implement) all new Interchange Transactions using Non-Firm Transmission Service that are at or above the Curtailment Threshold.*

**3.5.2** *The Reliability Coordinator shall allow Interchange Transactions using Firm Transmission Service to start if they are submitted prior to the NERC-approved tag submission deadline during TLR level 3B.*

1010           **3.5.2.1** *If an Interchange Transaction is identified as a Dynamic Schedule and the Transmission Service is considered Firm according to the constrained path method, then it will not be held by the IDC during TLR level 4 or lower. Adjustments to Dynamic Schedules in accordance with the current version of NERC INT-004 will not be held under TLR level 4 or lower.*

1015           **2.5.3. Reconfiguration procedures.** The issuance of a TLR Level 4 shall result in the curtailment, in the current hour and the next hour, of all Interchange Transactions using Non-firm Point-to-Point Transmission Service that are at or above the Curtailment Threshold that impact the Constrained Facilities. If a SOL or IROL violation is imminent or occurring, the Reliability Coordinator(s) shall request that the affected Transmission Operators reconfigure transmission on their system, or arrange for reconfiguration on other transmission systems, to mitigate the constraint. Specific details are explained in NAESB Appendix A - Mitigating Constraints On and Off the Contract Path during TLR.

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**2.6. TLR Level 5A — Reallocation of Transmission Service by curtailing Interchange Transactions using Firm Point-to-Point Transmission Service on a pro rata basis to allow additional Interchange Transactions using Firm Point-to-Point Transmission Service**

- 1030 **2.6.1.** The Reliability Coordinator shall use the following circumstances to establish the need for entering TLR Level 5A:
- The transmission system is secure.
  - One or more transmission facilities are at their SOL or IROL.
  - All Interchange Transactions using Non-firm Point-to-Point Transmission Service that are at or above the Curtailment Threshold have been curtailed.
  - The Transmission Provider has been requested to begin an Interchange Transaction using previously arranged Firm Transmission Service that would result in a SOL or IROL violation.
  - No further transmission reconfiguration is possible or effective.
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- 1040 **2.6.2. Reallocation Procedures to allow new Interchange Transactions using Firm Point-to-Point Transmission to Start.** Reallocation Procedures (a 3 Step Process) to allow new Interchange Transactions using Firm Point-to-Point Transmission to Start shall be implemented according to *[Sections 3.6, 3.6.1 and 3.6.2 of the NAESB Transmission Loading Relief Business Practice Standard]*.
- 1045 **3.6 TLR level 5A.** *When a Reliability Coordinator has initiated a TLR level 5A, the Reliability Coordinator shall allow additional Interchange Transactions using Firm Transmission Service to be implemented after all Interchange Transactions using Non-Firm Transmission Service have been curtailed. The Reliability Coordinator shall reallocate Transmission Service by curtailing on a pro rata basis Interchange Transactions using Firm Transmission Service to allow additional Interchange Transactions using Firm Transmission Service to start on a pro rata basis. These actions shall be taken in accordance with the NERC-approved tag submission deadline for Reallocation. The Reliability Coordinator shall hold an Interchange Transaction using Firm Transmission Service if the Interchange Transaction is submitted after the NERC-approved tag submission deadline for Reallocation during TLR level 5A, but shall allow the transaction to start in the following hour.*
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- 1055 **3.6.1** *The Reliability Coordinator shall only consider those Interchange Transactions at or above the Curtailment Threshold for which the Interconnection-wide TLR procedure is called.*
- 1060 **3.6.2** *The Reliability Coordinator shall use the following process for reallocation of Interchange Transactions using Firm Transmission Service:*
- 1065 **2.6.2.1. Step 1 (Sections 3.6.2.1 and 3.6.2.1.1 of NAESB Transmission Loading Relief Business Practice)**
- 1070 **3.6.2.1** *The Reliability Coordinator shall assist the Transmission Operator(s) in identifying known re-dispatch options that are available to the Transmission Customer that will mitigate the loading on the Constrained Facilities or Flowgates.*
- 3.6.2.1.1** *If such re-dispatch options are deemed insufficient to mitigate loading on the Constrained Facilities or Flowgates, the Reliability Coordinator shall continue to implement these re-dispatch options while*

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*simultaneously implementing other actions as described in this requirement.*

**2.6.2.2. Step 2 (Section 3.6.2.2 of NAESB Transmission Loading Relief Business Practice)**

**3.6.2.2** *The Reliability Coordinator shall calculate the percent of the overload on the Constrained Facility or Flowgate caused by Interchange Transactions utilizing Firm Transmission Service that are at or above the Curtailment Threshold and the Transmission Provider’s Native Load and untagged Network Integration Transmission Service, as required by the Transmission Provider’s filed tariff and as described in NAESB Requirement 3.11, “Parallel flow calculation procedure for reallocating or curtailing Firm Transmission Service.” [Found in this Document in NERC Section 1.6.7]*

**2.6.2.3. Step 3 (Sections 3.6.2.3, 3.6.2.3.1, and 3.6.2.3.2 of NAESB Transmission Loading Relief Business Practice)**

**3.6.2.3** *The Reliability Coordinator shall curtail or reallocate Interchange Transactions utilizing Firm Transmission Service and ask for relief from the Transmission Provider’s Native Load and untagged Network Integration Transmission Service as identified in requirement 3.6.2.2 to allow the start of additional Interchange Transactions utilizing Firm Transmission Service provided those transactions were submitted in accordance to the NERC-approved tag submission deadline for Reallocation during TLR level 5A.*

**3.6.2.3.1** *The Reliability Coordinator shall assist the Transmission Provider in curtailing Transmission Service to Network Integration Transmission Service customers and Native Load if such curtailments are required by the Transmission Provider’s tariff.*

**3.6.2.3.2** *The Reliability Coordinator will assist the Transmission Provider to ensure that available re-dispatch options will continue to be implemented.*

**2.6.3** *The Reliability Coordinator shall direct the curtailment of Interchange Transactions using Firm Transmission Service that are at or above the Curtailment Threshold for the following TLR Levels:*

**2.6.3.1. TLR Level 5A.** *Enable additional Interchange Transactions using Firm Point-to-Point Transmission Service to be implemented after all Interchange Transactions using Non-firm Point-to-Point Service have been curtailed*



**2.7. TLR Level 5B — Curtail Interchange Transactions using Firm Point-to-Point Transmission Service (a 3 Step Process) to mitigate an SOL or IROL violation**

**2.7.1.** The Reliability Coordinator shall use following circumstances to establish the need for entering TLR Level 5B:

- 1120
- One or more Transmission Facilities are operating above their SOL or IROL, or
  - Such operation is imminent, or
  - One or more Transmission Facilities will exceed their SOL or IROL upon the removal from service of a generating unit or another transmission facility.
- 1125
- All Interchange Transactions using Non-firm Point-to-Point Transmission Service that are at or above the Curtailment Threshold have been curtailed.
  - No further transmission reconfiguration is possible or effective.

**2.7.2.** [Sections 3.7 and 3.7.1 of NAESB Transmission Loading Relief Business Practice]

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**3.7 TLR level 5B.** *When a Reliability Coordinator has initiated a TLR level 5B (curtail Interchange Transactions using Firm Transmission Service to mitigate a SOL or IROL violation), the Reliability Coordinator shall take the following actions:*

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**3.7.1** *The Reliability Coordinator shall use the following process for curtailment of Interchange Transactions using Firm Transmission Service:*

**2.7.2.1. Step 1 (Sections 3.7.1.1 and 3.7.1.1.1 of the NAESB Transmission Loading Relief Business Practice Standard)**

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**3.7.1.1** *The Reliability Coordinator shall assist the Transmission Operator(s) in identifying those known re-dispatch options that are available to the Transmission Customer that will mitigate the loading on the Constrained Facilities or Flowgates.*

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**3.7.1.1.1** *If such re-dispatch options are deemed insufficient to mitigate loading on the Constrained Facilities or Flowgates, the Reliability Coordinator shall continue to implement these re-dispatch options while simultaneously implementing other actions as described in this requirement.*

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**2.7.2.2. Step 2 (Sections 3.7.1.2 of NAESB Transmission Loading Relief Business Practice)**

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**3.7.1.2** *The Reliability Coordinator shall calculate the percent of the overload on the Constrained Facility or Flowgate caused by Interchange Transactions utilizing Firm Transmission Service that are at or above the Curtailment Threshold and the Transmission Provider’s Native Load and untagged Network Integration Transmission Service, as required by the Transmission Provider’s filed tariff and as described in NAESB Requirement 3.11, “Parallel flow calculation procedure for reallocating or curtailing Firm Transmission Service.” [Found in this Document in NERC Section 1.6.7]*

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**2.7.2.3. Step 3 (Sections 3.7.1.3 and 3.7.1.3.1, and 3.7.1.3.2 of NAESB Transmission Loading Relief Business Practice)**

1165 **3.7.1.3** *The Reliability Coordinator shall curtail Firm Interchange Transactions utilizing Firm Transmission Service and shall ask for relief from the Transmission Provider's Native Load and untagged Network Integration Transmission Service as calculated in requirement 3.7.1.2 until the SOL or IROL violation has been mitigated.*

1170 **3.7.1.3.1** *The Reliability Coordinator will assist the Transmission Provider to ensure that available re-dispatch options will continue to be implemented.*

1175 **3.7.1.3.2** *The Reliability Coordinator shall assist the Transmission Provider in curtailing Transmission Service to Native Load and untagged Network Integration Transmission Service customers if such curtailments are required by the Transmission Provider's tariff.*

1180 **2.7.3** The Reliability Coordinator shall direct the curtailment of Interchange Transactions using Firm Transmission Service that are at or above the Curtailment Threshold for the following TLR Levels:

1185 **2.7.3.1. TLR Level 5B.** Mitigate a SOL or IROL violation that remains after all Interchange Transactions using Non-firm Transmission Service has been curtailed under TLR Level 3B, and following attempts to reconfigure transmission under TLR Level 4.

## 2.8. TLR Level 6 — Emergency Procedures

1190 2.8.1. The Reliability Coordinator shall use following circumstances to establish the need for entering TLR Level 6:

- One or more Transmission Facilities are above their SOL or IROL.
- One or more Transmission Facilities will exceed their SOL or IROL upon the removal from service of a generating unit or another transmission facility.

1195 2.8.2. **Implementing emergency procedures.** If the Reliability Coordinator deems that transmission loading is critical to Bulk Electric System reliability, the Reliability Coordinator shall immediately direct the Balancing Authorities and Transmission Operators in its Reliability Area to redispatch generation, or reconfigure transmission, or reduce load to mitigate the critical condition until Interchange Transactions can be reduced utilizing the TLR Procedures or other procedures to return the system to a secure state. All Balancing Authorities and Transmission Operators shall comply with all requests from their Reliability Coordinator.

1200 2.8.3 **All Parties to Comply** as described in [*Section 3.8 of the NAESB Transmission Loading Relief Business Practice Standard*]

1205 3.8 *When a Reliability Coordinator initiates a TLR level 6 (emergency conditions), all parties shall comply with the Reliability Coordinator's (s') requests to return the system to a secure state.*

**2.9. TLR Level 0 — TLR concluded**

1210 **2.9.1. Interchange Transaction restoration and notification procedures.** The Reliability Coordinator initiating the TLR Procedure shall notify all Reliability Coordinators within the Interconnection via the RCIS when the SOL or IROL violations are mitigated and the system is in a reliable state, allowing Interchange Transactions to be reestablished at its discretion. Those with the highest transmission priorities shall be re-established first if possible.

1215 **2.9.2 Notification of Affected Parties.** Notification of affected parties shall include notification prescribed in [*Sections 3.9 and 3.9.1 of the NAESB Transmission Loading Relief Business Practice Standard*]

*3.9 The Reliability Coordinator shall notify all affected parties when the Reliability Coordinator has returned the system to a reliable state.*

1220 *3.9.1 The Reliability Coordinator shall re-establish Interchange Transactions at its discretion. Those with the highest transmission priorities shall be re-established first, as described in NAESB Requirement 2.1, as practicable.*

**3. Interchange Transaction Curtailment Order for use in TLR Procedures**

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The specific TLR components of former Section 3 have been moved to their respective TLR Level descriptions within Sections 1 and 2 of Attachment 1 in this document.

**4. Mitigating Constraints On and Off the Contract Path during TLR**

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The discussion of On Contract Path / Off Contract Path has been moved to NAESB Appendix A – Mitigating Constraints On and Off the Contract Path during TLR.

**5. Parallel Flow Calculation Procedure for Reallocating or Curtailing Firm Transmission Service during TLR**

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Section 5 is now contained in NAESB Appendix B and to Section 1.6.7 of Attachment 1 in this document.

**6. Interchange Transaction Reallocation During TLR Levels 3A and 5A**

Information formerly shown in this section is now included under Section 3.3 – TLR 3A and Section 3.6 – TLR 5A, or is contained in the IDC Reference Document.

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**7. Interchange Transaction Curtailments during TLR Level 3B**

Information formerly shown in this section is now included under Sections 2.4.1, 2.4.2 and 2.4.3 – TLR 3B in Attachment 1 or is contained in the IDC Reference Document.

1245 **Appendices for Transmission Loading Relief Standard**

Appendix A. Transaction Management and Curtailment Process. (See NERC Appendix A)

Appendix B. Transaction Curtailment Formula. (See NAESB Appendix C)

Appendix C. Sample NERC Transmission Loading Relief Procedure Log. (Removed - Obsolete)

1250 Appendix D. Examples for Parallel Flow Calculation Procedure for Reallocating or Curtailing Firm Transmission Service. (See NAESB Appendix B)

Appendix E. How the IDC Handles Reallocation. (See IDC Reference Document Under Tab 4 – Reference/Support Documents)

Section E1: Summary of IDC Features that Support Transaction Reloading/Reallocation.

1255 Section E2: Timing Requirements. (See IDC Reference Document Under Tab 4 – Reference/Support Documents)

Section E2: Sub-Priorities. (See Section 3.3.5, and its sub-parts, of the NAESB Business Practice Standard)

1260 Appendix F. Considerations for Interchange Transactions using Firm Point-to-Point Transmission Service. (See IDC Reference Document Under Tab 4 – Reference/Support Documents)

Appendix G. Examples of On-Path and Off-Path Mitigation. (NAESB Appendix A)

## [TAB 4 – GLOSSARY / DEFINITIONS OF TERMS USED]

### 1265 Glossary of Terms / Definitions:

[NOTE: Source is noted following each definition]

- 1270 **Approval Entity** – An entity that has approval rights for an Interchange Transaction Tag. This includes Transmission Service Providers (TSPs), Balancing Authorities (BAs), Purchasing-Selling Entities (PSEs), and Load Serving Entities (LSEs) involved in the Interchange Transaction. *[Definition Section - NAESB Business Practice Standard]*
- Area Control Error (ACE)** – The instantaneous difference between a Balancing Authority’s net actual and scheduled interchange, taking into account the effects of Frequency Bias and correction for meter error. *[Definition Section - NAESB Business Practice Standard]*
- 1275 **Automatic Generation Control (AGC)** – Equipment that automatically adjusts generation in a Balancing Authority Area from a central location to maintain the Balancing Authority’s interchange schedule plus Frequency Bias. AGC may also accommodate automatic inadvertent payback and time error correction. *[Definition Section - NAESB Business Practice Standard]*
- 1280 **Balancing Authority (BA)** – The entity responsible for integrating resource plans ahead of time, maintaining load-interchange-generation balance within a Balancing Authority Area, and supporting Interconnection frequency in real time. *[Definition Section - NAESB Business Practice Standard]*
- Balancing Authority Area (BAA)** - An electrical system bounded by Interconnection (tie-line) metering and telemetry, where the Balancing Authority controls (either directly or by contract) generation to maintain its Interchange Schedule with other Balancing Authority Areas and contributes to frequency regulation of the Interconnection. *[Definition Section - NAESB Business Practice Standard]*
- 1285 **Bulk Electric System** – The electrical generation resources, transmission lines, interconnections with neighboring systems, and associated equipment, generally operated at voltages of 100 kV or higher. Radial transmission facilities serving only load with one transmission source are generally not included in this definition. *[Definition Section - NAESB Business Practice Standard]*
- 1290 **Constrained Facility** – A transmission facility (line, transformer, breaker, etc.) that is approaching, is at, or is beyond its SOL or IROL. *[Definition Section - NAESB Business Practice Standard]*
- 1295 **Constrained Flowgate** - A Flowgate that is approaching, is at, or is beyond System Operating Limits (SOL) or Interconnection Reliability Operating Limits (IROL). *[Definition Section - NAESB Business Practice Standard]*
- Constraint** – A limitation placed on Interchange Transactions that flow over a Constrained Facility or Flowgate. *[Definition Section - NAESB Business Practice Standard]*
- 1300 **Contract Path** - A predetermined Transmission Service electrical path between contiguous Transmission Service Providers established for scheduling and commercial settlement purposes that represents the continuous flow of electrical energy between the parties to a transaction. *[Definition Section - NAESB Business Practice Standard]*
- 1305 **Curtailed Threshold** – The minimum Transfer Distribution Factor which, if exceeded, will subject an Interchange Transaction to curtailment to relieve a transmission facility Constraint. *[Definition Section - NAESB Business Practice Standard]*

- 1310 **Dynamic Schedule** – A telemetered reading or value that is updated in real time and used as a schedule in the AGC/ACE equation and the integrated value of which is treated as a schedule for interchange accounting purposes. Commonly used for scheduling jointly owned generation to or from another Balancing Authority Area. *[Definition Section - NAESB Business Practice Standard]*
- 1315 **Firm Transmission Service** - The highest quality service offered to customers under a filed rate schedule that anticipates no planned interruption. Firm Transmission Service includes Firm Point-to-point Transmission Service and Firm Network Integration Transmission Service. *[Definition Section - NAESB Business Practice Standard]*
- Flowgate** – A designated point of the transmission system through which the Interchange Distribution Calculator calculates the power flow from Interchange Transactions. *[Definition Section - NAESB Business Practice Standard]*
- 1320 **Frequency Bias** – A value, usually expressed in megawatts per 0.1 hertz (MW/0.1 Hz), associated with a Balancing Authority Area that approximates the Balancing Authority Area’s response to Interconnection and frequency error. *[Definition Section - NAESB Business Practice Standard]*
- 1325 **Generation Shift Factor (GSF)** – A factor to be applied to a generator’s expected change in output to determine the amount of flow contribution that change in output will impose on an identified transmission facility or monitored Flowgate. *[Definition Section - NAESB Business Practice Standard]*
- Generator-to-Load Distribution Factor (GLDF)** - The algebraic sum of a GSF and an LSF to determine to total impact of an Interchange Transaction on an identified transmission facility or monitored Flowgate. *[Definition Section - NAESB Business Practice Standard]*
- 1330 **Interchange Distribution Calculator (IDC)** – The mechanism used by Reliability Coordinators in the Eastern Interconnection to calculate the distribution of Interchange Transactions over specific transmission interfaces, which are known as “Flowgates.” It includes a database of all Interchange Transactions and a matrix of the Distribution Factors for the Eastern Interconnection. *[Definition Section - NAESB Business Practice Standard]*
- 1335 **Interchange Transaction** - A transaction that crosses one or more Balancing Authorities’ boundaries. The planned energy exchange between two adjacent Balancing Authorities. *[Definition Section - NAESB Business Practice Standard]*
- 1340 **Interchange Transaction Tag (Tag)** – An Interchange Transaction being submitted for implementation according to NERC “Electronic Tagging Functional Specification”, version 1.7.095. *[Definition Section - NAESB Business Practice Standard]*
- Interconnection** – Any one of the three major electric system networks in North America: Eastern, Western, and ERCOT. *[Definition Section - NAESB Business Practice Standard]*
- 1345 **Interconnection Reliability Operating Limit (IROL)** – The value (such as MW, MVar, Amperes, Frequency or Volts) derived from, or a subset of, the System Operating Limit, which if exceeded, could expose a widespread area of the Bulk Electric System to instability, uncontrolled separation(s) or cascading outages. *[Definition Section - NAESB Business Practice Standard]*
- 1350 **Load Shift Factor (LSF)** - A factor to be applied to a load’s expected change in demand to determine the amount of flow contribution that change in demand will impose on an identified transmission facility or monitored Flowgate. *[Definition Section - NAESB Business Practice Standard]*



- 1355 **Native Load (NL)** - The demand imposed on an electric utility or an entity by the requirements of all customers located within a franchised service territory that the electric utility or entity has statutory or contractual obligation to serve. *[Definition Section - NAESB Business Practice Standard]*
- NERC** – North American Electric Reliability Council *[Definition Section - NAESB Business Practice Standard]*
- 1360 **Network Integration (NI) Transmission Service** – As specified in the Transmission Service Provider’s tariff, service that allows an electric Transmission Customer to integrate, plan, economically dispatch and regulate its network resources in a manner comparable to that in which the transmission owner serves Native Load customers. *[Definition Section - NAESB Business Practice Standard]*
- 1365 **Non-Firm Transmission Service** - As specified in the Transmission Service Provider’s tariff, transmission service that is reserved and scheduled on an as-available basis and is subject to curtailment or interruption, and has less priority than Firm Transmission. *[Definition Section - NAESB Business Practice Standard]*
- 1370 **Per Generator Method** – A methodology used by the IDC to calculate the portion of parallel flows on any Constrained Facility or Flowgate due to Network Integrated (NI) transmission service customers and service to Native Load (NL) customers for each Balancing Authority. *[Definition Section - NAESB Business Practice Standard]*
- Point-to-point (PTP) Transmission Service** - As specified in the Transmission Service Providers tariff, Transmission Service reserved and/or scheduled between specified points of receipt and delivery. *[Definition Section - NAESB Business Practice Standard]*
- 1375 **Purchasing-Selling Entity (PSE)** – The entity that purchases or sells and takes title to energy capacity and interconnected operations services. PSE’s may be affiliated or unaffiliated merchants and may and may not own generating facilities. *[Definition Section - NAESB Business Practice Standard]*
- 1380 **Reliability Coordinator Information System (RCIS)** –The system that Reliability Coordinators use to post messages and share operating information in real time. *[Definition Section - NAESB Business Practice Standard]*
- Reallocation** – The process used to totally or partially curtail Transactions during TLR levels 3A, 3B or 5A events to allow Transactions using equal or higher priority to be implemented. *[Definition Section - NAESB Business Practice Standard]*
- 1385 **Reliability Area** - The collection of generation, transmission, and loads within the boundaries of a Reliability Coordinator. Its boundary coincides with one or more Balancing Authority Areas. *[Definition Section - NAESB Business Practice Standard]*
- 1390 **Reliability Coordinator (RC)** - An entity that provides the security assessment and emergency operations coordination for a group of Balancing Authorities, Transmission Service Providers, and Transmission Operators. *[Definition Section - NAESB Business Practice Standard]*
- Sink Balancing Authority** - The Balancing Authority in which the load (Sink) is located for an Interchange Transaction. (This will also be a receiving Balancing Authority for the resulting Interchange Schedule). *[Definition Section - NAESB Business Practice Standard]*
- 1395 **System Operating Limit (SOL)** - The value (such as MW, MVar, Amperes, Frequency or Volts) that satisfies the most limiting of the prescribed operating criteria for a specified system configuration to ensure operation within acceptable reliability criteria. System Operating Limits

are based upon certain operating criteria. *[Definition Section - NAESB Business Practice Standard]*

**Tie Facility(ies)** – The transmission facility(ies) interconnecting Balancing Authority Areas. *[Definition Section - NAESB Business Practice Standard]*

1400 **Transfer Distribution Factor (TDF)** - The portion of an Interchange Transaction, expressed in percent that flows across a transmission facility (Flowgate). *[Definition Section - NAESB Business Practice Standard]*

1405 **Transmission Customer** - Any eligible customer (or its designated agent) that can or does execute a transmission service agreement or can or does receive transmission service. *[Definition Section - NAESB Business Practice Standard]*

**Transmission Loading Relief (TLR)** - A procedure used in the Eastern Interconnection to relieve potential or actual loading on a Constrained Facility or Flowgate. *[Definition Section - NAESB Business Practice Standard]*

1410 **Transmission Operator** – The entity that operates or directs the operations of transmission facilities. *[Definition Section - NAESB Business Practice Standard]*

**Transmission Service** – Services needed to move energy from a receipt point to a delivery point provided to Transmission Customers by Transmission Service Providers. *[Definition Section - NAESB Business Practice Standard]*

1415 **Transmission Service Provider (TSP) or Transmission Provider (TP)** - The entity that administers the transmission tariff and provides transmission services to qualified Transmission Customers under applicable transmission service agreements. *[Definition Section - NAESB Business Practice Standard]*

## 1425 IDC Reference Document

### 1425 Section A How the IDC Handles Reallocation

1425 The IDC algorithms reflect the reallocation and reloading principles presented in this Reference Documentation, as well as the reporting requirements, and status display. The IDC will obtain the tag submittal time from the tag authority, and post the reloading/reallocation information to the NERC TLR site.

1430 Section C (IDC Features that Support Transaction Reloading/Reallocation) provides a summary of IDC features that support the reallocation process, and Section D (Timing Requirements) provides the details on the interface and display features. Refer to Version 1.7.095 NERC Transaction Information Systems Working Group (TISWG) Electronic Tagging Functional Specification for details about the E-Tag system.

1435

### 1435 Section B Communication and Timing Requirements to Support Reallocation

1440 This section covers the communication and timing requirements to support reallocation during TLR Levels 3A and 5A. It should be noted that calling a TLR 3A does not necessarily mean that Interchange Transactions using Non-firm Transmission Service will always be curtailed the next hour. However, TLR Levels 3A and 5A trigger the approved tag submission deadline for Reallocation requirements and allow for a coordinated assessment of all Interchange Transactions tagged to start the upcoming hour.

1445 The following timeline shall be utilized to support reallocation decisions during TLR Levels 3A or 5A. See Figures 2 and 3 for a depiction of the reallocation time line.

1450 1. **Time Convention.** In this section, the beginning of the current hour shall be referenced as 00:00. The beginning of the next hour shall be referenced as 01:00. The end of the next hour shall be referenced as 02:00. See Figure 1.

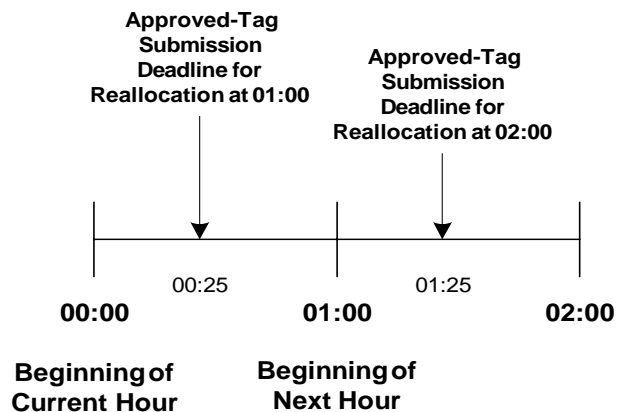


Figure 1 - Timeline showing Approved-tag Submission Deadline for Reallocation

1455 2. **Approved tag submission deadline for reallocation.** The reliability coordinators shall consider all approved tags for interchange transactions at or above the curtailment threshold that have

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been submitted to the IDC by 00:25 for reallocation at 01:00. See Figure 1. However, interchange transactions using firm point-to-point transmission service will be allowed to start as scheduled.

- 1465
- a. Reliability coordinators shall consider all approved tags submitted to the IDC beyond these deadlines for reallocation at 02:00 (for both firm and non-firm point-to-point transmission service). However, these interchange transactions will not be allowed to start or increase at 01:00.
  - b. The approved tag submission deadline for reallocation shall cease to be in effect as soon as the TLR level is reduced to 1 or 0.
- 1470
3. **Off-hour Transactions.** Interchange transactions with a start time other than *xx:00* shall be considered for reallocation at *xx+1:00*. For example, an interchange transaction with a start time of 01:05 and whose tag was submitted at 00:15 will be considered for reallocation at 02:00.
  4. **Tag Evaluation Period.** Balancing authorities and transmission providers shall evaluate all tags submitted for reallocation and shall communicate approval or rejection by 00:25.
- 1475

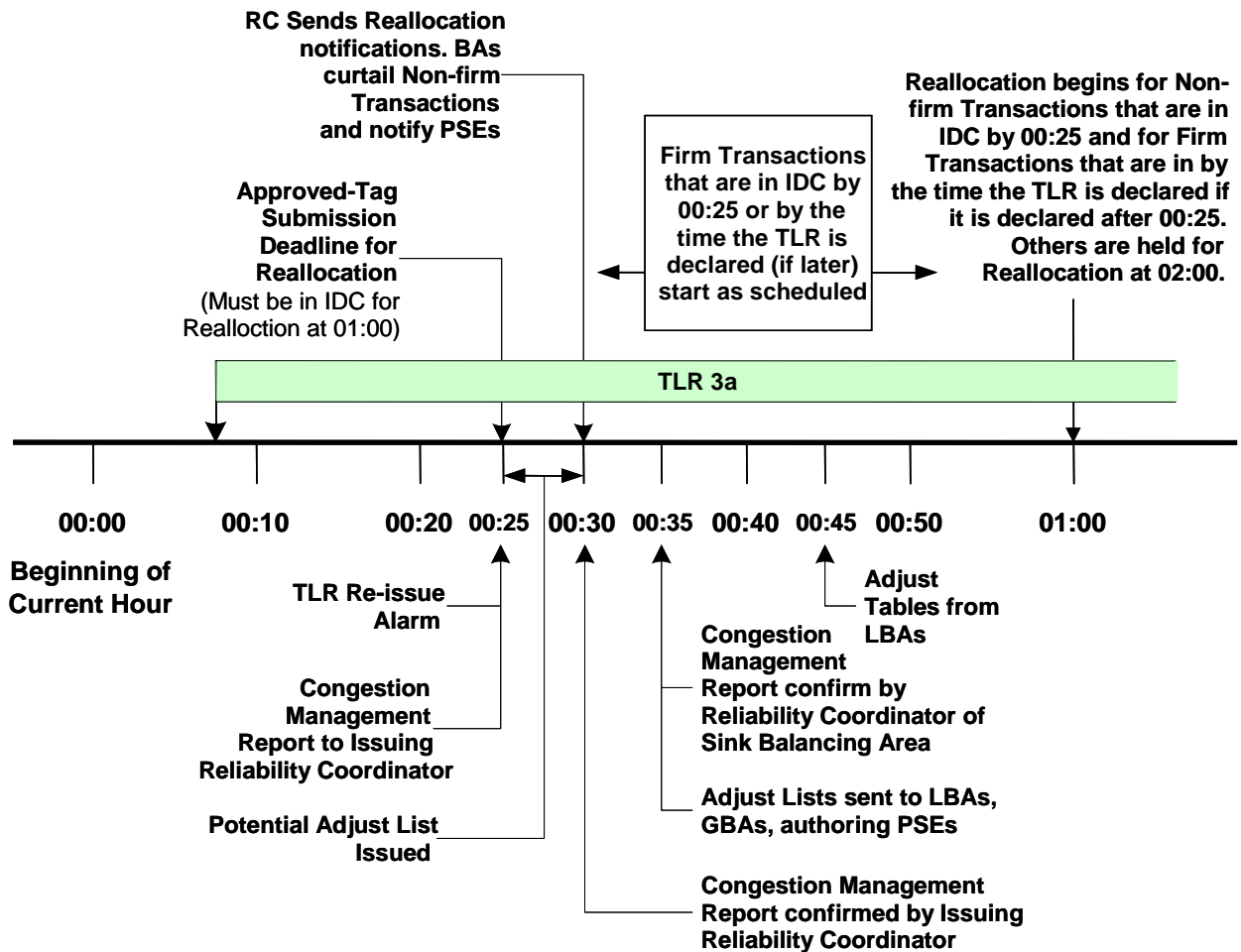
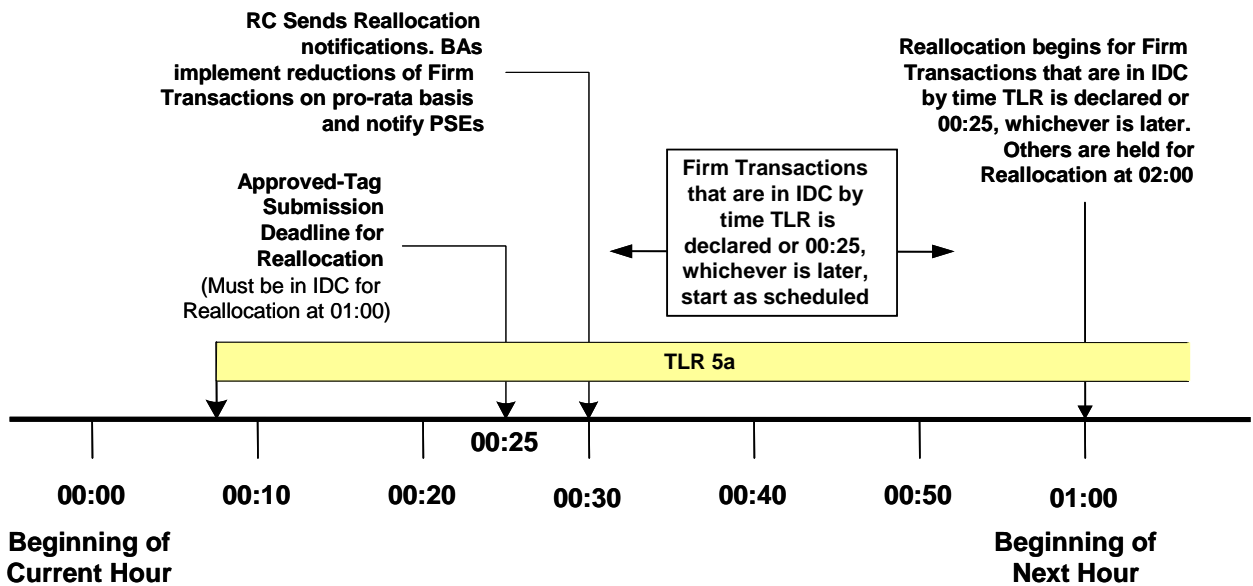


Figure 2 — Reallocation Timing for TLR 3A Called at 00:08

- 1480 5. **Collective Scheduling Assessment Period.** At 00:25, the initiating reliability coordinator (the one who called and still has a TLR 3A or 5A in effect) shall run the IDC to obtain a three-part list of interchange transactions including their transaction status:
- 1485 a. Interchange transactions that may start, increase, or reload shall have a status of PROCEED, and
- 1490 b. Interchange transactions that must be curtailed or interchange transactions whose tags were submitted prior to the TLR 2 or higher being declared but were not permitted to start or increase shall have a status of CURTAILED, and
- 1495 c. Interchange transactions that are entered into the IDC after 00:25 shall have a status of HOLD and be considered for reallocation at 02:00. Also, interchange transactions using non-firm point-to-point transmission service submitted after TLR 2 or higher was declared (“post-tagged”) but have not been allowed to start shall retain the HOLD status until given permission to PROCEED or e-tag expires. (Note: TLR Level 2 does not hold interchange transactions using firm point-to-point transmission service).



**Figure 3 — Reallocation timing for TLR 5A called at 00:08.**

- 1500 d. The initiating reliability coordinator shall communicate the list of interchange transactions to the appropriate sink reliability coordinators via the IDC, who shall in turn communicate the list to the sink balancing authorities at 00:30 for appropriate actions to implement interchange transactions (CURTAIL, PROCEED or HOLD). The IDC will prompt the initiating reliability coordinator to input the necessary information (i.e., maximum flowgate loading and curtailment requirement) into the IDC by
- 1505 00:25.

1510 e. Subsequent required reports before 01:00 shall allow the reliability coordinators to include those interchange transactions whose tags were submitted to the IDC after the approved tag submission time for reallocation and were given the HOLD status (not permitted to PROCEED). Transactions at or above the curtailment threshold that are not indicated as PROCEED on reload/reallocation report shall not be permitted to start or increase the next hour.

1515 **Discussion:** Note that TLR 2 does not initiate the approved tag submission deadline for reallocation, but a TLR3A or 5A does. It is, however, important to recognize the time when a TLR 2 is called, where applicable, to determine the status of a held transaction – “CURTAILED” if tagged before the TLR was called but “HOLD” if tagged after the TLR was called.

1520 f. In running the IDC, the reliability coordinator shall have an option to specify the maximum loading of the constrained facility by all interchange transactions using point-to-point transmission service.

1525 **Discussion:** This allows the reliability coordinator to take into consideration SOLs or IROLs and changes in interchange transactions using other than point-to-point transmission service taken under the open access transmission tariff. This option is needed to avoid loading the constrained facility to its limit with known interchange transactions while other factors push the facility into a SOL or IROL violation and hence triggering the declaration of a TLR 3B or 5B.

1530 g. Notification of interchange transaction status shall be provided from the IDC to the reliability coordinators via an IDC report. The reliability coordinators shall communicate this information to the balancing authorities and transmission operators.

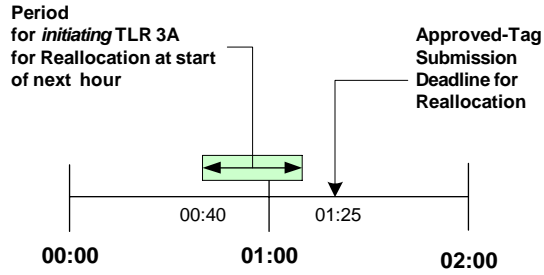
1535 6. **Customer Preferences on Timing to Call TLR 3A or 5A.** Reliability coordinators shall leave a TLR 2 and call a TLR 3A as soon as possible (but no later than 30 minutes) to initiate the approved tag submission deadline and start reallocating interchange transactions. Nevertheless, recognizing the approved tag submission deadline for reallocation, from a transmission customer perspective, it is preferable that the reliability coordinator calls a TLR 3A within a certain time period to allow for tag preparation and submission. See Figure 4.

1540 **Discussion:** A reliability coordinator calls a TLR 2 or 3A whenever it deems necessary to indicate that a transmission facility is approaching its SOL or IROL. It is envisioned, though not required, that a TLR 2 or 3A is preceded by a period of a TLR 1 declaration, hence transmission customers should normally have advance notice of a potential constraint. For example, a TLR 3A initiated during the period  
1545 01:00 to 01:25 would allow the purchasing-selling entity to submit a tag for entry into the IDC by the approved tag submission deadline for reallocation at 02:00. See Figure 4. However, the preferred time period to declare a TLR 3A or 5A would be

1550 between 00:40 (when tags for next hour market have been submitted) and 01:15.  
This will allow the transmission customers a range of 15 to 35 minutes to prepare  
and submit tags. (Note: In this situation, the reliability coordinator would need to  
reissue the TLR 3A at 01:00.)

1555 It must be emphasized that the preferred time period is not a requirement, and  
should not in any way impede a reliability coordinator's ability to declare a TLR  
3A, 3B, 4, 5A, or 5B whenever the need arises.

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1560

**Figure 4. "Ideal" time for issuing TLR 3A for Reallocation at 02:00.**

1565 **Section C: IDC Features that Support Transaction  
Reloading/Reallocation**

Following is a summary of IDC features and E-Tag interface that support reloading/reallocation:

1570 ***Information posted from IDC to NERC TLR site.***

1. Restricted directions (all source/sink combinations that impact a constrained facility(ies) with TLR 2 or higher) will be posted to the NERC TLR site and updated as necessary.
- 1575 2. TLR constrained facility status and transfer distribution factors (TDFs) will continue to be posted to NERC TLR site.
3. Lowest priority of interchange transactions (marginal “bucket”) to be reloaded/reallocated next-hour on each TLR constrained facility will be posted on NERC TLR site. This will provide an indication to the market of priority of interchange transactions that may be reloaded/reallocated the following hours.

1580 ***IDC Logic, IDC Report, and Timing***

1. The reliability coordinator will run the IDC the reloading/reallocation report at approximately 00:26. The IDC will prompt the reliability coordinator to enter a maximum loading value. The IDC will alarm if the reliability coordinator doesn't enter this value and issue a report by 00:30 or change from TLR 3A Level. The report will be distributed to balancing authorities and transmission operators at 00:30. This process repeats every hour as long as the approved tag submission deadline for reallocation is in effect (or until the TLR level is reduced to 1 or 0).  
1585
2. For interchange transactions in the restricted directions, tags must be submitted to the IDC by the approved tag submission deadline for reallocation to be considered for reallocation next-hour. The time stamp by the tag authority is regarded the official tag submission time.  
1590
3. Tags submitted to IDC after the approved tag submission deadline for reallocation will not be allowed to start or increase but will be considered for reallocation the next hour.
- 1595 4. Interchange transactions in restricted directions that are not indicated as “PROCEED” on the reload/reallocation report will not be permitted to start or increase next hour.

***Reloading/Reallocation Transaction Status***

1600 Reloading/Reallocation status will be determined by the IDC for all interchange transactions. The reloading/reallocation status of each interchange transaction will be listed



on IDC reports and NERC TLR site as appropriate. An interchange transaction is considered to be in a restricted direction if it is at or above the curtailment threshold. Interchange transactions below the curtailment threshold are unrestricted and free to flow subject to all applicable reliability standards, business practices, and transmission tariff rules.

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1. **HOLD.** Permission has not been given for the interchange transaction to start or increase, and it is waiting for the next reloading/reallocation evaluation for which it is a candidate. Interchange transactions with E-tags submitted to the tag authority prior to TLR 2 or higher being declared (pre-tagged) will change to *CURTAILED* Status upon evaluation that does not permit them to start or increase. Interchange transactions, with E-tags submitted to the tag authority after TLR 2 or higher was declared (post-tagged), will retain *HOLD* Status until given permission to proceed or the E-Tag expires.

1610

2. **CURTAILED.** Interchange transactions for which E-Tags were submitted to tag authority prior to TLR 2 or higher being declared (pre-tagged) and ordered to be curtailed totally, curtailed partially, not permitted to start, or not permitted to increase. Interchange transactions (pre-tagged or post-tagged) that were flowing and ordered to be reduced or totally curtailed. The balancing authority will indicate to the IDC through the E-Tag adjustment table the interchange transaction's curtailed values.

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1620

3. **PROCEED:** Interchange transaction is flowing or has been permitted to flow as a result of Reloading/Reallocation evaluation. The balancing authority will indicate through the E-Tag adjustment table to IDC if the interchange transaction will reload, start, or increase next-hour per PSE's energy schedule as appropriate.

1625

### ***Reallocation/Reloading Priorities***

1. Interchange transaction candidates are ranked for loading and curtailment by priority. This is called the "Constrained Path Method," or CPM. (secondary, hourly, daily, ... firm etc). Interchange transactions are curtailed and loaded pro-rata within priority level per TLR algorithm.

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2. Reloading/Reallocation of interchange transactions are prioritized first by priority per CPM. E-Tags must be submitted to the IDC by the approved tag submission deadline for reallocation of the hour during which the interchange transaction is scheduled to start or increase to be considered for reallocation.

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3. During reloading/reallocation, interchange transactions using lower priority transmission service will be curtailed pro-rata to allow higher priority transactions to reload, increase, or start. Equal priority interchange transactions will not reload, start, or increase by pro-rata curtailment of other equal priority interchange transactions.

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4. Reloading of interchange transactions using non-firm transmission service with *CURTAILED* Status will take precedence over starting or increasing of interchange

transactions using non-firm transmission service of the same priority with *PENDING* Status.

- 1645
5. Interchange transactions using firm point-to-point transmission service will be allowed to start as scheduled under TLR 3A as long as their E-Tag was received by the IDC by the approved tag submission deadline for reallocation of the hour during which the interchange transaction is due to start or increase, regardless of whether the E-tag was submitted to the tag authority prior to TLR 2 or higher being declared or not. If this is the initial issuance of the TLR 3A, interchange transactions using firm point-to-point transmission service will be allowed to start as scheduled as long as their E-Tag was received by the IDC by the time the TLR is declared.
- 1650

***Total Flow Value on a Constrained Facility for Next Hour***

- 1655
1. The reliability coordinator will calculate the change in net flow on a constrained facility due to reallocation for the next hour based on:
    - 1.1. Present constrained facility loading, present level of interchange transactions, and balancing authorities NNL responsibility (TLR Level 5A) impacting the constrained facility,
    - 1.2. SOLs or IROLs, known interchange impacts and balancing authority NNL responsibility (TLR Level 5A) on the constrained facility the next hour, and
    - 1.3. Interchange transactions scheduled to begin the next hour.
- 1660
2. The reliability coordinator will enter a maximum loading value for the constrained facility into the IDC as part of issuing the reloading/reallocation report.
  3. The reliability coordinator is allowed to call for TLR 3A or 5A when approaching a SOL or IROL to allow maximum transactional flow next hour, and to manage flows without violating transmission limits.
- 1665
4. The simultaneous curtailment and reallocation for a constrained facility is allowed. This reduces the flow over the constrained facility while allowing interchange transactions using higher priority transmission service to start or increase the next hour. This may be used to accommodate change in flow next-hour due to changes other than point-to-point interchange transactions while respecting the priorities of interchange transactions flowing and scheduled to flow the next hour. The intent is to reduce the need for using TLR 3B, which prevents new interchange transactions from starting or increasing the next hour.
- 1670
5. The reliability coordinator must allow interchange transactions to be reloaded as soon as possible. Reloading must be in an orderly fashion to prevent a SOL or IROL violation from (re)occurring and requiring holding or curtailments in the restricted direction.
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## Section D: Timing Requirements

### *TLR Levels 3A and 5A Issuing/Processing Time Requirement*

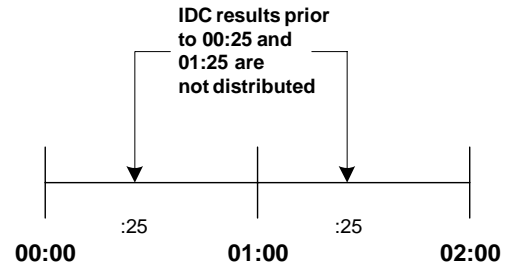
1680 1. In order for the IDC to be reasonably certain that a TLR Level 3A or 5A re-allocation/reloading report in which all tags submitted by the approved-Tag submission deadline for reallocation are included, the report must be generated no earlier than 00:25 to allow the 10-minute approval time for interchange transactions that start next hour.

1685 2. In order to allow a reliability coordinator to declare a TLR Level 3A or 5A any time during the hour, the TLR declaration and re-allocation/reloading report distribution will be treated as independent processes by IDC. That is, a reliability coordinator may declare a TLR Level 3A or 5A at any time during the course of an hour. However, if a TLR Level 3A or 5A is declared for the next hour prior to 00:25 (see Figure 5 at right), the re-allocation/reloading report that is generated will be made available to the issuing reliability coordinator only for previewing purposes, and can not be distributed to the other reliability coordinators or the market. Instead, the issuing reliability coordinator will be reminded by an IDC alarm at 00:25 to generate a new re-allocation/reloading report that will include all tags submitted prior to the approved tag submission deadline for reallocation.

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1700



**Figure 5 - IDC report may be run prior to 00:25, but results are not distributed.**

1705 3. A TLR Level 3A or 5A re-allocation/reloading report must be confirmed by the issuing reliability coordinator prior to 00:30 in order to provide a minimum of 30 minutes for the reliability coordinators with tags sinking in its reliability area to coordinate the re-allocation and reloading with the sink balancing authorities. This provides only 5 minutes (from 00:25 to 00:30) for the issuing reliability coordinator to generate a re-allocation/reloading report, review it, and approve it.

1710 4. The TLR declaration time will be recorded in the IDC for evaluating transaction sub-priorities for re-allocation/reloading purposes (see Sub-priority Table, in the **IDC Calculations and Reporting** section below).

### *Re-Issuing of a TLR Level 2 or Higher*

Each hour, the IDC will automatically remind the issuing reliability coordinator (via an IDC alarm) of a TLR level 2 or higher declared in the previous hour or earlier about re-issuing the TLR. The purpose of the reminder is to enable the reliability coordinator to reallocate or reload currently halted or curtailed interchange transactions next hour. The reminder will be in the form of an alarm to the issuing reliability coordinator, and will take place at 00:25 so that, if the reliability coordinator re-issues the TLR as a TLR level 3A or 5A, all tags

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submitted prior to the approved tag submission deadline for reallocation are available in the IDC.

1720 ***IDC Assistance with Next Hour Point-to-Point Transactions***

In order to assist a reliability coordinator in determining the MW relief required on a constrained facility for the next hour for a TLR level 3A or 5A, the IDC will calculate and present the total MW impact of all currently flowing and scheduled point-to-point interchange transactions for the next hour. In order to assist a reliability coordinator in determining the MW relief required on a constrained facility for the next hour during a TLR level 5A, the IDC will calculate and present the total MW impact of all currently flowing and scheduled point-to-point interchange transactions for the next hour as well as balancing authorities with flows due to service to network customers and native load. The reliability coordinator will then be requested to provide the total incremental or decremental MW amount of flow through the constrained facility that can be allowed for the next hour. The value entered by the reliability coordinator and the IDC-calculated amounts will be used by the IDC to identify the relief/reloading amounts (delta incremental flow value) on the constrained facility. The IDC will determine the interchange transactions to be reloaded, reallocated, or curtailed to make room for the interchange transactions using higher priority transmission service. The following examples show the calculation performed by IDC to identify the delta incremental flow:

**Example 1**

Flow to maintain on constrained facility	800 MW
Expected flow next hour from interchange transactions using point-to-point transmission service	950 MW
Contribution to flow next hour from service to network customers and native load	-100 MW
Expected net flow next hour on constrained facility	850 MW
Amount of interchange transactions using point-to-point transmission service to hold for reallocation	$850 \text{ MW} - 800 \text{ MW} = 50 \text{ MW}$
Amount to enter into IDC for interchange transactions using point-to-point transmission service	$950 \text{ MW} - 50 \text{ MW} = 900 \text{ MW}$

### Example 2

Flow to maintain on constrained facility	800 MW
Expected flow next hour from interchange transactions using point-to-point transmission service	950 MW
Contribution to flow next hour from service to network customers and native load	50 MW
Expected net flow next hour on constrained facility	1000 MW
Amount of interchange transactions using point-to-point transmission service to hold for reallocation	$1000 \text{ MW} - 800 \text{ MW} = 200 \text{ MW}$
Amount to enter into IDC for interchange transactions using point-to-point transmission service	$950 \text{ MW} - 200 \text{ MW} = 750 \text{ MW}$

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### Example 3

Flow to maintain on constrained facility	800 MW
Expected flow next hour from interchange transactions using point-to-point transmission service	950 MW
Contribution to flow next hour from service to network customers and native load	-200 MW
Expected net flow next hour on constrained facility	750 MW
Amount of interchange transactions using point-to-point transmission service to hold for reallocation	$750 \text{ MW} - 800 \text{ MW} = -50 \text{ MW}$ None are held

1745

For a TLR levels 3B or 5B the IDC will request the reliability coordinator to provide the MW requested relief amount on the constrained facility, and will not present the current and next hour MW impact of point-to-point interchange transactions. The reliability coordinator-entered requested relief amount will be used by IDC to determine the interchange transaction curtailments and flows due to service to network customers and native load (TLR Level 5B) in order to reduce the SOL or IROL violation on the constrained facility by the requested amount.

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#### ***IDC Calculations and Reporting***

At the time the TLR report is processed, the IDC will use all candidate interchange transactions for reallocation that met the approved tag submission deadline for reallocation plus those interchange transactions that were curtailed or halted on the previous TLR action of the same TLR event. The IDC will calculate and present an interchange transactions halt/curtailment list that will include reload and reallocation of interchange transactions.

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The interchange transactions are prioritized as follows:

1. All interchange transactions will be arranged by transmission service priority according to the constrained path method. These priorities range from 1 to 6 for the

1760 various non-firm transmission service products (TLR levels 3A and 3B).  
interchange transactions using firm transmission service (priority 7) are used only in  
TLR levels 5A and 5B. Next-hour market service is included at priority 0 (zero)

1765 2. In a TLR Level 3A the interchange transactions using non-firm transmission service  
in a given priority will be further divided into four sub-priorities, based on current  
schedule, current active schedule (identified by the submittal of a tag ADJUST  
message), next-hour schedule, and tag status. Solely for the purpose of identifying  
which interchange transactions to be loaded under a TLR 3A, various MW levels of  
an interchange transaction may be in different sub-priorities. The sub-priorities are  
shown in the table on the following page, and examples of interchange transactions  
using non-firm transmission service sub-priority settings are shown in the

1770 ***Transaction Sub-priority Examples*** section below.

<b><i>Sub-Priority</i></b>	<b><i>Purpose</i></b>	<b><i>Explanation and Conditions</i></b>
S1	To allow a flowing interchange transaction to maintain or reduce its current MW amount in accordance with its energy profile.	The MW amount is the lowest between currently flowing MW amount and the next-hour schedule. The currently flowing MW amount is determined by the e-tag ENERGY PROFILE and ADJUST tables. If the calculated amount is negative, zero is used instead.
S2	To allow a flowing interchange transaction that has been curtailed or halted by TLR to reload to the <i>lesser</i> of its current-hour MW amount or next-hour schedule in accordance with its energy profile.	The interchange transaction MW amount used is determined through the e-tag ENERGY PROFILE and ADJUST tables. If the calculated amount is negative, zero is used instead.
S3	To allow a flowing interchange transaction to increase from its current-hour schedule to its next-hour schedule in accordance with its energy profile.	The MW amount used in this sub-priority is determined by the e-tag ENERGY PROFILE table. If the calculated amount is negative, zero is used instead.
S4	To allow an interchange transaction that had never started and was submitted to the tag authority after the TLR (level 2 or higher) has been declared to begin flowing (i.e., the interchange transaction never had an active MW and was submitted to the IDC <i>after</i> the first TLR Action of the TLR event had been declared.)	The interchange transaction would not be allowed to start until all other interchange transactions submitted prior to the TLR with the same priority have been (re)loaded. The MW amount used in this sub-priority is the next-hour schedule determined by the e-tag ENERGY PROFILE table.

3. All interchange transactions using firm transmission service will be put in the same priority group, and will be curtailed/reallocated pro-rata, independent of their current status (curtailed or halted) or time of submittal with respect to TLR issuance (TLR level 5A). Under a TLR 5A, all interchange transactions using non-firm transmission service that are at or above the curtailment threshold will have been curtailed and hence sub-prioritizing is not required.

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***Assignment of Interchange Transaction Status***

All interchange transactions processed in a TLR are assigned one of the following statuses:

- 1780 PROCEED: The interchange transaction has started or is allowed to start to the next hour MW schedule amount.
- CURTAILED: The interchange transaction has started and is curtailed due to the TLR, or it had not started but it was submitted prior to the TLR being declared (level 2 or higher).
- 1785 HOLD: The interchange transaction had never started and it was submitted after the TLR being declared – the interchange transaction is held from starting next hour, or the interchange transaction had never started and it was submitted to the IDC after the approved tag submission deadline – the interchange transaction is to be held from starting next hour and is not included in the reallocation calculations until following hour.
- 1790

1795 Upon acceptance of the TLR interchange transaction reallocation/reloading report by the issuing reliability coordinator, the IDC will generate a report to be sent to NERC that will include the PSE name and Tag ID of each interchange transaction in the IDC TLR report. The interchange transaction will be ranked according to its assigned status of HOLD, CURTAILED or PROCEED. The reloading/reallocation report will be made available at NERC’s public TLR site, and it is NERC’s responsibility to format and publish the report.

***Tag Reloading for TLR Levels 1 and 0***

1800 When a TLR Level 1 or 0 is issued, the constrained facility is no longer under SOL or IROL violation, and all interchange transactions are allowed to flow. In order to provide the reliability coordinators with a view of the interchange transactions that were halted or curtailed on previous TLR actions (level 2 or higher), and are now available for reloading, the IDC provides such information in the TLR report.

***1805 New Tag Alarming***

Those interchange transactions that are at or above the curtailment threshold and are *not* candidates for reallocation because the tags for those interchange transactions were not submitted by the approved tag submission deadline for reallocation will be flagged as HOLD and must not be permitted to start or increase during the next hour. To alert reliability coordinators of those interchange transactions required to be held, the IDC will generate a report (for viewing within the IDC only) at various times. The report will include a list of all HOLD interchange transactions. In order not to overwhelm the reliability coordinator with alarms, only those who issued the TLR and those whose interchange transactions sink within their reliability area will be alarmed. An alarm will be issued for a given tag only once and will be issued for all TLR levels for which halting of new interchange transactions is required: TLR Levels 2, 3A, 3B, 5A and 5B.



### ***Tag Adjustment***

1820 The interchange transactions with statuses of HOLD, CURTAILED or PROCEED must be adjusted by a tag authority or tag approval entity. Without the tag adjustments, the IDC will assume that interchange transactions were not curtailed/held and are flowing at their specified schedule amounts.

1825 1. Interchange transactions marked as CURTAILED should be adjusted to a cap equal to, or at the request of the originating PSE, less than the reallocated amount (shown as the MW CAP on the IDC report). This amount may be zero if the interchange transaction is fully curtailed.

2. Interchange transactions marked as PROCEED should be adjusted to reload (NULL or to its MW level in accordance with its energy profile in the adjusted MW in the tag) if the interchange transaction has been previously adjusted; otherwise, if the interchange transaction is flowing in full, the tag authority need not issue an adjust.

1830 3. Interchange transactions marked as HOLD should be adjusted to 0 MW.

### ***Special Tag Status***

1835 There are cases in which a tag may be marked with a composite state of ATTN\_REQD to indicate that tag authority/approval failed to communicate or there is an inconsistency between the validation software of different tag authority/approval entities. In this situation, the tag is no longer subject to passive approval and its status change to IMPLEMENT may take longer than 10 minutes. Under these circumstances, the IDC may have a tag that is issued prior to the tag submittal deadline that will not be a candidate for reallocation. Such tags, when approved by the tag authority, will be marked as HOLD and must be halted.

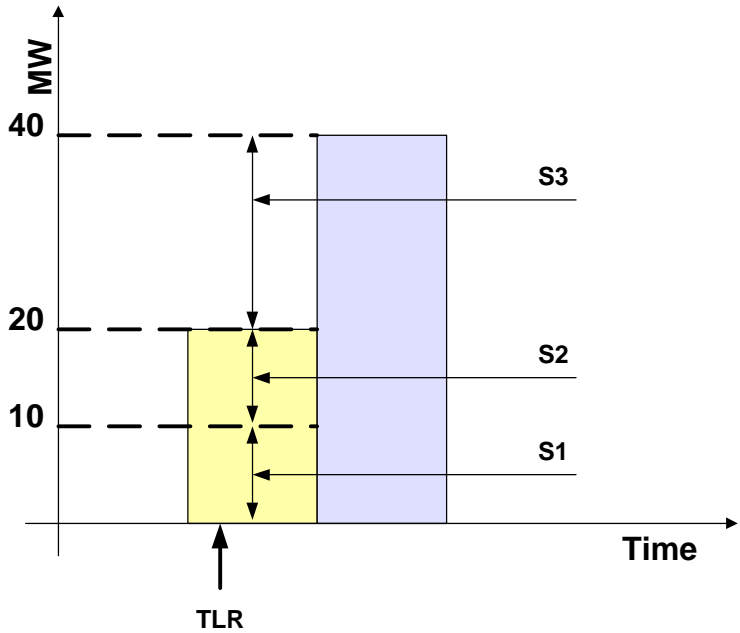
### ***Transaction Sub-Priority Examples***

1840 The following describes examples of interchange transactions using non-firm transmission service sub-priority setting for an interchange transaction under different circumstances of current-hour and next-hour schedules and active MW flowing as modified by tag adjust table in e-tag.

1845

**Example 1 – Interchange transaction curtailed, next-hour energy profile is higher**

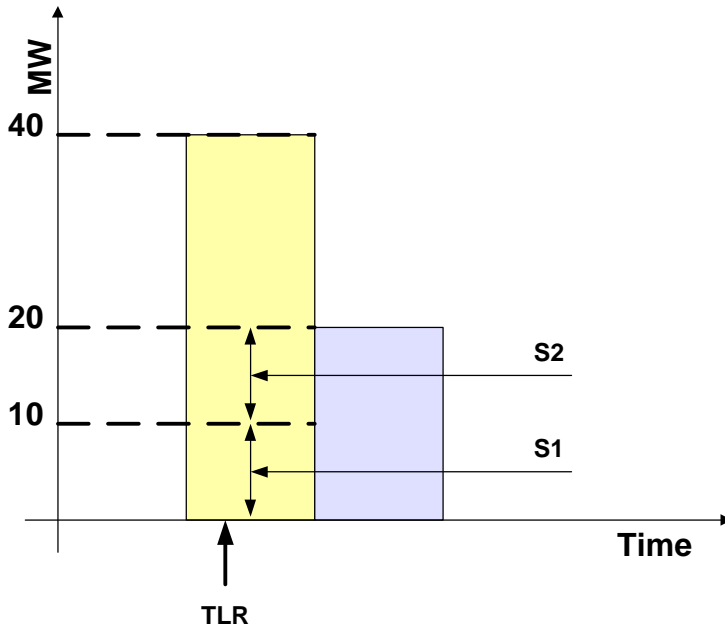
Energy profile: current hour	20 MW
Actual flow following curtailment: current hour	10 MW
Energy profile: next hour	40 MW



<i>Sub-priorities for Interchange Transaction (MW)</i>		
<i>Sub-Priority</i>	<i>MW Value</i>	<i>Explanation</i>
S1	10 MW	Maintain current curtailed flow
S2	+10 MW	Reload to current hour energy profile
S3	+20 MW	Load to next hour energy profile
S4		

**Example 2 – Transaction curtailed, next-hour energy profile is lower**

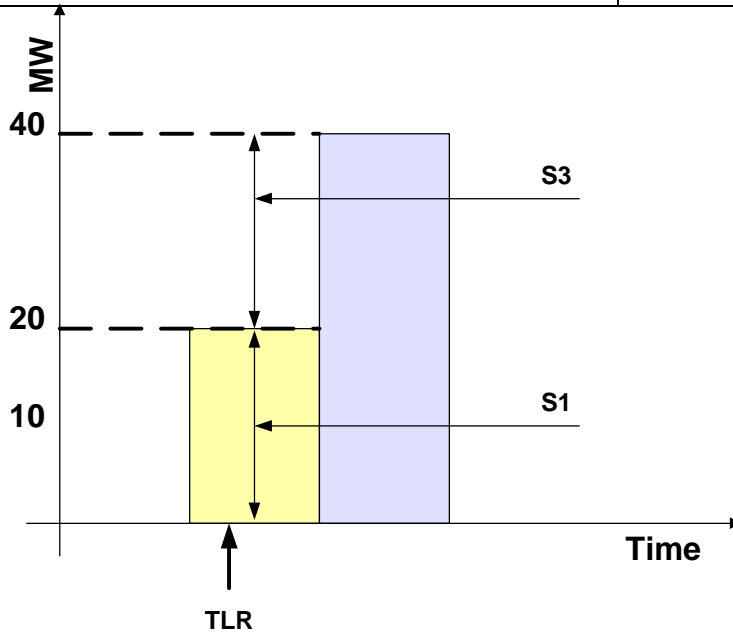
Energy profile: current hour	40 MW
Actual flow following curtailment: current hour	10 MW
Energy profile: next hour	20 MW



<i>Sub-priorities for Interchange Transaction (MW)</i>		
<i>Sub-Priority</i>	<i>MW Value</i>	<i>Explanation</i>
S1	10 MW	Maintain current curtailed flow
S2	+10 MW	Reload to <i>lesser</i> of current and next-hour energy profile
S3	+0 MW	Next-hour energy profile is 20MW, so no change in MW value
S4		

**Example 3 – Transaction not curtailed, next-hour energy profile is higher**

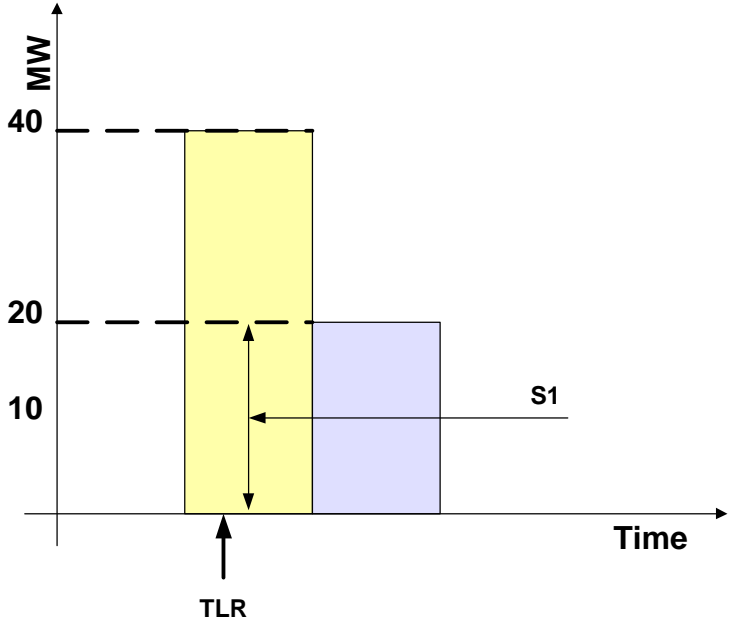
Energy profile: current hour	20 MW
Actual flow following curtailment: current hour	20 MW (no curtailment)
Energy profile: next hour	40 MW



<i>Sub-priorities for Interchange Transaction (MW)</i>		
<i>Sub-Priority</i>	<i>MW Value</i>	<i>Explanation</i>
S1	20 MW	Maintain current flow (not curtailed)
S2	+0 MW	Reload to <i>lesser</i> of current and next-hour energy profile
S3	+20 MW	Next-hour energy profile is 40MW
S4		

**Example 4 – Transaction not curtailed, next-hour energy profile is lower**

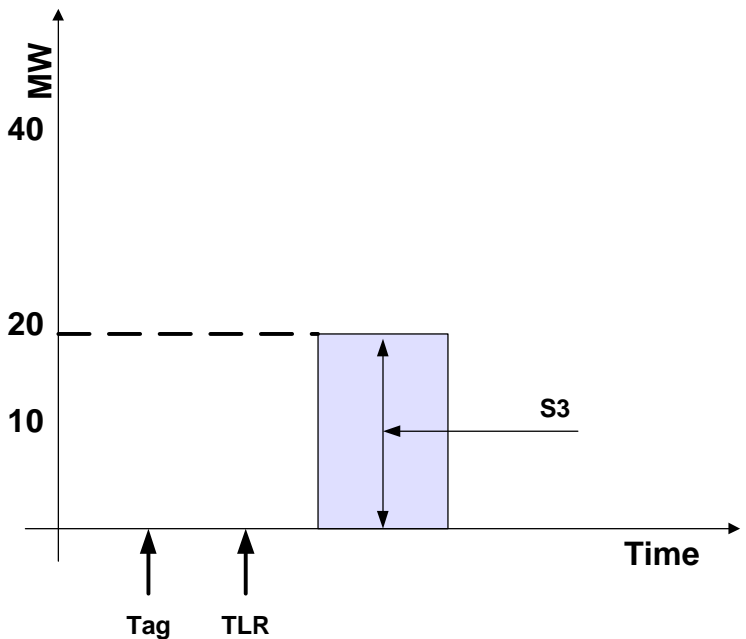
Energy profile: current hour	40 MW
Actual flow following curtailment: current hour	40 MW (no curtailment)
Energy profile: next hour	20 MW



<i>Sub-priorities for Interchange Transaction (MW)</i>		
<i>Sub-Priority</i>	<i>MW Value</i>	<i>Explanation</i>
S1	20 MW	Reduce flow to next-hour energy profile (20MW)
S2	+0 MW	Reload to <i>lesser</i> of current and next-hour energy profile
S3	+0 MW	Next-hour energy profile is 20MW
S4		

**Example 5 – TLR Issued before Interchange Transaction was scheduled to start**

Energy profile: current hour	0 MW
Actual flow following curtailment: current hour	0 MW (interchange transaction scheduled to start <i>after</i> TLR initiated) 1860
Energy profile: next hour	20 MW



<i>Sub-priorities for Interchange Transaction (MW)</i>		
<i>Sub-Priority</i>	<i>MW Value</i>	<i>Explanation</i>
S1	0 MW	Interchange transaction was not allowed to start
S2	+0 MW	Interchange transaction was not allowed to start
S3	+20 MW	Next-hour energy profile is 20MW
S4	+0	Tag submitted prior to TLR

## Section E: Interchange Transaction Curtailments During TLR Level 3B

1865 This section provides the details for implementing TLR Level 3B, which curtail interchange transactions using non-firm point-to-point transmission service to assist the reliability coordinator to recover from SOL or IROL violations.

The IDC shall issue ADJUST Lists to the Generation and Load Balancing Authorities and the Purchasing-Selling Entity who submitted the tag. The ADJUST List will include:

- 1870
1. Interchange transactions using non-firm point-to-point transmission service that are to be curtailed or held during current and next hours.
  2. Interchange transactions using firm point-to-point transmission service that were entered after 00:25 or issuance of TLR 3B (see Case 3 in Section F: Considerations for Interchange Transactions Using Firm Point-to-Point Transmission Service).

1875 The sink balancing authority shall send the ADJUST lists back to the IDC as soon as possible to ensure the most accurate calculations for actions subsequent to the TLR 3B being called.

1880 The reliability coordinator shall be allowed to call a TLR Level 3A as soon as the SOL or IROL violation, which caused the TLR 3B to be called, has been mitigated.

1. If the TLR Level 3A is called before the hour 01, then a reallocation shall be computed for the start of that hour.
- 1890 2. Interchange transactions must be in the IDC by the approved tag submission deadline for reallocation (see Section D: Timing Requirements).
- 1895

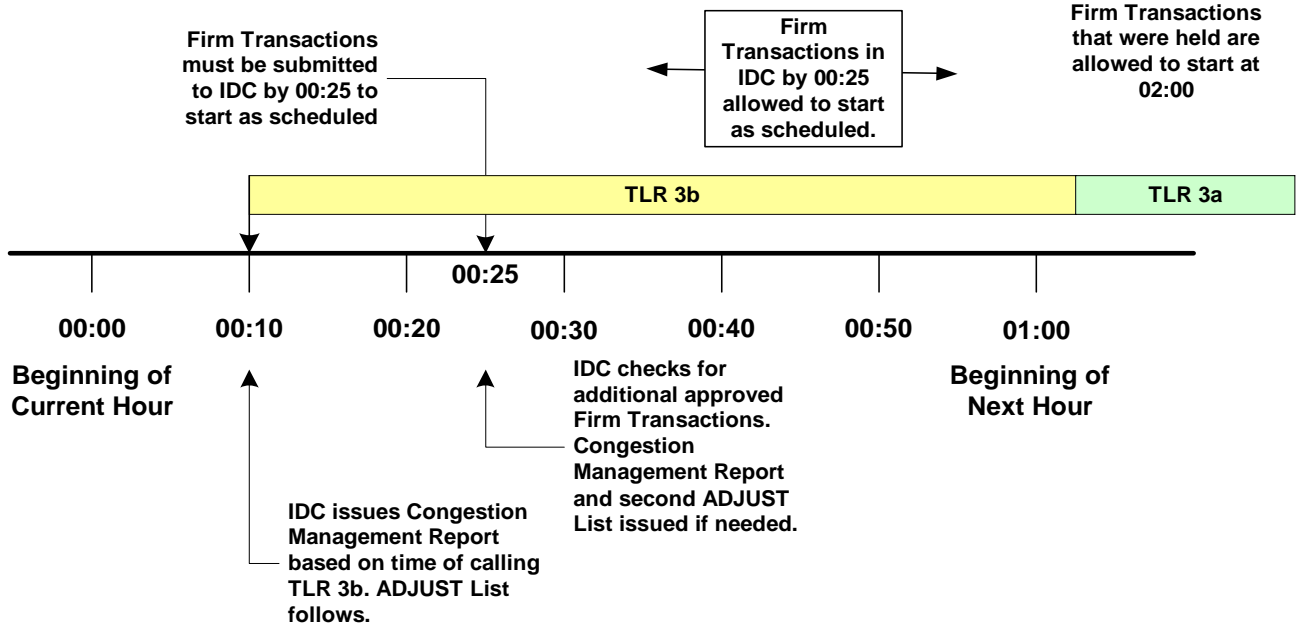
This section was removed from IRO-006-3, but is still a valid functionality within the IDC.

1900 The Reliability Coordinator will no longer be required to call a TLR Level 3A as soon as the SOL or IROL violation that caused the TLR 3B to be called has been mitigated due to the inherent next hour Reallocation that takes place for the top of the next hour in the TLR Level 3B

## Section F: Considerations for Interchange Transactions Using Firm Point-to-Point Transmission Service

1905 The following cases explain the circumstances under which an interchange transaction using firm point-to-point transmission service will be allowed to start as scheduled during a TLR 3B:

**Case 1: TLR 3B is called between 00:00 and 00:25 and the Interchange Transaction using Firm Point-to-Point Transmission Service is submitted to IDC by 00:25.**



1910

1. The IDC will examine the current hour (00) and next hour (01) for all Interchange Transactions.
2. The IDC will issue an ADJUST List based upon the time the TLR 3B is called. The ADJUST List will include curtailments of Interchange Transactions using Non-firm Point-to-Point Transmission Service as necessary to allow room for those Interchange Transactions using Firm Point-to-Point Transmission Service to start as scheduled.
3. At 00:25, the IDC will check for additional Interchange Transactions using Firm Point-to-Point Transmission Service that were submitted to the IDC by that time and issue a second ADJUST List if those additional Interchange Transactions are found. At 00:25, a reallocation will be performed to maintain the desired flow at the top of the following hour.
4. Interchange Transactions using Firm Point-to-Point Transmission Service that were submitted to the IDC by 00:25 will be allowed to start as scheduled.
5. Interchange Transactions using Firm Point-to-Point Transmission Service that were submitted to the IDC after 00:25 will be held.

1915

1920

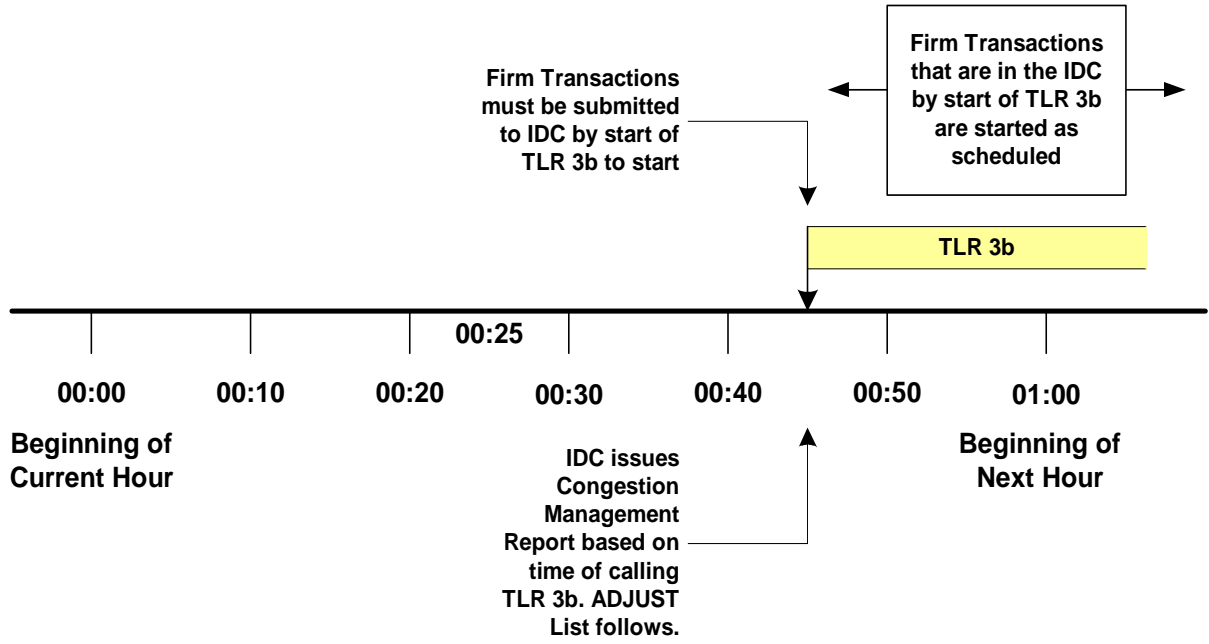
1925



1930

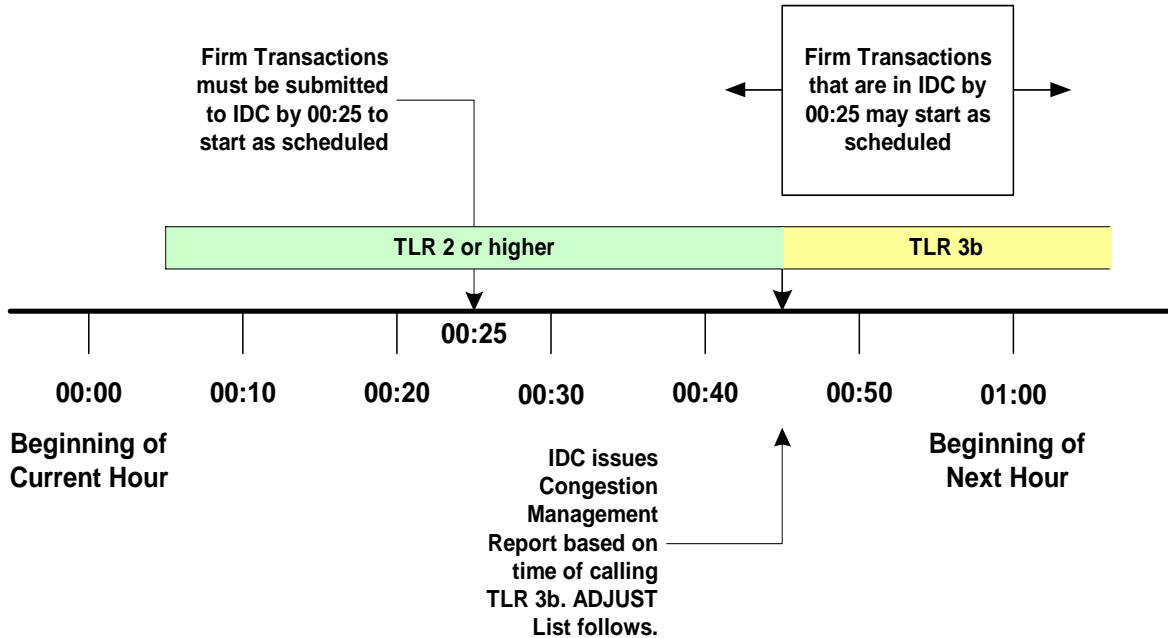
6. Once the SOL or IROL violation is mitigated, the Reliability Coordinator shall call a TLR Level 3A (or lower). If a TLR Level 3A is called:
  - a. Interchange Transactions using Firm Point-to-Point Transmission Service that were submitted to the IDC by 00:25 will be allowed to start as scheduled at 02:00.
  - b. Interchange Transactions using Non-firm Point-to-Point Transmission Service that were held may then be reallocated to start at 02:00.

1935 **Case 2: TLR 3B is called after 00:25 and the Interchange Transaction using Firm Point-to-Point Transmission Service is submitted to the IDC no later than the time at which the TLR 3B is called.**



- 1940
1. The IDC will examine the current hour (00) and next hour (01) for all Interchange Transactions.
  2. The IDC will issue an ADJUST List at the time the TLR 3B is called. The ADJUST List will include additional curtailments of Interchange Transactions using Non-firm Point-to-Point Transmission Service as necessary to allow room for those
- 1945
3. After 00:25, non-firm interchange transactions will be curtailed to meet the desired current hour relief and a reallocation will be performed to maintain the target flow identified for the current hour.
- 1950
4. Interchange Transactions using Firm Point-to-Point Transmission Service that were submitted to the IDC by the time the TLR 3B was called will be allowed to start at as scheduled.
  5. Interchange Transaction using Firm Point-to-Point Transmission Service that were submitted to the IDC after the TLR 3B was called will be held until the next
- 1955
- issuance for TLR (either TLR 3B, 3A, or lower level).

**Case 3. TLR 2 or higher is in effect, a TLR 3B is called after 00:25, and the Interchange Transaction using Firm Point-to-Point Transmission Service is submitted to the IDC by 00:25.**

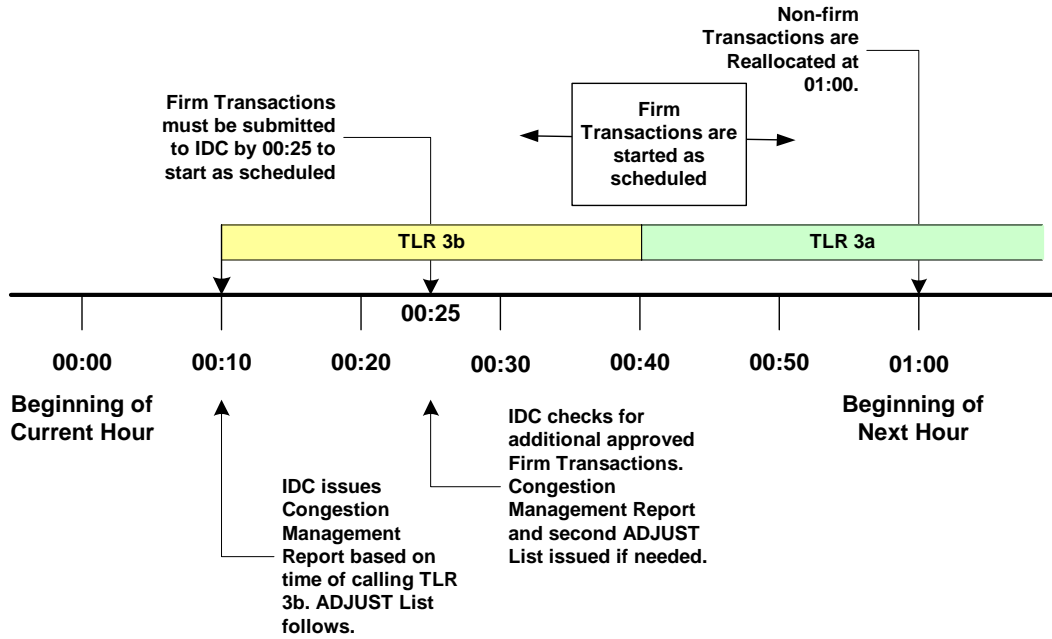


1960

1965 If a TLR 2 or higher has been issued and 3B is subsequently issued, then only those Interchange Transactions using Firm Point-to-Point Transmission Service that had been submitted to the IDC by 00:25 will be allowed to start as scheduled. All other Interchange Transactions are held.

**Case 4. TLR 3B is called before 00:25 and the Interchange Transaction is submitted to the IDC by 00:25. TLR 3A is called at 00:40.**

1970

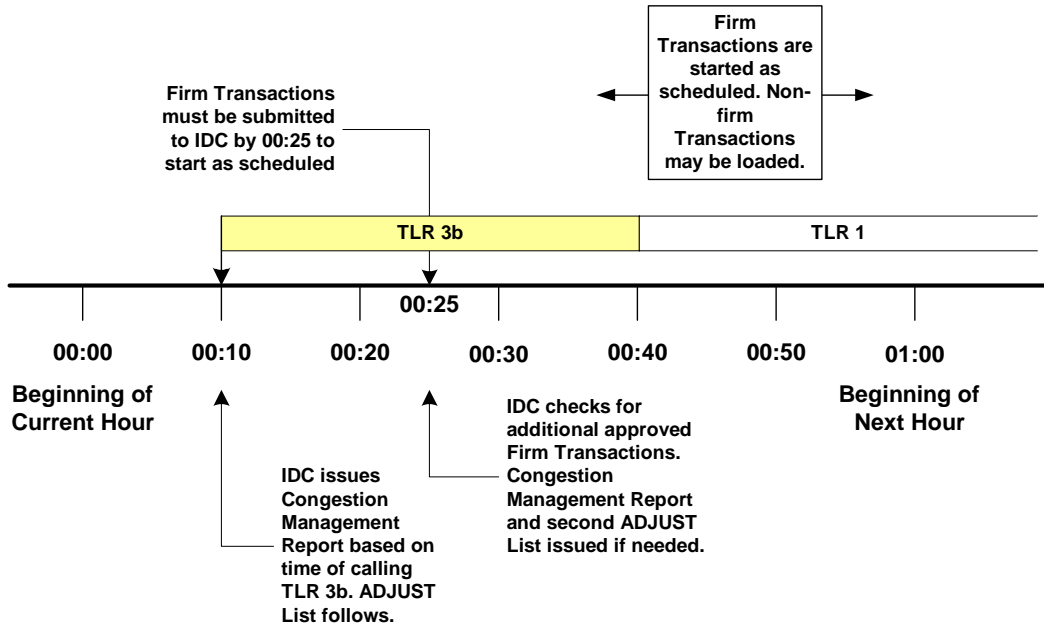


1975

1. Same as Case 1, but TLR Level 3B ends at 00:40 and becomes TLR Level 3A.
2. All Interchange Transactions using Firm Point-to-Point Transmission Service will start as scheduled if in by the time the 3A is declared.
3. All Interchange Transactions using Non-firm Point-to-Point Transmission Service are reallocated at 01:00.

**Case 5. TLR 3B is called before 00:25 and the Interchange Transaction is submitted to the IDC by 00:25. TLR 1 is called at 00:40.**

1980



1. Same as Case 1, but TLR Level 3B ends at 00:40 and becomes TLR Level 1.
2. All Interchange Transactions using Firm Point-to-Point Transmission Service will start as scheduled.
3. All Interchange Transactions using Non-firm Point-to-Point Transmission Service may be loaded immediately.

1985

## Section G: IDC Treatment of TLR Level 6

1990 In order for all reliability coordinators to understand how the IDC handles the issuance of a TLR Level 6 this section describes the IDC functionality that currently exists and options that the reliability coordinator has when declaring this critical TLR Level. This will help ensure the correct action is taken for the given event.

1995 When a reliability coordinator issues a TLR Level 6 on a flowgate in the IDC, the application will search the non-firm and firm tags that are in the IDC database for those that affect the flowgate greater than or equal to 5%. It will create two sets of tags from this list for the reliability coordinator to curtail:

1. If the tag has an active MW amount in the current hour it will be curtailed to zero MW.

2000 2. If the tag is planned to start the next hour it will not be allowed to start and will be curtailed to zero for the next hour.

Once this report is created and displayed as the congestion management report, the reliability coordinator will then have three options to move forward with the TLR Level 6:

2005 1. Confirm the curtailment list that contains the non-firm and firm complete curtailments for the current and next hour.

2010 1.1. This will alert the other reliability coordinators that a TLR Level 6 has been declared and that there are curtailments that need to be acknowledged for implementation.

2015 1.2. Once the sinking reliability coordinators acknowledge the curtailments the IDC will send a reliability cap of zero to the balancing authorities on the tags for curtailment implementation.

2. Exclude some or all of the tag curtailments from the congestion management report before declaring a TLR Level 6.

2020 2.1. This can be done by the issuing reliability coordinator using the “Re-issue/Exclude” option in the congestion management report.

2.2. This will give the issuing reliability coordinator the option of selecting those transactions they wish to exclude from the TLR issuance.

2025 2.3. Once the appropriate tags are selected the reliability coordinator will re-issue the TLR and the list of excluded tags will appear on the congestion management report, but will not be in the curtailed state.

2030 The reliability coordinator will then have to confirm the TLR to send the TLR Level 6 notification to the other reliability coordinators.

**2.4.** Any tags that were not chosen for exclusion will be sent out to the other reliability coordinators for acknowledgement and curtailment.

**2.5.** This option allows the reliability coordinator to declare a TLR Level 6 without implementing tag curtailments.

2035

**3.** Disregard some or all of the tag curtailments from the congestion management report while acknowledging the curtailments of a TLR Level 6:

2040

**3.1.** The sinking reliability coordinator can only do this for each tag curtailment after they receive a TLR Level 6 congestion management report from the issuing reliability coordinator.

2045

**3.2.** The sinking reliability coordinator will select the “Disregard” option for the tags they wish not to curtail. This is done in the acknowledgement screen.

2050

**3.3.** When the “Disregard” option is chosen and the “Acknowledgement” button selected the IDC will update the congestion management report to identify to all reliability coordinators that the sinking reliability coordinator has disregarded the curtailment and does not plan on implementing it.

2055

**3.4.** This will prompt the issuing reliability coordinator to initiate a conversation with the sinking reliability coordinator for further clarification on why the suggested curtailment will not take place.

## [TAB 6 – NAESB APPENDICES]

### NAESB Appendix A –

#### 2060 Mitigating Constraints On and Off the Contract Path during TLR

##### Section 1 – On and Off Contract Path Constraints

###### Introduction

2065 Reserving Transmission Service for an Interchange Transaction along a Contract Path may not  
reflect the actual distribution of the power flows over the transmission network from generation  
source to load sink. Interchange Transactions arranged over a Contract Path may, therefore,  
overload transmission elements on other electrically parallel paths. The curtailment priority of an  
Interchange Transaction depends on whether the Constrained Facility is on or off the Contract Path  
2070 as detailed below.

###### **A.1 Constraints ON the Contract Path (*Sections 2.2 of NAESB Transmission Loading Relief Business Practice*)**

2075 **A.1.1** The Reliability Coordinator initiating TLR shall consider the entire Interchange  
Transaction non-firm if the transmission link (i.e., a segment on the Contract Path) on the  
Constrained Facility is Non-firm Point-to-Point Transmission Service, even if other links  
in the Contract Path are firm. When the Constrained Facility is on the Contract Path, the  
Interchange Transaction takes on the Transmission Service Priority of the Transmission  
Service link with the Constrained Facility regardless of the Transmission Service Priority  
2080 on the other links along the Contract Path. (*Section 2.2.1.1 of NAESB Transmission Loading Relief Business Practice*)

**Discussion.** The Transmission Operator simply has to call its Reliability  
Coordinator, request the TLR Procedure be initiated, and allow the curtailments  
of all Interchange Transactions that are at or above the Curtailment Threshold to  
progress until the relief is realized. Firm Point-to-Point Transmission Service  
2085 links elsewhere in the Contract Path do not obligate Transmission Providers  
providing Non-firm Point-to-Point Transmission Service to treat the transaction  
as firm. For curtailment purposes, the Interchange Transaction's priority will be  
the priority of the Transmission Service link with the Constrained Facility. (See  
Requirement 4.1.2 below.)

2090 **A.1.2** The Reliability Coordinator initiating TLR shall consider the entire Interchange  
Transaction firm if the transmission link on the Constrained Facility is Firm Point-to-  
Point Transmission Service, even if other links in the Contract Path are non-firm. (*Section*  
*2.2.1.2 of NAESB Transmission Loading Relief Business Practice*)

2095 **Discussion.** The curtailment priority of an Interchange Transaction on a Contract Path  
link is not affected by the Transmission Service Priorities arranged with other links on the  
Contract Path. If the Constrained Facility is on a Firm Point-to- Point Transmission  
Service Contract Path link, then the curtailment priority of the Interchange Transaction is  
considered firm regardless of the Transmission Service arrangements elsewhere on the  
Contract Path. If the Transmission Provider provides its services under the FERC pro  
2100 forma tariff, it may also be obligated to offer its Transmission Customer alternate receipt  
and delivery points, thus allowing the customer to curtail its Transmission Service over  
the Constrained Facilities.



**A.2 Constraints OFF the Contract Path (Section 2.3 of NAESB Transmission Loading Relief Business Practice)**

- 2105     **A.2.1** The Reliability Coordinator initiating TLR shall consider the entire Interchange Transaction non-firm if none of the transmission links on the Contract Path are on the Constrained Facility and if any of the transmission links on the Contract Path are Non-firm Point-to-Point Transmission Service; the Interchange Transaction shall take on the lowest Transmission Service Priority of all Transmission Service links along the Contract Path. *(Section 2.3.1.1 of NAESB Transmission Loading Relief Business Practice)*
- 2110             **Discussion.** An Interchange Transaction arranged over a Contract Path where one or more individual links consist of Non-firm Point-to-Point Transmission Service is considered to be a non-firm Interchange Transaction for Constrained Facilities off the Contract Path. Sufficient Interchange Transactions that are at or above the Curtailment Threshold will be
- 2115             curtailed before any Interchange Transactions using Firm Point-to-Point Transmission Service are curtailed. The priority level for curtailment purposes will be the lowest level of Transmission Service arranged for on the Contract Path.
- 2120     **A.2.2** The Reliability Coordinator initiating TLR shall consider the entire Interchange Transaction firm if all of the transmission links on the Contract Path are Firm Point-to-Point Transmission Service, even if none of the transmission links are on the Constrained Facility and shall not be curtailed to relieve a Constraint off the Contract Path until all non-firm Interchange Transactions that are at or above the Curtailment Threshold have been curtailed. *(Section 2.3.1.2 of NAESB Transmission Loading Relief Business Practice)*
- 2125             **Discussion.** If the entire Contract Path is Firm Point-to-Point Transmission Service, then the TLR procedure will treat the Interchange Transaction as firm, even for Constraints off the Contract Path, and will not curtail that Interchange Transaction until all non-firm Interchange Transactions that are at or above the Curtailment Threshold have been
- 2130             curtailed. However, Transmission Providers off the Contract Path are not obligated to reconfigure their transmission system or provide other congestion management procedures unless special arrangements are in place. Because the Interchange Transaction is considered firm everywhere, the Reliability Coordinator may attempt to arrange for Transmission Operators to reconfigure transmission or provide other congestion
- 2135             management options or Balancing Authorities to re-dispatch, even if they are off the Contract Path, to try to avoid curtailing the Interchange Transaction that is using the Firm Point-to-Point Transmission Service.

**SECTION 2 - Examples of On-Path and Off-Path Mitigation**

2140

This section explains, by example, the obligations of the Transmission Service Providers on and off the Contract Path when calling for Transmission Loading Relief. When Reallocating or curtailing Interchange Transactions using Firm Transmission Service under TLR level 5A or 5B, the Transmission Service Providers may be obligated to perform comparable curtailments of its Transmission Service to Network Integration and Native Load customers.

2145

**Scenario:**

- Interchange Transaction arranged from system A to system D, and assumed to be at or above the Curtailment Threshold
- Contract Path is A-E-C-D (except as noted)
- Locations 1 and 2 denote Constraints

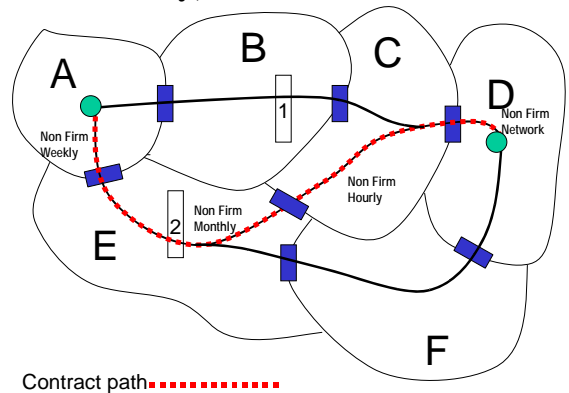
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**Case 1: E is a Non-Firm Monthly path, C is Non-Firm Hourly; E has Constraint at #2.**

2155

- E may call Reliability Coordinator for TLR Procedure to relieve overload at Constraint #2.
- Interchange Transaction A-D may be curtailed by TLR action as though it was being served by **Non-Firm monthly Point-to-point Transmission Service**, even though it was using Non-Firm hourly Point-To-Point Transmission Service from C. That is, it takes on the priority of the link with the Constrained Facility or Flowgate along the Contract Path. (See Section 2.2.)

2160



2165

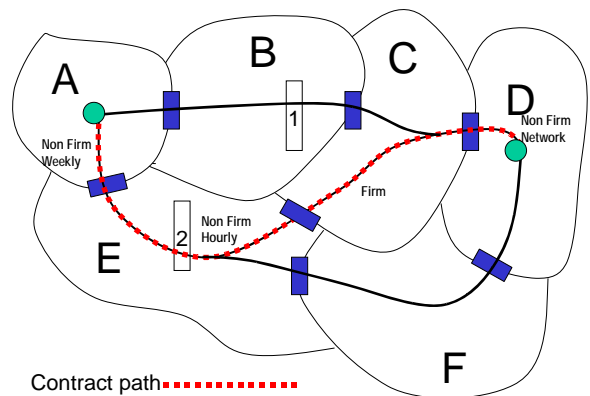
**Case 2: E is a Non-Firm Hourly path, C is Firm; E has Constraint at #2.**

2170

- Although C is providing Firm Transmission Service, the Constraint is not on C's system; therefore, E is not obligated to treat the Interchange Transaction as though it was being served by Firm Transmission Service.
- E may call Reliability Coordinator for TLR Procedure to relieve overload at Constraint #2.
- Interchange Transaction A-D may be curtailed by TLR action as though it was being served by Non-Firm hourly Point-to-point Transmission Service, even though it was using Firm Transmission Service from C. That is, when the Constraint is on the Contract Path, the Interchange Transaction takes on the priority of the link with the Constrained Facility or Flowgate. (See section 2.2.)

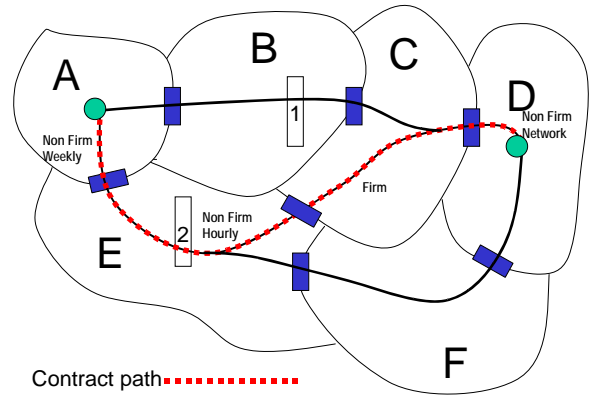
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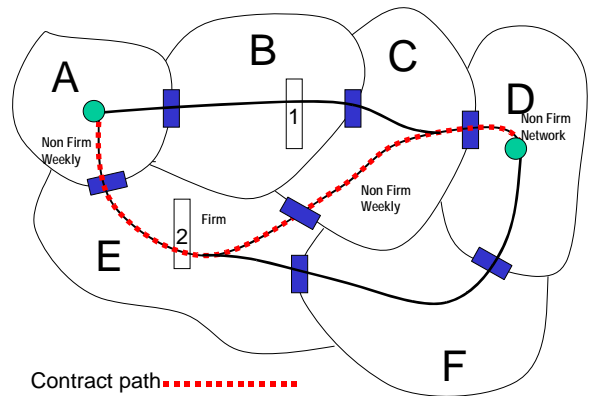
**Case 3: E is a Non-Firm hourly path, C is Firm, B has Constraint at #1.**

- 2185
- B may call Reliability Coordinator for TLR Procedure to relieve overload at Constraint #1.
  - Interchange Transaction A-D may be curtailed by TLR action as though it was being served by Non-Firm hourly Transmission Service, even if it was using Firm Transmission Service elsewhere on the path. When the Constraint is off the Contract Path, the Interchange Transaction takes on the lowest priority reserved on the Contract Path. (See section 2.3.)
- 2190
- 2195



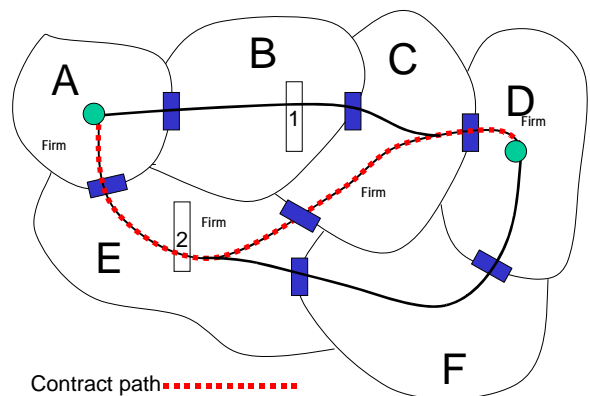
**Case 4: E is a Firm path; A, D, and C are Non-Firm; E has Constraint at #2.**

- 2200
- Interchange Transaction A – D is considered Firm priority for curtailment purposes.
  - E may then call Reliability Coordinator for TLR, which would curtail all Interchange Transactions using Non-Firm Transmission Service first.
  - E is obligated to try to reconfigure transmission to mitigate Constraint #2 in E before E may curtail the Interchange Transaction as ordered by the TLR. (See Section 2.2)
- 2205



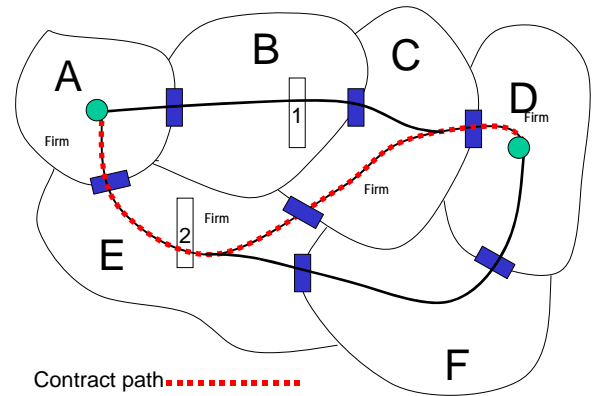
**Case 5: The entire path (A-E-C-D) is Firm; E has Constraint at #2.**

- 2210
- Interchange Transaction A – D is considered Firm priority for curtailment purposes.
  - E may call Reliability Coordinator for TLR, which would curtail all Interchange Transactions using Non-Firm Transmission Service first.
- 2215
- E is obligated to curtail Interchange Transactions using Non-Firm Transmission Service, and then reconfigure transmission on its system, or, if there is an agreement in place, arrange for reconfiguration or other congestion management options on another system, to mitigate Constraint #2 in E before the Firm A-D transaction is curtailed. (See section 2.2.)
- 2220
- A, C, D, may be requested by E to try to reconfigure transmission to mitigate Constraint #2 in E at E's expense. (See section 2.2.)
- 2225



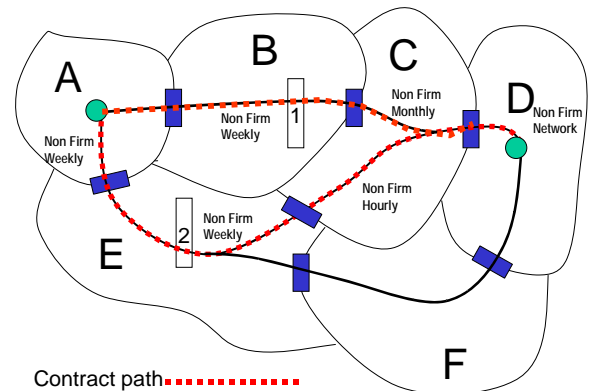
**Case 6: The entire path (A-E-C-D) is Firm; B has Constraint at #1.**

- Interchange Transaction A – D is considered Firm priority for curtailment purposes.
- B may call Reliability Coordinator for TLR Procedure for all *Non-Firm* Interchange Transactions that contribute to the overload at Constraint #1.
- Following the curtailment of all Non-Firm Interchange Transactions, the Reliability Coordinator(s) will determine which Transmission Operator(s) will reconfigure their transmission, if possible, to mitigate Constraint #1. (See section 2.3.)
- A-D transaction may be curtailed as a result. However, the A-D transaction is treated as a Firm Interchange Transaction and will be curtailed only after Non-Firm Interchange Transactions. (Note: This means that the Firm Contract Path is respected by all parties, including those not on the Contract Path.) (See section 2.3.)



**Case 7: Two A-to-D transactions using A-B-C-D and A-E-C-D; A and B are Non-Firm; B has Constraint at #1**

- B is not obligated to reconfigure transmission to mitigate Constraint at #1. (See section 2.2.)
- B may call for TLR Procedure to relieve overload at Constraint #1.
- If both A – D Interchange Transactions have the same TDF across Constraint #1, then they both are subject to curtailment. However, Interchange Transaction A – D using the A-B-C-D path is assigned a higher priority (priority NW on B), and would not be curtailed until after the Interchange Transaction using the path A-E-C-D (priority NH on the Contract Path as observed by B who is off the Contract Path).



2260

## **NAESB Appendix B –**

### **Section 1 Parallel Flow Calculation Procedure for Reallocating or Curtailing Firm Transmission Service**

#### **Introduction**

2265 The provision of Point-to-Point Transmission Service, Network Integration Transmission Service and service to Native Load results in parallel flows on the transmission network of other Transmission Operators. When a transmission facility becomes constrained curtailment of Interchange Transactions is required to allow Interchange Transactions of higher priority to be scheduled (Reallocation) or to provide transmission loading relief (Curtailment). An Interchange Transaction is considered for Reallocation or Curtailment if its Transfer Distribution Factor (TDF) exceeds the TLR Curtailment Threshold. In compliance with the Transmission Service Provider tariffs, Interchange Transactions using Non-firm Point-to-Point Transmission Service are curtailed first (TLR Level 3A and 3B), followed by transmission reconfiguration (TLR Level 4), and then the curtailment of Interchange Transactions using Firm Point-to-Point Transmission Service, Network Integration Transmission Service and service to Native Load (TLR Level 5A and 5B). Curtailment of Firm Point-to-Point Transmission Service shall be accompanied by the comparable curtailment of Network Integration Transmission Service and service to Native Load to the degree that these three Transmission Services contribute to the Constraint.

#### **B.1 Requirements**

2280 A methodology, called the Per Generator Method without Counter Flow, or simply the Per Generator Method, has been programmed into the IDC to calculate the portion of parallel flows on any Constrained Facility due to service to Native Load of each Balancing Authority. The following requirements are necessary to assure comparable Reallocation or Curtailment of firm Transmission Service:

2285 **B.1.1** The Reliability Coordinator initiating a curtailment shall identify for curtailment all firm Transmission Services (i.e. Point-to-Point, Network Integration and service to Native Load) that contribute to the flow on any Constrained Facility by an amount greater than or equal to the Curtailment Threshold on a pro rata basis. (*Section 3.11 of NAESB Transmission Loading Relief Business Practice*)

2290 **B.1.2** For Firm Point-to-Point Transmission Services, the Transfer Distribution Factors must be greater than or equal to the Curtailment Threshold. (*Sections 3.11.1 and 3.11.1.1 of NAESB Transmission Loading Relief Business Practice*)

2295 **B.1.3** For Network Integration Transmission Service and service to Native Load, the Generator-To-Load Distribution Factors must be greater than or equal to the Curtailment Threshold. (*Sections 3.11 and 3.11.1.1 of NAESB Transmission Loading Relief Business Practice*)

2300 **B.1.4** The Per Generator Method shall assign the amount of Constrained Facility relief that must be achieved by each Balancing Authority's Network Integration Transmission Service or service to Native Load. It shall not specify how the reduction will be achieved. (*Sections 3.11.2.1, 3.11.2.1.1, 3.11.2.1.2, 3.11.2.1.3 and 3.11.2.1.4 of NAESB Transmission Loading Relief Business Practice*)

**B.1.5** All Balancing Authorities in the Eastern Interconnection shall be obligated to achieve the amount of Constrained Facility relief assigned to them by the Per Generator Method. (*Section 3.11.2.8 of NAESB Transmission Loading Relief Business Practice*)

2305 **B.1.6** The implementation of the Per Generator Method shall be based on transmission and generation information that is readily available. (*Section 3.11.2 of NAESB Transmission Loading Relief Business Practice*)

## B.2 Calculation Method

2310 The calculation of the flow on a Constrained Facility due to Network Integration Transmission  
Service or service to Native Load shall be based on the Generation Shift Factors (GSFs) of a  
Balancing Authority's assigned generation and the Load Shift Factors (LSFs) of its native load,  
relative to the system swing bus. The GSFs shall be calculated from a single bus location in the  
IDC. The IDC shall report all generators assigned to native load for which the GLDF is greater  
than or equal to the Curtailment Threshold. (*all Sections 3.11.2.2 of the NAESB Transmission  
Loading Relief Business Practice Standard*)

2315

## Section 2 Example Calculations of the Per Generator Method

### Example 1: The Per Generator Method Calculation

2320 An example of calculating Firm transaction curtailments using the Per Generator Method is  
provided in this section, assuming that the Constrained Flowgate is #3006 (Eau Claire-Arpin 345  
kV circuit). The Generator-to-Load Distribution Factors (GLDFs) for this Flowgate are presented in  
Table B-1. In this example, a total Firm (PTP and tagged NI transactions) contribution of 708.85  
MW is assumed to be given by the IDC.

2325 From Table B-1, the untagged NI/NL contributions of all Balancing Authority Areas that impact the  
Constrained Facility or Flowgate are listed below:

$$\text{ALTE} = 27.0 \text{ MW}$$

$$\text{ALTW} = 41.1 \text{ MW}$$

$$\text{NSP} = 33.1 \text{ MW}$$

2330

$$\text{WPS} = 26.2 \text{ MW}$$

$$\text{Total NL \& untagged NI contribution} = 127.4 \text{ MW}$$

$$\text{Total Firm (PTP and NI/NL) contribution} = 127.4 \text{ MW} + 708.85 \text{ MW} = 836.25 \text{ MW}$$

$$\text{NL \& NI portion of total Firm contribution} = 127.4/836.25 = 15.2\%$$

$$\text{PTP and tagged NI portion of total Firm contribution} = 708.85/836.25 = 84.47\%$$

2335 Allocation of relief of the Constrained Facility or Flowgate to each Balancing Authority Area with  
impactive untagged NI/NL contribution is given below:

$$\text{ALTE} = 27.0 / 127.4 \times 0.152 = 3.2\%$$

$$\text{ALTW} = 41.1 / 127.4 \times 0.152 = 4.9\%$$

$$\text{NSP} = 33.1 / 127.4 \times 0.152 = 3.9\%$$

2340

$$\text{WPS} = 26.2 / 127.4 \times 0.152 = 3.1\%$$

Assume that 50 MW of relief is needed. Then those Balancing Authority Areas that impact NI/NL  
contribution and Firm Transmission Service are responsible for the providing the following amounts  
of Flowgate relief:

$$\text{Relief provided by removing Firm PTP and tagged NI} = 0.845 \times 50 = 42.25 \text{ MW}$$

2345

$$\text{Relief provided by removing NL and untagged NI contributions ALTE} = 0.032 \times 50 = 1.60 \text{ MW}$$

$$\text{Relief provided by removing NL and untagged NI contributions ALTW} = 0.049 \times 50 = 2.45 \text{ MW}$$

$$\text{Relief provided by removing NL and untagged NI contributions NSP} = 0.039 \times 50 = 1.95 \text{ MW}$$

$$\text{Relief provided by removing NL and untagged NI contributions WPS} = 0.031 \times 50 = 1.55 \text{ MW}$$

2350 **Table B-1**

**Native Load Responsibilities**

Flowgate #: 3006 **Flowgate Name: EAU CLAIRE-ARPIN 345 KV**

Common Name	Generator Reference System	Generator Shift Factor (GSF)	Percent Assigned	GLDF Gen to Load Factor	Pmax (MW)	Energy on Flowgate
<b>ALTE #364</b>	Avail Assigned Gen: 1,514 Load Level: 1,796 Scaling: 1.000	ALTE_LD Load Shift Factor: -0.097				
NED G1 13.8--1 CA=ALTE	39000_NED_G1	0.022	100	.1195	113.0	13.5
NED G2 13.8--2 CA=ALTE	39001_NED_G2	0.022	100	.1195	113.0	13.5
<b>Summary</b>						<b>27.0</b>
<b>WPS #366</b>	Avail Assigned Gen: 1,691 Load Level: 1,910 Scaling: 1.000	WPS_LD Load Shift Factor: -0.193				
COL G1 22.0--1 CA=ALTE	39152_COL_G1	-0.094	32	.0993	525.0	16.6
COL G2 22.0--2 CA=ALTE	39153_COL_G2	-0.094	32	.0993	525.0	16.6
EDG G4 22.0--4 CA=ALTE	39207_EDG_G4	-0.118	32	.0752	331.0	7.9
<b>Summary</b>						<b>41.1</b>
<b>NSP #623</b>	Avail Assigned Gen: 8,492 Load Level: 8,484 Scaling: 0.999	NSP_LD Load Shift Factor: 0.206				
WHEATON5 161--1 CA=NSP	61870_WHEATO	0.298	100	.0919	55.0	5.0
WHEATON5 161--2 CA=NSP	61870_WHEATO	0.298	100	.0919	63.0	5.8
WHEATON5 161--3 CA=NSP	61870_WHEATO	0.298	100	.0919	55.0	5.0
WHEATON5 161--4 CA=NSP	61870_WHEATO	0.298	100	.0919	55.0	5.0
WHEATON5 161--5 CA=NSP	61871_WHEATO	0.293	100	.0874	57.0	5.0
WHEATON5 161--6 CA=NSP	61871_WHEATO	0.293	100	.0874	57.0	5.0
WISSOTAG69.0--1 CA=NSP	69168_WISSOT	0.266	100	.0601	37.0	2.2
<b>Summary</b>						<b>33.1</b>
<b>ALTW #631</b>	Avail Assigned Gen: 2,337 Load Level: 3,640 Scaling: 1.000	ALTW_LD Load Shift Factor: 0.065				
FOXLK53G13.8--3 CA=ALTW	62016_FOXLK5	0.147	100	.0819	88.5	7.3
LANS5 4G22.0--4 CA=ALTW	62057_LANS5_	0.116	100	.0506	277.0	14.0
LANS5 3G22.0--3 CA=ALTW	62058_LANS5_	0.116	100	.0505	35.8	1.8
FAIRMONT69.0--3 CA=ALTW	65816_FAIRMO	0.151	100	.0857	5.0	0.4
FAIRMONT69.0--4 CA=ALTW	65816_FAIRMO	0.151	100	.0857	6.0	0.5

Common Name	Generator Reference System	Generator Shift Factor (GSF)	Percent Assigned	GLDF Gen to Load Factor	Pmax (MW)	Energy on Flowgate
FAIRMONT69.0--5 CA=ALTW	65816_FAIRMO	0.151	100	.0857	12.0	1.0
FAIRMONT69.0--6 CA=ALTW	65816_FAIRMO	0.151	100	.0857	7.0	0.6
FAIRMONT69.0--7 CA=ALTW	65816_FAIRMO	0.151	100	.0857	6.5	0.6
<b>Summary</b>	.	.	.	.	.	<b>26.2</b>
.	.	.	.	.	.	.
<b>TOTAL Summary</b>	.	.	.	.	.	<b>127.4</b>

2355 **Example 2: Use of Per Generator Method while Simultaneously Curtailing Transmission Service**

2360 An example of the output of the IDC calculation of curtailment of Firm Transmission Service is provided below for the specific Constrained Facility or Flowgate identified in the NERC Book of Flowgates as Flowgate 1368. In this example, a total Firm PTP and tagged NI contribution to the Constrained Facility or Flowgate, as calculated by the IDC, is assumed to be 21.8 MW.

2365 The Table B-2 below presents a summary of each Balancing Authority’s responsibility to provide relief to the Constrained Facility or Flowgate due to its untagged NI Transmission Service and service to NL contribution to the Constrained Facility or Flowgate. In this example, Balancing Authority LAGN would be requested to curtail 17.3 MW of its total of 401.1 MW of flow contribution on the Constrained Facility or Flowgate.

In summary, Interchange Transactions would be curtailed by a total of 21.8 MW and untagged NI Transmission Service and service to NL would be curtailed by a total of 178.2 MW by the five Balancing Authorities identified in the table. These curtailments would provide a total of 200.0 MW of relief to the Constrained Facility or Flowgate.



2370 **Table B-2**

<i>Sink Reliability Coordinator</i>	<i>Service Point</i>	<i>Scaled P Max</i>	<i>Flowgate untagged NI &amp;NL MW</i>	<i>Current untagged NI &amp;NL Relief</i>	<i>untagged NI &amp;NL Responsibility</i>		<i>untagged NI &amp;NL Responsibility Acknowledgement</i>	
					<i>Inc/Dec</i>	<i>Current Hr</i>	<i>Acknowledge Time</i>	<i>Total MW Resp.</i>
EES	EES	8429.7	2991.4	0.0	128.9	128.9	13:44	128.9
EES	LAGN	1514.0	718.6	0.0	31.0	31.0	13:44	31.0
SOCO	SOCO	5089.2	401.1	0.0	17.3	17.3	13:44	17.3
SWPP	CLEC	235.7	18.0	0.0	0.8	0.8	13:42	0.8
SWPP	LEPA	22.8	4.1	0.0	0.2	0.2	13:42	0.2
<b>Total</b>		<b>15291.4</b>	<b>4133.2</b>	<b>0.0</b>	<b>178.2</b>	<b>178.2</b>		<b>178.2</b>

**NAESB Appendix C –  
Transaction Curtailment Formula**

2375

**Example**

This example is based on the premise that a transaction should be curtailed in proportion to its Transfer Distribution Factor (TDF) on the Constraints. Its effect on the interface is a combination of its size in MW and its effect based on its distribution factor.

2380

<i>Column</i>	<i>Description</i>
1. Initial transaction	Interchange Transaction before the TLR Procedure is implemented.
2. Distribution factor	Proportional effect of the transaction over the constrained interface due to the physical arrangement and impedance of the transmission system.
3. Impact on the interface	Result of multiplying the transaction MW by the distribution factor. This yields the MW that flow through the constrained interface from the transaction. Performing this calculation for each transaction yields the total flow through the constrained interface from all the Interchange Transactions. In this case, 760 MW.
4. Impact weighting factor	“Normalization” of the total of the distribution factors in column 2. Calculated by dividing the distribution factor for each transaction by the total of the distribution factors.
5. Weighted maximum interface reduction	Multiplying the impact on the interface from each transaction by its impact weighting factor yields a new proportion that is a combination of the MW impact on the interface and the distribution factor.
6. Interface reduction	Multiplying the amount needed to reduce the flow over the constrained interface (280 MW) by the normalization of the weighted maximum interface reduction yields the actual MW reduction that each transaction must <i>contribute</i> to achieve the total reduction.
7. Transaction reduction	Divide by the distribution factor to see how much the transaction must be reduced to yield result we calculated in column 7. Note that the reductions for the first two Interchange Transactions (A-D (1) and A-D (2) are in proportion to their size since their distribution factors are equal.
8. New transaction amount	Subtracting the transaction reduction from the initial transaction yields the new transaction amount.
9. Adjusted impact on interface	A check to ensure the new constrained interface MW flow has been reduced to the target amount.

**Allocation Based on Weighted Impact**

		1	2	3	4	5	6	7	8	9
Transaction ID		Initial Transaction	Distribution Factor	(1)*(2) Impact on Interface	(2)/(2TOT) Impact Weighting Factor	(3)*(4) Weighted Max Interface Reduction	(5)*(Relief Requested)/(5 TOT) Interface Reductions	(6)/(2) Transaction Reductions	(1)-(7) New Transaction Amount	(8)*(2) Adjusted Impact on Interface
<b>EXAMPLE 1</b>	A-D(1)	800	0.60	480.00	0.34	164.57	209.73	349.54	450.46	270.27
	A-D(2)	200	0.60	120.00	0.34	41.14	52.43	87.39	112.61	67.57
	B-D	800	0.15	120.00	0.09	10.29	13.11	87.39	712.61	106.89
	C-D	100	0.20	20.00	0.11	2.29	2.91	14.56	85.44	17.09
	E-B	100	0.05	5.00	0.03	0.14	0.18	3.64	96.36	4.82
	F-B	100	0.15	15.00	0.09	1.29	1.64	10.92	89.08	13.36
<b>TOTAL</b>		<b>2100</b>	<b>1.75</b>	<b>760.00</b>		<b>219.71</b>	<b>280.00</b>	<b>553.45</b>	<b>1546.55</b>	<b>480.00</b>
<b>EXAMPLE 2</b>	A-D(1)	1000	0.60	600.00	0.52	313.04	262.16	436.93	563.07	337.84
	B-D	800	0.15	120.00	0.13	15.65	13.11	87.39	712.61	106.89
	C-D	100	0.20	20.00	0.17	3.48	2.91	14.56	85.44	17.09
	E-B	100	0.05	5.00	0.04	0.22	0.18	3.64	96.36	4.82
	F-B	100	0.15	15.00	0.13	1.96	1.64	10.92	89.08	13.36
	<b>TOTAL</b>		<b>2100</b>	<b>1.15</b>	<b>760.00</b>		<b>334.35</b>	<b>280.00</b>	<b>553.45</b>	<b>1546.55</b>
<b>EXAMPLE 3</b>	A-D(1A)	200	0.60	120.00	0.17	20.28	52.43	87.39	112.61	67.57
	A-D(1B)	200	0.60	120.00	0.17	20.28	52.43	87.39	112.61	67.57
	A-D(1C)	200	0.60	120.00	0.17	20.28	52.43	87.39	112.61	67.57
	A-D(1D)	200	0.60	120.00	0.17	20.28	52.43	87.39	112.61	67.57
	A-D(2)	200	0.60	120.00	0.17	20.28	52.43	87.39	112.61	67.57
	B-D	800	0.15	120.00	0.04	5.07	13.11	87.39	712.61	106.89
	C-D	100	0.20	20.00	0.06	1.13	2.91	14.56	85.44	17.09
	E-B	100	0.05	5.00	0.01	0.07	0.18	3.64	96.36	4.82
	F-B	100	0.15	15.00	0.04	0.63	1.64	10.92	89.08	13.36
	<b>TOTAL</b>		<b>2100</b>	<b>3.55</b>	<b>760.00</b>		<b>108.31</b>	<b>280.00</b>	<b>553.45</b>	<b>1546.55</b>

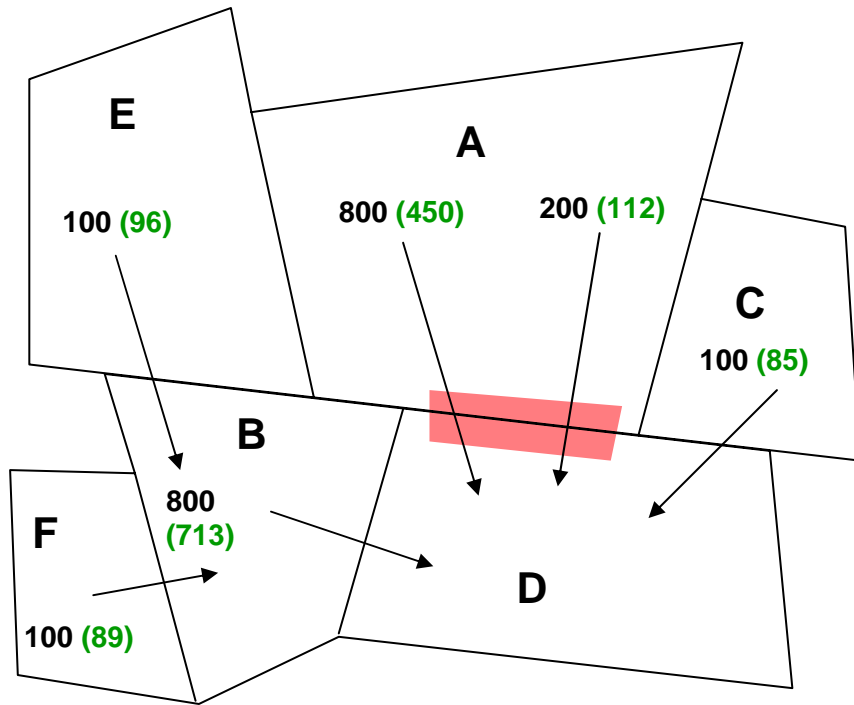
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2410 **NAESB Appendix D –**  
**Regional Differences**

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**Section A**

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2415 **PJM/Midwest ISO, Inc.** – Enhanced Congestion Management Method  
(Curtailement/Reload/Reallocation)

**Organization**

The Balancing Authority participants of:

- Midwest ISO, Inc. (Hereafter referred to as MISO)
- PJM Interconnection, L.L.C. (Hereafter referred to as PJM)

2420 **Business Practice**

This methodology implements a Multi-Balancing Authority Energy Market, simplifies transaction information requirements for market participants, and allows for a means of providing Reliability Coordinators with appropriate information for security analysis and curtailments/reloads/reallocations and re-dispatch requirements.

2425 To accommodate a Multi-Balancing Authority Energy Market, this methodology provides for regional differences from the NERC and NAESB specific standards listed below.

2430 This methodology also applies in the event that the above Balancing Authorities are combined into fewer Balancing Authorities or into one Balancing Authority. This methodology is required to realize the benefits of a LMP market operation while increasing the level of granularity of information provided to the NAESB and NERC Transmission Loading Relief standards. The concepts contained within the PJM/MISO paper, “Managing Congestion to Address Seams,” (see footnote 1) meet the requirements specified in this standard, its related appendices, and NERC Standards.

The processes proposed in this methodology affect the following specific sections:

- 2435
- **IDC Reference Document “How the IDC Handles Reallocation” of the current version of NERC IRO-006.**
  - **IDC Reference Document “Timing Requirements (IDC Calculations and Reporting Requirements)” of the current version of NERC IRO-006.**

2440 **Appendix C “Transaction Curtailment Formula” of this document Section 6 “Interchange Transaction Reallocation During TLR Levels 3A and 5A” of the current version of NERC IRO-006,** For the purposes of clarity, this methodology describes many actions as those of the “RTO.” It should be noted that “RTO” refers to the market-operating entity in which the subject Balancing Authorities participate.

**Assignment of Sub-Priorities**

2445 **Requirements**

- Requirements 3.3 and 3.6 of this document and as found in the current version of NERC IRO-006, IDC Reference Document.

**Explanation**

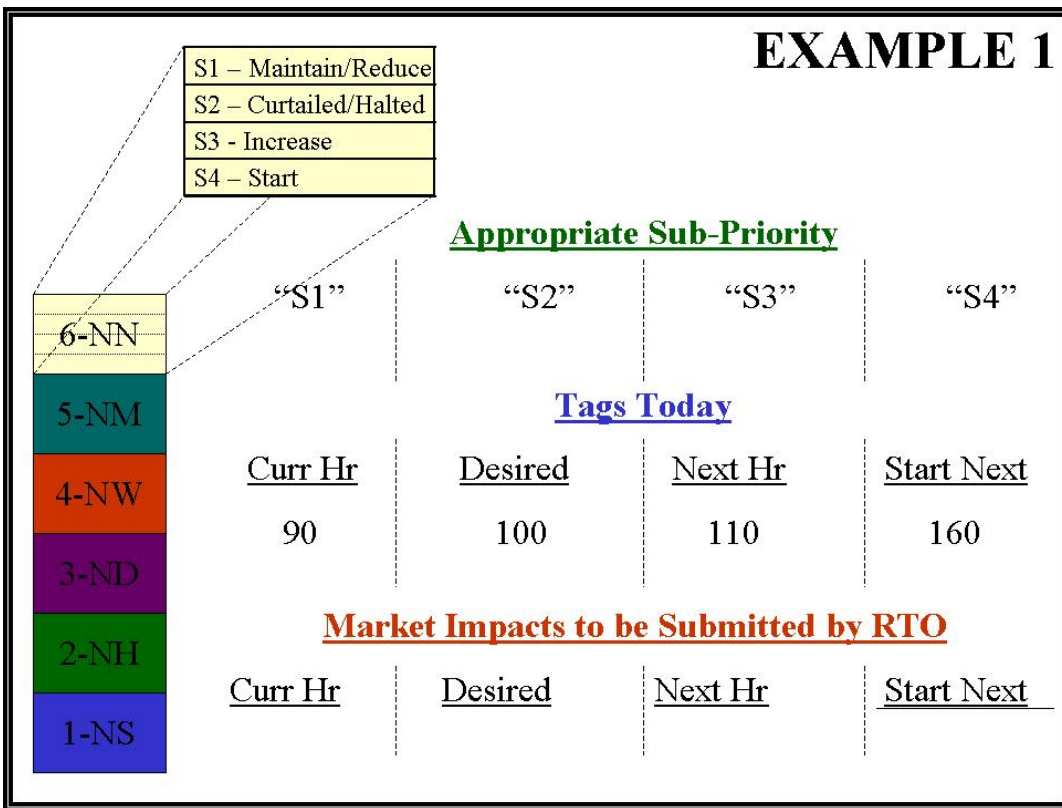
2450 The “IDC Calculations and Reporting Requirements” section of the current version of NERC IRO-006, IDC Reference Document “Timing Requirements” states that “In a TLR Level 3A the Interchange Transactions using Non-firm Transmission Service in a given priority will be further divided into four sub-priorities, based on current schedule, current active schedule (identified by the submittal of a tag ADJUST message), next-hour schedule, and tag status.”

2455 The RTO shall use a “Market Flow Calculation” methodology to calculate the amount of energy flowing across all facilities included in the RTO’s “Coordinated Flowgate List”<sup>1</sup> that is associated with the operation of the RTO market. This energy is identified as “market flow”.

These market flow impacts for current hour and next hour shall be separated into their appropriate priorities<sup>2</sup> and provided to the IDC by the RTO. The market flows shall then be represented and made available for curtailment under the appropriate TLR Levels.

2460 Even though these market flow impacts (separated into appropriate priorities) will not be represented by conventional “tags”, the impacts and their desired levels shall be provided to the IDC for current hour and next hour. Therefore, the RTO, for the purposes of reallocation, shall be assigned by the NERC IDC a sub-priority (S1 thru S4) to these market flow impacts, using the same parameters as would be used if the impacts were in fact tagged transactions — as detailed in

2465 the current version of NERC IRO-006, IDC Reference Document “How the IDC Handles Reallocation”. (See example 1 below).



<sup>1</sup> The RTO will conduct sensitivity studies to determine which external Flowgates (outside the RTO’s footprint) are significantly impacted by the market flows of the RTO’s control zones (currently the Balancing Authorities that exist today in the IDC). The RTO will perform the 4 studies as described in the MISO/PJM Paper “Managing Congestion to Address Seams” White Paper (Version 3.2, May 16, 2003, located on the NAESB website at [http://www.naesb.org/pdf2/weq\\_bps101205w3.pdf](http://www.naesb.org/pdf2/weq_bps101205w3.pdf)) to determine which external Flowgates the RTO will monitor and help control. An external Flowgate selected by one of these studies will be considered a coordinated Flowgate (CF).

<sup>2</sup> See footnote 1. for details on how these priorities will be assigned

2470 **Pro Rata Curtailment of Non-Firm Market Flow Impacts**

**Requirements**

- NAESB Appendix C of this document “Transaction Curtailment Formula”

**Explanation**

2475 Appendix C of this document “Transaction Curtailment Formula” details the formula used to apply a weighted impact to each Non-Firm tagged transaction (priorities 1 thru 6 as defined in section 2.1 of this business practice standard) for the purposes of curtailment by the IDC. For the purpose of curtailment, the non-firm market flow impacts (priorities 1 thru 6) submitted to the IDC by the RTO shall be curtailed pro rata as is done for Interchange Transactions using Firm Transmission Service. This method shall be used, because several of the values needed to assign a weighted impact using the process listed in Appendix C of this document “Transaction Curtailment Formula” will not be available:

- 2480
- Distribution factor (no tag to calculate this value from)
  - Impact on interface value (cannot be calculated without distribution factor)
  - Impact weighting factor (cannot be calculated without distribution factor)

2485

  - Weighted maximum interface reduction (cannot be calculated without distribution factor)
  - Interface reduction (cannot be calculated without distribution factor)
  - Transaction reduction (cannot be calculated without distribution factor)

2490 While the Non-Firm market flow impacts submitted to the IDC would be curtailed pro rata under this methodology, the impacting Non-Firm tagged transactions could still use the existing processes to assign the weighted impact value. Example 2 (below) illustrates how this would be accomplished.

### EXAMPLE 2

Contents of “Sub Priority 3” within non-firm priority (2 or 6) on Flowgate “A”

Sub Priority 3

S3 - Increase

S1	6-NN
S2	6-NN
S3	6-NN
S4	6-NN
5	5-NM
4	4-NW
3	3-ND
2	2-NH
1	1-NS

- Transactional-flow  $\geq$  5% & Market-flow impacts = 100MW
- Market Flow impacts equal 30MW (or 30%)
- Transaction-flow impacts equal 70MW (or 70%)
- Total relief required from Sub Priority (SP) 3 of Non-firm Priority (P) 6-NN for Flowgate A under TLR 3A equals **10MW**
- SP-3/P-6 Market Flow impacts reduced pro-rata (30%) or 3MW
- SP-3/P-6 Transactional Flow impacts reduced using current “weighted impact” calculation to achieve 7MW (70%) of the 10MW relief requested

## **NNL Calculation**

### 2495 **Requirements**

- **Requirement 3.11 “Parallel flow calculation procedure of reallocating or curtailing Firm Transmission Service” of this document** ‘Parallel Flow Calculation Procedure for Reallocating or curtailing Firm Transmission Service’
- **NERC “Parallel Flow Calculation Procedure Reference Document”, version 1 – section C** (Calculation Method), approved November 16, 2000, as found in the NERC Operating Manual.

2500

### **Explanation**

Requirement 3.11 of this document and the NERC “Parallel Flow Calculation Procedure Reference Document”, version 1 – section C (Calculation Method), approved November 16, 2000, as found in the NERC Operating Manual, currently require that the “Per Generator Method Without Counter Flow” (see footnote 1, PJM/MISO “Managing Congestion at the Seams” White Paper ) methodology be utilized to calculate the portion of parallel flows on any Constrained Facility due to Network Integration (NI) transmission service and service to Native Load (NL) of each Balancing Authority.

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2510 The RTO shall use a “Market Flow Calculation” methodology to calculate the portion of parallel flows on all facilities included in the RTO’s “Coordinated Flowgate List”<sup>3</sup> due to NI service or service to NL of each Balancing Authority.

The “Market Flow Calculation” differs from the Per Generator Method in the following ways:

2515

- The contribution from all market area generators shall be taken into account.
- In the Per Generator Method, only generators having a GLDF greater than 5% are included in the calculation. Additionally, generators are included only when the sum of the maximum generating capacity at a bus is greater than 20 MW. The market flow calculations shall use all positively impacting flows down to 0% with no threshold. Counter flows shall not be included in the market flow calculation.

2520

- The contribution of all market area generators is based on the present output level of each individual unit.
- The contribution of the market area load is based on the present demand at each individual bus.

2525

By expanding on the Per Generator Method, the market flow calculation evolves into a methodology very similar the “Per Generator Method” method, while providing granularity on the order of the most granular method developed by the NERC IDC Granularity Task Force. Counter flows are also calculated and tracked in order to account for and recognize that either the positive market flows may be reduced or counter flows may be increased to provide appropriate relief on a Flowgate. Under this methodology, the use of real-time values in concert with the market flow calculation effectively implements the most accurate and detailed method of the six IDC granularity options<sup>4</sup> considered by the NERC IDC Granularity Task Force.

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<sup>3</sup> See footnote 1. The RTO will conduct sensitivity studies to determine which external Flowgates (outside the RTO’s footprint) are significantly impacted by the market flows of the RTO’s control zones (currently the balancing authorities that exist today in the IDC). The RTO shall perform the four studies (described in the MISO/PJM paper “Managing Congestion to Address Seams,” Version 3.2) to determine which external Flowgates the RTO shall monitor and help control. An external Flowgate selected by one of these studies will be considered a Coordinated Flowgate (CF).

<sup>4</sup> The NERC IDC Granularity Task Force drafted “White Paper on the Future of Congestion Management”, draft version 2.1, completed June of 2004 (located on the NAESB website at [http://www.naesb.org/pdf/weq\\_bps120904a3.doc](http://www.naesb.org/pdf/weq_bps120904a3.doc)). Although the task force originally discussed six options for granularity, three options were included in the paper as possible options.

Units assigned to serve a market area's load do not need to reside within the RTO's market area footprint to be considered in the market flow calculation. However, units outside of the RTO's market area shall not be considered when those units have tags associated with their transfers.

2535 These NNL values shall be provided to the IDC to be included and represented with the calculated NNL values of all non-RTO Balancing Authorities for the purposes identifying and obtaining required NNL relief across a Flowgate in congestion under a TLR Level 5A/5B.

### **5% Curtailment Threshold**

#### **Requirements**

- 2540
- Requirements 3.3.2.2, 3.4.1.1, and 3.6.1 of this document.
  - Requirement 3.10 "Curtailment Threshold" of this document.

#### **Explanation**

2545 **Requirements 3.3.2.2, 3.4.1.1, and 3.6.1 of this document** state the following: "The Reliability Coordinator shall only consider those Interchange Transactions at or above the Curtailment Threshold for which the Interconnection-wide TLR procedure is called.

The Curtailment Threshold stated in requirement 3.10 is "5%".

The RTO intends to use a "Market Flow Calculation" methodology to calculate the amount of energy flowing across all facilities included in the RTO's "Coordinated Flowgate List"<sup>5</sup> that is associated with the operation of the RTO market. This energy is identified as "Market Flow".

2550 The RTO intends to provide to the IDC any market flows with an impact of greater than 0% on a coordinated Flowgate. These market flows shall be represented and made available for curtailment under the appropriate TLR Levels. Hence, for the purposes of curtailment and reallocation, the RTO shall observe an impact threshold of 0% instead of 5% for its market flows across any Flowgate in the RTO Coordinated Flowgate List (see footnote 1).

2555 The reason for this lower threshold is because of the size and scope of a large non-tagged energy market, such as the Multi-Balancing Authority market, and an impact of less than 5% on a Flowgate could still represent a large amount of the total capacity of that Flowgate. Therefore, to limit the Curtailment Threshold on these market flows to 5% could result in a Reliability Coordinator's inability to obtain the amount of relief that is needed to prevent the Flowgate from exceeding its operating limits.

2560

Below is an example of how a market flow curtailment threshold of less than 5% could substantially contribute to congestion on a Flowgate:

#### **Example:**

- 2565
- Energy market flows of 1,000 MW impact Flowgate A by 4% — or 40 MW
  - Flowgate A operating limit is 100 MW
  - Fully 40% of the flow across Flowgate A is not identified and represented in the IDC, and therefore not available for curtailment under the TLR process.

### **Current Operating Reliability**

There are no reliability implications from this regional difference.

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<sup>5</sup> See footnote 1. The RTO shall conduct sensitivity studies to determine which external Flowgates (outside the RTO's footprint) are significantly impacted by the market flows of the RTO's control zones (currently the control areas that exist today in the IDC). The RTO shall perform the 4 studies (described in the MISO/PJM "Managing Congestion to Address Seams" Whitepaper Version 3.2) to determine which external Flowgates the RTO will monitor and help control. An external Flowgate selected by one of these studies will be considered a coordinated Flowgate (CF).



## Section B

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### Southwest Power Pool (SPP) – Enhanced Congestion Management Method (Curtailed/Reload/Reallocation)

The SPP regional difference, which is equivalent to the PJM/MISO waiver, shall apply within the SPP region as follows:

This regional difference impacts actions on behalf of those SPP Balancing Authorities that are participating in the SPP market. This regional difference does not impact those Balancing Authorities for which SPP will continue to act as the Reliability Coordinator but that are not participating in the SPP market.

SPP shall calculate the impacts of SPP market flow on all facilities included in SPP's Coordinated Flowgate List. SPP shall conduct sensitivity studies to determine which external flowgates (outside SPP's footprint) are significantly impacted by the market flows of SPP's control zones (currently the balancing areas that exist today in the IDC). SPP shall perform studies to determine which external flowgates SPP will monitor and help control. An external flowgate selected by one of the studies will be considered a Coordinated Flowgate (CF).

In its calculation, SPP shall consider market flow impacts as the impacts of energy dispatched by the SPP market and self-dispatched energy serving load in the market footprint, but not tagged. SPP shall use a method equivalent to the PJM/MISO Market Flow Calculation methodology identified in the PJM/MISO regional difference. Impacts of tagged transactions representing delivery of energy not dispatched by the SPP market and energy dispatched by the market but delivered outside the footprint will not be included in market flow.

SPP shall separate the market flow impacts for current hour and next hour into their appropriate priorities and shall provide those market flow impacts to the IDC. The market flows will be represented in the IDC and made available for curtailment under the appropriate TLR Levels. The market flow impacts will not be represented by conventional interchange transaction tags.

The SPP method will impact the following sections of the TLR Procedure:

**Network and Native Load (NNL) Calculations** — The SPP regional difference modifies Section A of this appendix for the SPP region.

Section A of this appendix requires that the “Per Generator Method without Counter Flow” methodology be utilized to calculate the portion of parallel flows on any Constrained Facility due to Network Integration (NI) transmission service and service to Native Load (NL) of each balancing authority.

SPP shall use a “Market Flow Calculation” methodology to calculate the portion of parallel flows on all facilities included in the RTO's “Coordinated Flowgate List” due to NI service or service to NL of each balancing authority.

#### **The Market Flow Calculation differs from the Per Generator Method in the following ways:**

- The contribution from all market area generators will be taken into account.
- In the Per Generator Method, only generators having a GLDF greater than 5% are included in the calculation. Additionally, generators are included only when the sum of the maximum generating capacity at a bus is greater than 20 MW. The market flow calculations will use all positively impacting flows down to 0% with no threshold. Counter flows will not be included in the market flow calculation.
- The contribution of all market area generators is based on the present output level of each individual unit.
- The contribution of the market area load is based on the present demand at each individual bus.

By expanding on the Per Generator Method, the market flow calculation evolves into a methodology very similar to the “Per Generator Method” method, while providing increased Interchange Distribution Calculator (IDC) granularity. Counter flows are also calculated and tracked in order to account for and recognize that either the positive market flows may be reduced or counter flows may be increased to provide appropriate relief on a flowgate.

These NNL values will be provided to the IDC to be included and represented with the calculated NNL values of other Balancing Authorities for the purposes of identifying and obtaining required NNL relief across a flowgate in congestion under a TLR Level 5A/5B.

**Pro Rata Curtailment of Non-Firm Market Flow Impacts** — The SPP regional difference modifies Section A for the SPP region.

NAESB Appendix C “Transaction Curtailment Formula” of this document details the formula used to apply a weighted impact to each non-firm tagged Interchange Transaction (Priorities 1 thru 6) for the purposes of Curtailment by the IDC. For the purpose of Curtailment, the non-firm market flow impacts (Priorities 2 and 6) submitted to the IDC by SPP should be curtailed pro-rata as is done for Interchange Transaction using firm transmission service. This is because several of the values needed to assign a weighted impact using the process listed in Appendix C will not be available:

- Distribution Factor (no tag to calculate this value from)
- Impact on Interface value (cannot be calculated without Distribution Factor)
- Impact Weighting Factor (cannot be calculated without Distribution Factor)
- Weighted Maximum Interface Reduction (cannot be calculated without Distribution Factor)
- Interface Reduction (cannot be calculated without Distribution Factor)
- Transaction Reduction (cannot be calculated without Distribution Factor)

While the non-firm market flow impacts submitted to the IDC are to be curtailed pro rata, the impacting non-firm tagged Interchange Transactions could still use the existing processes to assign the weighted impact value.

**Assignment of Sub-Priorities** — The SPP regional difference modifies NERC’s Attachment 1-IRO-006-1 IDC Reference Document “How the IDC Handles Reallocation”, Section E2 “Timing Requirements”, for the SPP region and requirements 3.3 and 3.6 of this business practice standard.

Under the header “IDC Calculations and Reporting” in Section E2 of the IDC Reference Document NERC IRO-006, IDC Reference Document to Attachment 1-IRO-006-1, the following requirement exists: “In a TLR Level 3A the Interchange Transactions using Non-firm Transmission Service in a given priority will be further divided into four sub-priorities, based on current schedule, current active schedule (identified by the submittal of a tag ADJUST message), next-hour schedule, and tag status. Solely for the purpose of identifying which Interchange Transactions to be loaded under a TLR 3A, various MW levels of an Interchange Transaction may be in different sub-priorities. The sub-priorities are shown in the following table:

<b>Priority</b>	<b>Purpose</b>	<b>Explanation and Conditions</b>
S1	To allow a flowing Interchange Transaction to maintain or reduce its current MW amount in accordance with its energy profile.	The MW amount is the lowest between currently flowing MW amount and the next-hour schedule. The currently flowing MW amount is determined by the e-tag ENERGY PROFILE and ADJUST tables. If the calculated amount is negative, zero is used instead.
S2	To allow a flowing Interchange Transaction that has been curtailed or halted by TLR to reload to the <i>lesser</i> of its current-hour MW amount or next-hour schedule in accordance with its energy profile.	The Interchange Transaction MW amount used is determined through the e-tag ENERGY PROFILE and ADJUST tables. If the calculated amount is negative, zero is used instead.
S3	To allow a flowing Transaction to increase from its current-hour schedule to its next-hour schedule in accordance with its energy profile.	The MW amounts used in this sub-priority is determined by the e-tag ENERGY PROFILE table. If the calculated amount is negative, zero is used instead.

S4	To allow a Transaction that had never started and was submitted to the Tag Authority after the TLR (level 2 or higher) has been declared to begin flowing (i.e., the Interchange Transaction never had an active MW and was submitted to the IDC <i>after</i> the first TLR Action of the TLR Event had been declared.)	The Transaction would not be allowed to start until all other Interchange Transactions submitted prior to the TLR with the same priority have been (re)loaded. The MW amount used in this sub-priority is the next-hour schedule determined by the e-tag ENERGY PROFILE table.
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SPP shall use a “Market Flow Calculation” methodology to calculate the amount of energy flowing across all facilities included in the RTO’s “Coordinated Flowgate List” that is associated with the operation of the SPP market. This energy is identified as “market flow.”

These market flow impacts for current hour and next hour will be separated into their appropriate priorities and provided to the IDC by SPP. The market flows will then be represented and made available for curtailment under the appropriate TLR Levels.

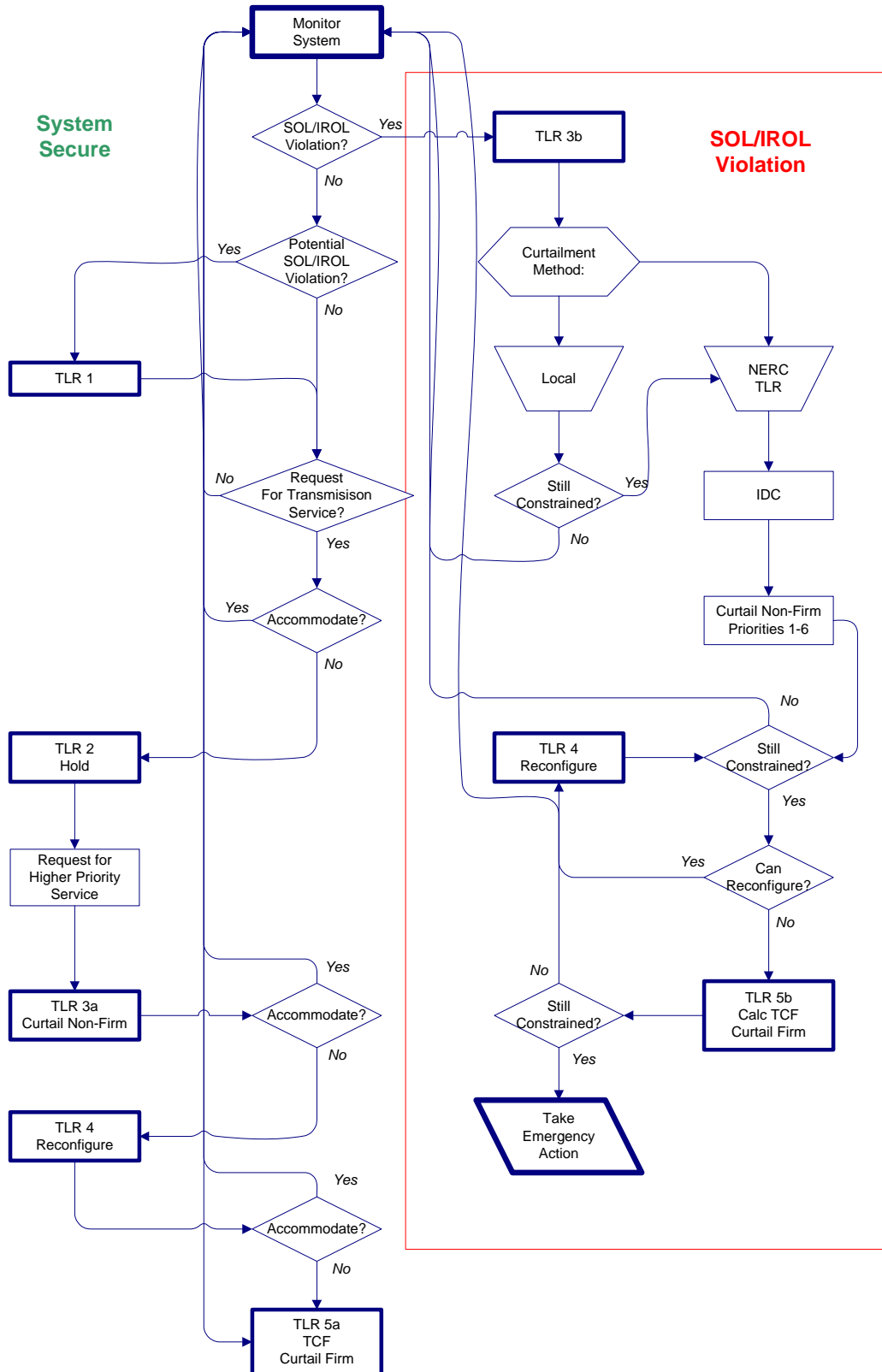
Even though these market flow impacts (separated into appropriate priorities) will not be represented by conventional “tags,” the impacts and their desired levels will still be provided to the IDC for current hour and next hour. Therefore, for the purposes of reallocation, a sub-priority (S1 thru S4) should be assigned to these market flow impacts by the NERC IDC as follows, using comparable logic as would be used if the impacts were in fact tagged transactions.

Priority	Purpose	Explanation and Conditions
S1	To allow existing market flow to maintain or reduce its current MW amount.	The currently flowing MW amount is the amount of market flow existing after the RTO has recognized the constraint for which TLR has been called. If the calculated amount is negative, zero is used instead.
S2	To allow market flow that has been curtailed or halted by TLR to reload to its desired amount for the current-hour.	This is the difference between the current hour unconstrained market flow and the current market flow. If the current-hour unconstrained market flow is not available, the IDC will use the most recent market flow since the TLR was first issued or, if not available, the market flow at the time the TLR was first issued.
S3	To allow a market flow to increase to its next-hour desired amount.	This is the difference between the next hour and current hour unconstrained market flow.

# [TAB 7 – NERC APPENDICES]

## NERC Appendix A – Transaction Management and Curtailment Process

This flowchart depicts an overview of the Transaction Management and Curtailment process. Detailed decisions are not shown.



PLEASE NOTE: items designated for inclusion in the NAESB TLR business practice following completion of the standard revision are highlighted in gray. Items in yellow will be recommended to be an Attachment 2 to IRO-006-4 at a later time. Items in blue will be recommended for retirement.

## Attachment 1-IRO-006

### Transmission Loading Relief Procedure — Eastern Interconnection

#### Purpose

This standard defines procedures for curtailment and reloading of Interchange Transactions to relieve overloads on transmission facilities modeled in the Interchange Distribution Calculator. This process is defined in the requirements below, and is depicted in Appendix A. Examples of curtailment calculations using these procedures are contained in Appendix B.

#### Applicability

This standard only applies to the Eastern Interconnection.

#### 1. Transmission Loading Relief (TLR) Procedure

**1.1. Initiation only by Reliability Coordinator.** A Reliability Coordinator shall be the only entity authorized to initiate the TLR Procedure and shall do so at 1) the Reliability Coordinator’s own request, or 2) upon the request of a Transmission Operator.

The flexibility for ISOs and RTOs to use redispatch is contained explicitly in the NAESB business practice Section 1.3.

**1.2. Mitigating transmission constraints.** A Reliability Coordinator may utilize the TLR Procedure to mitigate potential or existing System Operating Limit (SOL) violations or to prevent Interconnection Reliability Operating Limit (IROL) violations on any transmission facility modeled in the IDC. However, the TLR procedure is an inappropriate and ineffective tool as a sole means to mitigate existing IROL violations. Effective alternatives to the use of the TLR procedure in situations involving an existing IROL violation include: reconfiguration, redispatch, and load shedding outside the TLR process.

Comment: see FERC Order No. 693 paragraph 964 regarding recommendation for using tools other than TLR to mitigate an actual IROL.

**1.2.1. Requesting relief on tie facilities.** Any Transmission Operator who operates the tie facility shall be allowed to request relief from its Reliability Coordinator.

**1.2.1.1. Interchange Transaction priority on tie facilities.** The priority of the Interchange Transaction(s) to be curtailed shall be determined by the Transmission Service reserved on the Transmission Service Provider’s system who requested the relief. (*Section 2.1 of NAESB Transmission Loading Relief Business Practice*)

**1.3. Order of TLR Levels and taking emergency action.** The Reliability Coordinator shall not be required to follow the TLR Levels in their numerical order (Section 2, “TLR Levels”). Furthermore, if a Reliability Coordinator deems that a transmission loading condition could jeopardize Bulk Electric System reliability, the Reliability Coordinator shall have the authority to enter TLR Level 6 directly, and immediately direct the Balancing Authorities or Transmission Operators to take such actions as redispatching generation, or reconfiguring transmission, or reducing load to mitigate the critical

condition until Interchange Transactions can be reduced utilizing the TLR Procedure or other methods to return the system to a secure state.

- 1.4. **Notification of TLR Procedure implementation.** The Reliability Coordinator initiating the use of the TLR Procedure shall notify other Reliability Coordinators and Balancing Authorities and Transmission Operators, and must post the initiation and progress of the TLR event on the appropriate NERC web page(s).
  - 1.4.1. **Notifying other Reliability Coordinators.** The Reliability Coordinator initiating the TLR Procedure shall inform all other Reliability Coordinators via the Reliability Coordinator Information System (RCIS) that the TLR Procedure has been implemented.
    - 1.4.1.1. **Actions expected.** The Reliability Coordinator initiating the TLR Procedure shall indicate the actions expected to be taken by other Reliability Coordinators.
  - 1.4.2. **Notifying Transmission Operators and Balancing Authorities.** The Reliability Coordinator shall notify Transmission Operators and Balancing Authorities in its Reliability Area when entering and leaving any TLR level.
  - 1.4.3. **Notifying Balancing Authorities.** The Reliability Coordinator for the sink Balancing Authority shall be responsible for directing the Sink Balancing Authority to curtail the Interchange Transactions as specified by the Reliability Coordinator implementing the TLR Procedure.
    - 1.4.3.1. **Notification order.** Within a Transmission Service Priority level, the Sink Balancing Authorities whose Interchange Transactions have the largest impact on the Constrained Facilities shall be notified first if practicable.
  - 1.4.4. **Updates.** At least once each hour, or when conditions change, the Reliability Coordinator implementing the TLR Procedure shall update all other Reliability Coordinators (via the RCIS). Transmission Operators and Balancing Authorities who have had Interchange Transactions impacted by the TLR will be updated by their Reliability Coordinator.
- 1.5. **Obligations.** All Reliability Coordinators shall comply with the request of the Reliability Coordinator who initiated the TLR Procedure, unless the initiating Reliability Coordinator agrees otherwise.
  - 1.5.1. **Use of TLR Procedure with “local” procedures.** A Reliability Coordinator shall be allowed to implement a local transmission loading relief or congestion management procedure simultaneously with an Interconnection-wide procedure. However, the Reliability Coordinator shall be obligated to follow the curtailments as directed by the Interconnection-wide procedure. If the Reliability Coordinator desires to use a local procedure as a substitute for Curtailments as directed by the Interconnection-wide procedure, it may do so only if such use is approved by the NERC Operating Committee. (*Sections 1.1, 1.2, 1.2.11 of NAESB Transmission Loading Relief Business Practice*)
- 1.6. **Consideration of Interchange Transactions.** The administration of the TLR Procedure shall be guided by information obtained from the IDC.

The approval of the NERC Operating Committee is contained in Requirement R3 of draft IRO-006-4 – note that the NERC Operating Committee was replaced with the ‘ERO’.

- 1.6.1. Interchange Transactions not in the IDC.** Reliability Coordinators shall also treat known Interchange Transactions that may not appear in the IDC in accordance with the procedures in this document.
- 1.6.2. Transmission elements not in IDC.** When a Reliability Coordinator is faced with an overload on a transmission element that is not modeled in the IDC, the Reliability Coordinator shall use the best information available to curtail Interchange Transactions in order to operate the system in a reliable manner. The Reliability Coordinator shall use its best efforts to ensure that Interchange Transactions with a Transfer Distribution Factor of less than the Curtailment Threshold on the transmission element not modeled in the IDC are not curtailed.
- 1.6.3. Questionable IDC results.** Any Reliability Coordinator (or Transmission Operator through its Reliability Coordinator) who believes the curtailment list from the IDC for a particular TLR event is incorrect shall use its best efforts to communicate those adjustments necessary to bring the curtailment list into conformance with the principles of this Procedure to the initiating Reliability Coordinator. Causes of questionable IDC results may include:
- Missing Interchange Transactions that are known to contribute to the Constraint.
  - Significant change in transmission system topology.
  - TDF matrix error.

Impacts of questionable IDC results may include:

- Curtailment that would have no effect on, or aggravate the constraint.
- Curtailment that would initiate a constraint elsewhere.

If other Reliability Coordinators are involved in the TLR event, all impacted Reliability Coordinators shall be in agreement before any adjustments to the Curtailment list are made.

- 1.6.4. Curtailment that would cause a constraint elsewhere.** A Reliability Coordinator shall be allowed to exempt an Interchange Transaction from Curtailment if that Reliability Coordinator is aware that the Interchange Transaction Curtailment directed by the IDC would cause a constraint to occur elsewhere. This exemption shall only be allowed after the Reliability Coordinator has consulted with the Reliability Coordinator who initiated the Curtailment.
- 1.6.5. Redispatch options.** The Reliability Coordinator shall ensure that Interchange Transactions that are linked to redispatch options are protected from Curtailment in accordance with the redispatch provisions. (*Section 1.3 of NAESB Transmission Loading Relief Business Practice*)
- 1.6.6. Reallocation.** The Reliability Coordinator shall consider for Reallocation any Transactions of higher priority that meet the approved tag submission deadline during a TLR Level 3A. The Reliability Coordinator shall consider for Reallocation any Transaction using Firm Transmission Service that has met the approved tag submission deadline during a TLR Level 5A. Note Reallocations for Dynamic Schedules are as follows: If an Interchange Transaction is identified as a Dynamic Schedule and the transmission service is considered firm according to the constrained path method, then it will not be held by the IDC during TLR

level 4 or lower. Adjustments to Dynamic Schedules in accordance with INT-004 R5 will not be held under TLR level 4 or lower. (Sections 3.3, 3.3.1, 3.3.1.2, 3.6, and for Dynamic Schedules for levels 4 and lower Sections 3.2.5, 3.3.1.2, 3.4.1.2, and 3.5.2.1 of NAESB Transmission Loading Relief Business Practice)

- 1.7 **IDC updates.** Any Interchange Transaction adjustments or curtailments that result from using this Procedure must be entered into the IDC.
- 1.8 **Logging.** The Reliability Coordinator shall complete the NERC Transmission Loading Relief Procedure Log whenever it invokes TLR Level 2 or above, and send a copy of the log via email to NERC within two business days of the TLR event for posting on the NERC website.
- 1.9 **TLR Event Review.** The Reliability Coordinator shall report the TLR event to the NERC Market Committee and Operating Reliability Subcommittee in accordance with TLR review processes established by NERC as required.
  - 1.9.1. **Providing information.** Transmission Operators and Balancing Authorities within the Reliability Coordinator's Area, and all other Reliability Coordinators, including Transmission Operators and Balancing Authorities within their respective Reliability Areas, shall provide information, as requested by the initiating Reliability Coordinator, in accordance with TLR review processes established by NERC.
  - 1.9.2. **Market Committee reviews.** The Market Committee may conduct reviews of certain TLR events based on the size and number of Interchange Transactions that are affected, the frequency that the TLR Procedure is called for a particular Constrained Facility, or other factors.
  - 1.9.3. **Operating Reliability Subcommittee reviews.** The Operating Reliability Subcommittee shall conduct reviews to ensure proper implementation and for "lessons learned."



## 2. Transmission Loading Relief (TLR) Levels

### Introduction

This section describes the various levels of the TLR Procedure. The description of each level begins with the circumstances that define the TLR Level, followed by the procedures to be followed.

The decision that a Reliability Coordinator makes in selecting a particular TLR Level often depends on the transmission loading condition and whether the Interchange Transaction is using Non-firm Point-to-Point Transmission Service or Firm Point-to-Point Transmission Service. There are further considerations that depend on whether the Constrained Facility is on or off the Contract Path. It is important to note that an Interchange Transaction using Firm Point-to-Point Transmission Service on all Contract Path links is considered a “firm” Interchange Transaction even if the Constrained Facility is off the Contract Path.

### 2.1. TLR Level 1 — Notify Reliability Coordinators of potential SOL or IROL Violations

2.1.1. The Reliability Coordinator shall use the following circumstances to establish the need for TLR Level 1:

- The transmission system is secure.
- The Reliability Coordinator foresees a transmission or generation contingency or other operating problem within its Reliability Area that could cause one or more transmission facilities to approach or exceed their SOL or IROL.

2.1.2. **Notification procedures.** The Reliability Coordinator shall notify all Reliability Coordinators via the Reliability Coordinator Information System (RCIS) as soon as the condition is foreseen. All affected Reliability Coordinators shall check to ensure that Interchange Transactions are posted in the IDC.

### 2.2. TLR Level 2 — Hold transfers at present level to prevent SOL or IROL Violations

2.2.1. The Reliability Coordinator shall use the following circumstances to establish the need for entering TLR Level 2:

- The transmission system is secure.
- One or more transmission facilities are expected to approach, or are approaching, or are at their SOL or IROL.

2.2.2. **Holding procedures.** The Reliability Coordinator shall be allowed to hold the implementation of any additional Interchange Transactions that are at or above the Curtailment Threshold. However, the Reliability Coordinator should allow additional Interchange Transactions that flow across the Constrained Facility if their flow reduces the loading on the Constrained Facility or has a Transfer Distribution Factor less than the Curtailment Threshold. All Interchange Transactions using Firm Point-to-Point Transmission Service shall be allowed to start. (*Sections 3.2.2, 3.2.3, and 3.2.4 of NAESB Transmission Loading Relief Business Practice*)

2.2.3. TLR Level 2 is a transient state, which requires a quick decision to proceed to higher TLR Levels (3 and above) to allow Interchange Transactions to be implemented according to their transmission reservation priority. The time for being in TLR Level 2 should be no more than 30 minutes, with the understanding that there may be circumstances where this time may be exceeded. If the time in TLR Level 2 exceeds 30 minutes, the Reliability Coordinator shall document this action on the TLR Log. *(Sections 3.2.1, 3.2.1.1, and 3.2.1.2 of NAESB Transmission Loading Relief Business Practice)*

**2.3. TLR Level 3a — Reallocation of Transmission Service by curtailing Interchange Transactions using Non-firm Point-to-Point Transmission Service to allow Interchange Transactions using higher priority Transmission Service**

2.3.1. The Reliability Coordinator shall use the following circumstances to establish the need for entering TLR Level 3a:

- The transmission system is secure.
- One or more transmission facilities are expected to approach, or are approaching, or are at their SOL or IROL.
- Transactions using Non-firm Point-to-Point Transmission Service are flowing that are at or above the Curtailment Threshold on those facilities.
- The Transmission Provider has previously approved a higher priority Point-to-Point Transmission Service reservation over which a Transmission Customer wishes to begin an Interchange Transaction.

2.3.2. **Reallocation procedures to allow Interchange Transactions using higher priority Point-to-Point Transmission Service to start.** The Reliability Coordinator with the constraint shall give preference to those Interchange Transactions using Firm Point-to-Point Transmission Service, followed by those using higher priority Non-firm Point-to-Point Transmission Service as specified in Section 3. “Interchange Transaction Curtailment Order.” Interchange Transactions that have been held or curtailed as prescribed in this Section shall be reallocated (reloaded) according to their Transmission Service priorities when operating conditions permit as specified in Section 6. “Interchange Transaction Reallocation During TLR Level 3a and 5a.” *(Sections 3.3 – 3.3.1.2 of NAESB Transmission Loading Relief Business Practice)*

2.3.2.1. The Reliability Coordinator shall displace Interchange Transactions with lower priority Transmission Service using Interchange Transactions having higher priority Non-firm or Firm Transmission Service. *(Sections 3.3.2 and 3.3.2.3 of NAESB Transmission Loading Relief Business Practice)*

2.3.2.2. The Reliability Coordinator shall not curtail Interchange Transactions using Non-firm Transmission Service to allow the start or increase of another Interchange Transaction having the same priority Non-firm Transmission Service. *(Sections 3.3.2.4 of NAESB Transmission Loading Relief Business Practice)*

2.3.2.3. If there are insufficient Interchange Transactions using Non-firm Point-to-Point Transmission Service that can be curtailed to allow for Interchange Transactions using Firm Point-to-Point Transmission Service to begin, the Reliability Coordinator shall proceed to TLR Level

5a. *(Sections 3.3.2.5 of NAESB Transmission Loading Relief Business Practice)*

**2.3.2.4.** The Reliability Coordinator shall reload curtailed Interchange Transactions prior to allowing the start of new or increased Interchange Transactions. *(Sections 3.3.2.6 of NAESB Transmission Loading Relief Business Practice)*

**2.3.2.4.1.** Interchange Transactions whose tags were submitted prior to the TLR Level 2 or Level 3a being called, but were subsequently held from starting, are considered to have been curtailed and thus would be reloaded the same time as the curtailed Interchange Transactions. *(Sections 3.3.2.6.1 of NAESB Transmission Loading Relief Business Practice)*

**2.3.2.5.** The Reliability Coordinator shall fill available transmission capability by reloading or starting eligible Transactions on a pro-rata basis. *(Sections 3.3.3.1 of NAESB Transmission Loading Relief Business Practice)*

**2.3.2.6.** The Reliability Coordinator shall consider transactions whose tags meet the approved tag submission deadline for Reallocation for the upcoming hour. Tags submitted after this deadline shall be considered for Reallocation the following hour. *(Sections 3.3.2.1 and 3.3.2.1.1 of NAESB Transmission Loading Relief Business Practice)*

**2.4. TLR Level 3b — Curtail Interchange Transactions using Non-Firm Transmission Service Arrangements to mitigate a SOL or IROL Violation**

**2.4.1.** The Reliability Coordinator shall use the following circumstances to establish the need for entering TLR Level 3b:

- One or more transmission facilities are operating above their SOL or IROL, or
- Such operation is imminent and it is expected that facilities will exceed their reliability limit unless corrective action is taken, or
- One or more Transmission Facilities will exceed their SOL or IROL upon the removal from service of a generating unit or another transmission facility.
- Transactions using Non-firm Point-to-Point Transmission Service are flowing that are at or above the Curtailment Threshold on those facilities.

**2.4.2. Curtailment procedures to mitigate an SOL or IROL.** The Reliability Coordinator shall curtail Interchange Transactions using Non-firm Point-to-Point Transmission Service that are at or above the Curtailment Threshold as specified in Section 3, “Interchange Transaction Curtailment Order” in the current hour to mitigate an SOL or IROL as well as reallocating, in accordance with Section 6 of this document, to a determined flow for the top of the next hour.

The Reliability Coordinator shall allow Interchange Transactions using Firm Point-to-Point Transmission Service to start if they are submitted to the IDC within specific time limits as explained in Section 7 “Interchange Transaction Curtailments during TLR Level 3b.” *(Sections 3.4.2 and 3.4.1 of NAESB Transmission Loading Relief Business Practice)*

**2.5. TLR Level 4 — Reconfigure Transmission**

**2.5.1.** The Reliability Coordinator shall use the following circumstances to establish the need for entering TLR Level 4:

- One or more Transmission Facilities are above their SOL or IROL, or
- Such operation is imminent and it is expected that facilities will exceed their reliability limit unless corrective action is taken.

**2.5.2. Holding new Interchange Transactions.** The Reliability Coordinator shall hold all new Interchange Transactions using Non-firm Point-to-Point Transmission Service that are at or above the Curtailment Threshold during the period of the SOL or IROL Violation. The Reliability Coordinator shall allow Interchange Transactions using Firm Point-to-Point Transmission Service to start if they are submitted to the IDC by 25 minutes past the hour or the time at which the TLR Level 4 is called, whichever is later. See Appendix E, Section E2 – Timing Requirements. (*Sections 3.5, 3.5.1, and 3.5.2 of NAESB Transmission Loading Relief Business Practice*)

**2.5.3. Reconfiguration procedures.** The issuance of a TLR Level 4 shall result in the curtailment, in the current hour and the next hour, of all Interchange Transactions using Non-firm Point-to-Point Transmission Service that are at or above the Curtailment Threshold that impact the Constrained Facilities. If a SOL or IROL violation is imminent or occurring, the Reliability Coordinator(s) shall request that the affected Transmission Operators reconfigure transmission on their system, or arrange for reconfiguration on other transmission systems, to mitigate the constraint. Specific details are explained in Section 4, “Principles for Mitigating Constraints On and Off the Contract Path”.

**2.6. TLR Level 5a — Reallocation of Transmission Service by curtailing Interchange Transactions using Firm Point-to-Point Transmission Service on a pro rata basis to allow additional Interchange Transactions using Firm Point-to-Point Transmission Service**

**2.6.1.** The Reliability Coordinator shall use the following circumstances to establish the need for entering TLR Level 5a:

- The transmission system is secure.
- One or more transmission facilities are at their SOL or IROL.
- All Interchange Transactions using Non-firm Point-to-Point Transmission Service that are at or above the Curtailment Threshold have been curtailed.
- The Transmission Provider has been requested to begin an Interchange Transaction using previously arranged Firm Transmission Service that would result in a SOL or IROL violation.
- No further transmission reconfiguration is possible or effective.

**2.6.2. Reallocation procedures to allow new Interchange Transactions using Firm Point-to-Point Transmission Service to start.** The Reliability Coordinator shall use the following three-step process for Reallocation of Interchange Transactions using Firm Point-to-Point Transmission Service: (*Section 3.6.2 of NAESB Transmission Loading Relief Business Practice*)

**2.6.2.1. Step 1 — Identify available redispatch options.** The Reliability Coordinator shall assist the Transmission Operator(s) in identifying those known redispatch options that are available to the Transmission Customer that will mitigate the loading on the Constrained Facilities. If such redispatch options are deemed insufficient to mitigate loading on the Constrained Facilities, the Reliability Coordinator shall proceed to implement these options while proceeding to Steps 2 and 3 below. *(Sections 3.6.2.1 and 3.6.2.1.1 of NAESB Transmission Loading Relief Business Practice)*

**2.6.2.2. Step 2 —** The Reliability Coordinator shall calculate the percent of the overload on the Constrained Facility caused by both Firm Point-to-Point Transmission Service (at or above the Curtailment Threshold) and the Transmission Provider's Network Integration Transmission Service and Native Load, as required by the Transmission Provider's filed tariff. This is described in Section 5, "Parallel Flow Calculation Procedure for Reallocating or Curtailing Firm Transmission Service." *(Section 3.6.2.2 of NAESB Transmission Loading Relief Business Practice)*

**2.6.2.3. Step 3 — Curtail Interchange Transactions using Firm Transmission Service.** The Reliability Coordinator shall curtail or reallocate on a pro-rata basis (based on the MW level of the MW total to all such Interchange Transactions), those Interchange Transactions as calculated in Section 7.2.2 over the Constrained Facilities. (See also Section 6, "Interchange Transaction Reallocation during TLR 3a and 5a.") The Reliability Coordinator shall assist the Transmission Provider in curtailing Transmission Service to Network Integration Transmission Service customers and Native Load if such curtailments are required by the Transmission Provider's tariff. Available redispatch options will continue to be implemented. *(Sections 3.6.2.3, 3.6.2.3.1, and 3.6.2.3.2 of NAESB Transmission Loading Relief Business Practice)*

**2.7. TLR Level 5b — Curtail Interchange Transactions using Firm Point-to-Point Transmission Service to mitigate an SOL or IROL violation**

**2.7.1.** The Reliability Coordinator shall use following circumstances to establish the need for entering TLR Level 5b:

- One or more Transmission Facilities are operating above their SOL or IROL, or
- Such operation is imminent, or
- One or more Transmission Facilities will exceed their SOL or IROL upon the removal from service of a generating unit or another transmission facility.
- All Interchange Transactions using Non-firm Point-to-Point Transmission Service that are at or above the Curtailment Threshold have been curtailed.
- No further transmission reconfiguration is possible or effective.

**2.7.2.** The Reliability Coordinator shall use the following three-step process for curtailment of Interchange Transactions using Firm Point-to-Point Transmission Service: *(Sections 3.7 and 3.7.1 of NAESB Transmission Loading Relief Business Practice)*

**2.7.2.1. Step 1 — Identify available redispatch options.** The Reliability Coordinator shall assist the Transmission Operator(s) in identifying those known redispatch options that are available to the Transmission Customer that will mitigate the loading on the Constrained Facilities. If such redispatch options are deemed insufficient to mitigate loading on the Constrained Facilities, the Reliability Coordinator shall proceed to implement these options while proceeding to Steps 2 and 3 below. *(Sections 3.7.1.1 and 3.7.1.1.1 of NAESB Transmission Loading Relief Business Practice)*

**2.7.2.2. Step 2 —** The Reliability Coordinator shall calculate the percent of the overload on the Constrained Facility caused by both Firm Point-to-Point Transmission Service (at or above the Curtailment Threshold) and the Transmission Provider's Network Integration Transmission Service and Native Load, as required by the Transmission Provider's filed tariff. This is described in Section 5, "Parallel Flow Calculation Procedure for Reallocating or Curtailing Firm Transmission Service." *(Sections 3.7.1.2 of NAESB Transmission Loading Relief Business Practice)*

**2.7.2.3. Step 3 — Curtailment of Interchange Transactions using Firm Transmission Service.** At this point, the Reliability Coordinator shall begin the process of curtailing Interchange Transactions as calculated in Section 2.7.2.2 over the Constrained Facilities using Firm Point-to-Point Transmission Service until the SOL or IROL violation has been mitigated. The Reliability Coordinator shall assist the Transmission Provider in curtailing Transmission Service to Network Integration Transmission Service customers and Native Load if such curtailments are required by the Transmission Providers' tariff. Available redispatch options will continue to be implemented. *(Sections 3.7.1.3 and 3.7.1.3.1, and 3.7.1.3.2 of NAESB Transmission Loading Relief Business Practice)*

**2.8. TLR Level 6 — Emergency Procedures**

**2.8.1.** The Reliability Coordinator shall use following circumstances to establish the need for entering TLR Level 6:

- One or more Transmission Facilities are above their SOL or IROL.
- One or more Transmission Facilities will exceed their SOL or IROL upon the removal from service of a generating unit or another transmission facility.

**2.8.2. Implementing emergency procedures.** If the Reliability Coordinator deems that transmission loading is critical to Bulk Electric System reliability, the Reliability Coordinator shall immediately direct the Balancing Authorities and Transmission Operators in its Reliability Area to redispatch generation, or reconfigure transmission, or reduce load to mitigate the critical condition until Interchange Transactions can be reduced utilizing the TLR Procedures or other procedures to return the system to a secure state. All Balancing Authorities and Transmission Operators shall comply with all requests from their Reliability Coordinator.

**2.9. TLR Level 0 — TLR concluded**

**2.9.1. Interchange Transaction restoration and notification procedures.** The Reliability Coordinator initiating the TLR Procedure shall notify all Reliability

Coordinators within the Interconnection via the RCIS when the SOL or IROL violations are mitigated and the system is in a reliable state, allowing Interchange Transactions to be reestablished at its discretion. Those with the highest transmission priorities shall be reestablished first if possible.

### 3. Interchange Transaction Curtailment Order for use in TLR Procedures

#### 3.1. Priority of Interchange Transactions

3.1.1. Interchange Transaction curtailment priority shall be determined by the Transmission Service reserved over the constrained facility(ies) as follows:

##### Transmission Service Priorities

- Priority 0. Next-hour Market Service — NX\*
- Priority 1. Service over secondary receipt and delivery points — NS
- Priority 2. Non-Firm Point-to-Point Hourly Service — NH
- Priority 3. Non-Firm Point-to-Point Daily Service — ND
- Priority 4. Non-Firm Point-to-Point Weekly Service — NW
- Priority 5. Non-Firm Point-to-Point Monthly Service — NM
- Priority 6. Network Integration Transmission Service from sources not designated as network resources — NN
- Priority 7. Firm Point-to-Point Transmission Service — F and Network Integration Transmission Service from Designated Resources — FN (*Section 2.1 of NAESB Transmission Loading Relief Business Practice*)

3.1.2. The curtailment priority for Interchange Transactions that do not have a Transmission Service reservation over the constrained facility(ies) shall be defined by the lowest priority of the individual reserved transmission segments. (*Section 2.2.1 of NAESB Transmission Loading Relief Business Practice*)

#### 3.2. Curtailment of Interchange Transactions Using Non-firm Transmission Service

3.2.1. The Reliability Coordinator shall direct the curtailment of Interchange Transactions using Non-firm Transmission Service that are at or above the Curtailment Threshold for the following TLR Levels (*Section 3.3 of the NAESB Transmission Loading Relief Business Practice*):

3.2.1.1. TLR Level 3a. Enable Interchange Transactions using a higher Transmission reservation priority to be implemented, or (*Section 3.3 of NAESB Transmission Loading Relief Business Practice*)

3.2.1.2. TLR Level 3b. Mitigate an SOL or IROL violation.

#### 3.3. Curtailment of Interchange Transactions Using Firm Transmission Service

3.3.1. The Reliability Coordinator shall direct the curtailment of Interchange Transactions using Firm Transmission Service that are at or above the Curtailment Threshold for the following TLR Levels:

3.3.1.1. TLR Level 5a. Enable additional Interchange Transactions using Firm Point-to-Point Transmission Service to be implemented after all Interchange Transactions using Non-firm Point-to-Point Service have been curtailed, or



**3.3.1.2. TLR Level 5b.** Mitigate a SOL or IROL violation that remains after all Interchange Transactions using Non-firm Transmission Service has been curtailed under TLR Level 3b, and following attempts to reconfigure transmission under TLR Level 4.

#### 4. Mitigating Constraints On and Off the Contract Path during TLR

##### Introduction

Reserving Transmission Service for an Interchange Transaction along a Contract Path may not reflect the actual distribution of the power flows over the transmission network from generation source to load sink. Interchange Transactions arranged over a Contract Path may, therefore, overload transmission elements on other electrically parallel paths.

The curtailment priority of an Interchange Transaction depends on whether the Constrained Facility is on or off the Contract Path as detailed below.

##### 4.1. Constraints ON the Contract Path (*Sections 2.2 of NAESB Transmission Loading Relief Business Practice*)

4.1.1. The Reliability Coordinator initiating TLR shall consider the entire Interchange Transaction non-firm if the transmission link (i.e., a segment on the Contract Path) on the Constrained Facility is Non-firm Point-to-Point Transmission Service, even if other links in the Contract Path are firm. When the Constrained Facility is on the Contract Path, the Interchange Transaction takes on the Transmission Service Priority of the Transmission Service link with the Constrained Facility regardless of the Transmission Service Priority on the other links along the Contract Path. (*Section 2.2.1.1 of NAESB Transmission Loading Relief Business Practice*)

**Discussion.** The Transmission Operator simply has to call its Reliability Coordinator, request the TLR Procedure be initiated, and allow the curtailments of all Interchange Transactions that are at or above the Curtailment Threshold to progress until the relief is realized. Firm Point-to-Point Transmission Service links elsewhere in the Contract Path do not obligate Transmission Providers providing Non-firm Point-to-Point Transmission Service to treat the transaction as firm. For curtailment purposes, the Interchange Transaction's priority will be the priority of the Transmission Service link with the Constrained Facility. (See Requirement 4.1.2 below.)

4.1.2. The Reliability Coordinator initiating TLR shall consider the entire Interchange Transaction firm if the transmission link on the Constrained Facility is Firm Point-to-Point Transmission Service, even if other links in the Contract Path are non-firm. (*Section 2.2.1.2 of NAESB Transmission Loading Relief Business Practice*)

**Discussion.** The curtailment priority of an Interchange Transaction on a Contract Path link is not affected by the Transmission Service Priorities arranged with other links on the Contract Path. If the Constrained Facility is on a Firm Point-to-Point Transmission Service Contract Path link, then the curtailment priority of the Interchange Transaction is considered firm regardless of the Transmission Service arrangements elsewhere on the Contract Path. If the Transmission Provider provides its services under the FERC pro forma tariff, it may also be obligated to offer its Transmission Customer alternate receipt and delivery points, thus allowing the customer to curtail its Transmission Service over the Constrained Facilities.

**4.2. Constraints OFF the Contract Path** (*Section 2.3 of NAESB Transmission Loading Relief Business Practice*)

**4.2.1.** The Reliability Coordinator initiating TLR shall consider the entire Interchange Transaction non-firm if none of the transmission links on the Contract Path are on the Constrained Facility and if any of the transmission links on the Contract Path are Non-firm Point-to-Point Transmission Service; the Interchange Transaction shall take on the lowest Transmission Service Priority of all Transmission Service links along the Contract Path. (*Section 2.3.1.1 of NAESB Transmission Loading Relief Business Practice*)

**Discussion.** An Interchange Transaction arranged over a Contract Path where one or more individual links consist of Non-firm Point-to-Point Transmission Service is considered to be a non-firm Interchange Transaction for Constrained Facilities off the Contract Path. Sufficient Interchange Transactions that are at or above the Curtailment Threshold will be curtailed before any Interchange Transactions using Firm Point-to-Point Transmission Service are curtailed. The priority level for curtailment purposes will be the lowest level of Transmission Service arranged for on the Contract Path.

**4.2.2.** The Reliability Coordinator initiating TLR shall consider the entire Interchange Transaction firm if all of the transmission links on the Contract Path are Firm Point-to-Point Transmission Service, even if none of the transmission links are on the Constrained Facility and shall not be curtailed to relieve a Constraint off the Contract Path until all non-firm Interchange Transactions that are at or above the Curtailment Threshold have been curtailed. (*Section 2.3.1.2 of NAESB Transmission Loading Relief Business Practice*)

**Discussion.** If the entire Contract Path is Firm Point-to-Point Transmission Service, then the TLR procedure will treat the Interchange Transaction as firm, even for Constraints off the Contract Path, and will not curtail that Interchange Transaction until all non-firm Interchange Transactions that are at or above the Curtailment Threshold have been curtailed. However, Transmission Providers off the Contract Path are not obligated to reconfigure their transmission system or provide other congestion management procedures unless special arrangements are in place. Because the Interchange Transaction is considered firm everywhere, the Reliability Coordinator may attempt to arrange for Transmission Operators to reconfigure transmission or provide other congestion management options or Balancing Authorities to redispatch, even if they are off the Contract Path, to try to avoid curtailing the Interchange Transaction that is using the Firm Point-to-Point Transmission Service.

## **5. Parallel Flow Calculation Procedure for Reallocating or Curtailing Firm Transmission Service during TLR**

### **Introduction**

The provision of Point-to-Point Transmission Service, Network Integration Transmission Service and service to Native Load results in parallel flows on the transmission network of other Transmission Operators. When a transmission facility becomes constrained curtailment of Interchange Transactions is required to allow Interchange Transactions of higher priority to be scheduled (Reallocation) or to provide transmission loading relief (Curtailment). An Interchange Transaction is considered for Reallocation or Curtailment if its Transfer Distribution Factor (TDF) exceeds the TLR Curtailment Threshold.

In compliance with the Transmission Service Provider tariffs, Interchange Transactions using Non-firm Point-to-Point Transmission Service are curtailed first (TLR Level 3a and 3b), followed by transmission reconfiguration (TLR Level 4), and then the curtailment of Interchange Transactions using Firm Point-to-Point Transmission Service, Network Integration Transmission Service and service to Native Load (TLR Level 5a and 5b). Curtailment of Firm Point-to-Point Transmission Service shall be accompanied by the comparable curtailment of Network Integration Transmission Service and service to Native Load to the degree that these three Transmission Services contribute to the Constraint.

### **5.1. Requirements**

A methodology, called the Per Generator Method without Counter Flow, or simply the Per Generator Method, has been programmed into the IDC to calculate the portion of parallel flows on any Constrained Facility due to service to Native Load of each Balancing Authority. The following requirements are necessary to assure comparable Reallocation or Curtailment of firm Transmission Service:

- 5.1.1.** The Reliability Coordinator initiating a curtailment shall identify for curtailment all firm Transmission Services (i.e. Point-to-Point, Network Integration and service to Native Load) that contribute to the flow on any Constrained Facility by an amount greater than or equal to the Curtailment Threshold on a pro rata basis. *(Section 3.11 of NAESB Transmission Loading Relief Business Practice)*
- 5.1.2.** For Firm Point-to-Point Transmission Services, the Transfer Distribution Factors must be greater than or equal to the Curtailment Threshold. *(Sections 3.11.1 and 3.11.1.1 of NAESB Transmission Loading Relief Business Practice)*
- 5.1.3.** For Network Integration Transmission Service and service to Native Load, the Generator-To-Load Distribution Factors must be greater than or equal to the Curtailment Threshold. *(Sections 3.11 and 3.11.1.1 of NAESB Transmission Loading Relief Business Practice)*
- 5.1.4.** The Per Generator Method shall assign the amount of Constrained Facility relief that must be achieved by each Balancing Authority's Network Integration Transmission Service or service to Native Load. It shall not specify how the reduction will be achieved. *(Sections 3.11.2.1, 3.11.2.1.1, 3.11.2.1.2, 3.11.2.1.3 and 3.11.2.1.4 of NAESB Transmission Loading Relief Business Practice)*
- 5.1.5.** All Balancing Authorities in the Eastern Interconnection shall be obligated to achieve the amount of Constrained Facility relief assigned to them by the Per Generator Method. *(Section 3.11.2.8 of NAESB Transmission Loading Relief Business Practice)*

**5.1.6.** The implementation of the Per Generator Method shall be based on transmission and generation information that is readily available. *(Section 3.11.2 of NAESB Transmission Loading Relief Business Practice)*

**5.2. Calculation Method**

The calculation of the flow on a Constrained Facility due to Network Integration Transmission Service or service to Native Load shall be based on the Generation Shift Factors (GSFs) of a Balancing Authority's assigned generation and the Load Shift Factors (LSFs) of its native load, relative to the system swing bus. The GSFs shall be calculated from a single bus location in the IDC. The IDC shall report all generators assigned to native load for which the GLDF is greater than or equal to the Curtailment Threshold. *(all Sections 3.11.2.2 of NAESB Transmission Loading Relief Business Practice)*

## 6. Interchange Transaction Reallocation During TLR Levels 3a and 5a

### Introduction

This section provides the details for implementing TLR Levels 3a and 5a, both of which provide a means for Reallocation of Transmission Service.

**TLR Level 3a** accomplishes Reallocation by curtailing Interchange Transactions using Non-firm Point-to-Point Transmission Service to allow Interchange Transactions using higher priority Non-firm or Firm Point-to-Point Transmission Service to start. (See **Requirement 2.3, “TLR Level 3a.”**) When a TLR Level 3a is in effect, Reliability Coordinators shall reallocate Interchange Transactions according to the Transactions’ Transmission Service Priorities. Reallocation also includes the orderly reloading of Transactions by priority when conditions permit curtailed Transactions to be reinstated. [Recommended for deletion since this is redundant with NERC 2.3 and NAESB 3.3]

**TLR Level 5a** accomplishes Reallocation by curtailing Interchange Transactions using Firm Point-to-Point Transmission Service on a pro-rata basis to allow new Interchange Transactions using Firm Point-to-Point Transmission Service to begin, also on a pro-rata basis. (See **Requirement 2.6, “TLR Level 5a.”**) [Recommended for deletion since this is redundant with NERC 2.6 and NAESB 3.6]

### 6.1. Requirements

The basic requirements for Transaction Reallocation are as follows:

- 6.1.1.** When identifying transactions for Reallocation the Reliability Coordinator shall normally only involve Curtailments of Interchange Transactions using Non-firm Point-to-Point Transmission Service during TLR 3a. However, Reallocation may be used during TLR 5a to allow the implementation of additional Interchange Transactions using Firm Transmission Service on a pro-rata basis. (*Section 3 introduction, 3.3, and 3.6 of NAESB Transmission Loading Relief Business Practice*)
- 6.1.2.** When identifying transactions for Reallocation, the Reliability Coordinator shall only consider those Interchange Transactions at or above the Curtailment Threshold for which a TLR 2 or higher is called. (*Section 3.3.2.2 of NAESB Transmission Loading Relief Business Practice, which refers to Interconnection-wide procedure rather than TLR 2*)
- 6.1.3.** When identifying transactions for Reallocation, the Reliability Coordinator shall displace Interchange Transactions utilizing lower priority Transmission Service with Interchange Transactions utilizing higher Transmission Service Priority. (*Section 3.3.2.3 of NAESB Transmission Loading Relief Business Practice*)
- 6.1.4.** When identifying transactions for Reallocation, the Reliability Coordinator shall not curtail Interchange Transactions using Non-firm Transmission Service to allow the start or increase of another transaction having the same Non-Firm Transmission Service Priority (marginal “bucket”). (*Section 3.3.2.4 of NAESB Transmission Loading Relief Business Practice*)
- 6.1.5.** When identifying transactions for Reallocation, the Reliability Coordinator shall reload curtailed Interchange Transactions prior to starting new or increasing

existing Interchange Transactions. (*Section 3.3.2.6 of NAESB Transmission Loading Relief Business Practice*)

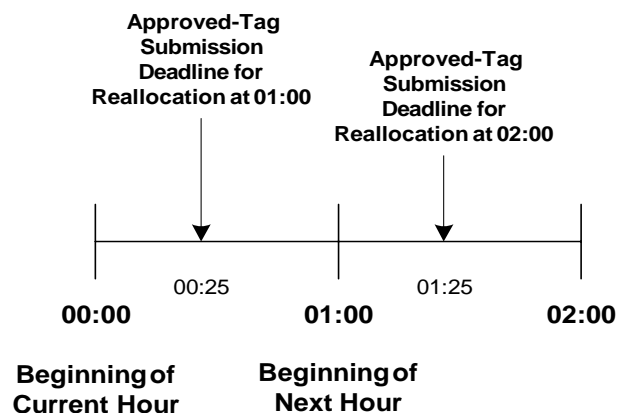
- 6.1.6.** Interchange Transactions whose tags were submitted prior to the TLR 2 or 3a being called, but were subsequently held from starting because they failed to meet the approved tag submission deadline for Reallocation (see Section 6.2, “Communications and Timing Requirements”), shall be considered to have been curtailed and thus would be eligible for reload at the same time as the curtailed Interchange Transaction. (*Section 3.3.2.6.1 of NAESB Transmission Loading Relief Business Practice*)
- 6.1.7.** The Reliability Coordinator shall reload or start all eligible Transactions on a pro-rata basis. (*intro to TLR level 5a in 3.6, and 3.3.3 Section of NAESB Transmission Loading Relief Business Practice*)
- 6.1.8.** Interchange Transactions whose tags meet the approved tag submission deadline for Reallocation (see Section 6.2, “Communications and Timing Requirements”) shall be considered for Reallocation for the upcoming hour. (*Sections 3.3.2.1 and 3.6.2.3 of NAESB Transmission Loading Relief Business Practice*) (However, Interchange Transactions using Firm Point-to-Point Transmission Service shall be allowed to start as scheduled.) Interchange Transactions whose tags are submitted to the IDC after the approved tag submission deadline for Reallocation shall be considered for Reallocation the following hour. This applies to Interchange Transactions using either Non-firm Point-to-Point Transmission Service or Firm Point-to-Point Transmission Service. If an Interchange Transaction using Firm Interchange Transaction is submitted after the approved tag submission deadline and after the TLR is declared, that Transaction shall be held and then allowed to start in the upcoming hour. (*Section 3.3.2.1.1 of NAESB Transmission Loading Relief Business Practice; Section 3.6.2.3 will be adjusted in next revision of business practice once NERC makes it Phase 3 revisions related to processing holds across the top of the hour.*)

It should be noted that calling a TLR 3a does not necessarily mean that Interchange Transactions using Non-firm Transmission Service will always be curtailed the next hour. However, TLR Levels 3a and 5a trigger the approved tag submission deadline for Reallocation requirements and allow for a coordinated assessment of all Interchange Transactions tagged to start the upcoming hour.

**6.2. Communication and Timing Requirements**

The following timeline shall be utilized to support Reallocation decisions during TLR Levels 3a or 5a. See Figures 2 and 3 for a depiction of the Reallocation Time Line.

- 6.2.1. Time Convention.** In this document, the beginning of the current hour shall be referenced as 00:00. The beginning of the next hour shall be referenced as 01:00. The end of the next hour shall



**Figure 1 - Timeline showing Approved-tag Submission Deadline for Reallocation**

be referenced as 02:00. See Figure 1.

**6.2.2. Approved tag submission deadline for Reallocation** Reliability Coordinators shall consider all approved Tags for Interchange Transactions at or above the Curtailment Threshold that have been submitted to the IDC by 00:25 for Reallocation at 01:00. See Figure 1. However, Interchange Transactions using Firm Point-to-Point Transmission Service will be allowed to start as scheduled.

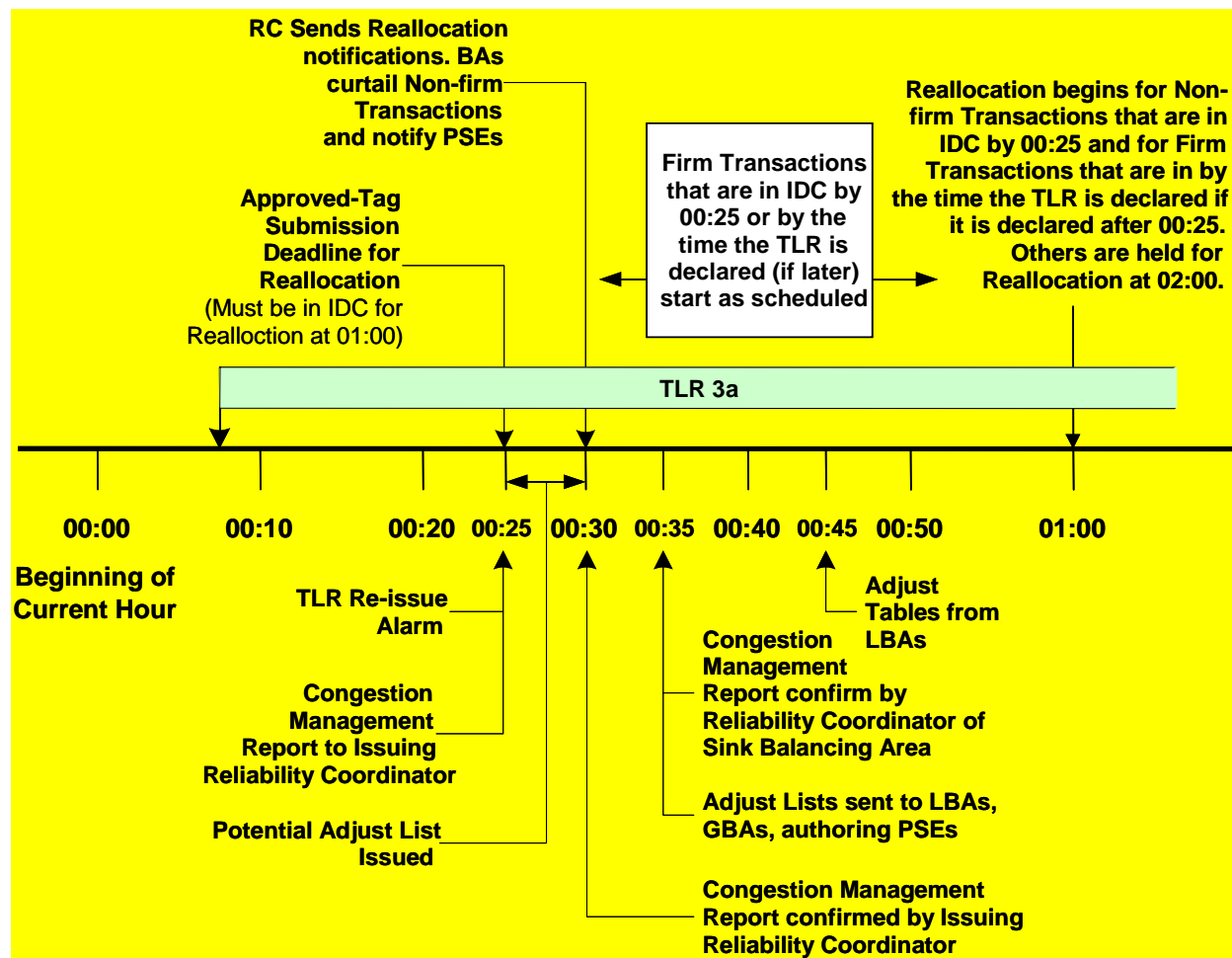
**6.2.2.1.** Reliability Coordinators shall consider all approved tags submitted to the IDC beyond these deadlines for Reallocation at 02:00 (for both Firm and Non-firm Point-to-Point Transmission Service). However, these Interchange Transactions will not be allowed to start or increase at 01:00.

**6.2.2.2.** The approved tag submission deadline for Reallocation shall cease to be in effect as soon as the TLR level is reduced to 1 or 0.

**6.2.3. Off-hour Transactions.** Interchange Transactions with a start time other than  $xx:00$  shall be considered for Reallocation at  $xx+1:00$ . For example, an Interchange Transaction with a start time of 01:05 and whose Tag was submitted at 00:15 will be considered for Reallocation at 02:00.

**6.2.4. Tag Evaluation Period.** Balancing Authorities and Transmission Providers shall evaluate all tags submitted for Reallocation and shall communicate approval or rejection by 00:25.





**Figure 2 — Reallocation Timing for TLR 3a Called at 00:08**

**6.2.5. Collective Scheduling Assessment Period.** At 00:25, the initiating Reliability Coordinator (the one who called and still has a TLR 3a or 5a in effect) shall run the IDC to obtain a three-part list of Interchange Transactions including their transaction status:

**6.2.5.1.** Interchange Transactions that may start, increase, or reload shall have a status of PROCEED, and

**6.2.5.2.** Interchange Transactions that must be curtailed or Interchange Transactions whose tags were submitted prior to the TLR 2 or higher being declared but were not permitted to start or increase shall have a status of CURTAILED, and

**6.2.5.3.** Interchange Transactions that are entered into the IDC after 00:25 shall have a status of HOLD and be considered for Reallocation at 02:00. Also, Interchange Transactions using Non-firm Point-to-Point Transmission Service submitted after TLR 2 or higher was declared (“post-tagged”) but have not been allowed to start shall retain the HOLD status until given permission to PROCEED or E-Tag expires. (Note:

TLR Level 2 does not hold Interchange Transactions using Firm Point-to-Point Transmission Service).

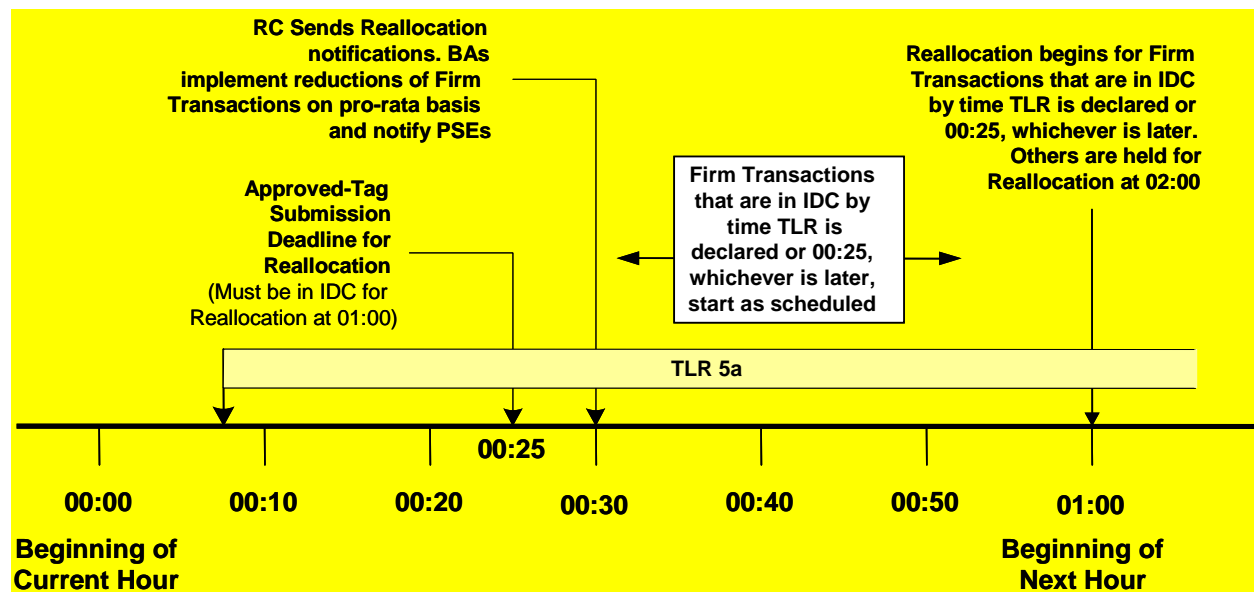


Figure 3 — Reallocation timing for TLR 5a called at 00:08.

6.2.5.4. The initiating Reliability Coordinator shall communicate the list of Interchange Transactions to the appropriate sink Reliability Coordinators via the IDC, who shall in turn communicate the list to the Sink Balancing Authorities at 00:30 for appropriate actions to implement Interchange Transactions (CURTAIL, PROCEED or HOLD). The IDC will prompt the initiating Reliability Coordinator to input the necessary information (i.e., maximum flowgate loading and curtailment requirement) into the IDC by 00:25.

6.2.5.5. Subsequent required reports before 01:00 shall allow the Reliability Coordinators to include those Interchange Transactions whose tags were submitted to the IDC after the Approved-Tag Submission Time for Reallocation and were given the HOLD status (not permitted to PROCEED). Transactions at or above the Curtailment Threshold that are not indicated as “PROCEED” on Reload/Reallocation Report shall not be permitted to start or increase the next hour.

**Discussion:** Note that TLR 2 does not initiate the approved tag submission deadline for Reallocation, but a TLR3a or 5a does. It is, however, important to recognize the time when a TLR 2 is called, where applicable, to determine the status of a held transaction – “CURTAILED” if tagged before the TLR was called but “HOLD” if tagged after the TLR was called.

6.2.5.6. In running the IDC, the Reliability Coordinator shall have an option to specify the maximum loading of the Constrained Facility by all Interchange Transactions using Point-to-Point Transmission Service.

**Discussion:** This allows the Reliability Coordinator to take into consideration SOLs or IROLs and changes in Transactions using other than Point-to-Point service taken under the Open Access Transmission Tariff. This option is needed to avoid loading the Constrained Facility to its limit with known Interchange Transactions while other factors push the facility into a SOL or IROL violation and hence triggering the declaration of a TLR 3b or 5b.

6.2.5.7. Notification of Interchange Transaction status shall be provided from the IDC to the Reliability Coordinators via an IDC Report. The Reliability Coordinators shall communicate this information to the Balancing Authorities and Transmission Operators.

Additional reporting and communications details on information posted from the IDC to the NERC TLR website are contained in Appendix E.

6.2.6. **Customer Preferences on Timing to Call TLR 3a or 5a.** Reliability Coordinators shall leave a TLR 2 and call a TLR 3a as soon as possible (but no later than 30 minutes) to initiate the Approved-Tag Submission Deadline and start reallocating Transactions. Nevertheless, recognizing the approved tag submission deadline for Reallocation, from a Transmission Customer perspective, it is preferable that the Reliability Coordinator call a TLR 3a within a certain time period to allow for tag preparation and submission. See Figure 4.

**Discussion:** A Reliability Coordinator calls a TLR 2 or 3a whenever it deems necessary to indicate that a transmission facility is approaching its SOL or IROL. It is envisioned, though not required, that a TLR 2 or 3a is preceded by a period of a TLR 1 declaration, hence Transmission Customers should normally have advance notice of a potential constraint. For example, a TLR 3a initiated during the period 01:00 to 01:25 would allow the Purchasing-Selling Entity to submit a Tag for entry into the IDC by the Approved-Tag Submission Deadline for Reallocation at 02:00. See Figure 4. However, the preferred time period to declare a TLR 3a or 5a would be between 00:40 (when tags for Next Hour Market have been submitted) and 01:15. This will allow the Transmission Customers a range of 15 to 35 minutes to prepare and submit tags. (Note: In this situation, the Reliability Coordinator would need to reissue the TLR 3a at 01:00.)

It must be emphasized that the preferred time period is not a requirement, and should not in any way impede a Reliability Coordinator's ability to declare a TLR 3a, 3b, 4, 5a, or 5b whenever the need arises.

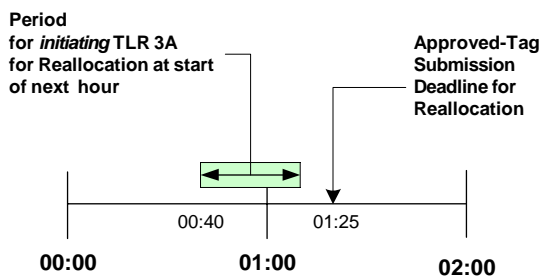


Figure 4. "Ideal" time for issuing TLR 3a for Reallocation at 02:00.

## 7. Interchange Transaction Curtailments During TLR Level 3b

### Introduction

This section provides the details for implementing TLR Level 3b, which curtails Interchange Transactions using Non-firm Point-to-Point Transmission Service to assist the Reliability Coordinator to recover from SOL or IROL violations.

TLR Level 3b curtails Interchange Transactions using Non-firm Point-to-Point Transmission Service that are at or above the Curtailment Threshold in the current hour while Reallocating to a determined flow for the top of the next hour (See **Requirement 2.4, “TLR Level 3b.”**).

### Requirements

- 7.1. The Reliability Coordinator shall be allowed to call a TLR 3b at any time to help mitigate a SOL or IROL violation.
- 7.2. The Reliability Coordinator shall consider only those Interchange Transactions at or above the Curtailment Threshold for curtailment or holding. (*Section 3.4.1.1 of NAESB Transmission Loading Relief Business Practice*)
- 7.3. The Reliability Coordinator shall curtail existing Interchange Transactions using Non-firm Point-to-Point Transmission Service as necessary to provide the required relief on the Constrained Facility for the current hour. (*Section 3.4.2 of NAESB Transmission Loading Relief Business Practice*)
- 7.4. The Reliability Coordinator shall Reallocate Interchange Transactions using Non-firm Point-to-Point Transmission Service in accordance with Section 6 of this document for the next hour to maintain the desired flow using Reallocation in accordance with the following timing specification:
  - 7.4.1. If issued prior to XX: 25, Non-firm Interchange Transactions will be curtailed to meet the desired current hour relief
    - 7.4.1.1. At XX: 25 a Reallocation will be performed to maintain the desired flow at the top of the following hour
  - 7.4.2. If issued after XX: 25, Non firm Interchange Transactions will be curtailed to meet the desired current hour relief and a Reallocation will be performed to maintain the target flow identified for the current hour.
  - 7.4.3. Transactions must be in the IDC by the Approved-tag Submission Deadline for Reallocation (see Requirement 6.2).
- 7.5. The Reliability Coordinator shall allow Interchange Transactions using Firm Point-to-Point Transmission Service to start as explained in Appendix F, “Considerations for Interchange Transactions using Firm Point-to-Point Transmission Service.” (*Section 3.4.3 of NAESB Transmission Loading Relief Business Practice*)
- 7.6. The Reliability Coordinator shall progress to TLR Level 5b as necessary if there is still insufficient transmission capacity for Interchange Transactions using Firm Point-to-Point Transmission Service to start as scheduled after all Interchange Transactions using Non-firm Point-to-Point Transmission Service have been curtailed. (*Section 3.4.4 of NAESB Transmission Loading Relief Business Practice*)

- 7.7. The IDC shall issue ADJUST Lists to the Generation and Load Balancing Authority Areas and the Purchasing-Selling Entity who submitted the tag. The ADJUST List will include: (recommended to be moved to Attachment 2)
  - 7.7.1. Interchange Transactions using Non-firm Point-to-Point Transmission Service that are to be curtailed or held during current and next hours. (recommended to be moved to Attachment 2)
  - 7.7.2. Interchange Transactions using Firm Point-to-Point Transmission Service that were entered after XX:25 or issuance of TLR 3b (see Case 3 in Appendix F). (recommended to be moved to Attachment 2)
- 7.8. The Sink Balancing Authority shall send the ADJUST Lists back to the IDC as soon as possible to ensure the most accurate calculations for actions subsequent to the TLR 3b being called. (recommend to be moved to Attachment 2)
- 7.9. The Reliability Coordinator will no longer be required to call a TLR Level 3a as soon as the SOL or IROL violation that caused the TLR 3b to be called has been mitigated due to the inherent next hour Reallocation that takes place for the top of the next hour in the TLR Level 3b. (recommend to be moved to Attachment 2)

## Appendices for Transmission Loading Relief Standard

Appendix A. Transaction Management and Curtailment Process. (stays at NERC)

Appendix B. Transaction Curtailment Formula. (NAESB TLR Business Practice Appendix C)

Appendix C. Sample NERC Transmission Loading Relief Procedure Log. (Recommended to be removed)

Appendix D. Examples for Parallel Flow Calculation Procedure for Reallocating or Curtailing Firm Transmission Service. (Appendix B of NAESB TLR Business Practice)

Appendix E. How the IDC Handles Reallocation.

Section E1: Summary of IDC Features that Support Transaction Reloading/Reallocation.

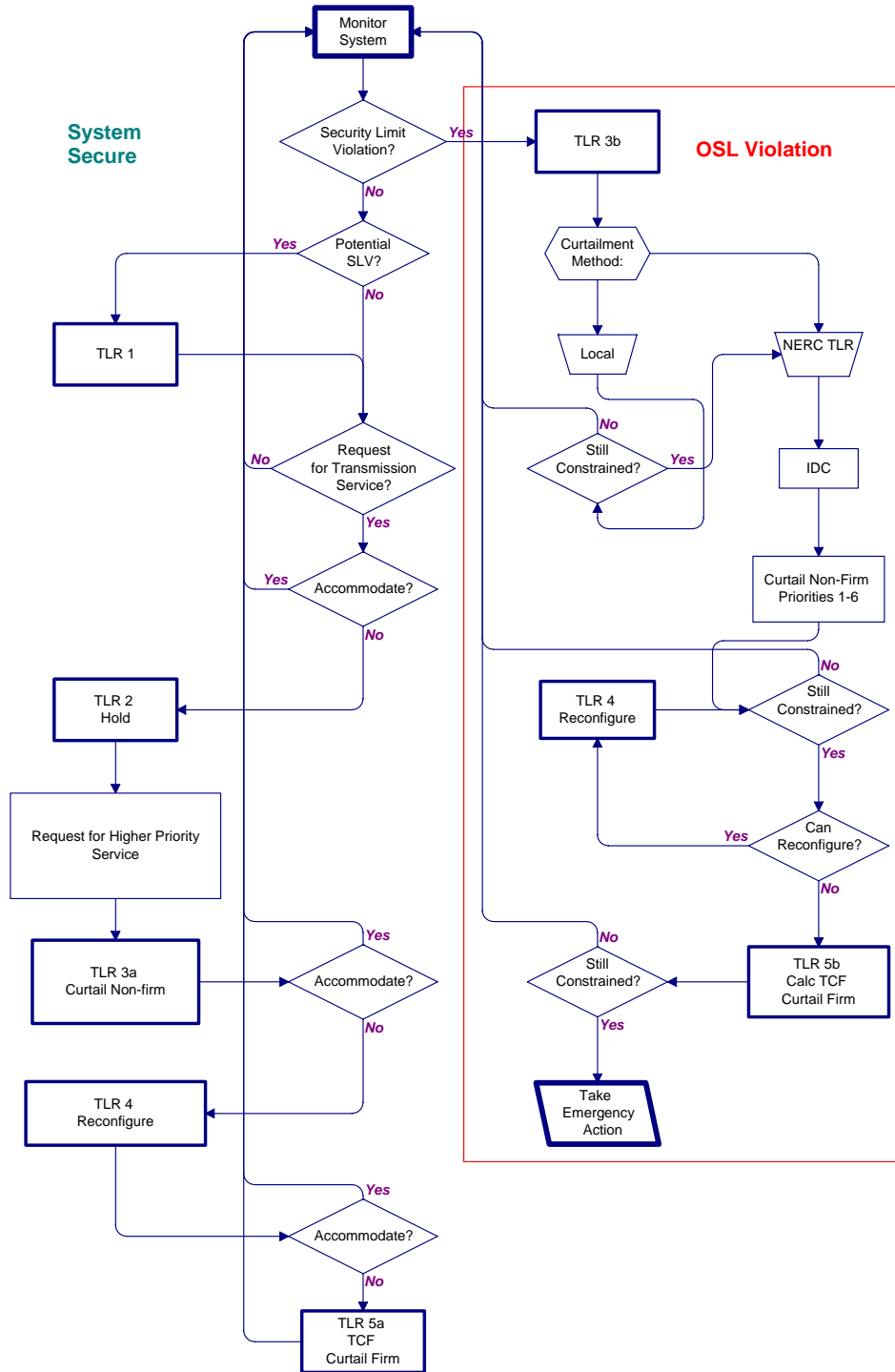
Section E2: Timing Requirements. (Recommended to be placed in Attachment 2, except for sub-priorities, which went to NAESB TLR Business Practice Section 3.3.5 and subparts)

Appendix F. Considerations for Interchange Transactions using Firm Point-to-Point Transmission Service. (Recommended to be placed in the Attachment 2)

Appendix G. Examples of On-Path and Off-Path Mitigation. (Appendix A of NAESB TLR Business Practice)

**Appendix A. Transaction Management and Curtailment Process**

This flowchart depicts an overview of the Transaction Management and Curtailment process. Detailed decisions are not shown.



**Appendix B. Transaction Curtailment Formula**

**Example**

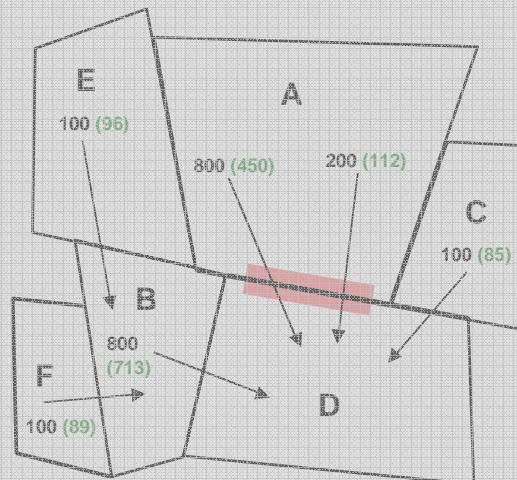
This example is based on the premise that a transaction should be curtailed in proportion to its Transfer Distribution Factor on the Constraints. Its effect on the interface is a combination of its size in MW and its effect based on its distribution factor.

Column	Description
1. Initial Transaction	Interchange Transaction before the TLR Procedure is implemented.
2. Distribution Factor	Proportional effect of the Transaction over the constrained interface due to the physical arrangement and impedance of the transmission system.
3. Impact on the Interface	Result of multiplying the Transaction MW by the distribution factor. This yields the MW that flow through the constrained interface from the Transaction. Performing this calculation for each Transaction yields the total flow through the constrained interface from all the Interchange Transactions. In this case, 760 MW.
4. Impact Weighting Factor	“Normalization” of the total of the Distribution Factors in Column 2. Calculated by dividing the Distribution Factor for each Transaction by the total of the Distribution Factors.
5. Weighted Maximum Interface Reduction	Multiplying the Impact on the Interface from each Transaction by its Impact Weighting Factor yields a new proportion that is a combination of the MW Impact on the Interface and the Distribution Factor.
6. Interface Reduction	Multiplying the amount needed to reduce the flow over the constrained interface (280 MW) by the normalization of the Weighted Maximum Interface Reduction yields the actual MW reduction that each Transaction must <i>contribute</i> to achieve the total reduction.
7. Transaction Reduction	Now divide by the Distribution Factor to see how much the Transaction must be reduced to yield the result calculated in Column 7. Note that the reductions for the first two Interchange Transactions (A-D (1) and A-D (2) are in proportion to their size since their distribution factors are equal.
8. New Transaction Amount	Subtracting the Transaction Reduction from the Initial Transaction yields the New Transaction Amount.
9. Adjusted Impact on Interface	A check to ensure the new constrained interface MW flow has been reduced to the target amount.



**Mapping of Proposed Split of Attachment 1 - IRO-006**

Allocation based on Weighted Impact									
Transaction ID	1 Initial Transaction	2 Distribution Factor	3 (1)*(2) Impact On Interface	4 (2)/(2TOT) Impact weighting factor	5 (3)*(4) Weighted Max Interface Reduction	6 (5)*(Relief Requested)/(5 Tot) Interface Reduction	7 (6)/(2) Transaction Reduction	8 (1)-(7) New Transaction Amount	9 (8)*(2) Adjusted Impact On Interface
<b>Example 1</b>									
A-D(1)	800	0.6	480	0.34	164.57	209.73	349.54	450.46	270.27
A-D(2)	200	0.6	120	0.34	41.14	52.43	87.39	112.61	67.57
B-D	800	0.15	120	0.09	10.29	13.11	87.39	712.61	106.89
C-D	100	0.2	20	0.11	2.29	2.91	14.56	85.44	17.09
E-B	100	0.05	5	0.03	0.14	0.18	3.64	96.36	4.82
F-B	100	0.15	15	0.09	1.29	1.64	10.92	89.08	13.36
	<b>2100</b>	<b>1.75</b>	<b>760</b>		<b>219.71</b>	<b>280.00</b>	<b>553.45</b>	<b>1546.55</b>	<b>480.00</b>
<b>Example 2</b>									
A-D(1)	1000	0.6	600	0.52	313.04	262.16	436.93	563.07	337.84
B-D	800	0.15	120	0.13	15.65	13.11	87.39	712.61	106.89
C-D	100	0.2	20	0.17	3.48	2.91	14.56	85.44	17.09
E-B	100	0.05	5	0.04	0.22	0.18	3.64	96.36	4.82
F-B	100	0.15	15	0.13	1.96	1.64	10.92	89.08	13.36
	<b>2100</b>	<b>1.15</b>	<b>760</b>		<b>334.35</b>	<b>280.00</b>	<b>553.45</b>	<b>1546.55</b>	<b>480.00</b>
<b>Example 3</b>									
A-D(1A)	200	0.6	120	0.17	20.28	52.43	87.39	112.61	67.57
A-D(1B)	200	0.6	120	0.17	20.28	52.43	87.39	112.61	67.57
A-D(1C)	200	0.6	120	0.17	20.28	52.43	87.39	112.61	67.57
A-D(1D)	200	0.6	120	0.17	20.28	52.43	87.39	112.61	67.57
A-D(2)	200	0.6	120	0.17	20.28	52.43	87.39	112.61	67.57
B-D	800	0.15	120	0.04	5.07	13.11	87.39	712.61	106.89
C-D	100	0.2	20	0.06	1.13	2.91	14.56	85.44	17.09
E-B	100	0.05	5	0.01	0.07	0.18	3.64	96.36	4.82
F-B	100	0.15	15	0.04	0.63	1.64	10.92	89.08	13.36
	<b>2100</b>	<b>3.55</b>	<b>760</b>		<b>108.31</b>	<b>280.00</b>	<b>553.45</b>	<b>1546.55</b>	<b>480.00</b>





**Appendix D. Examples for Parallel Flow Calculation Procedure  
for Reallocating or Curtailing Firm Transmission Service**

The NERC “Parallel Flow Calculation Procedure Reference Document” provides additional information about the criteria used to include generators in the IDC calculation process.

**Example of Results of Calculation Method**

An example of the output of the IDC calculation of curtailment of firm Transmission Service is provided below for the specific Constrained Facility identified in the *Book of Flowgates* as Flowgate 1368. In this example, a total Firm Point-to-Point contribution to the Constrained Facility, as calculated by the IDC, is assumed to be 21.8 MW.

The table below presents a summary of each Balancing Authority’s responsibility to provide relief to the Constrained Facility due to its Network Integration Transmission Service and service to Native Load contribution to the Constrained Facility. In this example, Balancing Authority LAGN would be requested to curtail 17.3 MW of its total of 401.1 MW of flow contribution on the Constrained Facility. See the “Parallel Flow Calculation Procedure Reference Document” for additional details regarding the information illustrated in the table (e. g. Scaled P Max and Flowgate NNative Load MW).

In summary, Interchange transactions would be curtailed by a total of 21.8 MW and Network Integration Transmission Service and service to Native Load would be curtailed by a total of 178.2 MW by the five Balancing Authorities identified in the table. These curtailments would provide a total of 200.0 MW of relief to the Constrained Facility. (Appendix B of NAESB)

Sink Reliability Coordinator	Service Point	Scaled P Max	Flowgate NNative Load MW	Current NNative Load Relief	NNative Load Responsibility		NNative Load Responsibility Acknowledgement	
					Inc/Dec	Current Hr	Acknowledge Time	Total MW Resp.
EES	EES	8429.7	2991.4	0.0	128.9	128.9	13:44	128.9
EES	LAGN	1514.0	718.6	0.0	31.0	31.0	13:44	31.0
SOCO	SOCO	5089.2	401.1	0.0	17.3	17.3	13:44	17.3
SWPP	CLEC	235.7	18.0	0.0	0.8	0.8	13:42	0.8
SWPP	LEPA	22.8	4.1	0.0	0.2	0.2	13:42	0.2
<b>Total</b>				<b>0.0</b>				

(Appendix B of NAESB)

## **Appendix E. How the IDC Handles Reallocation**

The IDC algorithms reflect the Reallocation and reloading principles in this Appendix, as well as the reporting requirements, and status display. The IDC will obtain the Tag Submittal Time from the Tag Authority and post the Reloading/Reallocation information to the NERC TLR website.

A summary of IDC features that support the Reallocation process is provided in Attachment E1. Details on the interface and display features are provided in Attachment E2. Refer to Version 1.7.095 NERC Transaction Information Systems Working Group (TISWG) *Electronic Tagging Functional Specification* for details about the E-Tag system.

### **E1. Summary of IDC Features that Support Transaction Reloading/Reallocation**

The following is a summary of IDC features and E-Tag interface that support Reloading/Reallocation:

#### **Information posted from IDC to NERC TLR website.**

1. Restricted directions (all source/sink combinations that impact a Constrained Facility(ies) with TLR 2 or higher) will be posted to the NERC TLR website and updated as necessary.
2. TLR Constrained Facility status and Transfer Distribution Factors will continue to be posted to NERC TLR website.
3. Lowest priority of Interchange Transactions (marginal “bucket”) to be Reloaded/Reallocated next-hour on each TLR Constrained Facility will be posted on NERC TLR website. This will provide an indication to the market of priority of Interchange Transactions that may be Reloaded/Reallocated the following hours.

#### **IDC Logic, IDC Report, and Timing**

1. The Reliability Coordinator will run the IDC the Reloading/Reallocation report at approximately 00:26. The IDC will prompt the Reliability Coordinator to enter a maximum loading value. The IDC will alarm if the Reliability Coordinator does not enter this value and issue a report by 00:30 or change from TLR 3a Level. The Report will be distributed to Balancing Authorities and Transmission Operators at 00:30. This process repeats every hour as long as the approved tag submission deadline for Reallocation is in effect (or until the TLR level is reduced to 1 or 0).
2. For Interchange Transactions in the restricted directions, tags must be submitted to the IDC by the approved tag submission deadline for Reallocation to be considered for Reallocation next-hour. The time stamp by the Tag Authority is regarded the official tag submission time.
3. Tags submitted to IDC after the approved tag submission deadline for Reallocation will not be allowed to start or increase but will be considered for Reallocation the next hour.
4. Interchange Transactions in restricted directions that are not indicated as “PROCEED” on the Reload/Reallocation Report will not be permitted to start or increase next hour.

#### **Reloading/Reallocation Transaction Status**

Reloading/Reallocation status will be determined by the IDC for all Interchange Transactions. The Reloading/Reallocation status of each Interchange Transaction will be listed on IDC reports and NERC TLR website as appropriate. An Interchange Transaction is considered to be in a restricted direction if it is at or above the Curtailment Threshold. Interchange Transactions below the Curtailment Threshold are unrestricted and free to flow subject to all applicable Reliability Standards and tariff rules.

1. **HOLD.** Permission has not been given for Interchange Transaction to start or increase and is waiting for the next Reloading/Reallocation evaluation for which it is a candidate. Interchange Transactions with E-tags submitted to the Tag Authority prior to TLR 2 or higher being declared (pre-tagged) will change to CURTAILED Status upon evaluation that does not permit them to start or increase. Transactions with E-tags submitted to Tag Authority after TLR 2 or higher was declared (post-tagged) will retain HOLD Status until given permission to proceed or E-Tag expires.
2. **CURTAILED.** Transactions for which E-Tags were submitted to Tag Authority prior to TLR 2 or higher being declared (pre-tagged) and ordered to be curtailed totally, curtailed partially, not permitted to start, or not permitted to increase. Interchange Transactions (pre-tagged or post-tagged) that were flowing and ordered to be reduced or totally curtailed. The Balancing Authority will indicate to the IDC through the E-Tag adjustment table the Interchange Transaction's curtailed values.
3. **PROCEED:** Interchange Transaction is flowing or has been permitted to flow as a result of Reloading/Reallocation evaluation. The Balancing Authority will indicate through the E-Tag adjustment table to IDC if Interchange Transaction will reload, start, or increase next-hour per Purchasing-Selling Entity's energy schedule as appropriate.

#### **Reallocation/Reloading Priorities**

1. Interchange Transaction candidates are ranked for loading and curtailment by priority as per Section 4, "Principles for Mitigating Constraints On and Off the Contract Path." This is called the "Constrained Path Method," or CPM. (secondary, hourly, daily, ... firm etc). Interchange Transactions are curtailed and loaded pro-rata within priority level per TLR algorithm.
2. Reloading/Reallocation of Interchange Transactions are prioritized first by priority per CPM. E-Tags must be submitted to the IDC by the approved tag submission deadline for Reallocation of the hour during which the Interchange Transaction is scheduled to start or increase to be considered for Reallocation.
3. During Reloading/Reallocation, Interchange Transactions using lower priority Transmission Service will be curtailed pro-rata to allow higher priority transactions to reload, increase, or start. Equal priority Interchange Transactions will not reload, start, or increase by pro-rata Curtailment of other equal priority Interchange Transactions.
4. Reloading of Interchange Transactions using Non-firm Transmission Service with CURTAILED Status will take precedence over starting or increasing of Interchange Transactions using Non-firm Transmission Service of the same priority with PENDING Statuses.
5. Interchange Transactions using Firm Point-to-Point Transmission Service will be allowed to start as scheduled under TLR 3a as long as their E-Tag was received by the IDC by the approved tag submission deadline for Reallocation of the hour during which the Interchange Transaction is due to start or increase, regardless of whether the E-tag was submitted to the Tag Authority prior to TLR 2 or higher being declared or not. If this is the initial issuance of the TLR 3a, Interchange Transactions using Firm Point-to-Point Transmission Service will be allowed to start as scheduled as long as their E-Tag was received by the IDC by the time the TLR is declared.

#### **Total Flow Value on a Constrained Facility for Next Hour**

1. The Reliability Coordinator will calculate the change in net flow on a Constrained Facility due to Reallocation for the next hour based on:

- Present constrained facility loading, present level of Interchange Transactions, and Balancing Authorities NNative Load responsibility (TLR Level 5a) impacting the Constrained Facility,
  - SOLs or IROLs, known interchange impacts and Balancing Authority NNative Load responsibility (TLR Level 5a) on the Constrained Facility the next hour, and
  - Interchange Transactions scheduled to begin the next hour.
2. The Reliability Coordinator will enter a maximum loading value for the constrained facility into the IDC as part of issuing the Reloading/Reallocation report.
  3. The Reliability Coordinator is allowed to call for TLR 3a or 5a when approaching a SOL or IROL to allow maximum transactional flow next hour, and to manage flows without violating transmission limits.
  4. The simultaneous curtailment and Reallocation for a Constrained Facility is allowed. This reduces the flow over the Constrained Facility while allowing Interchange Transactions using higher priority Transmission Service to start or increase the next hour. This may be used to accommodate change in flow next-hour due to changes other than Point-to-Point Interchange Transactions while respecting the priorities of Interchange Transactions flowing and scheduled to flow the next hour. The intent is to reduce the need for using TLR 3b, which prevents new Interchange Transactions from starting or increasing the next hour.
  5. The Reliability Coordinator must allow Interchange Transactions to be reloaded as soon as possible. Reloading must be in an orderly fashion to prevent a SOL or IROL violation from (re)occurring and requiring holding or curtailments in the restricted direction.

## E2. Timing Requirements

### TLR Levels 3a and 5a Issuing/Processing Time Requirement

1. In order for the IDC to be reasonably certain that a TLR Level 3a or 5a re-allocation/reloading report in which all tags submitted by the approved tag submission deadline for Reallocation are included, the report must be generated no earlier than 00:25 to allow the 10-minute approval time for Transactions that start next hour.
2. In order to allow a Reliability Coordinator to declare a TLR Level 3a or 5a at any time during the hour, the TLR declaration and Reallocation/Reloading report distribution will be treated as independent processes by the IDC. That is, a Reliability Coordinator may declare a TLR Level 3a or 5a at any time during the course of an hour. However, if a TLR Level 3a or 5a is declared for the next hour prior to 00:25 (see Figure 5 at right), the Reallocation/Reloading report that is generated will be made available to the issuing Reliability Coordinator only for previewing purposes, and cannot be distributed to the other Reliability Coordinators or the market. Instead, the issuing Reliability Coordinator will be reminded by an IDC alarm at 00:25 to generate a new Reallocation/Reloading report that will include all tags submitted prior to the approved tag submission deadline for Reallocation.
3. A TLR Level 3a or 5a Reallocation/Reloading report must be confirmed by the issuing Reliability Coordinator prior to 00:30 in order to provide a minimum of 30 minutes for the Reliability Coordinators with tags sinking in its Reliability Area to coordinate the Reallocation and Reloading with the Sink Balancing Authorities. This provides only 5 minutes (from 00:25 to 00:30) for the issuing Reliability Coordinator to generate a Reallocation/Reloading report, review it, and approve it.
4. The TLR declaration time will be recorded in the IDC for evaluating transaction sub-priorities for Reallocation/Reloading purposes (see Subpriority Table, in the **IDC Calculations and Reporting** section below).

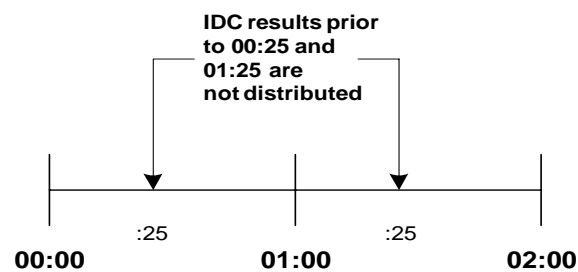


Figure 5 - IDC report may be run prior to 00:25, but results are not distributed.

### Re-Issuing of a TLR Level 2 or Higher

Each hour, the IDC will automatically remind the issuing Reliability Coordinator (via an IDC alarm) of a TLR level 2 or higher declared in the previous hour or earlier about re-issuing the TLR. The purpose of the reminder is to enable the Reliability Coordinator to Reallocate or reload currently halted or curtailed Interchange Transactions next hour. The reminder will be in the form of an alarm to the issuing Reliability Coordinator, and will take place at 00:25 so that, if the Reliability Coordinator re-issues the TLR as a TLR level 3a or 5a, all tags submitted prior to the approved tag submission deadline for Reallocation are available in the IDC.

### IDC Assistance with Next Hour Point-to-Point Transactions

In order to assist a Reliability Coordinator in determining the MW relief required on a Constrained Facility for the next hour for a TLR level 3a or 5a, the IDC will calculate and present the total MW impact of all currently flowing and scheduled Point-to-Point Transactions for the next hour. In order to assist a Reliability Coordinator in determining the MW relief required on a Constrained Facility for the next hour during a TLR level 5a, the IDC will calculate and present the total MW impact of all currently flowing and scheduled Point-to-Point Transactions for the next hour as well as Balancing Authority with flows due to service to Network Customers and Native Load. The Reliability Coordinator will then be requested to provide the total incremental or decremental MW amount of flow through the Constrained Facility that can be allowed for the next hour. The value entered by the Reliability Coordinator and the

IDC-calculated amounts will be used by the IDC to identify the relief/reloading amounts (delta incremental flow value) on the constrained facility. The IDC will determine the Transactions to be reloaded, reallocated, or curtailed to make room for the Transactions using higher priority Transmission Service. The following examples show the calculation performed by IDC to identify the “delta incremental flow:”

**Example 1**

Flow to maintain on Facility	800 MW
Expected flow next hour from Transactions using Point-to-Point Transmission Service	950 MW
Contribution from flow next hour from service to Network customers and Native Load	-100 MW
Expected Net flow next hour on Facility	850 MW
Amount of Transactions using Point-to-Point Transmission Service to hold for Reallocation	$850 \text{ MW} - 800 \text{ MW} = 50 \text{ MW}$
Amount to enter into IDC for Transactions using Point-to-Point Transmission Service	$950 \text{ MW} - 50 \text{ MW} = 900 \text{ MW}$

**Example 2**

Flow to maintain on Facility	800 MW
Expected flow next hour from Transactions using Point-to-Point Transmission Service	950 MW
Contribution from flow next hour from service to Network customers and Native Load	50 MW
Expected Net flow next hour on Facility	1000 MW
Amount of Transactions using Point-to-Point Transmission Service to hold for Reallocation	$1000 \text{ MW} - 800 \text{ MW} = 200 \text{ MW}$
Amount to enter into IDC for Transactions using Point-to-Point Transmission Service	$950 \text{ MW} - 200 \text{ MW} = 750 \text{ MW}$

**Example 3**

Flow to maintain on Facility	800 MW
Expected flow next hour from Transactions using Point-to-Point Transmission Service	950 MW
Contribution from flow next hour from service to Network customers and Native Load	-200 MW
Expected Net flow next hour on Facility	750 MW
Amount of Transactions using Point-to-Point Transmission Service to hold for Reallocation	$750 \text{ MW} - 800 \text{ MW} = -50 \text{ MW}$ None are held



For a TLR levels 3b or 5b the IDC will request the Reliability Coordinator to provide the MW requested relief amount on the Constrained Facility, and will not present the current and next hour MW impact of Point-to-Point transactions. The Reliability Coordinator-entered requested relief amount will be used by the IDC to determine the Interchange Transaction Curtailments and flows due to service to Network Customers and Native Load (TLR Level 5b) in order to reduce the SOL or IROL violation on the Constrained Facility by the requested amount.

**IDC Calculations and Reporting**

At the time the TLR report is processed, the IDC will use all candidate Interchange Transactions for Reallocation that met the approved tag submission deadline for Reallocation plus those Interchange Transactions that were curtailed or halted on the previous TLR action of the same TLR event. The IDC will calculate and present an Interchange Transactions Halt/Curtailment list that will include reload and Reallocation of Interchange Transactions. The Interchange Transactions are prioritized as follows:

1. All Interchange Transactions will be arranged by Transmission Service Priority according to the Constrained Path Method. These priorities range from 1 to 6 for the various non-firm Transmission Service products (TLR levels 3a and 3b). Interchange Transactions using Firm Transmission Service (priority 7) are used only in TLR levels 5a and 5b. Next-Hour Market Service is included at priority 0. (Recommended to be placed in Attachment 2)
2. In a TLR Level 3a the Interchange Transactions using Non-firm Transmission Service in a given priority will be further divided into four sub-priorities, based on current schedule, current active schedule (identified by the submittal of a tag ADJUST message), next-hour schedule, and tag status. Solely for the purpose of identifying which Interchange Transactions to be loaded under a TLR 3a, various MW levels of an Interchange Transaction may be in different sub-priorities. The sub-priorities are shown in the following table: *(Section 3.3.5 and subparts of NAESB Transmission Loading Relief Business Practice)*

Priority	Purpose	Explanation and Conditions
S1	To allow a flowing Interchange Transaction to maintain or reduce its current MW amount in accordance with its energy profile.	The MW amount is the lowest between currently flowing MW amount and the next-hour schedule. The currently flowing MW amount is determined by the e-tag ENERGY PROFILE and ADJUST tables. If the calculated amount is negative, zero is used instead.
S2	To allow a flowing Interchange Transaction that has been curtailed or halted by TLR to reload to the <i>lesser</i> of its current-hour MW amount or next-hour schedule in accordance with its energy profile.	The Interchange Transaction MW amount used is determined through the e-tag ENERGY PROFILE and ADJUST tables. If the calculated amount is negative, zero is used instead.
S3	To allow a flowing Transaction to increase from its current-hour schedule to its next-hour schedule in accordance with its energy profile.	The MW amounts used in this sub-priority is determined by the e-tag ENERGY PROFILE table. If the calculated amount is negative, zero is used instead.

Priority	Purpose	Explanation and Conditions
S4	To allow a Transaction that had never started and was submitted to the Tag Authority after the TLR (level 2 or higher) has been declared to begin flowing (i.e., the Interchange Transaction never had an active MW and was submitted to the IDC after the first TLR Action of the TLR Event had been declared.)	The Transaction would not be allowed to start until all other Interchange Transactions submitted prior to the TLR with the same priority have been (re)loaded. The MW amount used is the sub-priority is the next-hour schedule determined by the e-tag ENERGY PROFILE table.

(equivalent to the table in *(Section 3.4.2 and subparts of NAESB Transmission Loading Relief Business Practice)*)

Examples of Interchange Transactions using Non-firm Transmission Service sub-priority settings begin in the **Transaction Sub-priority Examples** following sections.

- All Interchange Transactions using Firm Transmission Service will be put in the same priority group, and will be Curtailed/Reallocated pro-rata, independent of their current status (curtailed or halted) or time of submittal with respect to TLR issuance (TLR level 5a). Under a TLR 5a, all Interchange Transactions using Non-firm Transmission Service that is at or above the Curtailment Threshold will have been curtailed and hence sub-prioritizing is not required.

All Interchange Transactions processed in a TLR are assigned one of the following statuses:

**PROCEED:** The Interchange Transaction has started or is allowed to start to the next hour MW schedule amount.

**CURTAILED:** The Interchange Transaction has started and is curtailed due to the TLR, or it had not started but it was submitted prior to the TLR being declared (level 2 or higher).

**HOLD:** The Interchange Transaction had never started and it was submitted after the TLR being declared – the Interchange Transaction is held from starting next hour or the transaction had never started and it was submitted to the IDC after the Approved-Tag Submission Deadline – the Interchange Transaction is to be held from starting next hour and is not included in the Reallocation calculations until following hour.

Upon acceptance of the TLR Transaction Reallocation/reloading report by the issuing Reliability Coordinator, the IDC will generate a report to be sent to NERC that will include the PSE name and Tag ID of each Interchange Transaction in the IDC TLR report. The Interchange Transaction will be ranked according to its assigned status of HOLD, CURTAILED or PROCEED. The reloading/Reallocation report will be made available at NERC’s public TLR website, and it is NERC’s responsibility to format and publish the report.

**Tag Reloading for TLR Levels 1 and 0**

When a TLR Level 1 or 0 is issued, the Constrained Facility is no longer under SOL or IROL violation and all Interchange Transactions are allowed to flow. In order to provide the Reliability Coordinators with a view of the Interchange Transactions that were halted or curtailed on previous TLR actions (level 2 or higher) and are now available for reloading, the IDC provides such information in the TLR report.

### **New Tag Alarming**

Those Interchange Transactions that are at or above the Curtailment Threshold and are *not* candidates for Reallocation because the tags for those Transactions were not submitted by the approved tag submission deadline for Reallocation will be flagged as HOLD and must not be permitted to start or increase during the next hour. To alert Reliability Coordinators of those Transactions required to be held, the IDC will generate a report (for viewing within the IDC only) at various times. The report will include a list of all HOLD Transactions. In order not to overwhelm the Reliability Coordinator with alarms, only those who issued the TLR and those whose Transactions sink within their Reliability Area will be alarmed. An alarm will be issued for a given tag only once and will be issued for all TLR levels for which halting new Transactions is required: TLR Level 2, 3a, 3b, 5a and 5b.

### **Tag Adjustment**

The Interchange Transactions with statuses of HOLD, CURTAILED or PROCEED must be adjusted by a Tag Authority or Tag Approval entity. Without the tag adjustments, the IDC will assume that Interchange Transactions were not curtailed/held and are flowing at their specified schedule amounts.

1. Interchange Transactions marked as CURTAILED should be adjusted to a cap equal to, or at the request of the originating PSE, less than the reallocated amount (shown as the MW CAP on the IDC report). This amount may be zero if the Transaction is fully curtailed.
2. Interchange Transaction marked as PROCEED should be adjusted to reload (NULL or to its MW level in accordance with its Energy Profile in the adjusted MW in the E-Tag) if the Interchange Transaction has been previously adjusted; otherwise, if the Interchange Transaction is flowing in full, the Tag Authority need not issue an adjust.
3. Interchange Transactions marked as HOLD should be adjusted to 0 MW.

### **Special Tag Status**

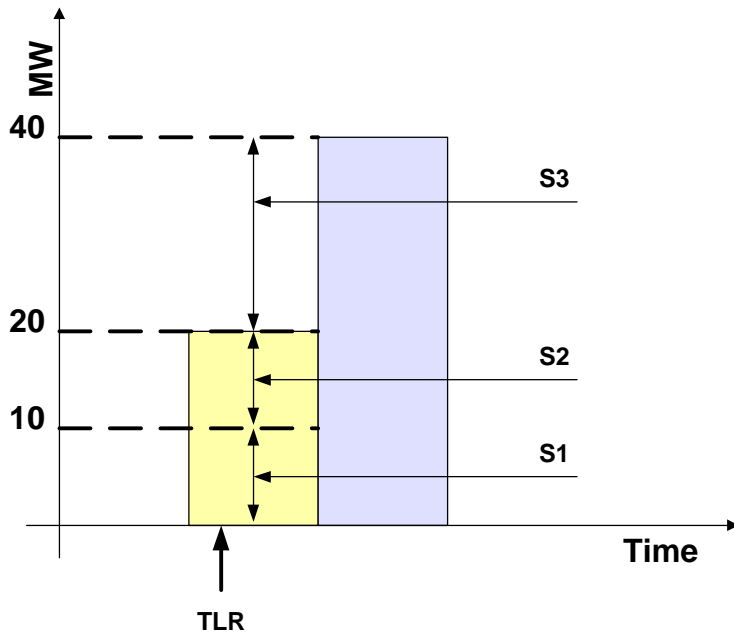
There are cases in which a tag may be marked with a composite state of ATTN\_REQD to indicate that tag Authority/Approval failed to communicate or there is an inconsistency between the validation software of different tag Authority/Approval entities. In this situation, the tag is no longer subject to passive approval and its status change to IMPLEMENT may take longer than 10 minutes. Under these circumstances, the IDC may have a tag that is issued prior to the Tag Submittal Deadline that will not be a candidate for Reallocation. Such tags, when approved by the Tag Authority, will be marked as HOLD and must be halted.

### **Transaction Sub-Priority Examples**

The following describes examples of Interchange Transactions using Non-firm Transmission Service sub-priority setting for an Interchange Transaction under different circumstances of current-hour and next-hour schedules and active MW flowing as modified by tag adjust table in E-Tag.

Example 1 – Transaction curtailed, next-hour Energy Profile is higher

Energy Profile: Current hour	20 MW
Actual flow following curtailment: Current hour	10 MW
Energy Profile: Next hour	40 MW

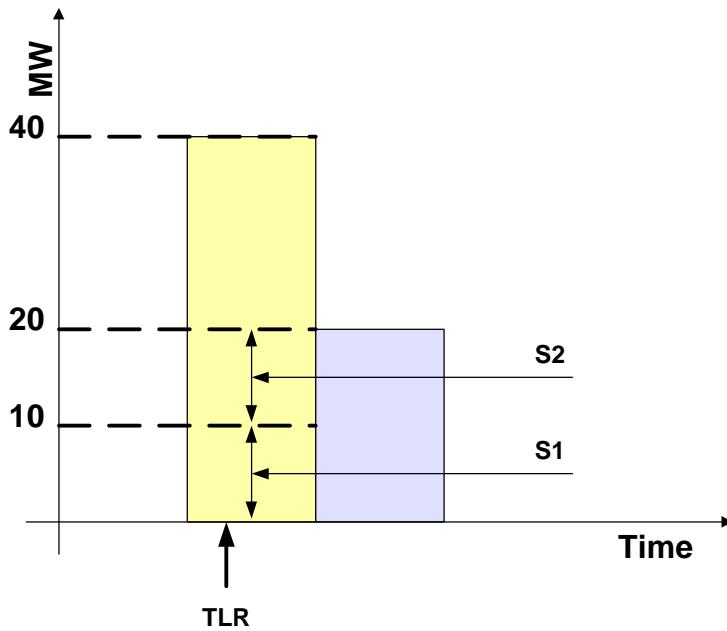


Sub-priorities for Transaction MW:

Sub-Priority	MW Value	Explanation
S1	10 MW	Maintain current curtailed flow
S2	+10 MW	Reload to current hour Energy Profile
S3	+20 MW	Load to next hour Energy Profile
S4		

**Example 2 – Transaction curtailed, next-hour Energy Profile is lower**

Energy Profile: Current hour	40 MW
Actual flow following curtailment: Current hour	10 MW
Energy Profile: Next hour	20 MW

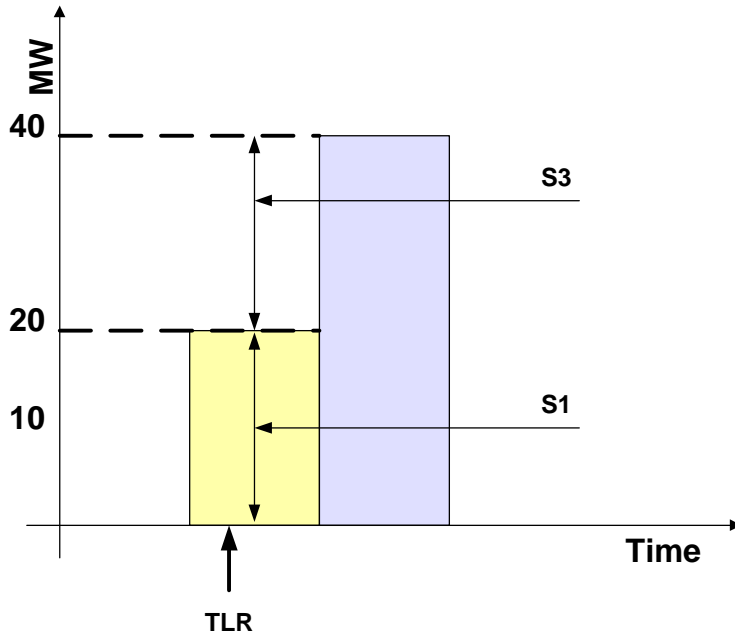


**Sub-priorities for Transaction MW:**

Sub-Priority	MW Value	Explanation
S1	10 MW	Maintain current curtailed flow
S2	+10 MW	Reload to <i>lesser</i> of current and next-hour Energy Profile
S3	+0 MW	Next-hour Energy Profile is 20MW, so no change in MW value
S4		

**Example 3 – Transaction not curtailed, next-hour Energy Profile is higher**

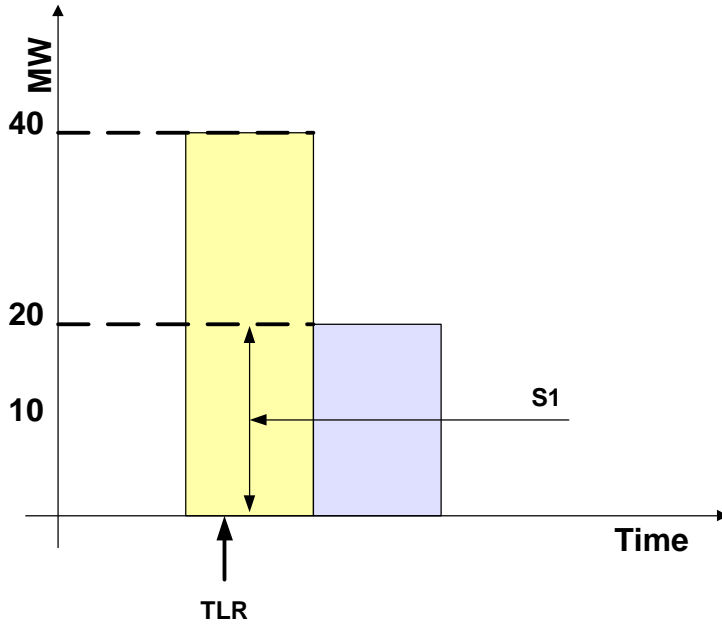
Energy Profile: Current hour	20 MW
Actual flow following curtailment: Current hour	20 MW (no curtailment)
Energy Profile: Next hour	40 MW



Sub-Priority	MW Value	Explanation
S1	20 MW	Maintain current flow (not curtailed)
S2	+0 MW	Reload to lesser of current and next-hour Energy Profile
S3	+20 MW	Next-hour Energy Profile is 40MW
S4		

**Example 4 – Transaction not curtailed, next-hour Energy Profile is lower**

Energy Profile: Current hour	40 MW
Actual flow following curtailment: Current hour	40 MW (no curtailment)
Energy Profile: Next hour	20 MW

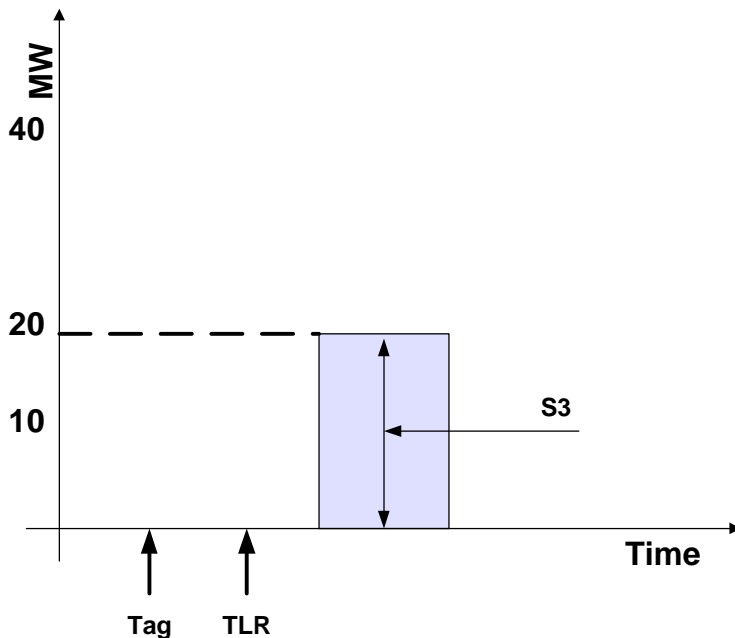


**Sub-priorities for Transaction MW:**

<i>Sub-Priority</i>	<i>MW Value</i>	<i>Explanation</i>
S1	20 MW	Reduce flow to next-hour Energy Profile (20MW)
S2	+0 MW	Reload to <i>lesser</i> of current and next-hour Energy Profile
S3	+0 MW	Next-hour Energy Profile is 20MW
S4		

**Example 5 — TLR Issued before Transaction was scheduled to start**

Energy Profile: Current hour	0 MW
Actual flow following curtailment: Current hour	0 MW (Transaction scheduled to start <i>after</i> TLR initiated)
Energy Profile: Next hour	20 MW



Sub-Priority	MW Value	Explanation
S1	0 MW	Transaction was not allowed to start
S2	+0 MW	Transaction was not allowed to start
S3	+20 MW	Next-hour Energy Profile is 20MW
S4	+0	Tag submitted prior to TLR

(These examples are recommended to be placed in the Attachment 2)

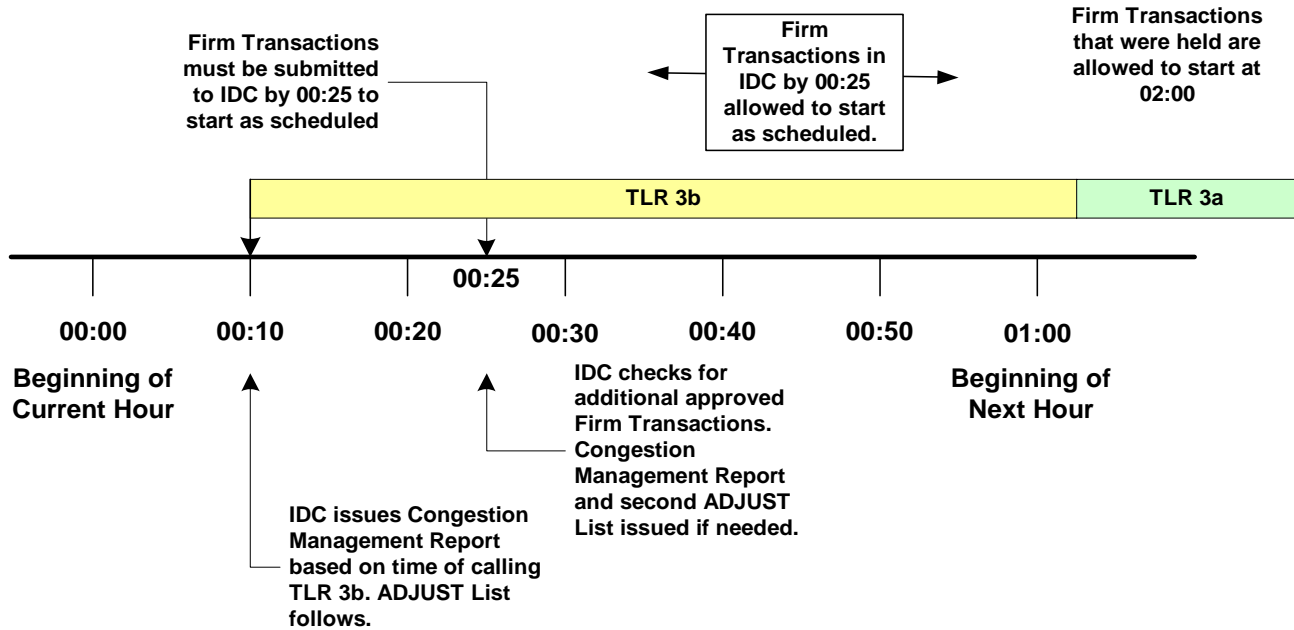


**Appendix F. Considerations for Interchange Transactions**

**Using Firm Point-to-Point Transmission Service**

The following cases explain the circumstances under which an Interchange Transaction using Firm Point-to-Point Transmission Service will be allowed to start as scheduled during a TLR 3b:

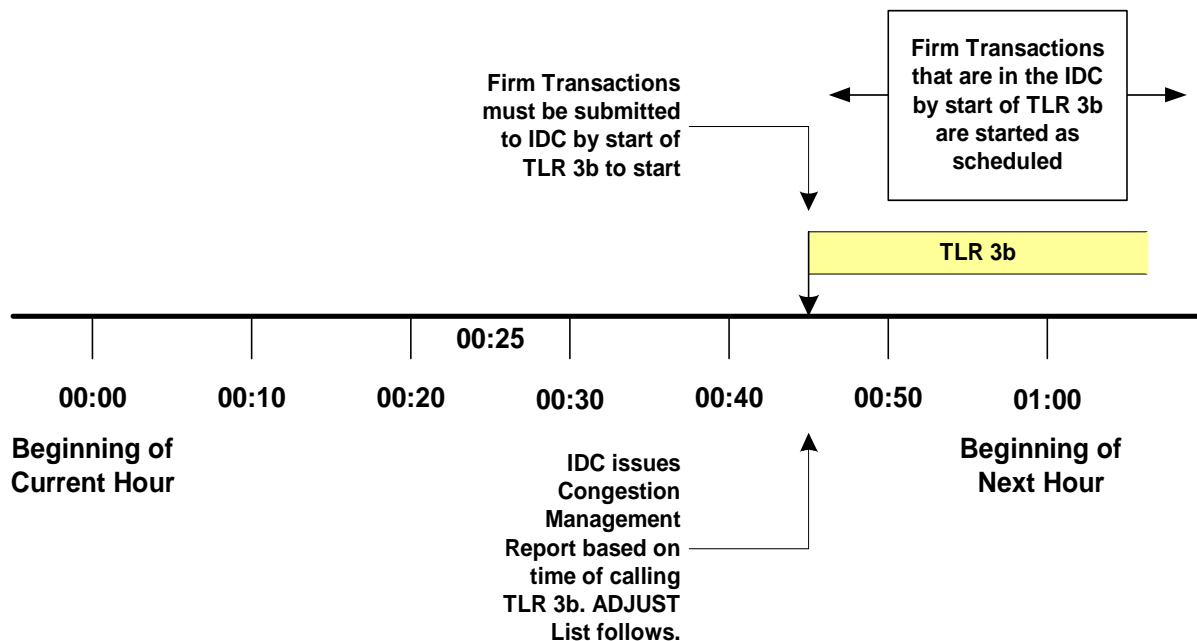
**Case 1: TLR 3b is called between 00:00 and 00:25 and the Interchange Transaction using Firm Point-to-Point Transmission Service is submitted to IDC by 00:25.**



1. The IDC will examine the current hour (00) and next hour (01) for all Interchange Transactions.
  2. The IDC will issue an ADJUST List based upon the time the TLR 3b is called. The ADJUST List will include curtailments of Interchange Transactions using Non-firm Point-to-Point Transmission Service as necessary to allow room for those Interchange Transactions using Firm Point-to-Point Transmission Service to start as scheduled.
  3. At 00:25, the IDC will check for additional Interchange Transactions using Firm Point-to-Point Transmission Service that were submitted to the IDC by that time and issue a second ADJUST List if those additional Interchange Transactions are found.
  4. All existing or new Interchange Transactions using Non-firm Point-to-Point Transmission Service that are increasing or expected to start during the current hour or next hour will be placed on HALT or HOLD. There is no Reallocation of lower-priority Interchange Transactions using Non-firm Point-to-Point Transmission Service.
- Need to reconcile where #4 goes in light of changes to IRO-006-3 (old 2.4.2 of NERC IRO-006-1)
5. Interchange Transactions using Firm Point-to-Point Transmission Service that were submitted to the IDC by 00:25 will be allowed to start as scheduled.

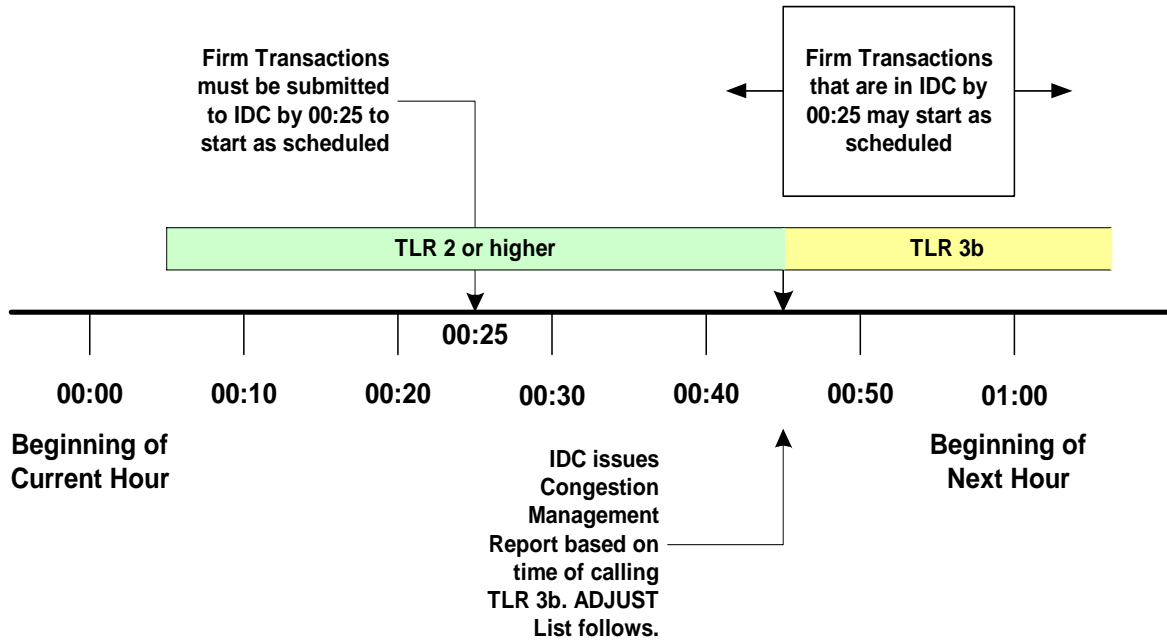
6. Interchange Transactions using Firm Point-to-Point Transmission Service that were submitted to the IDC after 00:25 will be held.
7. Once the SOL or IROL violation is mitigated, the Reliability Coordinator shall call a TLR Level 3a (or lower). If a TLR Level 3a is called:
  - a. Interchange Transactions using Firm Point-to-Point Transmission Service that were submitted to the IDC by 00:25 will be allowed to start as scheduled at 02:00.
  - b. Interchange Transactions using Non-firm Point-to-Point Transmission Service that were held may then be reallocated to start at 02:00.

**Case 2: TLR 3b is called after 00:25 and the Interchange Transaction using Firm Point-to-Point Transmission Service is submitted to the IDC no later than the time at which the TLR 3b is called.**



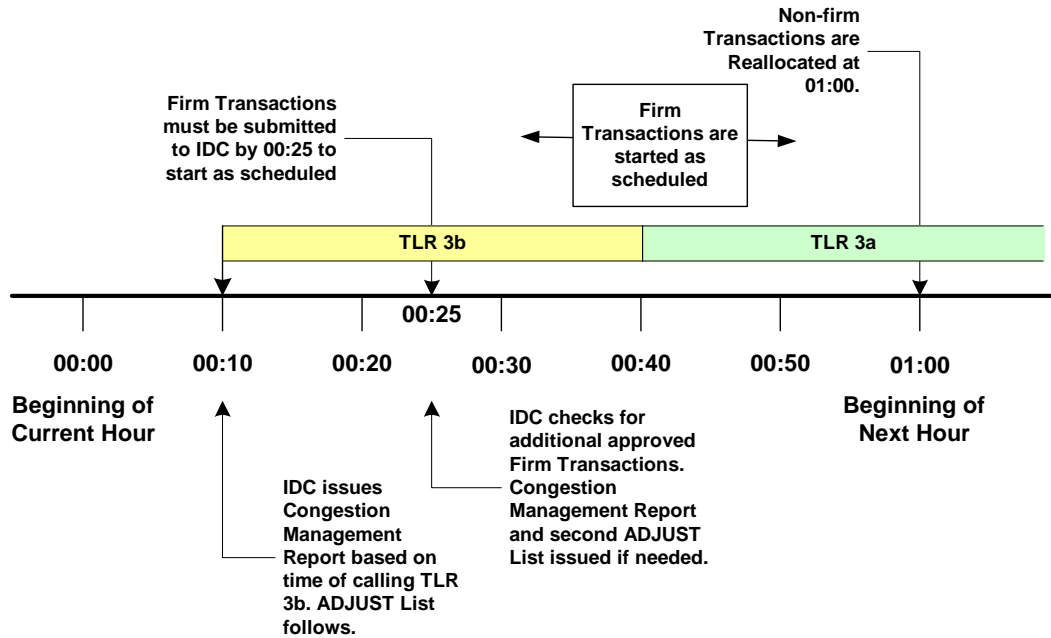
1. The IDC will examine the current hour (00) and next hour (01) for all Interchange Transactions.
2. The IDC will issue an ADJUST List at the time the TLR 3b is called. The ADJUST List will include additional curtailments of Interchange Transactions using Non-firm Point-to-Point Transmission Service as necessary to allow room for those Interchange Transactions using Firm Point-to-Point Transmission Service to start at as scheduled.
3. All existing or new Interchange Transactions using Non-firm Point-to-Point Transmission Service that are increasing or expected to start during the current hour or next hour will be placed on HALT or HOLD. There is no Reallocation of lower-priority Interchange Transactions using Non-firm Point-to-Point Transmission Service.
4. Interchange Transactions using Firm Point-to-Point Transmission Service that were submitted to the IDC by the time the TLR 3b was called will be allowed to start at as scheduled.
5. Interchange Transaction using Firm Point-to-Point Transmission Service that were submitted to the IDC after the TLR 3b was called will be held until the next issuance for TLR (either TLR 3b, 3a, or lower level).

**Case 3. TLR 2 or higher is in effect, a TLR 3b is called after 00:25, and the Interchange Transaction using Firm Point-to-Point Transmission Service is submitted to the IDC by 00:25.**



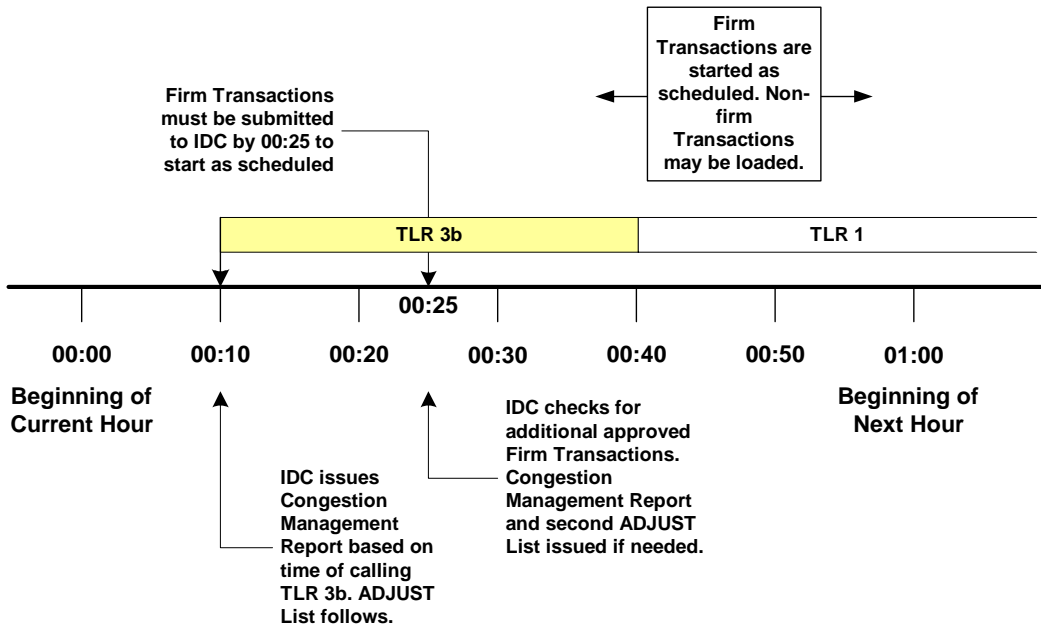
If a TLR 2 or higher has been issued and 3B is subsequently issued, then only those Interchange Transactions using Firm Point-to-Point Transmission Service that had been submitted to the IDC by 00:25 will be allowed to start as scheduled. All other Interchange Transactions are held.

Case 4. TLR 3b is called before 00:25 and the Interchange Transaction is submitted to the IDC by 00:25. TLR 3a is called at 00:40.



1. Same as Case 1, but TLR Level 3b ends at 00:40 and becomes TLR Level 3a.
2. All Interchange Transactions using Firm Point-to-Point Transmission Service will start as scheduled if in by the time the 3A is declared.
3. All Interchange Transactions using Non-firm Point-to-Point Transmission Service are reallocated at 01:00.

Case 5. TLR 3b is called before 00:25 and the Interchange Transaction is submitted to the IDC by 00:25. TLR 1 is called at 00:40.



1. Same as Case 1, but TLR Level 3b ends at 00:40 and becomes TLR Level 1.
2. All Interchange Transactions using Firm Point-to-Point Transmission Service will start as scheduled.
3. All Interchange Transactions using Non-firm Point-to-Point Transmission Service may be loaded immediately.

**Appendix G. Examples of On-Path and Off-Path Mitigation**

**Examples**

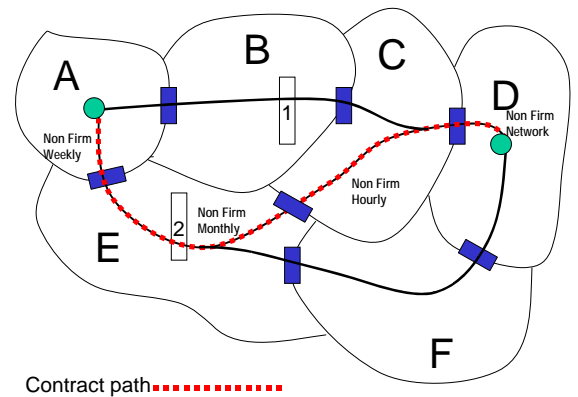
This section explains, by example, the obligations of the Transmission Service Providers on and off the Contract Path when calling for Transmission Loading Relief. (References to Principles refer to **Requirement 4, “Mitigating Constraints On and Off the Contract Path during TLR,”** on the preceding pages.) When Reallocating or curtailing Interchange Transactions using Firm Point-to-Point Transmission Service under TLR Level 5a or 5b, the Transmission Service Providers may be obligated to perform comparable curtailments of its Transmission Service to Network Integration and Native Load customers. See **Requirement 5, “Parallel Flow Calculation Procedure for Reallocating or Curtailing Firm Transmission Service during TLR.”**

**Scenario:**

- Interchange Transaction arranged from system A to system D, and assumed to be at or above the Curtailment Threshold.
- Contract path is A-E-C-D (except as noted).
- Locations 1 and 2 denote Constraints.

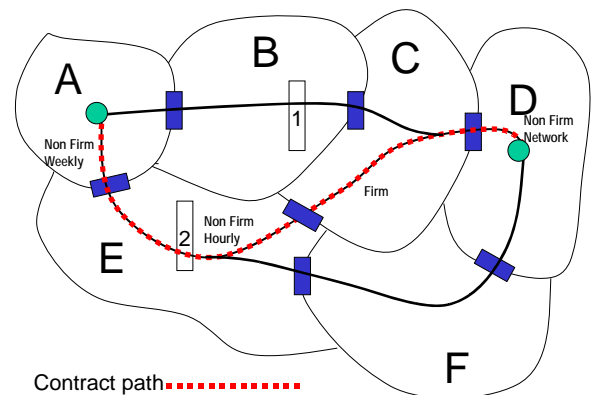
**Case 1: E is a non-firm Monthly path; C is non-firm Hourly; E has Constraint at #2**

- E may call its Reliability Coordinator for TLR to relieve overload at Constraint #2.
- Interchange Transaction A-D may be curtailed by TLR action as though it was being served by **Non-firm Monthly Point-to-Point Transmission Service**, even though it was using Non-firm Hourly Point-to-Point Transmission Service from C. That is, it takes on the priority of the link with the Constrained Facility along the Contract Path (Principle 1).



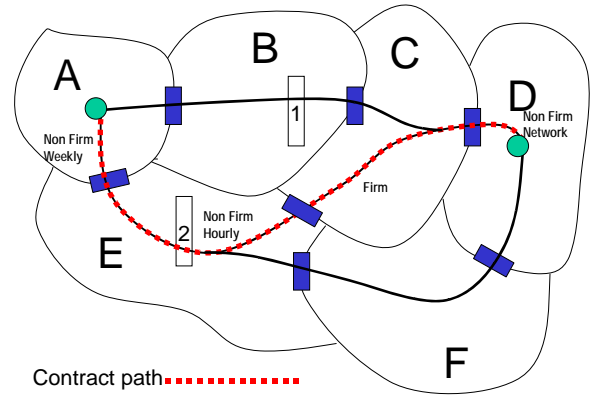
**Case 2: E is a non-firm hourly path, C is firm; E has Constraint at #2**

- Although C is providing Firm Service, the Constraint is not on C’s system; therefore E is not obligated to treat the Interchange Transaction as though it was being served by Firm Point-to-Point Transmission Service.
- E may call its Reliability Coordinator for TLR to relieve overload at Constraint #2.
- Interchange Transaction A-D may be curtailed by TLR action as though it was being served by Non-firm Hourly Point-to-Point Transmission Service, even though it was using firm service from C. That is, when the constraint is on the Contract Path, the Interchange Transaction takes on the priority of the link with the Constrained Facility (Principle 1).



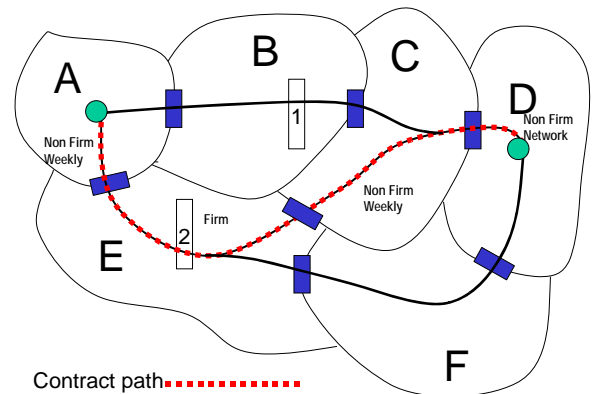
**Case 3: E is a non-firm hourly path, C is firm, B has Constraint at #1**

- B may call its Reliability Coordinator for TLR to relieve overload at Constraint #1.
- Interchange Transaction A-D may be curtailed by TLR action as though it was being served by Non-firm Hourly Transmission Service, even if it was using firm Transmission Service elsewhere on the path. When the constraint is off the Contract Path, the Interchange Transaction takes on the lowest priority reserved on the Contract Path (Principle 3).



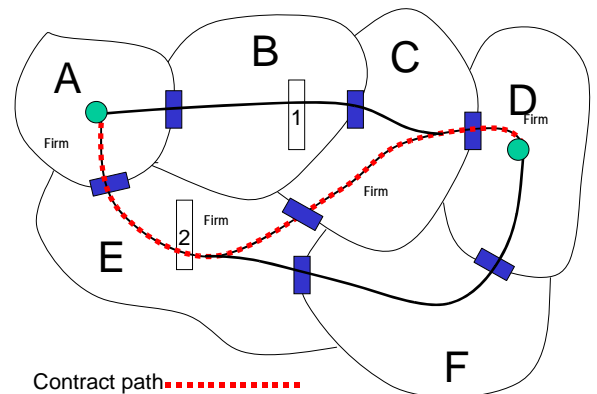
**Case 4: E is a firm path; A, D, and C are Non-firm; E has Constraint at #2**

- Interchange Transaction A – D is considered Firm priority for curtailment purposes.
- E may then call its Reliability Coordinator for TLR, which would curtail all Interchange Transactions using Non-firm Point-to-Point Transmission Service first.
- E is obligated to try to reconfigure transmission to mitigate Constraint #2 in E before E may curtail the Interchange Transaction as ordered by the TLR (Principle 2).



**Case 5: The entire path (A-E-C-D) is firm; E has Constraint at #2**

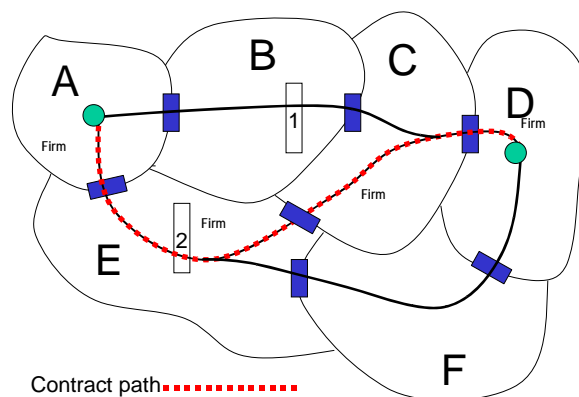
- Interchange Transaction A – D is considered Firm priority for curtailment purposes.
- E may call its Reliability Coordinator for TLR, which would curtail all Interchange Transactions using Non-firm Point-to-Point Transmission Service first.
- E is obligated to curtail Interchange Transactions using Non-firm Point-to-Point Transmission Service, and then reconfigure transmission on its system, or, if there is an agreement in place, arrange for reconfiguration or other congestion management options on another system, to mitigate Constraint #2 in E before the firm A-D transaction is curtailed (Principle 2).
- A, C, D, may be requested by E to try to reconfigure transmission to mitigate Constraint #2 in E at E's expense (Principle 2).





**Case 6: The entire path (A-E-C-D) is firm; B has Constraint at #1.**

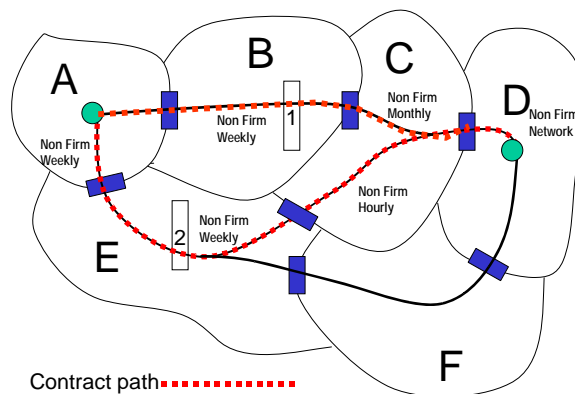
- Interchange Transaction A – D is considered Firm priority for curtailment purposes.
- B may call its Reliability Coordinator for TLR for all *non-firm* Interchange Transactions that contribute to the overload at Constraint #1.
- Following the curtailment of all non-firm Interchange Transactions, the Reliability Coordinator (ies) will determine which Transmission Operator(s) will reconfigure their transmission, if possible, to mitigate constraint #1 (Principle 4).



- A-D transaction may be curtailed as a result. However, the A-D transaction is treated as a firm Interchange Transaction and will be curtailed only after non-firm Interchange Transactions. (Note: This means that the firm Contract Path is respected by all parties, including those not on the Contract Path.) (Principle 4)

**Case 7: Two A-to-D transactions using A-B-C-D and A-E-C-D; A and B are non-firm; B has Constraint at #1**

- B is not obligated to reconfigure transmission to mitigate Constraint at #1. (Principle 1)
- B may call its Reliability Coordinator for TLR to relieve overload at Constraint #1.
- If both A – D Interchange Transactions have the same Transfer Distribution Factors across Constraint #1, then they both are subject to curtailment. However, Interchange Transaction A – D using the A-B-C-D path is assigned a higher priority (priority NW on B), and would not be curtailed until after the Interchange Transaction using the path A-E-C-D (priority NH on the Contract Path as observed by B who is off the Contract Path).



## **Implementation Plan for Standard IRO-006-4 — Reliability Coordination — Transmission Loading Relief**

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### **Summary**

As filed with FERC, the NERC TLR Drafting Team has identified the reliability aspects of IRO-006 in a draft revision to the standard. In order to ensure industry understanding of these efforts, the Drafting Team has prepared the following documents:

- A white paper detailing the reasons for and history of this SAR
- The proposed reliability standard (redlines showing changes to the last approved version of the standard and showing changes to the last posing of the proposed changes to the standard and in clean formats),
- A proposed Attachment 1 (both in redline and in clean formats),
- A reference to the approved NAESB business practices (to show where commercial aspects will be covered), and
- An annotated mark-up of the original IRO-006-3 Attachment 1 (highlighting how each part of the standard was divided).

### **Prerequisite Approvals**

There are no other reliability standards or Standard Authorization Requests (SARs), approved, that must be implemented before this standard can be implemented.

### **Modified Standards**

IRO-006-3 should be retired when IRO-006-4 and IRO-006-4 Attachment 1 become effective.

### **Compliance with Standards**

Once this standard becomes effective, the responsible entities identified in the applicability section of the standard must comply with the requirements. These include:

- Reliability Coordinator,
- Transmission Operator, and
- Balancing Authority.

### **Proposed Effective Date**

For each Interconnection, all requirements in the standard become effective on the first day of first quarter after all applicable regulatory approvals (for entities in that Interconnection) have been received (or the Reliability Standards otherwise become effective in those jurisdictions if regulatory approval is not required.)

## Summary

As filed with FERC, the NERC TLR Drafting Team has identified the reliability aspects of IRO-006 in a draft revision to the standard. In order to ensure industry understanding of these efforts, the ~~Drafting Team~~drafting team has prepared the following documents:

- ~~A~~A-white paper detailing the reasons for and history of this SAR
- ~~The proposed~~Draft reliability standard (redlines showing changes to the last approved version of the standard and showing changes to the last posing of the proposed changes to the standard~~both in redline~~ and in clean formats);
- ~~A proposed~~Draft Attachment 1 (both in redline and in clean formats);
- ~~A A-reference~~Reference to the approved NAESB business practices (to show where commercial aspects will be covered),~~and~~
- ~~An An-annotated~~Aannotated mark-up of the original IRO-006-3 Attachment 1 (highlighting how each part of the standard was divided);

## Prerequisite Approvals

There are no other reliability standards or Standard Authorization Requests (SARs), approved, that must be implemented before this standard can be implemented.

## Modified Standards

IRO-006-3 should be retired when IRO-006-4 and IRO-006-4 Attachment 1 become effective.

## Compliance with Standards

Once this standard becomes effective, the responsible entities identified in the applicability section of the standard must comply with the requirements. These include:

- Reliability Coordinator;
- Transmission Operator, and
- Balancing Authority;

## Proposed Effective Date

For each Interconnection, all~~All~~ requirements in the standard ~~should~~ become effective on the first day of the first quarter after all applicable regulatory approvals (for entities in that Interconnection) have been received (or the Reliability Standards otherwise become effective in those jurisdictions if regulatory approval is not required.) ~~Board of Trustee adoption.~~

**Consideration of Comments on Initial Ballot of IRO-006-4 — Reliability Coordination – Transmission Loading Relief**

**Summary Consideration:**

The drafting team did not make any changes to the standard based on the comments submitted by balloters.

Segment	Organization	Comment
1	Duke Energy	<p>Duke Energy greatly appreciates the work behind the drafting of this Standard, however most of the concerns which we have noted in the past have not been addressed:</p> <ol style="list-style-type: none"> <li>1. There is ambiguity between requirements R1, R1.1 and R3 which could cause the RC or BA to hesitate to act during an emergency in real time. We are concerned that there is a lack of clarity between R1, R1.1 and R3 regarding the use of local procedures in response to a SOL or IROL violation. R1 states that the RC can select a local procedure at its discretion, and R1.1 recognizes that an Interconnection-wide TLR procedure used alone is an inappropriate and ineffective tool. However R3 states that the RC must have prior approval from the ERO to use a local procedure as a substitute for curtailments directed by the Interconnection-wide procedure. However it is unclear how prior approval can be obtained since the local procedure will be case-specific to the problem that initiates the Interconnection-wide procedure. Further, depending upon the resolution of this issue, M3 will need to be restated.</li> <li>2. The SDT added Transmission Operator back to the Applicability section of this standard. We disagree with this because there are no requirements in the standard which apply to the Transmission Operator.</li> <li>3. The SDT has not accurately captured the reliability requirements of the former TLR procedure following the NERC/NAESB split.           <ul style="list-style-type: none"> <li>▪ The portions of the Regional Differences (Section E) that describe how the impact of market flows on facilities are calculated should not be moved to NAESB. The amount of flow presented to the IDC for curtailment on a constrained facility (Flowgate) clearly has Reliability aspects. Also, while it is clear what the intent is, the objective has not been accomplished because there are some instances where information may need to be in both documents.</li> <li>▪ Attachment 1 - Section 2 Transmission Loading Relief (TLR) Levels should have a statement for each level that indicates whether or not transactions will be impacted. (Example – for TLR Level 1 – No transactions will be impacted; Level 2 - Prevents all transactions less than priority 7 with TDF &gt; 5% from starting or increasing; etc.) A good guide for this can be found on the NERC site under IDC training – IDC TLR Matrix.</li> </ul> </li> </ol>

**Consideration of Comments on Initial Ballot of IRO-006-4 — Reliability Coordination – Transmission Loading Relief**

Segment	Organization	Comment
		<ul style="list-style-type: none"> <li>▪ Attachment 1 - Section 3.1 (Interchange Transaction Curtailment Order for use in TLR Procedures / Priority of Interchange Transactions) should not be moved to NAESB. Without this, there will be no reference to the curtailment order in the procedure.</li> <li>▪ Additional comments on the split: Section 1.5.1 should not move to NAESB</li> <li>▪ Section 2.2.2 “However, the RC...on the Constrained Facility” should stay in IRO-004.</li> <li>▪ Section 2.2.3 “If the time in TLR Level 2...TLR Log” should stay in IRO-004.</li> <li>▪ Section 2.5.3 First sentence should move to NAESB.</li> <li>▪ Section 2.5.3 Reference to Section 4 in last sentence needs to be reviewed since Section 4 moves to NAESB.</li> <li>▪ Section 3.2 – 3.2.1.1 Stay in the IRO.</li> <li>▪ Section 4.1.4 Stay in the IRO.</li> <li>▪ Section 6 – 6.1 Need wording like section 7 – 7.1</li> <li>▪ Section 6.2 -6.2.6 Should move to NAESB</li> <li>▪ Section 7.4.1 – 7.4.3 Move to NAESB</li> <li>▪ Section 7.7 – 7.9, Appendix E and F should move to NAESB.</li> <li>▪ Attachment 1 - Section 1.7 Redispatch options should not be moved Attachment 1 - Section 2. - Introduction – The last two sentences are “on path/off path discussion”. Similar discussion was moved.</li> <li>▪ Attachment 1 - Section 2.5.3 – the first sentence should be moved</li> </ul> <p>4. We do not agree with the measures proposed in the standard.</p> <ul style="list-style-type: none"> <li>▪ M5 seems to be measuring compliance to other Standards. INT-001 and INT-003 have applicability for the BA and not the RC. And INT-004 has applicability for both the RC and BA. INT-004 has no measure or compliance for the RC. There should not be a requirement (R5) or measure (M5) that requires compliance to another standard.</li> <li>▪ R3 needs to be split into two requirements, one that focuses on implementing a local procedure simultaneously with the Interconnection-wide procedure and another that states specifically, “Each Reliability Coordinator shall follow the curtailments as directed by the Interconnection-wide procedure.” This requirement should have a Medium Violation Risk factor and a real time operations time horizon. This would</li> </ul>

**Consideration of Comments on Initial Ballot of IRO-006-4 — Reliability Coordination – Transmission Loading Relief**

Segment	Organization	Comment
		<p>be similar to R4, but for curtailing transactions that are within an Interconnection.</p> <ul style="list-style-type: none"> <li>▪ M3 – Need to have clarity on just what is considered a procedure in this case.</li> </ul> <p>5. We do not agree with the compliance elements proposed in the standard.</p> <ul style="list-style-type: none"> <li>▪ Violation Severity Levels 2.4.2 and 2.4.3 should be moved from Severe to High because these violations may not adversely affect the effectiveness of TLR in mitigating the congestion on the constrained facility.</li> <li>▪ Section 2.1.2 – the RC has no compliance obligation</li> </ul>
<p><b>Response:</b> The Drafting Team has responded to your comments in detail below.</p> <p>1.) The Drafting Team does not agree the requirements are ambiguous.</p> <p>R1 indicates that an RC can select a local procedure, an Interconnection-wide procedure, or some combination of the two to mitigate a transmission constraint. In R1.1, if an Interconnection-wide procedure is used (with or without any other local procedures), the TLR procedure stipulated in Attachment 1 must be followed. It is also pointed out in R1.1 that an Interconnection-wide procedure alone is inappropriate and ineffective tool to manage IROLS. There is no conflict between R1 and R1.1.</p> <p>R3 requires that an RC having a relief obligation from an Interconnection-wide procedure shall follow that procedure and meet any relief obligation in the manner directed by the procedure. However, if an RC wishes to use a local procedure <u>in lieu</u> of the requested curtailment, the use of that local procedure needs to have prior approval from the ERO. There is no conflict with R1 and R1.1 (in which the local procedure is used either alone or in conjunction with other procedures, but not as a substitute for a requested curtailment using the Interconnection-wide procedure). Obtaining prior approval from the ERO for use of a local procedure as a substitute for TLR curtailments is the current practice and a requirement stipulated in the pre-converted Operating Policy 9. The need for obtaining the ERO approval has been a practice for years. Before formation and certification of the ERO, the NERC OC has served the approval role. The Drafting Team has not changed the requirement, except to replace “NERC OC” with “the ERO” to reflect today’s standard approval authority.</p> <p>With regard to the concerns expressed related to “prior approval,” the intent is that prior to any local procedure being used in lieu of the curtailments directed by an RC, it must be peer-reviewed for effectiveness by the industry at large. This does not require all local procedures to be pre-approved by the ERO; only those that will be used in place of RC-requested curtailments. It is expected that such procedures will not be developed “on the fly,” but be developed and reviewed for effectiveness prior to implementation.</p> <p>We will attempt to provide more clarity in the planned Phase 3 revisions.</p> <p>2.) Some previous commenters pointed out that Requirement 1.8.1 and 2.9.2 place requirements for the Transmission Operators to comply with the RC’s requests. The Drafting Team has therefore returned the TOp to the Applicability Section.</p> <p>3.) Regional Differences (Section E) - Calculation of market flows is part of the “how” the TLR is implemented and hence, should be in the NAESB Business Practice. However, the calculation of market flows will continue to be in the NERC Standard until such time as the</p>		

**Consideration of Comments on Initial Ballot of IRO-006-4 — Reliability Coordination – Transmission Loading Relief**

Segment	Organization	Comment
		ongoing Market Flow pilot has been completed and changes to the market flow calculation (if any) are determined and implemented.
		Attachment 1 - Section 2 Transmission Loading Relief (TLR) Levels - The IDC TLR matrix is an excellent reference document for an overview of the TLR levels, but this information does not belong in this standard because it is supporting information for the NAESB Business Practice. A more appropriate place for this information is in the NAESB Business Practice or the forthcoming Operator's Guide.
		Attachment 1 - Section 3 - The curtailment order is a NAESB Business Practice issue and is addressed in NAESB documents.
		Section 1.5 - The Drafting Team agrees that Section 1.5.1 should be included in the NERC Standard and it will be reviewed as part of the planned Phase 3 revisions.
		Section 2.2.2 - The Drafting Team agrees with the comment and it will be reviewed as part of the planned Phase 3 revisions.
		Section 2.2.3 - The Drafting Team agrees with the comment and it will be reviewed as part of the planned Phase 3 revisions.
		Section 2.5.3 - Curtailments of non-firm are addressed in the NAESB Business Practice.
		Section 2.5.3 - Section 4 is addressed in the NAESB Business Practice.
		Section 3.2 – 3.2.1.1 - The details of how curtailments are implemented are a NAESB Business Practice issue and are addressed in NAESB documents.
		Section 4.1.4 - The details of how curtailments are implemented are a NAESB Business Practice issue and are addressed in NAESB documents.
		Section 6 – 6.1 - The details of how curtailments are implemented are a NAESB Business Practice issue and are addressed in NAESB documents.
		Section 6.2 -6.2.6 - The Drafting Team agrees. The details of how curtailments are implemented are a NAESB Business Practice issue and are addressed in NAESB documents.
		Section 7.4.1 – 7.4.3 - The Drafting Team agrees. The details of how curtailments are implemented are a NAESB Business Practice issue and are addressed in NAESB documents.
		Section 7.7 – 7.9, Appendix E and F - The Drafting Team agrees. The details of how curtailments are implemented are a NAESB Business Practice issue and are addressed in NAESB documents.
		Attachment 1 - Section 1.7 - The Drafting Team does not understand the comment.
		Introduction to Section 2 – This topic is a NAESB Business Practice issue and should have been removed. This will be addressed in

**Consideration of Comments on Initial Ballot of IRO-006-4 — Reliability Coordination – Transmission Loading Relief**

Segment	Organization	Comment
		<p>the planned Phase 3 revisions.</p> <p>Attachment 1 - Section 2.5.3 - The Drafting Team agrees. The details of how curtailments are implemented are a NAESB Business Practice issue and are addressed in NAESB documents.</p> <p>4.) R5 in this standard is worded such that the applicable requirements in the Interchange Standards shall be followed. The need for R5 is under review and will be either removed or strengthened in the planned Phase 3 revisions.</p> <p>The Drafting Team agrees that R3 can be split into 2 requirements. However, given the scope of this Phase 1 task (to split the existing standard into the NERC Reliability and NAESB Business Practice components), the Drafting Team has attempted to minimize changes to existing requirements and put all improvement changes into the planned Phase 3 revisions.</p> <p>M3 references R3, which indicates that the procedure is a local procedure that is used as a substitute for curtailment as directed by an Interconnection-wide procedure.</p> <p>5.) Violation Severity Levels 2.4.2 and 2.4.3 - The Drafting Team believes the "Severe" level is appropriate. Please note that the Violation Severity Level is not a measure of how much impact a violation of the requirement will have on the system (which is described by the Violation Risk Factor); it is a measure of the magnitude of a violation, or "how far" the entity has deviated from the standard.</p> <p>In the case of 2.4.2 which references R3, compliance is a simple "Yes" or "No". If the TOp experiencing the congestion uses a local procedure to which it is not a party, then R3 is obviously violated. There is no "partial compliance" or way to determine degree of violation in this case beyond "Yes" or "No." Hence a Severe level is assigned.</p> <p>The same reasoning applies for 2.4.2, in which case prior approval has either been obtained or not.</p> <p>Section 2.1.2 – The Reliability Coordinator has compliance obligations in INT-004 and INT-010.</p>
1	ITC Transmission	This Standard is not ready for ballot; the Drafting Team did not complete its job. There are too many instances where the SDT pushed resolution of comments and concerns off to "Phase III." The Drafting Team even acknowledged, "The Drafting Team was not able to resolve all issues." Resolve the issues, then post it for ballot.
<p><b>Response:</b> Phase 1 of the Drafting Team's work aims only at splitting the existing standard to meet FERC's requirement. It was made clear to the industry, both at the start of this project and in the first posting of this standard, that changes to improve the quality of this standard would be addressed in a planned "Phase 3," an approach with which the majority of the industry agreed.</p>		
1	Nebraska Public Power District	<p>I believe the Violation Risk Factor of R3 should be Medium due to the potential SOL/IROL impact of not complying with curtailments as directed by the interconnect-wide procedure.</p> <p>Also, the Time Horizon of R3 should be Real-Time Operations as curtailments are implemented real-time. I do not</p>



**Consideration of Comments on Initial Ballot of IRO-006-4 — Reliability Coordination – Transmission Loading Relief**

Segment	Organization	Comment
		believe these comments warrant a negative vote however they should be considered at the next opportunity.
<p><b>Response:</b> The key requirement in R3 is to obtain prior approval from the ERO to use a local procedure as a substitute for curtailments directed by the Interconnection-wide procedure. If the local procedure is invoked, it is likely that relief will be provided; the main violation is that the procedure has not received prior approval. Hence, the Drafting Team assesses the risk of this requirement based on the impact of not receiving prior approval, and find that risk to be Low. Risk of this requirement is not based on the impact of not following the Interconnection-wide procedure, which is addressed in R1.1.</p> <p>Similarly, mitigation of the violation (in this case, obtaining approval from the ERO), is not a real-time or short term task. Hence, the Drafting Team assigns the time horizon “Operations Planning” to be an acceptable duration in which to have the violation corrected.</p> <p>Thank you for supporting this standard despite your concerns.</p>		
1	SaskPower	<p>SaskPower is generally supportive of the standard, but does not support the language in R3 requiring a RC to obtain prior approval of a local procedure from the ERO. We can see the need for documentation as to why a local procedure is being used and its effectiveness for compliance purposes, but not approval from the ERO.</p> <p>Also we do not see the need for the industry at large to verify that a local procedure will achieve the stated goals of providing relief. That is the function of the RC, or why have them.</p> <p>R3 also does not seem to follow the intent of the following SAR mandates in that it introduces a role for the ERO in the requirement: Do not include any ‘fill-in-the-blank’ requirements. These are requirements that assign one entity responsibility for developing some performance measures without requiring that the performance measures be included in the body of a standard – then require another entity to comply with those requirements. Do not write any requirements for the Regional Reliability Organization. Any requirements currently assigned to the RRO should be re-assigned to the applicable functional entity. In the Saskatchewan context, the Eastern Interconnection procedure based on using the IDC does not work due to the nature of either the interface (phase-shifting transformer) or its transfer limitation (voltage). Perhaps the Eastern Interconnection procedure needs to be reviewed to see if it can truly function on an Interconnection wide basis.</p>
<p><b>Response:</b> The need for obtaining the ERO approval has been a practice for years. Before formation and certification of the ERO, the NERC OC has served as the approval authority. The Drafting Team has not changed the requirement, except to replace “NERC OC” with “the ERO” to reflect today’s standard approval authority.</p> <p>Nonetheless, as part of our work on the planned Phase 3 revisions, the Drafting Team will take your comment to the NERC Standards Committee (and the OC as appropriate) to review the need for having prior NERC approval for using a local procedure as a substitute for curtailments directed by an Interconnection-wide procedure. This may be discussed as part of a broader issue regarding the need for NERC to approve regional reliability plans and Reliability Coordinator plans.</p>		
1	Tri-State G &	Standard does not fully address the regional differences and could allow the Reliability Coordinator to implement a

**Consideration of Comments on Initial Ballot of IRO-006-4 — Reliability Coordination – Transmission Loading Relief**

Segment	Organization	Comment
	T Association Inc.	procedure not applicable to its region, i.e. a WECC - Coordinator could implement the Eastern TLR at their discretion.
<p><b>Response:</b> The regional differences are provided in R1.1 to R1.3, where it is described that each procedure is for use in a specific Interconnection. While your described scenario could technically occur based on the language used in the standard, the Drafting Team does not believe an RC in one Interconnection would attempt to implement an Interconnection-wide procedure from another Interconnection, because 1.) any such attempt would require tools not available to that RC, and 2.) if those tools were available to that RC, they would not be configured such that they were capable of analyzing the different Interconnection without significant re-work and modeling effort.</p>		
2	Midwest ISO, Inc.	<p>While we are supportive of this standard, we have underlying concerns about how similar things will be handled in the future. The Drafting Teams had to create an “operator manual” to provide a single picture of how the process works. After parsing part of this standard out, the industry has spent a very very significant amount of time and effort tinkering with the two pieces. After all this effort, it appears from the operator manual that nothing really has changed. Just because a reliability standard has business implications, does not make it a business practice. We hope careful thought is given before going down a similar path with other reliability standards.</p>
<p><b>Response:</b> The Drafting Team appreciates your concerns. The Drafting Team is assigned such a task (to split the standard) and has provided the draft Operator Manual in response to industry comments. The Drafting Team will bring your comments to the Standards Committee's attention, so they may consider them in future work efforts.</p>		
3	Duke Energy	<p>1. There is ambiguity between requirements R1, R1.1 and R3 which could cause the RC or BA to hesitate to act during an emergency in real time. We are concerned that there is a lack of clarity between R1, R1.1 and R3 regarding the use of local procedures in response to a SOL or IROL violation. R1 states that the RC can select a local procedure at its discretion, and R1.1 recognizes that an Interconnection-wide TLR procedure used alone is an inappropriate and ineffective tool. However R3 states that the RC must have prior approval from the ERO to use a local procedure as a substitute for curtailments directed by the Interconnection-wide procedure. However it is unclear how prior approval can be obtained since the local procedure will be case-specific to the problem that initiates the Interconnection-wide procedure. Further, depending upon the resolution of this issue, M3 will need to be restated.</p> <p>2. The SDT added Transmission Operator back to the Applicability section of this standard. We disagree with this because there are no requirements in the standard which apply to the Transmission Operator.</p> <p>3. The SDT has not accurately captured the reliability requirements of the former TLR procedure following the NERC/NAESB split.</p> <ul style="list-style-type: none"> <li>▪ The portions of the Regional Differences (Section E) that describe how the impact of market flows on facilities are calculated should not be moved to NAESB. The amount of flow presented to the IDC for curtailment on a constrained facility (Flowgate) clearly has Reliability aspects. Also, while it is clear what the intent is, the objective has not been accomplished because there are some instances where information may need to be in both documents.</li> <li>▪ Attachment 1 - Section 2 Transmission Loading Relief (TLR) Levels should have a statement for each level that indicates whether or not transactions will be impacted. (Example – for TLR Level 1 – No transactions will be impacted; Level 2 - Prevents all transactions less than priority 7 with TDF &gt; 5% from starting or</li> </ul>

**Consideration of Comments on Initial Ballot of IRO-006-4 — Reliability Coordination – Transmission Loading Relief**

Segment	Organization	Comment
		<p>increasing; etc.) A good guide for this can be found on the NERC site under IDC training – IDC TLR Matrix.</p> <ul style="list-style-type: none"> <li>▪ Attachment 1 - Section 3.1 (Interchange Transaction Curtailment Order for use in TLR Procedures / Priority of Interchange Transactions) should not be moved to NAESB. Without this, there will be no reference to the curtailment order in the procedure.</li> <li>▪ Additional comments on the split: Section 1.5.1 should not move to NAESB</li> <li>▪ Section 2.2.2 “However, the RC...on the Constrained Facility” should stay in IRO-004.</li> <li>▪ Section 2.2.3 “If the time in TLR Level 2...TLR Log” should stay in IRO-004.</li> <li>▪ Section 2.5.3 First sentence should move to NAESB.</li> <li>▪ Section 2.5.3 Reference to Section 4 in last sentence needs to be reviewed since Section 4 moves to NAESB.</li> <li>▪ Section 3.2 – 3.2.1.1 Stay in the IRO.</li> <li>▪ Section 4.1.4 Stay in the IRO.</li> <li>▪ Section 6 – 6.1 Need wording like section 7 – 7.1</li> <li>▪ Section 6.2 -6.2.6 Should move to NAESB</li> <li>▪ Section 7.4.1 – 7.4.3 Move to NAESB</li> <li>▪ Section 7.7 – 7.9, Appendix E and F should move to NAESB.</li> <li>▪ Attachment 1 - Section 1.7 Redispatch options should not be moved</li> <li>▪ Attachment 1 - Section 2. - Introduction – The last two sentences are “on path/off path discussion”. Similar discussion was moved. Attachment 1 - Section 2.5.3 – the first sentence should be moved</li> </ul> <p>4. We do not agree with the measures proposed in the standard.</p> <ul style="list-style-type: none"> <li>▪ M5 seems to be measuring compliance to other Standards. INT-001 and INT-003 have applicability for the BA and not the RC. And INT-004 has applicability for both the RC and BA. INT-004 has no measure or compliance for the RC. There should not be a requirement (R5) or measure (M5) that requires compliance to another standard.</li> <li>▪ R3 needs to be split into two requirements, one that focuses on implementing a local procedure simultaneously with the Interconnection-wide procedure and another that states specifically, “Each Reliability</li> </ul>

**Consideration of Comments on Initial Ballot of IRO-006-4 — Reliability Coordination – Transmission Loading Relief**

Segment	Organization	Comment
		<p>Coordinator shall follow the curtailments as directed by the Interconnection-wide procedure.” This requirement should have a Medium Violation Risk factor and a real time operations time horizon. This would be similar to R4, but for curtailing transactions that are within an Interconnection.</p> <ul style="list-style-type: none"> <li>▪ M3 – Need to have clarity on just what is considered a procedure in this case.</li> </ul> <p>5. We do not agree with the compliance elements proposed in the standard.</p> <ul style="list-style-type: none"> <li>▪ Violation Severity Levels 2.4.2 and 2.4.3 should be moved from Severe to High because these violations may not adversely affect the effectiveness of TLR in mitigating the congestion on the constrained facility.</li> <li>▪ Section 2.1.2 – the RC has no compliance obligation.</li> </ul>
<p><b>Response:</b> <a href="#">See previous response to Duke Energy's comments.</a></p>		
9	North Carolina Utilities Commission	<p>Comments of the North Carolina Utilities Commission regarding NERC’s Transmission Loading Relief Standard IRO-006 Please refer to the referenced lines in the draft “Joint NERC/NAESB System Operator’s Transmission Loading Relief (TLR) Reference Manual.” (These comments apply to parallel portions of the draft standard document as well.)</p> <ol style="list-style-type: none"> <li>1. Line 403 allows a Reliability Coordinator (RC) to implement a local transmission loading relief or congestion management procedure “simultaneously” with the interconnection-wide TLR procedure. At 407 the RC is to “revert back” to the Interconnection–wide TLR procedure in the event the local procedures are not effective. It is not clear how much authority a “local” Reliability Coordinator has and what kinds of coordination are expected with the Reliability Coordinator who is driving the interconnection-wide TLR effort. While the standard seems to acknowledge that a local solution might be the most effective and while the standard appears to give a local Reliability Coordinator flexibility to use a local approach, the standard also requires compliance with mandates from the RC in charge of the interconnection-wide TLR, as well as communication. Given the need to take prompt action in real time, the standard and operating manual need to be clearer regarding whether the “local” RC can act unilaterally. If the standard is ambiguous, the “local” RC could lose precious time discerning their options. Finally, M3 in the Standards document indicates a local procedure must be pre-approved by the ERO. If this is the case, the system operator’s reference manual should reiterate the requirement for pre-approval at 1.5.1.2.</li> <li>2. Line 423 – The manual asks the RC to use “best efforts” to curtail transactions in order to relieve overloads of transmission elements that are not modeled in the Interchange Distribution Calculator. The “lessons learned” effort after the TLR should include consideration regarding whether those specific overloading transmission facilities should be added to the model.</li> <li>3. In several places (lines 470 and 1117 for example) the manual seems to indicate that TLR is appropriate for an existing Interconnection Reliability Operating Limit (IROL) violation. While the standard attempts to be very clear that this is not the case, all of the documents need to be tightly edited to remove/address any ambiguity.</li> <li>4. Line 1217 – “The Reliability Coordinator shall notify all affected parties when the Reliability Coordinator has returned the system to a reliable state.” It does not appear “reliable state” has a definition. Section 200 of the</li> </ol>

**Consideration of Comments on Initial Ballot of IRO-006-4 — Reliability Coordination – Transmission Loading Relief**

Segment	Organization	Comment
		<p>“Rules of Procedure of the Electric Reliability Organization” states: “Reliable operation means operating the elements of the bulk power system within equipment and electric system thermal, voltage, and stability limits so that instability, uncontrolled separation, or cascading failures of such system will not occur as a result of a sudden disturbance, including a cyber security incident, or unanticipated failure of system elements.” Is this intended to be the controlling definition of “reliable state”?</p> <p>5. The draft removes some of the material regarding regional differences, thus allowing RTOs to apply a different curtailment threshold to transactions in and out of the RTO than they do to transactions within the RTO. Page 83 of the draft manual references four planned flowgate studies per the MISO/PJM white paper “Managing Congestion to Address Seams.” The material on regional differences should not be removed from the standard until the studies are conducted and stakeholders discuss the findings.</p>
<p><b>Response:</b> Thank you for commenting on the Joint Operator Manual. The manual is not posted for balloting. After the Standard is approved by the NERC Board of Trustees, the manual will be posted again for public comments. These comments will be considered when the Standards Committee reviews, revises, and approves the final version of the Joint Operator Manual.</p> <p>Specific to your comments, our responses are:</p> <ol style="list-style-type: none"> <li>1. We will review the referenced sections in the manual to provide better clarity as needed. In general, Reliability Coordinators would follow the relief requests. However, provision has always been made that an RC may deviate from the request, for whatever reasons, for so long as the measure taken to substitute for the requested curtailment provides the equivalent amount of relief on the constrained transmission facility. While time may be of essence, TLR is not being relied upon as the primary tool to correct SOL or IROL violations. Other measures, as described in the TOP and IRO standards, are more effective means to provide the relief.</li> <li>2. Best effort is the appropriate approach before the newly identified facility is added to the model. The Drafting Team will include adding the facility to the model as a priority in the upcoming revisions to the manual.</li> <li>3. We will review, and revise as necessary, any language in the manual that is not clear regarding the use of TLR to mitigate transmission congestion – whether caused by SOL or IROL.</li> <li>4. This is the intent. The Drafting Team will look at the definition provided in the Rules of Procedure and/or NERC standards to make references where appropriate.</li> <li>5. The Midwest ISO/PJM Regional Difference that appears on pages 81 through 85 of the Joint Operator Manual contains the Regional Difference that was approved by the NERC OC on March 25, 2004. There has been no change to the Regional Difference based on its inclusion in the Joint Operator Manual.</li> </ol> <p>Footnote 3 that appears on page 84 references the four studies that are performed by Midwest ISO and PJM to determine whether a flowgate is significantly impacted by market flows and should have its market flows reported to the IDC. These studies have not changed since the original approved Regional Difference and are not related to the market flow threshold pilot study that is underway.</p> <p>As previously stated in response to Duke Energy’s third comment, the calculation of market flows will continue to be in the NERC Standard until such time as the ongoing market flow pilot has been completed and changes, if any, are made to the market flow threshold.</p>		
10	SERC	The statement that the TLR procedure is an inappropriate and ineffective tool to mitigate IROL violations is not

**Consideration of Comments on Initial Ballot of IRO-006-4 — Reliability Coordination – Transmission Loading Relief**

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Segment	Organization	Comment
	Reliability Corporation	stated as a performance requirement. The statement also does not distinguish between use of TLR to prevent reaching an IROL, which is appropriate and effective, and use of TLR to cure an IROL violation that has already occurred.
<p><b>Response:</b> The use of TLR to mitigate an SOL/IROL violation is not effective, as evidenced in previous events and as indicated by FERC. This statement is made in the requirements. The Drafting Team has not included a statement that the use of TLR to prevent reaching an IROL is inappropriate, but notes that other measures could be more appropriate and effective. The Drafting Team will address this concern in more detail in the planned Phase 3 revisions.</p>		



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Ballot Results	
<b>Ballot Name:</b>	IRO-006-4 - Reliability Coordination - Transmission Loading Relief_in
<b>Ballot Period:</b>	8/20/2007 - 8/29/2007
<b>Ballot Type:</b>	Initial
<b>Total # Votes:</b>	165
<b>Total Ballot Pool:</b>	178
<b>Quorum:</b>	<b>92.70 % The Quorum has been reached</b>
<b>Weighted Segment Vote:</b>	93.52 %
<b>Ballot Results:</b>	<b>The standard will proceed to recirculation ballot.</b>

Summary of Ballot Results									
Segment	Ballot Pool	Segment Weight	Affirmative		Negative		Abstain	No Vote	
			# Votes	Fraction	# Votes	Fraction	# Votes		
1 - Segment 1.		52	1	34	0.872	5	0.128	10	3
2 - Segment 2.		8	0.7	7	0.7	0	0	1	0
3 - Segment 3.		41	1	29	0.906	3	0.094	6	3
4 - Segment 4.		8	0.6	5	0.5	1	0.1	2	0
5 - Segment 5.		25	1	15	1	0	0	7	3
6 - Segment 6.		23	1	14	0.875	2	0.125	5	2
7 - Segment 7.		1	0.1	1	0.1	0	0	0	0
8 - Segment 8.		3	0.3	3	0.3	0	0	0	0
9 - Segment 9.		11	0.7	7	0.7	0	0	2	2
10 - Segment 10.		6	0.5	5	0.5	0	0	1	0
<b>Totals</b>		<b>178</b>	<b>6.9</b>	<b>120</b>	<b>6.453</b>	<b>11</b>	<b>0.447</b>	<b>34</b>	<b>13</b>

Individual Ballot Pool Results				
Segment	Organization	Member	Ballot	Comments
1	AEP Service Corp. -- Transmission System AEP	Scott P. Moore	Affirmative	
1	Ameren Services Company	Kirit S Shah	Affirmative	
1	American Public Power Association	E. Nick Henery	Affirmative	
1	American Transmission Company, LLC	Jason Shaver	Abstain	
1	Arizona Public Service Co.	Cary B. Deise	Affirmative	
1	Avista Corp.	Scott Kinney	Abstain	
1	Basin Electric Power Cooperative	David Rudolph	Affirmative	
1	Bonneville Power Administration	Donald S. Watkins	Abstain	
1	CenterPoint Energy	Paul Rocha	Abstain	

1	Consolidated Edison Co. of New York	Edwin E. Thompson PE		
1	Dairyland Power Coop.	Robert W. Roddy	Affirmative	
1	Duke Energy	Doug Hils	Negative	<a href="#">View</a>
1	East Kentucky Power Coop.	George S. Carruba	Affirmative	
1	Entergy Corporation	George R. Bartlett	Affirmative	
1	FirstEnergy Energy Delivery	Robert Martinko	Affirmative	
1	Florida Power & Light Co.	C. Martin Mennes	Affirmative	
1	Gainesville Regional Utilities	Luther E. Fair	Abstain	
1	Great River Energy	Gordon Pietsch	Affirmative	
1	Hoosier Energy Rural Electric Cooperative, Inc.	Damon Holladay	Affirmative	
1	Hydro One Networks, Inc.	Ajay Garg	Affirmative	
1	Idaho Power Company	Ronald D. Schellberg	Affirmative	
1	ITC Transmission	Brian F. Thumm	Negative	<a href="#">View</a>
1	Kansas City Power & Light Co.	Jim Useldinger	Affirmative	
1	Keyspan LIPA	Richard J. Bolbrock	Affirmative	
1	Lincoln Electric System	Doug Bantam		
1	Manitoba Hydro	Robert G. Coish	Affirmative	
1	Minnesota Power, Inc.	Carol Gerou	Affirmative	
1	Municipal Electric Authority of Georgia	Jerry J Tang	Affirmative	
1	Nebraska Public Power District	Richard L Koch	Affirmative	<a href="#">View</a>
1	New Brunswick Power Transmission Corporation	Wayne N. Snowdon	Affirmative	
1	New York Power Authority	Ralph Rufrano	Affirmative	
1	Northeast Utilities	David H. Boguslawski	Affirmative	
1	Northern Indiana Public Service Co.	Joseph Dobes	Affirmative	
1	Oncor Electric Delivery	Charles W. Jenkins	Affirmative	
1	Otter Tail Power Company	Lawrence R. Larson	Affirmative	
1	PacifiCorp	Robert Williams	Affirmative	
1	Potomac Electric Power Co.	Richard J. Kafka	Affirmative	
1	PP&L, Inc.	Ray Mammarella	Affirmative	
1	Public Service Company of New Mexico	Keith Nix		
1	San Diego Gas & Electric	Linda Brown	Abstain	
1	Santee Cooper	Terry L. Blackwell	Negative	
1	SaskPower	Wayne Guttormson	Negative	<a href="#">View</a>
1	Seattle City Light	Christopher M. Turner	Abstain	
1	Sierra Pacific Power Co.	Richard Salgo	Abstain	
1	Southern California Edison Co.	Dana Cabbell	Abstain	
1	Southern Company Services, Inc.	Horace Stephen Williamson	Affirmative	
1	Tennessee Valley Authority	Larry G. Akens	Affirmative	
1	Tri-State G & T Association Inc.	Bruce A Sembrick	Negative	<a href="#">View</a>
1	Tucson Electric Power Co.	Ronald P. Belval	Abstain	
1	Westar Energy	Allen Klassen	Affirmative	
1	Western Area Power Administration	Robert Temple	Affirmative	
1	Xcel Energy, Inc.	Gregory L. Pieper	Affirmative	
2	Alberta Electric System Operator	Anita Lee	Affirmative	
2	British Columbia Transmission Corporation	Phil Park	Abstain	
2	California ISO	David Hawkins	Affirmative	
2	Independent Electricity System Operator	Don Tench	Affirmative	
2	Midwest ISO, Inc.	Terry Bilke	Affirmative	<a href="#">View</a>
2	New Brunswick System Operator	Alden Briggs	Affirmative	
2	New York Independent System Operator	Gregory Campoli	Affirmative	



2	PJM Interconnection, L.L.C.	Tom Bowe	Affirmative	
3	Alabama Power Company	Robin Hurst	Affirmative	
3	Arizona Public Service Co.	Thomas R. Glock	Affirmative	
3	Atlantic City Electric Company	James V. Petrella	Affirmative	
3	Basin Electric Power Cooperative	Daniel Klempel	Affirmative	
3	Bonneville Power Administration	Rebecca Berdahl	Abstain	
3	City of Tallahassee	Rusty S. Foster	Affirmative	
3	Consumers Energy Co.	David A. Lapinski	Negative	
3	Delmarva Power & Light Co.	Michael R. Mayer	Affirmative	
3	Dominion Resources, Inc.	Jalal (John) Babik	Affirmative	
3	Duke Energy	Henry Ernst-Jr	Negative	<a href="#">View</a>
3	Entergy Services, Inc.	Matt Wolf	Affirmative	
3	Farmington Electric Utility System	Alan Glazner	Abstain	
3	FirstEnergy Solutions	Joanne Kathleen Borrell	Affirmative	
3	Florida Municipal Power Agency	Michael Alexander	Affirmative	
3	Florida Power & Light Co.	W.R. Schoneck	Affirmative	
3	Florida Power Corporation	Lee Schuster	Affirmative	
3	Georgia Power Company	Leslie Sibert	Affirmative	
3	Great River Energy	Sam Kokkinen	Affirmative	
3	Gulf Power Company	William F. Pope	Affirmative	
3	Hydro One Networks, Inc.	Michael D. Penstone	Affirmative	
3	JEA	Garry Baker		
3	Lincoln Electric System	Bruce Merrill	Affirmative	
3	Louisville Gas and Electric Co.	Charles A. Freibert		
3	Manitoba Hydro	Ronald Dacombe	Affirmative	
3	MidAmerican Energy Co.	Thomas C. Mielnik	Affirmative	
3	Mississippi Power	Don Horsley	Affirmative	
3	New York Power Authority	Christopher Lawrence de Graffenried	Affirmative	
3	Niagara Mohawk (National Grid Company)	Michael Schiavone	Affirmative	
3	Orlando Utilities Commission	Ballard Keith Mutters	Abstain	
3	Platte River Power Authority	Terry L Baker	Affirmative	
3	Potomac Electric Power Co.	Robert Reuter	Affirmative	
3	Public Utility District No. 1 of Chelan County	Kenneth R. Johnson	Affirmative	
3	Public Utility District No. 2 of Grant County	Greg Lange	Affirmative	
3	Salt River Project	John T. Underhill	Affirmative	
3	San Diego Gas & Electric	Scott Peterson		
3	Santee Cooper	Zack Dusenbury	Negative	
3	Seattle City Light	Dana Wheelock	Abstain	
3	Tennessee Valley Authority	Cynthia Herron	Affirmative	
3	Tri-State G & T Association Inc.	Dillwyn H. Ramsay	Abstain	
3	Wisconsin Electric Power Marketing	James R. Keller	Affirmative	
3	Xcel Energy, Inc.	Michael Ibold	Abstain	
4	Consumers Energy Co.	David Frank Ronk	Negative	
4	Florida Municipal Power Agency	William S. May	Affirmative	
4	Northern California Power Agency	Fred E. Young	Affirmative	
4	Oklahoma Municipal Power Authority	Robin J. Morecroft	Affirmative	
4	Public Utility District No. 2 of Grant County	Kevin J. Conway	Abstain	
4	Seattle City Light	Hao Li	Abstain	
4	Seminole Electric Cooperative, Inc.	Steven R. Wallace	Affirmative	
4	Wisconsin Energy Corp.	Anthony Jankowski	Affirmative	
5	AEP Service Corp.	Brock Ondayko	Affirmative	

5	Alabama Electric Coop. Inc.	Tim Hattaway	Abstain
5	Avista Corp.	Edward F. Groce	Abstain
5	BC Hydro and Power Authority	Clement Ma	Abstain
5	Bonneville Power Administration	Francis J. Halpin	
5	City of Tallahassee	Alan Gale	Abstain
5	Conectiv Energy Supply, Inc.	Richard K Douglass	Affirmative
5	Detroit Edison Company	Ronald W. Bauer	Affirmative
5	East Kentucky Power Coop.	Gerard Bordes	Affirmative
5	Entegra Power Group, LLC	Kenneth Parker	Affirmative
5	Florida Municipal Power Agency	Douglas Keegan	Affirmative
5	Great River Energy	Cynthia E Sulzer	Affirmative
5	Lincoln Electric System	Dennis Florom	Affirmative
5	Louisville Gas and Electric Co.	Charlie Martin	
5	Manitoba Hydro	Mark Aikens	Affirmative
5	New York Power Authority	Richard J Ardolino	Abstain
5	North Carolina Municipal Power Agency #1	Matthew E. Schull	Abstain
5	Oklahoma Gas and Electric Co.	Kim Morphis	
5	PPL Generation LLC	Mark A. Heimbach	Affirmative
5	Salt River Project	Glen Reeves	Affirmative
5	Southeastern Power Administration	Douglas Spencer	Affirmative
5	Southern Company Services, Inc.	Roger D. Green	Affirmative
5	Tenaska, Inc.	Scott M. Helyer	Abstain
5	Wisconsin Electric Power Co.	Linda Horn	Affirmative
5	Xcel Energy, Inc.	Stephen J. Beuning	Affirmative
6	AEP Service Corp.	Dana E. Horton	Affirmative
6	Black Hills Power	Larry Williamson	Abstain
6	Bonneville Power Administration	Brenda S. Anderson	Abstain
6	Constellation Energy Commodities Group	Donald Schopp	Abstain
6	Entergy Services, Inc.	William Franklin	Affirmative
6	First Energy Solutions	Alfred G. Roth	Affirmative
6	Florida Municipal Power Agency	Robert C. Williams	
6	Great River Energy	Donna Stephenson	Affirmative
6	Lincoln Electric System	Eric Ruskamp	Affirmative
6	Louisville Gas and Electric Co.	Daryn Barker	Affirmative
6	Manitoba Hydro	Daniel Prowse	Affirmative
6	New York Power Authority	Thomas Papadopoulos	Affirmative
6	Powerex Corp.	Daniel W O'Hearn	Abstain
6	Progress Energy Carolinas	James Eckelkamp	Abstain
6	Salt River Project	Mike Hummel	Affirmative
6	Santee Cooper	Suzanne Ritter	Negative
6	Seminole Electric Cooperative, Inc.	Trudy S. Novak	Affirmative
6	South Carolina Electric & Gas Co.	Matt Hammond	Affirmative
6	Southern Company Generation and Energy Marketing	J. Roman Carter	Affirmative
6	Tampa Electric Co.	Jose Benjamin Quintas	Negative
6	Tennessee Valley Authority	Katherine E York	Affirmative
6	Western Area Power Administration - UGP Marketing	John Stonebarger	
6	Xcel Energy, Inc.	David F. Lemmons	Affirmative
7	Eastman Chemical Company	Lloyd Webb	Affirmative
8	JDRJC Associates	Jim D. Cyrulewski	Affirmative
8	North Carolina Utilities Commission Public Staff	Jack Floyd	Affirmative
8	Other	Michehl R. Gent	Affirmative
9	California Energy Commission	William Mitchell Chamberlain	Abstain

9	California Public Utilities Commission	Laurence Chaset	Abstain	
9	Commonwealth of Massachusetts Department of Public Utilities	Donald E. Nelson	Affirmative	
9	Maryland Public Service Commission	James Schafer	Affirmative	
9	National Association of Regulatory Utility Commissioners	Diane J. Barney		
9	New York State Public Service Commission	James T. Gallagher	Affirmative	
9	North Carolina Utilities Commission	Sam Watson	Affirmative	<a href="#">View</a>
9	Oregon Public Utility Commission	Jerome Murray	Affirmative	
9	Public Service Commission of South Carolina	Philip Riley	Affirmative	
9	Public Utilities Commission of Ohio	Klaus Lambeck	Affirmative	
9	Wyoming Public Service Commission	Kathleen A. Lewis		
10	Midwest Reliability Organization	Larry Brusseau	Affirmative	
10	New York State Reliability Council	Alan Adamson	Affirmative	
10	Northeast Power Coordinating Council, Inc.	Edward A. Schwerdt	Affirmative	
10	SERC Reliability Corporation	Gerry W. Cauley	Affirmative	<a href="#">View</a>
10	Southwest Power Pool	Charles H. Yeung	Affirmative	
10	Western Electricity Coordinating Council	Louise McCarren	Abstain	

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Ballot Results	
<b>Ballot Name:</b>	IRO-006-4 - Reliability Coordination - Transmission Loading Relief_rc
<b>Ballot Period:</b>	9/13/2007 - 9/23/2007
<b>Ballot Type:</b>	recirculation
<b>Total # Votes:</b>	167
<b>Total Ballot Pool:</b>	178
<b>Quorum:</b>	<b>93.82 % The Quorum has been reached</b>
<b>Weighted Segment Vote:</b>	92.33 %
<b>Ballot Results:</b>	<b>The Standard has Passed</b>

Summary of Ballot Results									
Segment	Ballot Pool	Segment Weight	Affirmative		Negative		Abstain	No Vote	
			# Votes	Fraction	# Votes	Fraction	# Votes		
1 - Segment 1.		52	1	34	0.872	5	0.128	10	3
2 - Segment 2.		8	0.7	7	0.7	0	0	1	0
3 - Segment 3.		41	1	30	0.909	3	0.091	5	3
4 - Segment 4.		8	0.6	4	0.4	2	0.2	2	0
5 - Segment 5.		25	1	15	1	0	0	8	2
6 - Segment 6.		23	1	15	0.882	2	0.118	4	2
7 - Segment 7.		1	0.1	1	0.1	0	0	0	0
8 - Segment 8.		3	0.3	3	0.3	0	0	0	0
9 - Segment 9.		11	0.8	8	0.8	0	0	2	1
10 - Segment 10.		6	0.5	5	0.5	0	0	1	0
<b>Totals</b>		<b>178</b>	<b>7</b>	<b>122</b>	<b>6.463</b>	<b>12</b>	<b>0.537</b>	<b>33</b>	<b>11</b>

Individual Ballot Pool Results				
Segment	Organization	Member	Ballot	Comments
1	AEP Service Corp. -- Transmission System AEP	Scott P. Moore	Affirmative	
1	Ameren Services Company	Kirit S. Shah	Affirmative	
1	American Public Power Association	E. Nick Henery	Affirmative	
1	American Transmission Company, LLC	Jason Shaver	Abstain	
1	Arizona Public Service Co.	Cary B. Deise	Affirmative	
1	Avista Corp.	Scott Kinney	Abstain	
1	Basin Electric Power Cooperative	David Rudolph	Affirmative	
1	Bonneville Power Administration	Donald S. Watkins	Abstain	
1	CenterPoint Energy	Paul Rocha	Abstain	

1	Consolidated Edison Co. of New York	Edwin E. Thompson PE		
1	Dairyland Power Coop.	Robert W. Roddy	Affirmative	
1	Duke Energy	Doug Hils	Negative	<a href="#">View</a>
1	East Kentucky Power Coop.	George S. Carruba	Affirmative	
1	Entergy Corporation	George R. Bartlett	Affirmative	
1	FirstEnergy Energy Delivery	Robert Martinko	Affirmative	
1	Florida Power & Light Co.	C. Martin Mennes	Affirmative	
1	Gainesville Regional Utilities	Luther E. Fair	Abstain	
1	Great River Energy	Gordon Pietsch	Affirmative	
1	Hoosier Energy Rural Electric Cooperative, Inc.	Damon Holladay	Affirmative	
1	Hydro One Networks, Inc.	Ajay Garg	Affirmative	
1	Idaho Power Company	Ronald D. Schellberg	Affirmative	
1	ITC Transmission	Brian F. Thumm	Negative	<a href="#">View</a>
1	Kansas City Power & Light Co.	Jim Useldinger	Affirmative	
1	Keyspan LIPA	Richard J. Bolbrock	Affirmative	
1	Lincoln Electric System	Doug Bantam		
1	Manitoba Hydro	Robert G. Coish	Affirmative	
1	Minnesota Power, Inc.	Carol Gerou	Affirmative	
1	Municipal Electric Authority of Georgia	Jerry J Tang	Affirmative	
1	Nebraska Public Power District	Richard L. Koch	Affirmative	<a href="#">View</a>
1	New Brunswick Power Transmission Corporation	Wayne N. Snowdon	Affirmative	
1	New York Power Authority	Ralph Rufrano	Affirmative	
1	Northeast Utilities	David H. Boguslawski	Affirmative	
1	Northern Indiana Public Service Co.	Joseph Dobes	Affirmative	
1	Oncor Electric Delivery	Charles W. Jenkins	Affirmative	
1	Otter Tail Power Company	Lawrence R. Larson	Affirmative	
1	PacifiCorp	Robert Williams	Affirmative	
1	Potomac Electric Power Co.	Richard J. Kafka	Affirmative	
1	PP&L, Inc.	Ray Mammarella	Affirmative	
1	Public Service Company of New Mexico	Keith Nix		
1	San Diego Gas & Electric	Linda Brown	Abstain	
1	Santee Cooper	Terry L. Blackwell	Negative	
1	SaskPower	Wayne Guttormson	Negative	<a href="#">View</a>
1	Seattle City Light	Christopher M. Turner	Abstain	
1	Sierra Pacific Power Co.	Richard Salgo	Abstain	
1	Southern California Edison Co.	Dana Cabbell	Abstain	
1	Southern Company Services, Inc.	Horace Stephen Williamson	Affirmative	
1	Tennessee Valley Authority	Larry Akens	Affirmative	
1	Tri-State G & T Association Inc.	Bruce A Sembrick	Negative	<a href="#">View</a>
1	Tucson Electric Power Co.	Ronald P. Belval	Abstain	
1	Westar Energy	Allen Klassen	Affirmative	
1	Western Area Power Administration	Robert Temple	Affirmative	
1	Xcel Energy, Inc.	Gregory L. Pieper	Affirmative	
2	Alberta Electric System Operator	Anita Lee	Affirmative	
2	British Columbia Transmission Corporation	Phil Park	Abstain	
2	California ISO	David Hawkins	Affirmative	
2	Independent Electricity System Operator	Don Tench	Affirmative	
2	Midwest ISO, Inc.	Terry Bilke	Affirmative	<a href="#">View</a>
2	New Brunswick System Operator	Alden Briggs	Affirmative	<a href="#">View</a>
2	New York Independent System Operator	Gregory Campoli	Affirmative	

2	PJM Interconnection, L.L.C.	Tom Bowe	Affirmative	
3	Alabama Power Company	Robin Hurst	Affirmative	
3	Arizona Public Service Co.	Thomas R. Glock	Affirmative	
3	Atlantic City Electric Company	James V. Petrella	Affirmative	
3	Basin Electric Power Cooperative	Daniel Klempel	Affirmative	
3	Bonneville Power Administration	Rebecca Berdahl	Abstain	
3	City of Tallahassee	Rusty S. Foster	Affirmative	
3	Consumers Energy Co.	David A. Lapinski	Negative	
3	Delmarva Power & Light Co.	Michael R. Mayer	Affirmative	
3	Dominion Resources, Inc.	Jalal (John) Babik	Affirmative	
3	Duke Energy	Henry Ernst-Jr	Negative	<a href="#">View</a>
3	Entergy Services, Inc.	Matt Wolf	Affirmative	
3	Farmington Electric Utility System	Alan Glazner	Abstain	
3	FirstEnergy Solutions	Joanne Kathleen Borrell	Affirmative	
3	Florida Municipal Power Agency	Michael Alexander	Affirmative	
3	Florida Power & Light Co.	W.R. Schoneck	Affirmative	
3	Florida Power Corporation	Lee Schuster	Affirmative	
3	Georgia Power Company	Leslie Sibert	Affirmative	
3	Great River Energy	Sam Kokkinen	Affirmative	
3	Gulf Power Company	William F. Pope	Affirmative	
3	Hydro One Networks, Inc.	Michael D. Penstone	Affirmative	
3	JEA	Garry Baker		
3	Lincoln Electric System	Bruce Merrill	Affirmative	
3	Louisville Gas and Electric Co.	Charles A. Freibert		
3	Manitoba Hydro	Ronald Dacombe	Affirmative	
3	MidAmerican Energy Co.	Thomas C. Mielnik	Affirmative	
3	Mississippi Power	Don Horsley	Affirmative	
3	New York Power Authority	Christopher Lawrence de Graffenried	Affirmative	
3	Niagara Mohawk (National Grid Company)	Michael Schiavone	Affirmative	
3	Orlando Utilities Commission	Ballard Keith Mutters	Abstain	
3	Platte River Power Authority	Terry L Baker	Affirmative	
3	Potomac Electric Power Co.	Robert Reuter	Affirmative	
3	Public Utility District No. 1 of Chelan County	Kenneth R. Johnson	Affirmative	
3	Public Utility District No. 2 of Grant County	Greg Lange	Affirmative	
3	Salt River Project	John T. Underhill	Affirmative	
3	San Diego Gas & Electric	Scott Peterson		
3	Santee Cooper	Zack Dusenbury	Negative	
3	Seattle City Light	Dana Wheelock	Abstain	
3	Tennessee Valley Authority	Cynthia Herron	Affirmative	
3	Tri-State G & T Association Inc.	Dillwyn H. Ramsay	Abstain	
3	Wisconsin Electric Power Marketing	James R. Keller	Affirmative	
3	Xcel Energy, Inc.	Michael Ibold	Affirmative	
4	Consumers Energy Co.	David Frank Ronk	Negative	
4	Florida Municipal Power Agency	William S. May	Affirmative	
4	Northern California Power Agency	Fred E. Young	Abstain	
4	Oklahoma Municipal Power Authority	Robin J. Morecroft	Affirmative	
4	Public Utility District No. 2 of Grant County	Kevin J. Conway	Negative	<a href="#">View</a>
4	Seattle City Light	Hao Li	Abstain	
4	Seminole Electric Cooperative, Inc.	Steven R. Wallace	Affirmative	
4	Wisconsin Energy Corp.	Anthony Jankowski	Affirmative	
5	AEP Service Corp.	Brock Ondayko	Affirmative	

5	Alabama Electric Coop. Inc.	Tim Hattaway	Abstain	
5	Avista Corp.	Edward F. Groce	Abstain	
5	BC Hydro and Power Authority	Clement Ma	Abstain	
5	Bonneville Power Administration	Francis J. Halpin	Abstain	
5	City of Tallahassee	Alan Gale	Abstain	
5	Conectiv Energy Supply, Inc.	Richard K. Douglass	Affirmative	
5	Detroit Edison Company	Ronald W. Bauer	Affirmative	
5	East Kentucky Power Coop.	Gerard Bordes	Affirmative	
5	Entegra Power Group, LLC	Kenneth Parker	Affirmative	
5	Florida Municipal Power Agency	Douglas Keegan	Affirmative	
5	Great River Energy	Cynthia E Sulzer	Affirmative	
5	Lincoln Electric System	Dennis Florum	Affirmative	
5	Louisville Gas and Electric Co.	Charlie Martin		
5	Manitoba Hydro	Mark Aikens	Affirmative	
5	New York Power Authority	Richard J. Ardolino	Abstain	
5	North Carolina Municipal Power Agency #1	Matthew E. Schull	Abstain	
5	Oklahoma Gas and Electric Co.	Kim Morphis		
5	PPL Generation LLC	Mark A. Heimbach	Affirmative	
5	Salt River Project	Glen Reeves	Affirmative	
5	Southeastern Power Administration	Douglas Spencer	Affirmative	
5	Southern Company Services, Inc.	Roger D. Green	Affirmative	
5	Tenaska, Inc.	Scott M. Helyer	Abstain	
5	Wisconsin Electric Power Co.	Linda Horn	Affirmative	
5	Xcel Energy, Inc.	Stephen J. Beuning	Affirmative	
6	AEP Service Corp.	Dana E. Horton	Affirmative	
6	Black Hills Power	Larry Williamson	Affirmative	
6	Bonneville Power Administration	Brenda S. Anderson	Abstain	
6	Constellation Energy Commodities Group	Donald Schopp	Abstain	
6	Entergy Services, Inc.	William Franklin	Affirmative	
6	First Energy Solutions	Alfred G. Roth	Affirmative	
6	Florida Municipal Power Agency	Robert C. Williams		
6	Great River Energy	Donna Stephenson	Affirmative	
6	Lincoln Electric System	Eric Ruskamp	Affirmative	
6	Louisville Gas and Electric Co.	Daryn Barker	Affirmative	
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6	New York Power Authority	Thomas Papadopoulos	Affirmative	
6	Powerex Corp.	Daniel W. O'Hearn	Abstain	
6	Progress Energy Carolinas	James Eckelkamp	Abstain	
6	Salt River Project	Mike Hummel	Affirmative	
6	Santee Cooper	Suzanne Ritter	Negative	
6	Seminole Electric Cooperative, Inc.	Trudy S. Novak	Affirmative	
6	South Carolina Electric & Gas Co.	Matt Hammond	Affirmative	
6	Southern Company Generation and Energy Marketing	J. Roman Carter	Affirmative	
6	Tampa Electric Co.	Jose Benjamin Quintas	Negative	
6	Tennessee Valley Authority	Katherine E. York	Affirmative	
6	Western Area Power Administration - UGP Marketing	John Stonebarger		
6	Xcel Energy, Inc.	David F. Lemmons	Affirmative	
7	Eastman Chemical Company	Lloyd Webb	Affirmative	
8	JDRJC Associates	Jim D. Cyrulewski	Affirmative	
8	North Carolina Utilities Commission Public Staff	Jack Floyd	Affirmative	
8	Other	Michehl R. Gent	Affirmative	
9	California Energy Commission	William Mitchell Chamberlain	Abstain	

9	California Public Utilities Commission	Laurence Chaset	Abstain	
9	Commonwealth of Massachusetts Department of Public Utilities	Donald E. Nelson	Affirmative	
9	Maryland Public Service Commission	James Schafer	Affirmative	
9	National Association of Regulatory Utility Commissioners	Diane J. Barney	Affirmative	
9	New York State Public Service Commission	James T. Gallagher	Affirmative	
9	North Carolina Utilities Commission	Sam Watson	Affirmative	<a href="#">View</a>
9	Oregon Public Utility Commission	Jerome Murray	Affirmative	
9	Public Service Commission of South Carolina	Philip Riley	Affirmative	
9	Public Utilities Commission of Ohio	Klaus Lambeck	Affirmative	
9	Wyoming Public Service Commission	Kathleen A. Lewis		
10	Midwest Reliability Organization	Larry Brusseau	Affirmative	
10	New York State Reliability Council	Alan Adamson	Affirmative	
10	Northeast Power Coordinating Council, Inc.	Edward A. Schwerdt	Affirmative	
10	SERC Reliability Corporation	Gerry W. Cauley	Affirmative	<a href="#">View</a>
10	Southwest Power Pool	Charles H. Yeung	Affirmative	
10	Western Electricity Coordinating Council	Louise McCarren	Abstain	

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September 24, 2007

TO: REGISTERED BALLOT BODY

Ladies and Gentlemen:

### **Announcement of Final Ballot Results**

**The Standards Committee (SC) announces the following:**

#### **Final Ballot Results for IRO-006-4 — Reliability Coordination — Transmission Loading Relief**

The recirculation ballot for the first phase of modifications to IRO-006-4 — Reliability Coordination — [Transmission Loading Relief](#) was conducted from September 13 through September 23, 2007 and the ballot was approved. ([Detailed Ballot Results](#))

Quorum: 93.82 %

Approval: 92.33 %

The first phase of revisions to IRO-006 included working with NAESB to remove all business practices from IRO-006 and then to add measures and compliance elements to support the remaining reliability-related requirements. Future phases of the project will address a broader range of improvements.

#### **Standards Development Process**

The [Reliability Standards Development Procedure](#) contains all the procedures governing the standards development process. The success of the NERC standards development process depends on stakeholder participation. We extend our thanks to all those who participate. If you have any questions, please contact me at 813-468-5998 or [maureen.long@nerc.net](mailto:maureen.long@nerc.net).

Sincerely,

*Maureen E. Long*

cc: Registered Ballot Body Registered Users  
Standards Mailing List  
NERC Roster

## A. Introduction

1. **Title:** Reliability Coordination — Transmission Loading Relief (TLR)
2. **Number:** IRO-006-4
3. **Purpose:** The purpose of this standard is to provide Interconnection-wide transmission loading relief procedures that can be used to prevent or manage potential or actual SOL and IROL violations to maintain reliability of the Bulk Electric System.
4. **Applicability:**
  - 4.1. Reliability Coordinators.
  - 4.2. Transmission Operators.
  - 4.3. Balancing Authorities.
5. **Proposed Effective Date:** First day of first quarter after BOT adoption.

## B. Requirements

- R1.** A Reliability Coordinator experiencing a potential or actual SOL or IROL violation within its Reliability Coordinator Area shall, with its authority and at its discretion, select one or more procedures to provide transmission loading relief. These procedures can be a “local” (regional, interregional, or sub-regional) transmission loading relief procedure or one of the following Interconnection-wide procedures: [*Violation Risk Factor: Medium*] [*Time Horizon: Real-time Operations*]

This requirement simply states; the RC has the authority to act, the RC should know at what limits he/she needs to act, the RC has pre-identified regional, interregional and sub-regional TLR procedures.

- R1.1.** The Interconnection-wide Transmission Loading Relief (TLR) procedure for use in the Eastern Interconnection provided in Attachment 1-IRO-006-4. The TLR procedure alone is an inappropriate and ineffective tool to mitigate an IROL violation due to the time required to implement the procedure. Other acceptable and more effective procedures to mitigate actual IROL violations include: reconfiguration, redispatch, or load shedding.

Comment: see FERC Order 693 paragraph 964 regarding recommendation for using tools other than TLR to mitigate an actual IROL.

- R1.2.** The Interconnection-wide transmission loading relief procedure for use in the Western Interconnection is WECC-IRO-STD-006-0 provided at: [ftp://www.nerc.com/pub/sys/all\\_updl/standards/rrs/IRO-STD-006-0\\_17Jan07.pdf](ftp://www.nerc.com/pub/sys/all_updl/standards/rrs/IRO-STD-006-0_17Jan07.pdf).

- R1.3.** The Interconnection-wide transmission loading relief procedure for use in ERCOT is provided as Section 7 of the ERCOT Protocols, posted at: <http://www.ercot.com/mktrules/protocols/current.html>

Note: the URL has changed.

- R2.** The Reliability Coordinator shall only use local transmission loading relief or congestion management procedures to which the Transmission Operator experiencing

the potential or actual SOL or IROL violation is a party. [*Violation Risk Factor: Low*] [*Time Horizon: Operations Planning*]

- R3.** Each Reliability Coordinator with a relief obligation from an Interconnection-wide procedure shall follow the curtailments as directed by the Interconnection-wide procedure. A Reliability Coordinator desiring to use a local procedure as a substitute for curtailments as directed by the Interconnection-wide procedure shall obtain prior approval of the local procedure from the ERO. [*Violation Risk Factor: Low*] [*Time Horizon: Operations Planning*]
- R4.** When Interconnection-wide procedures are implemented to curtail Interchange Transactions that cross an Interconnection boundary, each Reliability Coordinator shall comply with the provisions of the Interconnection-wide procedure. [*Violation Risk Factor: Medium*] [*Time Horizon: Real-time Operations*]
- R5.** During the implementation of relief procedures, and up to the point that emergency action is necessary, Reliability Coordinators and Balancing Authorities shall comply with applicable Interchange scheduling standards. [*Violation Risk Factor: Medium*] [*Time Horizon: Real-time Operations*]

Comment: R5 will be reviewed during Phase 3 of the TLR drafting team work. See white paper for explanation of the three phases of changes to this standard.

**C. Measures**

- M1.** Each Reliability Coordinator shall be capable of providing evidence (such as logs) that demonstrate when Eastern Interconnection, WECC, or ERCOT Interconnection-wide transmission loading relief procedures are implemented, the implementation follows the respective established procedure as specified in this standard (R1, R1.1, R1.2 and R1.3).
- M2.** Each Reliability Coordinator shall be capable of providing evidence (such as written documentation) that the Transmission Operator experiencing the potential or existing SOL or IROL violations is a party to the local transmission loading relief or congestion management procedures when these procedures have been implemented (R2).
- M3.** Each Reliability Coordinator shall be capable of providing evidence (such as NERC meeting minutes) that the local procedure has received prior approval by the ERO when such procedure is used as a substitute for curtailment as directed by the Interconnection-wide procedure (R3).
- M4.** Each Reliability Coordinator shall be capable of providing evidence (such as logs) that the responding Reliability Coordinator complied with the provisions of the Interconnection-wide procedure as requested by the initiating Reliability Coordinator when requested to curtail an Interchange Transaction that crosses an Interconnection boundary (R4).
- M5.** Each Reliability Coordinator and Balancing Authority shall be capable of providing evidence (such as Interchange Transaction Tags, operator logs, voice recordings or transcripts of voice recordings, electronic communications, computer printouts) that they have complied with applicable Interchange scheduling standards INT-001, INT-

003, and INT-004 during the implementation of relief procedures, up to the point emergency action is necessary (R5).

## **D. Compliance**

### **1. Compliance Monitoring Process**

#### **1.1. Compliance Monitoring Responsibility**

Regional Entity.

#### **1.2. Compliance Monitoring Period and Reset Time Frame**

Compliance Monitoring Period: One calendar year.

Reset Period: One month without a violation.

#### **1.3. Data Retention**

The Reliability Coordinator shall maintain evidence for eighteen months for M1, M4, and M5.

The Reliability Coordinator shall maintain evidence for the duration the Transmission Operator is party to the procedure in effect plus one calendar year thereafter for M2.

The Reliability Coordinator shall maintain evidence for the approved duration of the procedure in effect plus one calendar year thereafter for M3.

#### **1.4. Additional Compliance Information**

Each Reliability Coordinator and Balancing Authority shall demonstrate compliance through self-certification submitted to its Compliance Monitor annually and reporting by exception. The Compliance Monitor may also use scheduled on-site reviews every three years, and investigations upon complaint, to assess performance.

Each Reliability Coordinator and Balancing Authority shall have the following available for its Compliance Monitor to inspect during a scheduled, on-site review or within 5 days of a request as part of an investigation upon complaint:

**1.4.1** Operations logs, voice recordings or transcripts of voice recordings or other documentation providing the evidence of its compliance to all the requirements for all Interconnection-wide TLR procedures that it has implemented during the review period.

**1.4.2** TLR reports.

### **2. Violation Severity Levels**

#### **2.1. Lower. There shall be a lower violation severity level if any of the following conditions exist:**

**2.1.1** For each TLR in the Eastern Interconnection, the Reliability Coordinator violates one (1) requirement of the applicable Interconnection-wide procedure (R1)

- 2.1.2 The Reliability Coordinators or Balancing Authorities did not comply with applicable Interchange scheduling standards during the implementation of the relief procedures, up to the point emergency action is necessary (R5).
- 2.1.3 When requested to curtail an Interchange Transaction that crosses an Interconnection boundary utilizing an Interconnection-wide procedure, the responding Reliability Coordinator did not comply with the provisions of the Interconnection-wide procedure as requested by the initiating Reliability Coordinator (R4).
- 2.2. Moderate. There shall be a moderate violation severity level if any of the following conditions exist:**
  - 2.2.1 For each TLR in the Eastern Interconnection, the Reliability Coordinator violated two (2) to three (3) requirements of the applicable Interconnection-wide procedure (R1).
- 2.3. High. There shall be a high violation severity level if any of the following conditions exist:**
  - 2.3.1 For each TLR in the Eastern Interconnection, the applicable Reliability Coordinator violated four (4) to five (5) requirements of the applicable Interconnection-wide procedure (R1).
- 2.4. Severe. There shall be a severe violation severity level if any of the following conditions exist:**
  - 2.4.1 For each TLR in the Eastern Interconnection, the Reliability Coordinator violated six (6) or more of the requirements of the applicable Interconnection-wide procedure (R1).
  - 2.4.2 A Reliability Coordinator implemented local transmission loading relief or congestion management procedures to relieve congestion but the Transmission Operator experiencing the congestion was not a party to those procedures (R2).
  - 2.4.3 A Reliability Coordinator implemented local transmission loading relief or congestion management procedures as a substitute for curtailment as directed by the Interconnection-wide procedure but the local procedure had not received prior approval from the ERO (R3).
  - 2.4.4 While attempting to mitigate an existing IROL violation in the Eastern Interconnection, the Reliability Coordinator applied TLR as the sole remedy for an existing IROL violation.
  - 2.4.5 While attempting to mitigate an existing constraint in the Western Interconnection using the “WSCC Unscheduled Flow Mitigation Plan”, the Reliability Coordinator did not follow the procedure correctly.
  - 2.4.6 While attempting to mitigate an existing constraint in ERCOT using Section 7 of the ERCOT Protocols, the Reliability Coordinator did not follow the procedure correctly.

## E. Regional Differences

1. [PJM/MISO Enhanced Congestion Management](#) (Curtailment/Reload/Reallocation) Waiver approved March 25, 2004. To be retired upon completion of the field test, and in the interim the Regional Difference will be contained in both the NERC and NAESB standards.

This section on Regional Differences is highlighted for transfer to NAESB following completion of the MISO/PJM/SPP field test as described in the white paper.

2. Southwest Power Pool (SPP) Regional Difference – Enhanced Congestion Management (Curtailment/Reload/Reallocation). The SPP regional difference, which is equivalent to the PJM/MISO waiver, shall apply within the SPP region as follows:

This regional difference impacts actions on behalf of those SPP Balancing Authorities that are participating in the SPP market. This regional difference does not impact those Balancing Authorities for which SPP will continue to act as the Reliability Coordinator but that are not participating in the SPP market.

SPP shall calculate the impacts of SPP market flow on all facilities included in SPP's Coordinated Flowgate List. SPP shall conduct sensitivity studies to determine which external flowgates (outside SPP's footprint) are significantly impacted by the market flows of SPP's control zones (currently the balancing areas that exist today in the IDC). SPP shall perform studies to determine which external flowgates SPP will monitor and help control. An external flowgate selected by one of the studies will be considered a Coordinated Flowgate (CF).

In its calculation, SPP shall consider market flow impacts as the impacts of energy dispatched by the SPP market and self-dispatched energy serving load in the market footprint, but not tagged. SPP shall use a method equivalent to the PJM/MISO Market Flow Calculation methodology identified in the PJM/MISO waiver. Impacts of tagged transactions representing delivery of energy not dispatched by the SPP market and energy dispatched by the market but delivered outside the footprint will not be included in market flow.

SPP shall separate the market flow impacts for current hour and next hour into their appropriate priorities and shall provide those market flow impacts to the IDC. The market flows will be represented in the IDC and made available for curtailment under the appropriate TLR Levels. The market flow impacts will not be represented by conventional interchange transaction tags.

The SPP method will impact the following sections of the TLR Procedure:

**Network and Native Load (NNL) Calculations** — The SPP regional difference modifies Attachment 1-IRO-006-1 Section 5 “Parallel Flow Calculation Procedure for Reallocating or Curtailing Firm Transmission Service” within the SPP region.

Section 5 of Attachment 1-IRO-006-1 requires that the “Per Generator Method without Counter Flow” methodology be utilized to calculate the portion of parallel flows on any Constrained Facility due to Network Integration (NI) transmission service and service to Native Load (NL) of each balancing authority.

SPP shall use a “Market Flow Calculation” methodology to calculate the portion of parallel flows on all facilities included in the RTO’s “Coordinated Flowgate List” due to NI service or service to NL of each balancing authority.

The Market Flow Calculation differs from the Per Generator Method in the following ways:

- The contribution from all market area generators will be taken into account.
- In the Per Generator Method, only generators having a GLDF greater than 5% are included in the calculation. Additionally, generators are included only when the sum of the maximum generating capacity at a bus is greater than 20 MW. The market flow calculations will use all positively impacting flows down to 0% with no threshold. Counter flows will not be included in the market flow calculation.
- The contribution of all market area generators is based on the present output level of each individual unit.
- The contribution of the market area load is based on the present demand at each individual bus.

By expanding on the Per Generator Method, the market flow calculation evolves into a methodology very similar to the “Per Generator Method” method, while providing increased Interchange Distribution Calculator (IDC) granularity. Counter flows are also calculated and tracked in order to account for and recognize that the either the positive market flows may be reduced or counter flows may be increased to provide appropriate relief on a flowgate.

These NNL values will be provided to the IDC to be included and represented with the calculated NNL values of other Balancing Authorities for the purposes of identifying and obtaining required NNL relief across a flowgate in congestion under a TLR Level 5A/5B.

**Pro Rata Curtailment of Non-Firm Market Flow Impacts** — The SPP regional difference modifies Attachment 1-IRO-006-1 Appendix B “Transaction Curtailment Formula” within the SPP region.

Appendix B “Transaction Curtailment Formula” details the formula used to apply a weighted impact to each non-firm tagged Interchange Transaction (Priorities 1 thru 6) for the purposes of Curtailment by the IDC. For the purpose of Curtailment, the non-firm market flow impacts (Priorities 2 and 6) submitted to the IDC by SPP should be curtailed pro-rata as is done for Interchange Transaction using firm transmission service. This is because several of the values needed to assign a weighted impact using the process listed in Appendix B will not be available:

- Distribution Factor (no tag to calculate this value from)
- Impact on Interface value (cannot be calculated without Distribution Factor)
- Impact Weighting Factor (cannot be calculated without Distribution Factor)
- Weighted Maximum Interface Reduction (cannot be calculated without Distribution Factor)

- Interface Reduction (cannot be calculated without Distribution Factor)
- Transaction Reduction (cannot be calculated without Distribution Factor)

While the non-firm market flow impacts submitted to the IDC are to be curtailed pro rata, the impacting non-firm tagged Interchange Transactions could still use the existing processes to assign the weighted impact value.

**Assignment of Sub-Priorities** — The SPP regional difference modifies Attachment 1-IRO-006-1 Appendix E “How the IDC Handles Reallocation”, Section E2 “Timing Requirements”, within the SPP region.

Under the header “IDC Calculations and Reporting” in Section E2 of Appendix E to Attachment 1-IRO-006-1, the following requirement exists: “In a TLR Level 3a the Interchange Transactions using Non-firm Transmission Service in a given priority will be further divided into four sub-priorities, based on current schedule, current active schedule (identified by the submittal of a tag ADJUST message), next-hour schedule, and tag status. Solely for the purpose of identifying which Interchange Transactions to be loaded under a TLR 3a, various MW levels of an Interchange Transaction may be in different sub-priorities. The sub-priorities are shown in the following table:

Priority	Purpose	Explanation and Conditions
S1	To allow a flowing Interchange Transaction to maintain or reduce its current MW amount in accordance with its energy profile.	The MW amount is the lowest between currently flowing MW amount and the next-hour schedule. The currently flowing MW amount is determined by the e-tag ENERGY PROFILE and ADJUST tables. If the calculated amount is negative, zero is used instead.
S2	To allow a flowing Interchange Transaction that has been curtailed or halted by TLR to reload to the lesser of its current-hour MW amount or next-hour schedule in accordance with its energy profile.	The Interchange Transaction MW amount used is determined through the e-tag ENERGY PROFILE and ADJUST tables. If the calculated amount is negative, zero is used instead.
S3	To allow a flowing Transaction to increase from its current-hour schedule to its next-hour schedule in accordance with its energy profile.	The MW amounts used in this sub-priority is determined by the e-tag ENERGY PROFILE table. If the calculated amount is negative, zero is used instead.
S4	To allow a Transaction that had never started and was submitted to the Tag Authority after the TLR (level 2 or higher) has been declared	The Transaction would not be allowed to start until all other Interchange Transactions submitted prior to the TLR with the same



	to begin flowing (i.e., the Interchange Transaction never had an active MW and was submitted to the IDC after the first TLR Action of the TLR Event had been declared.)	priority have been (re)loaded. The MW amount used is the sub-priority is the next-hour schedule determined by the e-tag ENERGY PROFILE table.
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SPP shall use a “Market Flow Calculation” methodology to calculate the amount of energy flowing across all facilities included in the RTO’s “Coordinated Flowgate List” that is associated with the operation of the SPP market. This energy is identified as “market flow.”

These market flow impacts for current hour and next hour will be separated into their appropriate priorities and provided to the IDC by SPP. The market flows will then be represented and made available for curtailment under the appropriate TLR Levels.

Even though these market flow impacts (separated into appropriate priorities) will not be represented by conventional “tags,” the impacts and their desired levels will still be provided to the IDC for current hour and next hour. Therefore, for the purposes of reallocation, a sub-priority (S1 thru S4) should be assigned to these market flow impacts by the NERC IDC as follows, using comparable logic as would be used if the impacts were in fact tagged transactions.

Priority	Purpose	Explanation and Conditions
S1	To allow existing market flow to maintain or reduce its current MW amount.	The currently flowing MW amount is the amount of market flow existing after the RTO has recognized the constraint for which TLR has been called. If the calculated amount is negative, zero is used instead.
S2	To allow market flow that has been curtailed or halted by TLR to reload to its desired amount for the current-hour.	This is the difference between the current hour unconstrained market flow and the current market flow. If the current-hour unconstrained market flow is not available, the IDC will use the most recent market flow since the TLR was first issued or, if not available, the market flow at the time the TLR was first issued.
S3	To allow a market flow to increase to its next-hour desired amount.	This is the difference between the next hour and current hour unconstrained market flow.

To be retired upon completion of the field test, and in the interim the Regional Difference will be contained in both the NERC and NAESB standards.

## F. Associated Documents

### Version History

Version	Date	Action	Change Tracking
0	April 1, 2005	Effective Date	New
0	August 8, 2005	Removed “Proposed” from Effective Date	Errata
1	August 8, 2005	Revised Attachment 1	Revision
3	February 26, 2007	Revised Purpose and Attachment 1 related to NERC NAESB split of the TLR procedure	Revision
4	October 23, 2007	Approved by Board of Trustees	Revision

**PLEASE NOTE: items designated for inclusion in the NAESB TLR business practice following completion of the standard revision were deleted. Please see the mapped document to see which items were move to NAESB and what future changes are expected.**

**Attachment 1 — IRO-006**

**Transmission Loading Relief Procedure — Eastern Interconnection**

**Purpose**

This standard defines procedures for curtailment and reloading of Interchange Transactions to relieve overloads on transmission facilities modeled in the Interchange Distribution Calculator.

**Applicability**

This standard only applies to the Eastern Interconnection.

The flexibility for ISOs and RTOs to use redispatch is contained explicitly in the NAESB business practice Section 1.3.

**1. Transmission Loading Relief (TLR) Procedure**

**1.1. Initiation only by Reliability Coordinator.** A Reliability Coordinator shall be the only entity authorized to initiate the TLR Procedure.

**1.1.1. Requesting relief on transmission facilities.** Any Transmission Operator may request from its Reliability Coordinator relief on the transmission facilities it operates. A Reliability Coordinator shall review these requests for relief and determine the appropriate relief actions.

**1.2. Mitigating SOL and IROL violations.** A Reliability Coordinator may utilize the TLR Procedure to mitigate potential or existing System Operating Limit (SOL) violations or to prevent or mitigate Interconnection Reliability Operating Limit (IROL) violations on any transmission facility modeled in the IDC. However, the TLR procedure is an inappropriate and ineffective tool as a sole means to mitigate existing IROL violations due to the time required to implement the procedure. Reconfiguration, redispatch, and load shedding are more timely and effective in mitigating existing IROL violations

**1.3. Sequencing of TLR Levels and taking emergency action.** The Reliability Coordinator shall not be required to follow the TLR Levels in their numerical sequence (Section 2, “TLR Levels”). Furthermore, if a Reliability Coordinator deems that a transmission loading condition could jeopardize Bulk Electric System reliability, the Reliability Coordinator shall have the authority to enter TLR Level 6 directly, and immediately direct the Balancing Authorities or Transmission Operators to take such actions as redispatching generation, or reconfiguring transmission, or reducing load to mitigate the critical condition until Interchange Transactions can be reduced utilizing the TLR Procedure or other methods to return the system to a secure state.

**1.4. Notification of TLR Procedure implementation.** The Reliability Coordinator initiating the use of the TLR

This notification is automated in the Interchange Distribution Calculator (IDC) and populates a message on the NERC RCIS.

Procedure shall notify other Reliability Coordinators and Balancing Authorities and Transmission Operators, and must post the initiation and progress of the TLR event on the appropriate NERC web page(s).

**1.4.1. Notifying other Reliability Coordinators.** The Reliability Coordinator initiating the TLR Procedure shall inform all other Reliability Coordinators via the Reliability Coordinator Information System (RCIS) that the TLR Procedure has been implemented.

**Actions expected.** The Reliability Coordinator initiating the TLR Procedure shall indicate the actions expected to be taken by other Reliability Coordinators.

**1.4.2. Notifying Transmission Operators and Balancing Authorities.** The Reliability Coordinator shall notify Transmission Operators and Balancing Authorities in its Reliability Area when entering and leaving any TLR level.

**1.4.3. Notifying Sink Balancing Authorities.** The Reliability Coordinator for the sink Balancing Authority shall be responsible for directing the Sink Balancing Authority to curtail the Interchange Transactions as specified by the Reliability Coordinator implementing the TLR Procedure.

This notification is automated in the Interchange Distribution Calculator (IDC) and populates a message on the NERC RCIS.

**Notification order.** Within a Transmission Service Priority level, the Sink Balancing Authorities whose Interchange Transactions have the largest impact on the Constrained Facilities shall be notified first if practicable.

**1.4.4. Updates.** At least once each hour, or when conditions change, the Reliability Coordinator implementing the TLR Procedure shall update all other Reliability Coordinators (via the RCIS). Transmission Operators and Balancing Authorities who have had Interchange Transactions impacted by the TLR will be updated by their Reliability Coordinator.

**1.5. Obligations.** All Reliability Coordinators shall comply with the request of the Reliability Coordinator who initiated the TLR Procedure, unless the initiating Reliability Coordinator agrees otherwise.

**1.6. Consideration of Interchange Transactions.** The administration of the TLR Procedure shall be guided by information obtained from the IDC.

**1.6.1. Interchange Transactions not in the IDC.** Reliability Coordinators shall also treat known Interchange Transactions that may not appear in the IDC in accordance with the procedures in this document.

**1.6.2. Transmission elements not in IDC.** When a Reliability Coordinator is faced with an overload on a transmission element that is not modeled in the IDC, the Reliability Coordinator shall use the best information available to curtail Interchange Transactions in order to operate the system in a reliable manner. The Reliability Coordinator shall use its best efforts to ensure that Interchange Transactions with a Transfer Distribution Factor

of less than the Curtailment Threshold on the transmission element not modeled in the IDC are not curtailed.

**1.6.3. Questionable IDC results.** Any Reliability Coordinator who believes the curtailment list from the IDC for a particular TLR event is incorrect shall use its best efforts to communicate those adjustments necessary to bring the curtailment list into conformance with the principles of this Procedure to the initiating Reliability Coordinator. Causes of questionable IDC results may include:

- Missing Interchange Transactions that are known to contribute to the Constraint.
- Significant change in transmission system topology.
- TDF matrix error.

Impacts of questionable IDC results may include:

- Curtailment that would have no effect on, or aggravate the constraint.
- Curtailment that would initiate a constraint elsewhere.

If other Reliability Coordinators are involved in the TLR event, all impacted Reliability Coordinators shall be in agreement before any adjustments to the Curtailment list are made.

**1.6.4. Curtailment that would cause a constraint elsewhere.** A Reliability Coordinator shall be allowed to exempt an Interchange Transaction from Curtailment if that Reliability Coordinator is aware that the Interchange Transaction Curtailment directed by the IDC would cause a constraint to occur elsewhere. This exemption shall only be allowed after the Reliability Coordinator has consulted with the Reliability Coordinator who initiated the Curtailment.

**1.7 Logging.** The Reliability Coordinator shall complete the NERC Transmission Loading Relief Procedure Log whenever it invokes TLR Level 2 or above, and send a copy of the log via email to NERC within two business days of the TLR event for posting on the NERC website.

Creation and distribution of the TLR Procedure Log is now automated in the IDC.

**1.8 TLR Event Review.** The Reliability Coordinator shall report the TLR event to the Operating Reliability Subcommittee in accordance with TLR review processes established by NERC as required.

**1.8.1 Providing information.** Transmission Operators and Balancing Authorities within the Reliability Coordinator's Area, and all other Reliability Coordinators, including Transmission Operators and Balancing Authorities within their respective Reliability Areas, shall provide information, as requested by the initiating Reliability Coordinator, in accordance with TLR review processes established by NERC.

**1.8.2 Market Committee reviews.** The Market Committee may conduct reviews of certain TLR events based on the size and number of Interchange Transactions that are affected, the frequency that the TLR Procedure is called for a particular Constrained Facility, or other factors.

The Market Committee no longer exists and this requirement will be removed in Phase 3.

**1.8.3 Operating Reliability Subcommittee reviews.** The Operating Reliability Subcommittee shall conduct reviews to ensure proper implementation and for “lessons learned.”

## **2. Transmission Loading Relief (TLR) Levels**

### **Introduction**

This section describes the various levels of the TLR Procedure. The description of each level begins with the circumstances that define the TLR Level, followed by the procedures to be followed.

The decision that a Reliability Coordinator makes in selecting a particular TLR Level often depends on the transmission loading condition and whether the Interchange Transaction is using Non-firm Point-to-Point Transmission Service or Firm Point-to-Point Transmission Service. There are further considerations that depend on whether the Constrained Facility is on or off the Contract Path. It is important to note that an Interchange Transaction using Firm Point-to-Point Transmission Service on all Contract Path links is considered a “firm” Interchange Transaction even if the Constrained Facility is off the Contract Path.

### **2.1. TLR Level 1 — Notify Reliability Coordinators of potential SOL or IROL Violations**

**2.1.1.** The Reliability Coordinator shall use the following circumstances to establish the need for TLR Level 1:

- The transmission system is secure.
- The Reliability Coordinator foresees a transmission or generation contingency or other operating problem within its Reliability Area that could cause one or more transmission facilities to approach or exceed their SOL or IROL.

**2.1.2. Notification procedures.** The Reliability Coordinator shall notify all Reliability Coordinators via the Reliability Coordinator Information System (RCIS) as soon as the condition is foreseen. All affected Reliability Coordinators shall check to ensure that Interchange Transactions are posted in the IDC.

### **2.2. TLR Level 2 — Hold transfers at present level to prevent SOL or IROL Violations**

**2.2.1.** The Reliability Coordinator shall use the following circumstances to establish the need for entering TLR Level 2:

- The transmission system is secure.
- One or more transmission facilities are expected to approach, or are approaching, or are at their SOL or IROL.

**2.3 TLR Level 3a — Reallocation of Transmission Service by curtailing Interchange Transactions using Non-firm Point-to-Point Transmission Service to allow Interchange Transactions using higher priority Transmission Service**

**2.3.1.** The Reliability Coordinator shall use the following circumstances to establish the need for entering TLR Level 3a:

- The transmission system is secure.
- One or more transmission facilities are expected to approach, or are approaching, or are at their SOL or IROL.
- Transactions using Non-firm Point-to-Point Transmission Service are flowing that are at or above the Curtailment Threshold on those facilities.
- The Transmission Provider has previously approved a higher priority Point-to-Point Transmission Service reservation over which a Transmission Customer wishes to begin an Interchange Transaction.

**2.4. TLR Level 3b — Curtail Interchange Transactions using Non-Firm Transmission Service Arrangements to mitigate a SOL or IROL Violation**

**2.4.1.** The Reliability Coordinator shall use the following circumstances to establish the need for entering TLR Level 3b:

- One or more transmission facilities are operating above their SOL or IROL, or
- Such operation is imminent and it is expected that facilities will exceed their reliability limit unless corrective action is taken, or
- One or more Transmission Facilities will exceed their SOL or IROL upon the removal from service of a generating unit or another transmission facility.
- Transactions using Non-firm Point-to-Point Transmission Service are flowing that are at or above the Curtailment Threshold on those facilities.

**2.5 TLR Level 4 — Reconfigure Transmission**

**2.5.1.** The Reliability Coordinator shall use the following circumstances to establish the need for entering TLR Level 4:

- One or more Transmission Facilities are above their SOL or IROL, or
- Such operation is imminent and it is expected that facilities will exceed their reliability limit unless corrective action is taken.

**2.5.2. Reconfiguration procedures.** The issuance of a TLR Level 4 shall result in the curtailment, in the current hour and the next hour, of all Interchange Transactions using Non-firm Point-to-Point Transmission Service that are at or above the Curtailment Threshold that impact the Constrained



Facilities. If a SOL or IROL violation is imminent or occurring, the Reliability Coordinator(s) shall request that the affected Transmission Operators reconfigure transmission on their system, or arrange for reconfiguration on other transmission systems, to mitigate the constraint.

**2.6. TLR Level 5a — Reallocation of Transmission Service by curtailing Interchange Transactions using Firm Point-to-Point Transmission Service on a pro rata basis to allow additional Interchange Transactions using Firm Point-to-Point Transmission Service**

**2.6.1.** The Reliability Coordinator shall use the following circumstances to establish the need for entering TLR Level 5a:

- The transmission system is secure.
- One or more transmission facilities are at their SOL or IROL.
- All Interchange Transactions using Non-firm Point-to-Point Transmission Service that are at or above the Curtailment Threshold have been curtailed.
- The Transmission Provider has been requested to begin an Interchange Transaction using previously arranged Firm Transmission Service that would result in a SOL or IROL violation.
- No further transmission reconfiguration is possible or effective.

**2.7. TLR Level 5b — Curtail Interchange Transactions using Firm Point-to-Point Transmission Service to mitigate an SOL or IROL violation**

**2.7.1.** The Reliability Coordinator shall use following circumstances to establish the need for entering TLR Level 5b:

- One or more Transmission Facilities are operating above their SOL or IROL, or
- Such operation is imminent, or
- One or more Transmission Facilities will exceed their SOL or IROL upon the removal from service of a generating unit or another transmission facility.
- All Interchange Transactions using Non-firm Point-to-Point Transmission Service that are at or above the Curtailment Threshold have been curtailed.
- No further transmission reconfiguration is possible or effective.

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**2.8. Curtailment of Interchange Transactions Using Firm Transmission Service**

**2.8.1.** The Reliability Coordinator shall direct the curtailment of Interchange Transactions using Firm Transmission Service that are at or above the Curtailment Threshold for the following TLR Levels:

**2.8.1.1. TLR Level 5a.** Enable additional Interchange Transactions using Firm Point-to-Point Transmission Service to be implemented after all Interchange Transactions using Non-firm Point-to-Point Service have been curtailed, or

**2.8.1.2. TLR Level 5b.** Mitigate a SOL or IROL violation that remains after all Interchange Transactions using Non-firm Transmission Service has been curtailed under TLR Level 3b, and following attempts to reconfigure transmission under TLR Level 4.

**2.9. TLR Level 6 — Emergency Procedures**

**2.9.1** The Reliability Coordinator shall use following circumstances to establish the need for entering TLR Level 6:

- One or more Transmission Facilities are above their SOL or IROL.
- One or more Transmission Facilities will exceed their SOL or IROL upon the removal from service of a generating unit or another transmission facility.

**2.9.2 Implementing emergency procedures.** If the Reliability Coordinator deems that transmission loading is critical to Bulk Electric System reliability, the Reliability Coordinator shall immediately direct the Balancing Authorities and Transmission Operators in its Reliability Area to redispatch generation, or reconfigure transmission, or reduce load to mitigate the critical condition until Interchange Transactions can be reduced utilizing the TLR Procedures or other procedures to return the system to a secure state. All Balancing Authorities and Transmission Operators shall comply with all requests from their Reliability Coordinator.

**2.10 TLR Level 0 — TLR concluded**

**2.10.1 Interchange Transaction restoration and notification procedures.** The Reliability Coordinator initiating the TLR Procedure shall notify all Reliability Coordinators within the Interconnection via the RCIS when the SOL or IROL violations are mitigated and the system is in a reliable state, allowing Interchange Transactions to be reestablished at its discretion. Those with the highest transmission priorities shall be reestablished first if possible.

**3. Requirements**

**3.1** The Reliability Coordinator shall be allowed to call a TLR 3b at any time to help mitigate a SOL or IROL violation.

- 3.2** The Reliability Coordinator shall Reallocate Interchange Transactions using Non-firm Point-to-Point Transmission for the next hour to maintain the desired flow using Reallocation in accordance with the following timing specification:
  - 3.2.1** If issued prior to XX: 25, Non-firm Interchange Transactions will be curtailed to meet the desired current hour relief
    - 4.2.1.1** At XX: 25 a Reallocation will be performed to maintain the desired flow at the top of the following hour
  - 3.2.2** If issued after XX: 25, Non firm Interchange Transactions will be curtailed to meet the desired current hour relief and a Reallocation will be performed to maintain the target flow identified for the current hour.
  - 3.2.3** Transactions must be in the IDC by the Approved-tag Submission Deadline for Reallocation.
- 3.3** The IDC shall issue ADJUST Lists to the Generation and Load Balancing Authority Areas and the Purchasing-Selling Entity who submitted the tag. The ADJUST List will include: (recommended to be moved to Attachment 2)
  - 3.3.1** Interchange Transactions using Non-firm Point-to-Point Transmission Service that are to be curtailed or held during current and next hours. (recommended to be moved to Attachment 2)
  - 3.3.2** Interchange Transactions using Firm Point-to-Point Transmission Service that were entered after XX:25 or issuance of TLR 3b (see Case 3 in Appendix F). (recommended to be moved to Attachment 2)
- 3.4** The Sink Balancing Authority shall send the ADJUST Lists back to the IDC as soon as possible to ensure the most accurate calculations for actions subsequent to the TLR 3b being called. (recommend to be moved to Attachment 2)
- 3.5** The Reliability Coordinator will no longer be required to call a TLR Level 3a as soon as the SOL or IROL violation that caused the TLR 3b to be called has been mitigated due to the inherent next hour Reallocation that takes place for the top of the next hour in the TLR Level 3b. (recommend to be moved to Attachment 2)

### Appendices for Transmission Loading Relief Standard

**PLEASE NOTE: items designated for inclusion in the NAESB TLR business practice following completion of the standard revision were deleted from this version of the NERC standard. Please see the mapped document to see which requirements were moved to NAESB and what future changes are expected. Appendices B, D, G, and the sub-priority portions of E-2 have been moved to NAESB, The appendices below (A, C, E, F) will be renumbered in the final standard.**

Appendix A. Transaction Management and Curtailment Process.

Appendix C. Sample NERC Transmission Loading Relief Procedure Log.

Appendix E. How the IDC Handles Reallocation.

Section E1: Summary of IDC Features that Support Transaction Reloading/Reallocation.

Section E2: Timing Requirements.

Appendix F. Considerations for Interchange Transactions using Firm Point-to-Point Transmission Service.





## **Appendix E. How the IDC Handles Reallocation**

The IDC algorithms reflect the Reallocation and reloading principles in this Appendix, as well as the reporting requirements, and status display. The IDC will obtain the Tag Submittal Time from the Tag Authority and post the Reloading/Reallocation information to the NERC TLR website.

A summary of IDC features that support the Reallocation process is provided in Attachment E1. Details on the interface and display features are provided in Attachment E2. Refer to Version 1.7.095 NERC Transaction Information Systems Working Group (TISWG) *Electronic Tagging Functional Specification* for details about the E-Tag system.

### **E1. Summary of IDC Features that Support Transaction Reloading/Reallocation**

The following is a summary of IDC features and E-Tag interface that support Reloading/Reallocation:

#### **Information posted from IDC to NERC TLR website.**

1. Restricted directions (all source/sink combinations that impact a Constrained Facility(ies) with TLR 2 or higher) will be posted to the NERC TLR website and updated as necessary.
2. TLR Constrained Facility status and Transfer Distribution Factors will continue to be posted to NERC TLR website.
3. Lowest priority of Interchange Transactions (marginal “bucket”) to be Reloaded/Reallocated next-hour on each TLR Constrained Facility will be posted on NERC TLR website. This will provide an indication to the market of priority of Interchange Transactions that may be Reloaded/Reallocated the following hours.

#### **IDC Logic, IDC Report, and Timing**

1. The Reliability Coordinator will run the IDC the Reloading/Reallocation report at approximately 00:26. The IDC will prompt the Reliability Coordinator to enter a maximum loading value. The IDC will alarm if the Reliability Coordinator does not enter this value and issue a report by 00:30 or change from TLR 3a Level. The Report will be distributed to Balancing Authorities and Transmission Operators at 00:30. This process repeats every hour as long as the approved tag submission deadline for Reallocation is in effect (or until the TLR level is reduced to 1 or 0).
2. For Interchange Transactions in the restricted directions, tags must be submitted to the IDC by the approved tag submission deadline for Reallocation to be considered for Reallocation next-hour. The time stamp by the Tag Authority is regarded the official tag submission time.
3. Tags submitted to IDC after the approved tag submission deadline for Reallocation will not be allowed to start or increase but will be considered for Reallocation the next hour.
4. Interchange Transactions in restricted directions that are not indicated as “PROCEED” on the Reload/Reallocation Report will not be permitted to start or increase next hour.

### **Reloading/Reallocation Transaction Status**

Reloading/Reallocation status will be determined by the IDC for all Interchange Transactions. The Reloading/Reallocation status of each Interchange Transaction will be listed on IDC reports and NERC TLR website as appropriate. An Interchange Transaction is considered to be in a restricted direction if it is at or above the Curtailment Threshold. Interchange Transactions below the Curtailment Threshold are unrestricted and free to flow subject to all applicable Reliability Standards and tariff rules.

1. **HOLD.** Permission has not been given for Interchange Transaction to start or increase and is waiting for the next Reloading/Reallocation evaluation for which it is a candidate. Interchange Transactions with E-tags submitted to the Tag Authority prior to TLR 2 or higher being declared (pre-tagged) will change to CURTAILED Status upon evaluation that does not permit them to start or increase. Transactions with E-tags submitted to Tag Authority after TLR 2 or higher was declared (post-tagged) will retain HOLD Status until given permission to proceed or E-Tag expires.
2. **CURTAILED.** Transactions for which E-Tags were submitted to Tag Authority prior to TLR 2 or higher being declared (pre-tagged) and ordered to be curtailed totally, curtailed partially, not permitted to start, or not permitted to increase. Interchange Transactions (pre-tagged or post-tagged) that were flowing and ordered to be reduced or totally curtailed. The Balancing Authority will indicate to the IDC through the E-Tag adjustment table the Interchange Transaction's curtailed values.
3. **PROCEED:** Interchange Transaction is flowing or has been permitted to flow as a result of Reloading/Reallocation evaluation. The Balancing Authority will indicate through the E-Tag adjustment table to IDC if Interchange Transaction will reload, start, or increase next-hour per Purchasing-Selling Entity's energy schedule as appropriate.

### **Reallocation/Reloading Priorities**

1. Interchange Transaction candidates are ranked for loading and curtailment by priority as per Section 4, "Principles for Mitigating Constraints On and Off the Contract Path." This is called the "Constrained Path Method," or CPM. (secondary, hourly, daily, ... firm etc). Interchange Transactions are curtailed and loaded pro-rata within priority level per TLR algorithm.
2. Reloading/Reallocation of Interchange Transactions are prioritized first by priority per CPM. E-Tags must be submitted to the IDC by the approved tag submission deadline for Reallocation of the hour during which the Interchange Transaction is scheduled to start or increase to be considered for Reallocation.
3. During Reloading/Reallocation, Interchange Transactions using lower priority Transmission Service will be curtailed pro-rata to allow higher priority transactions to reload, increase, or start. Equal priority Interchange Transactions will not reload, start, or increase by pro-rata Curtailment of other equal priority Interchange Transactions.
4. Reloading of Interchange Transactions using Non-firm Transmission Service with CURTAILED Status will take precedence over starting or increasing of Interchange



Transactions using Non-firm Transmission Service of the same priority with PENDING Statuses.

5. Interchange Transactions using Firm Point-to-Point Transmission Service will be allowed to start as scheduled under TLR 3a as long as their E-Tag was received by the IDC by the approved tag submission deadline for Reallocation of the hour during which the Interchange Transaction is due to start or increase, regardless of whether the E-tag was submitted to the Tag Authority prior to TLR 2 or higher being declared or not. If this is the initial issuance of the TLR 3a, Interchange Transactions using Firm Point-to-Point Transmission Service will be allowed to start as scheduled as long as their E-Tag was received by the IDC by the time the TLR is declared.

**Total Flow Value on a Constrained Facility for Next Hour**

1. The Reliability Coordinator will calculate the change in net flow on a Constrained Facility due to Reallocation for the next hour based on:
  - Present constrained facility loading, present level of Interchange Transactions, and Balancing Authorities NNative Load responsibility (TLR Level 5a) impacting the Constrained Facility,
  - SOLs or IROLs, known interchange impacts and Balancing Authority NNative Load responsibility (TLR Level 5a) on the Constrained Facility the next hour, and
  - Interchange Transactions scheduled to begin the next hour.
2. The Reliability Coordinator will enter a maximum loading value for the constrained facility into the IDC as part of issuing the Reloading/Reallocation report.
3. The Reliability Coordinator is allowed to call for TLR 3a or 5a when approaching a SOL or IROL to allow maximum transactional flow next hour, and to manage flows without violating transmission limits.
4. The simultaneous curtailment and Reallocation for a Constrained Facility is allowed. This reduces the flow over the Constrained Facility while allowing Interchange Transactions using higher priority Transmission Service to start or increase the next hour. This may be used to accommodate change in flow next-hour due to changes other than Point-to-Point Interchange Transactions while respecting the priorities of Interchange Transactions flowing and scheduled to flow the next hour. The intent is to reduce the need for using TLR 3b, which prevents new Interchange Transactions from starting or increasing the next hour.
5. The Reliability Coordinator must allow Interchange Transactions to be reloaded as soon as possible. Reloading must be in an orderly fashion to prevent a SOL or IROL violation from (re)occurring and requiring holding or curtailments in the restricted direction.

## E2. Timing Requirements

### TLR Levels 3a and 5a Issuing/Processing Time Requirement

1. In order for the IDC to be reasonably certain that a TLR Level 3a or 5a re-allocation/reloading report in which all tags submitted by the approved tag submission deadline for Reallocation are included, the report must be generated no earlier than 00:25 to allow the 10-minute approval time for Transactions that start next hour.
2. In order to allow a Reliability Coordinator to declare a TLR Level 3a or 5a at any time during the hour, the TLR declaration and Reallocation/Reloading report distribution will be treated as independent processes by the IDC. That is, a Reliability Coordinator may declare a TLR Level 3a or 5a at any time during the course of an hour. However, if a TLR Level 3a or 5a is declared for the next hour prior to 00:25 (see Figure 5 at right), the Reallocation/Reloading report that is generated will be made available to the issuing Reliability Coordinator only for previewing purposes, and cannot be distributed to the other Reliability Coordinators or the market. Instead, the issuing Reliability Coordinator will be reminded by an IDC alarm at 00:25 to generate a new Reallocation/Reloading report that will include all tags submitted prior to the approved tag submission deadline for Reallocation.
3. A TLR Level 3a or 5a Reallocation/Reloading report must be confirmed by the issuing Reliability Coordinator prior to 00:30 in order to provide a minimum of 30 minutes for the Reliability Coordinators with tags sinking in its Reliability Area to coordinate the Reallocation and Reloading with the Sink Balancing Authorities. This provides only 5 minutes (from 00:25 to 00:30) for the issuing Reliability Coordinator to generate a Reallocation/Reloading report, review it, and approve it.
4. The TLR declaration time will be recorded in the IDC for evaluating transaction sub-priorities for Reallocation/Reloading purposes (see Subpriority Table, in the **IDC Calculations and Reporting** section below).

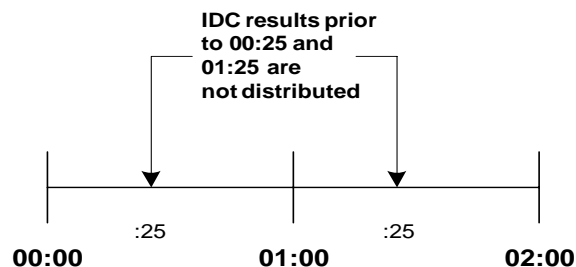


Figure 5 - IDC report may be run prior to 00:25, but results are not distributed.

### Re-Issuing of a TLR Level 2 or Higher

Each hour, the IDC will automatically remind the issuing Reliability Coordinator (via an IDC alarm) of a TLR level 2 or higher declared in the previous hour or earlier about re-issuing the TLR. The purpose of the reminder is to enable the Reliability Coordinator to Reallocate or reload currently halted or curtailed Interchange Transactions next hour. The reminder will be in the form of an alarm to the issuing Reliability Coordinator, and will take place at 00:25 so that, if the Reliability Coordinator re-issues the TLR as a TLR level 3a or 5a, all tags submitted prior to the approved tag submission deadline for Reallocation are available in the IDC.

### IDC Assistance with Next Hour Point-to-Point Transactions

In order to assist a Reliability Coordinator in determining the MW relief required on a Constrained Facility for the next hour for a TLR level 3a or 5a, the IDC will calculate and present the total MW impact of all currently flowing and scheduled Point-to-Point Transactions

for the next hour. In order to assist a Reliability Coordinator in determining the MW relief required on a Constrained Facility for the next hour during a TLR level 5a, the IDC will calculate and present the total MW impact of all currently flowing and scheduled Point-to-Point Transactions for the next hour as well as Balancing Authority with flows due to service to Network Customers and Native Load. The Reliability Coordinator will then be requested to provide the total incremental or decremental MW amount of flow through the Constrained Facility that can be allowed for the next hour. The value entered by the Reliability Coordinator and the IDC-calculated amounts will be used by the IDC to identify the relief/reloading amounts (delta incremental flow value) on the constrained facility. The IDC will determine the Transactions to be reloaded, reallocated, or curtailed to make room for the Transactions using higher priority Transmission Service. The following examples show the calculation performed by IDC to identify the “delta incremental flow:”

**Example 1**

Flow to maintain on Facility	800 MW
Expected flow next hour from Transactions using Point-to-Point Transmission Service	950 MW
Contribution from flow next hour from service to Network customers and Native Load	-100 MW
Expected Net flow next hour on Facility	850 MW
Amount of Transactions using Point-to-Point Transmission Service to hold for Reallocation	850 MW – 800 MW = 50 MW
Amount to enter into IDC for Transactions using Point-to-Point Transmission Service	950 MW – 50 MW = 900 MW

**Example 2**

Flow to maintain on Facility	800 MW
Expected flow next hour from Transactions using Point-to-Point Transmission Service	950 MW
Contribution from flow next hour from service to Network customers and Native Load	50 MW
Expected Net flow next hour on Facility	1000 MW
Amount of Transactions using Point-to-Point Transmission Service to hold for Reallocation	1000 MW – 800 MW = 200 MW
Amount to enter into IDC for Transactions using Point-to-Point Transmission Service	950 MW – 200 MW = 750 MW

**Example 3**

Flow to maintain on Facility	800 MW
Expected flow next hour from Transactions using Point-	950 MW

to-Point Transmission Service	
Contribution from flow next hour from service to Network customers and Native Load	-200 MW
Expected Net flow next hour on Facility	750 MW
Amount of Transactions using Point-to-Point Transmission Service to hold for Reallocation	750 MW – 800 MW = -50 MW None are held

For a TLR levels 3b or 5b the IDC will request the Reliability Coordinator to provide the MW requested relief amount on the Constrained Facility, and will not present the current and next hour MW impact of Point-to-Point transactions. The Reliability Coordinator-entered requested relief amount will be used by the IDC to determine the Interchange Transaction Curtailments and flows due to service to Network Customers and Native Load (TLR Level 5b) in order to reduce the SOL or IROL violation on the Constrained Facility by the requested amount.

***IDC Calculations and Reporting***

At the time the TLR report is processed, the IDC will use all candidate Interchange Transactions for Reallocation that met the approved tag submission deadline for Reallocation plus those Interchange Transactions that were curtailed or halted on the previous TLR action of the same TLR event. The IDC will calculate and present an Interchange Transactions Halt/Curtailment list that will include reload and Reallocation of Interchange Transactions. The Interchange Transactions are prioritized as follows:

1. All Interchange Transactions will be arranged by Transmission Service Priority according to the Constrained Path Method. These priorities range from 1 to 6 for the various non-firm Transmission Service products (TLR levels 3a and 3b). Interchange Transactions using Firm Transmission Service (priority 7) are used only in TLR levels 5a and 5b. Next-Hour Market Service is included at priority 0 (Recommended to be placed in Attachment 2).

Examples of Interchange Transactions using Non-firm Transmission Service sub-priority settings begin in the **Transaction Sub-priority Examples** following sections

2. All Interchange Transactions using Firm Transmission Service will be put in the same priority group, and will be Curtailed/Reallocated pro-rata, independent of their current status (curtailed or halted) or time of submittal with respect to TLR issuance (TLR level 5a). Under a TLR 5a, all Interchange Transactions using Non-firm Transmission Service that is at or above the Curtailment Threshold will have been curtailed and hence sub-prioritizing is not required.

All Interchange Transactions processed in a TLR are assigned one of the following statuses:

**PROCEED:** The Interchange Transaction has started or is allowed to start to the next hour MW schedule amount.

**CURTAILED:** The Interchange Transaction has started and is curtailed due to the TLR, or it had not started but it was submitted prior to the TLR being declared (level 2 or higher).

**HOLD:** The Interchange Transaction had never started and it was submitted after the TLR being declared – the Interchange Transaction is held from starting next hour or the transaction had never started and it was submitted to the IDC after the Approved-Tag Submission Deadline – the Interchange Transaction is to be held from starting next hour and is not included in the Reallocation calculations until following hour.

Upon acceptance of the TLR Transaction Reallocation/reloading report by the issuing Reliability Coordinator, the IDC will generate a report to be sent to NERC that will include the PSE name and Tag ID of each Interchange Transaction in the IDC TLR report. The Interchange Transaction will be ranked according to its assigned status of HOLD, CURTAILED or PROCEED. The reloading/Reallocation report will be made available at NERC's public TLR website, and it is NERC's responsibility to format and publish the report.

### **Tag Reloading for TLR Levels 1 and 0**

When a TLR Level 1 or 0 is issued, the Constrained Facility is no longer under SOL or IROL violation and all Interchange Transactions are allowed to flow. In order to provide the Reliability Coordinators with a view of the Interchange Transactions that were halted or curtailed on previous TLR actions (level 2 or higher) and are now available for reloading, the IDC provides such information in the TLR report.

### **New Tag Alarming**

Those Interchange Transactions that are at or above the Curtailment Threshold and are *not* candidates for Reallocation because the tags for those Transactions were not submitted by the approved tag submission deadline for Reallocation will be flagged as HOLD and must not be permitted to start or increase during the next hour. To alert Reliability Coordinators of those Transactions required to be held, the IDC will generate a report (for viewing within the IDC only) at various times. The report will include a list of all HOLD Transactions. In order not to overwhelm the Reliability Coordinator with alarms, only those who issued the TLR and those whose Transactions sink within their Reliability Area will be alarmed. An alarm will be issued for a given tag only once and will be issued for all TLR levels for which halting new Transactions is required: TLR Level 2, 3a, 3b, 5a and 5b.

### **Tag Adjustment**

The Interchange Transactions with statuses of HOLD, CURTAILED or PROCEED must be adjusted by a Tag Authority or Tag Approval entity. Without the tag adjustments, the IDC will assume that Interchange Transactions were not curtailed/held and are flowing at their specified schedule amounts.

1. Interchange Transactions marked as CURTAILED should be adjusted to a cap equal to, or at the request of the originating PSE, less than the reallocated amount (shown as the MW CAP on the IDC report). This amount may be zero if the Transaction is fully curtailed.
2. Interchange Transaction marked as PROCEED should be adjusted to reload (NULL or to its MW level in accordance with its Energy Profile in the adjusted MW in the E-Tag) if the Interchange Transaction has been previously adjusted; otherwise, if the Interchange Transaction is flowing in full, the Tag Authority need not issue an adjust.
3. Interchange Transactions marked as HOLD should be adjusted to 0 MW.

### **Special Tag Status**

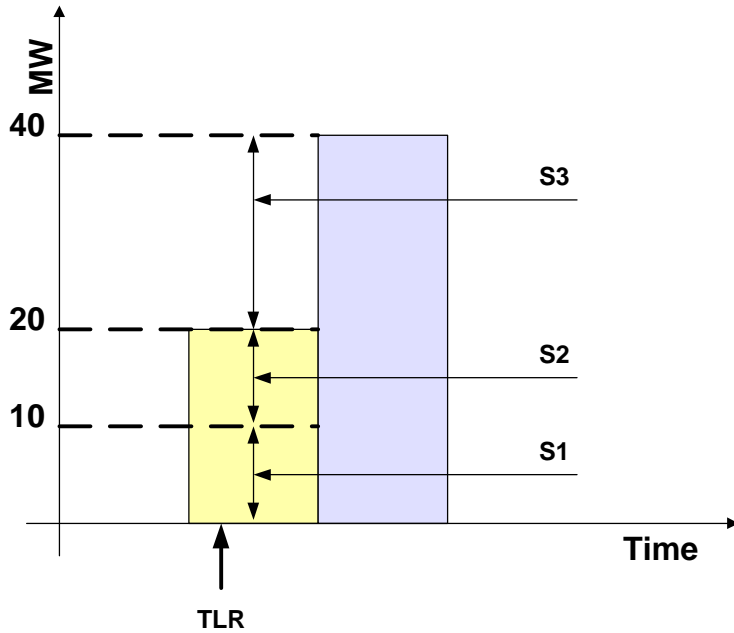
There are cases in which a tag may be marked with a composite state of ATTN\_REQD to indicate that tag Authority/Approval failed to communicate or there is an inconsistency between the validation software of different tag Authority/Approval entities. In this situation, the tag is no longer subject to passive approval and its status change to IMPLEMENT may take longer than 10 minutes. Under these circumstances, the IDC may have a tag that is issued prior to the Tag Submittal Deadline that will not be a candidate for Reallocation. Such tags, when approved by the Tag Authority, will be marked as HOLD and must be halted.

### **Transaction Sub-Priority Examples**

The following describes examples of Interchange Transactions using Non-firm Transmission Service sub-priority setting for an Interchange Transaction under different circumstances of current-hour and next-hour schedules and active MW flowing as modified by tag adjust table in E-Tag.

Example 1 – Transaction curtailed, next-hour Energy Profile is higher

Energy Profile: Current hour	20 MW
Actual flow following curtailment: Current hour	10 MW
Energy Profile: Next hour	40 MW

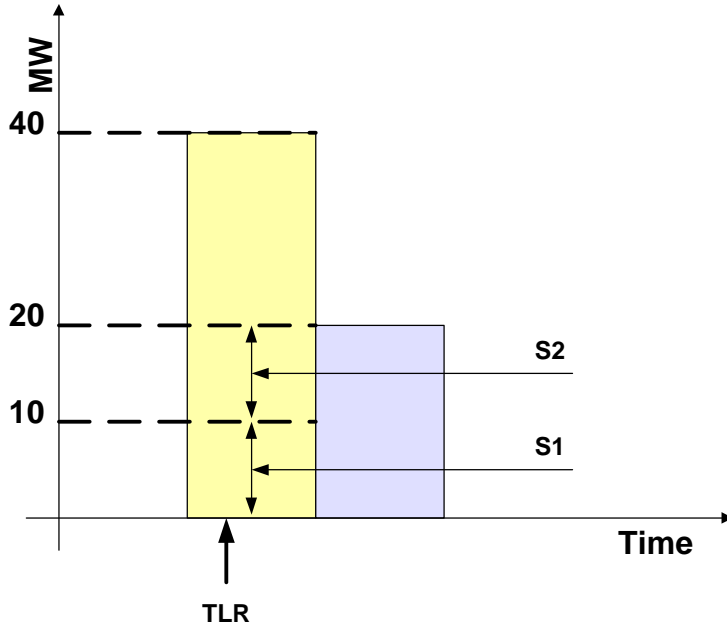


**Sub-priorities for Transaction MW:**

<i>Sub-Priority</i>	<i>MW Value</i>	<i>Explanation</i>
S1	10 MW	Maintain current curtailed flow
S2	+10 MW	Reload to current hour Energy Profile
S3	+20 MW	Load to next hour Energy Profile
S4		

**Example 2 – Transaction curtailed, next-hour Energy Profile is lower**

Energy Profile: Current hour	40 MW
Actual flow following curtailment: Current hour	10 MW
Energy Profile: Next hour	20 MW



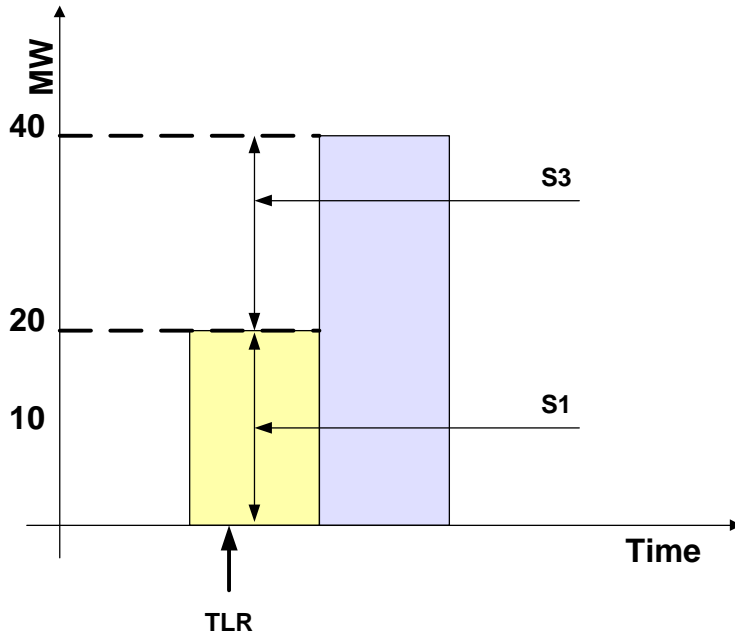
**Sub-priorities for Transaction MW:**

<i>Sub-Priority</i>	<i>MW Value</i>	<i>Explanation</i>
S1	10 MW	Maintain current curtailed flow
S2	+10 MW	Reload to <i>lesser</i> of current and next-hour Energy Profile
S3	+0 MW	Next-hour Energy Profile is 20MW, so no change in MW value
S4		



**Example 3 – Transaction not curtailed, next-hour Energy Profile is higher**

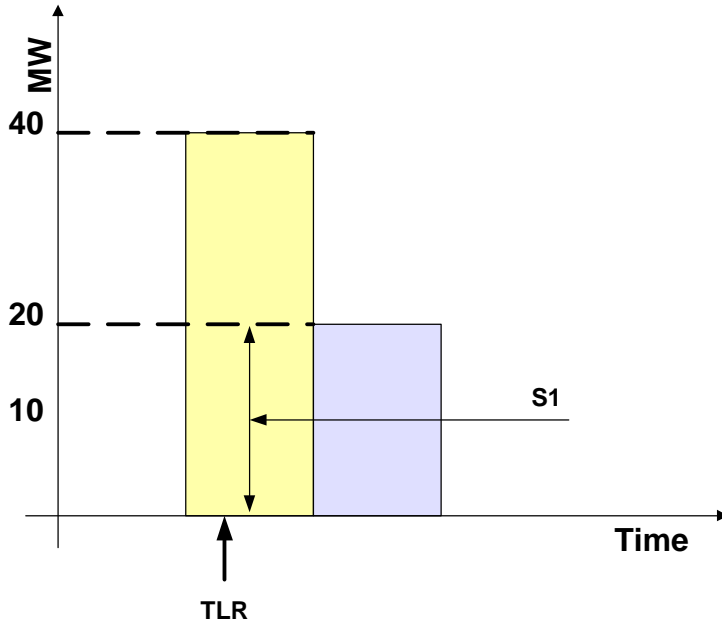
Energy Profile: Current hour	20 MW
Actual flow following curtailment: Current hour	20 MW (no curtailment)
Energy Profile: Next hour	40 MW



<i>Sub-Priority</i>	<i>MW Value</i>	<i>Explanation</i>
S1	20 MW	Maintain current flow (not curtailed)
S2	+0 MW	Reload to <i>lesser</i> of current and next-hour Energy Profile
S3	+20 MW	Next-hour Energy Profile is 40MW
S4		

**Example 4 – Transaction not curtailed, next-hour Energy Profile is lower**

Energy Profile: Current hour	40 MW
Actual flow following curtailment: Current hour	40 MW (no curtailment)
Energy Profile: Next hour	20 MW

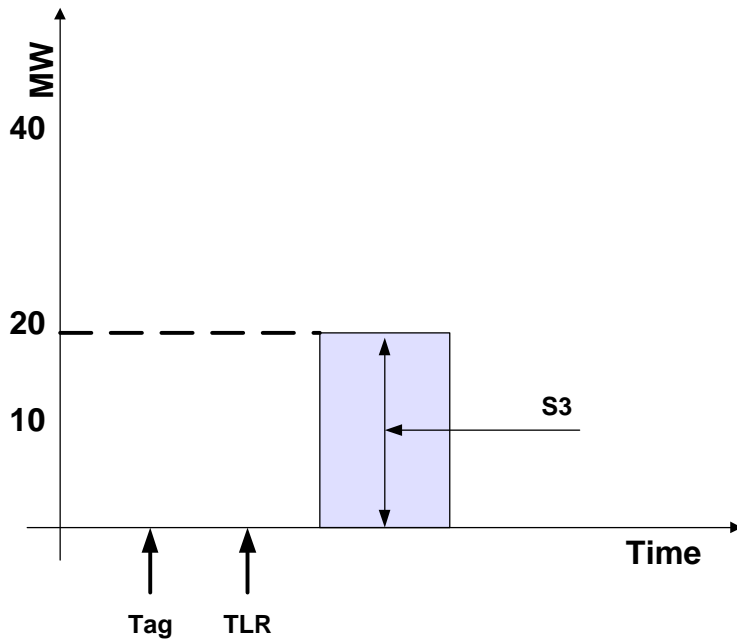


**Sub-priorities for Transaction MW:**

<i>Sub-Priority</i>	<i>MW Value</i>	<i>Explanation</i>
S1	20 MW	Reduce flow to next-hour Energy Profile (20MW)
S2	+0 MW	Reload to <i>lesser</i> of current and next-hour Energy Profile
S3	+0 MW	Next-hour Energy Profile is 20MW
S4		

**Example 5 — TLR Issued before Transaction was scheduled to start**

Energy Profile: Current hour	0 MW
Actual flow following curtailment: Current hour	0 MW (Transaction scheduled to start <i>after</i> TLR initiated)
Energy Profile: Next hour	20 MW



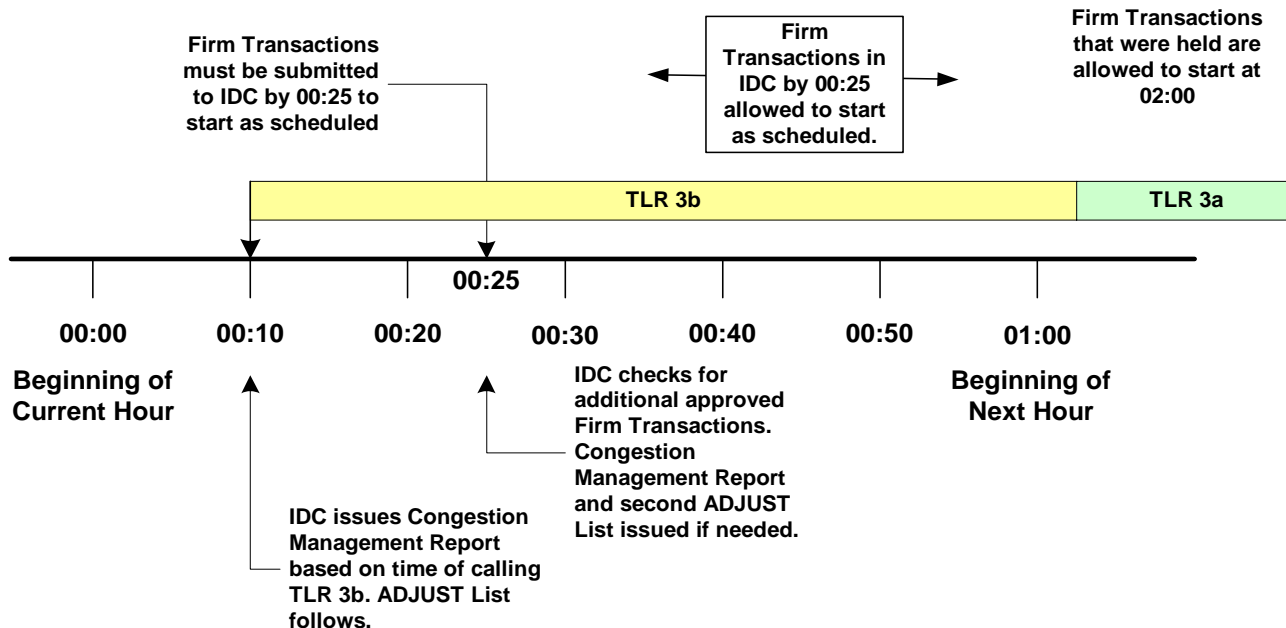
<i>Sub-Priority</i>	<i>MW Value</i>	<i>Explanation</i>
S1	0 MW	Transaction was not allowed to start
S2	+0 MW	Transaction was not allowed to start
S3	+20 MW	Next-hour Energy Profile is 20MW
S4	+0	Tag submitted prior to TLR

**Appendix F. Considerations for Interchange Transactions**

**Using Firm Point-to-Point Transmission Service**

The following cases explain the circumstances under which an Interchange Transaction using Firm Point-to-Point Transmission Service will be allowed to start as scheduled during a TLR 3b:

**Case 1: TLR 3b is called between 00:00 and 00:25 and the Interchange Transaction using Firm Point-to-Point Transmission Service is submitted to IDC by 00:25.**



The IDC will examine the current hour (00) and next hour (01) for all Interchange Transactions.

The IDC will issue an ADJUST List based upon the time the TLR 3b is called. The ADJUST List will include curtailments of Interchange Transactions using Non-firm Point-to-Point Transmission Service as necessary to allow room for those Interchange Transactions using Firm Point-to-Point Transmission Service to start as scheduled.

At 00:25, the IDC will check for additional Interchange Transactions using Firm Point-to-Point Transmission Service that were submitted to the IDC by that time and issue a second ADJUST List if those additional Interchange Transactions are found.

All existing or new Interchange Transactions using Non-firm Point-to-Point Transmission Service that are increasing or expected to start during the current hour or next hour will be placed on HALT or HOLD. There is no Reallocation of lower-priority Interchange Transactions using Non-firm Point-to-Point Transmission Service.

Interchange Transactions using Firm Point-to-Point Transmission Service that were submitted to the IDC by 00:25 will be allowed to start as scheduled.

## **Standard IRO-006-4 — Reliability Coordination — Transmission Loading Relief**

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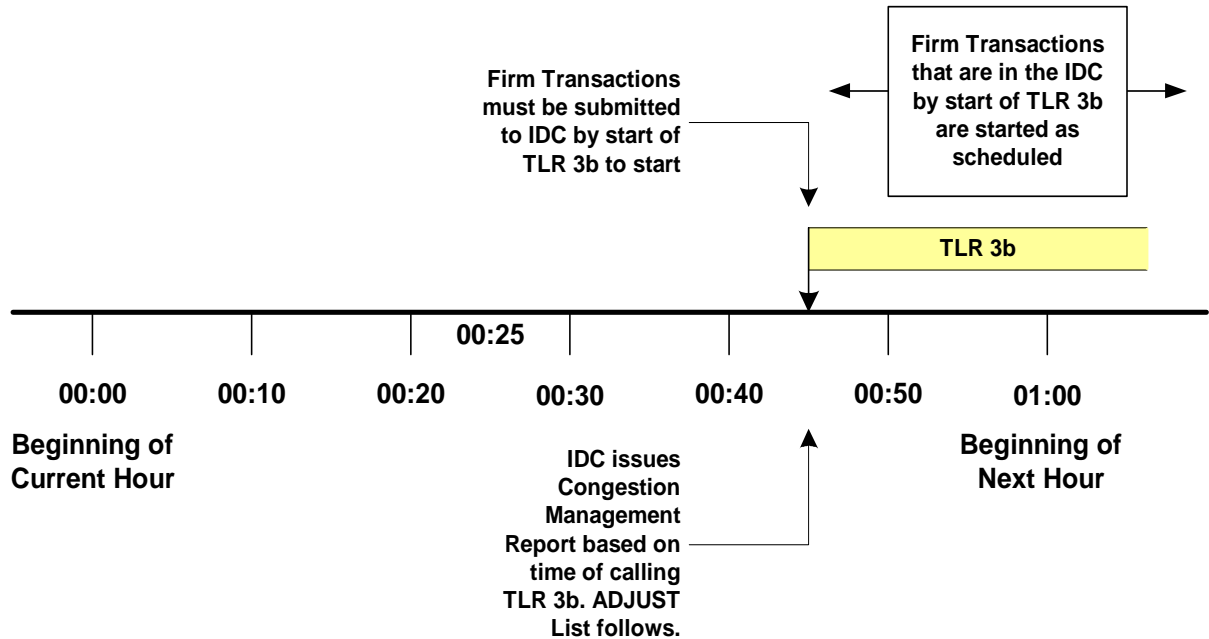
Interchange Transactions using Firm Point-to-Point Transmission Service that were submitted to the IDC after 00:25 will be held.

Once the SOL or IROL violation is mitigated, the Reliability Coordinator shall call a TLR Level 3a (or lower). If a TLR Level 3a is called:

Interchange Transactions using Firm Point-to-Point Transmission Service that were submitted to the IDC by 00:25 will be allowed to start as scheduled at 02:00.

Interchange Transactions using Non-firm Point-to-Point Transmission Service that were held may then be reallocated to start at 02:00.

**Case 2: TLR 3b is called after 00:25 and the Interchange Transaction using Firm Point-to-Point Transmission Service is submitted to the IDC no later than the time at which the TLR 3b is called.**



The IDC will examine the current hour (00) and next hour (01) for all Interchange Transactions.

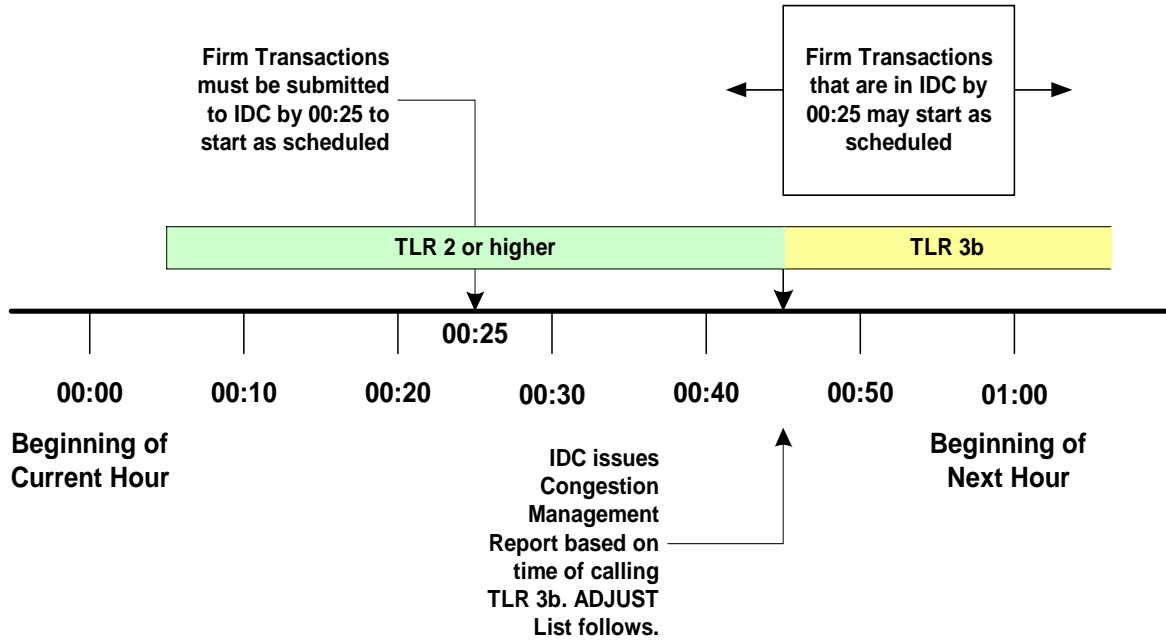
The IDC will issue an ADJUST List at the time the TLR 3b is called. The ADJUST List will include additional curtailments of Interchange Transactions using Non-firm Point-to-Point Transmission Service as necessary to allow room for those Interchange Transactions using Firm Point-to-Point Transmission Service to start at as scheduled.

All existing or new Interchange Transactions using Non-firm Point-to-Point Transmission Service that are increasing or expected to start during the current hour or next hour will be placed on HALT or HOLD. There is no Reallocation of lower-priority Interchange Transactions using Non-firm Point-to-Point Transmission Service.

Interchange Transactions using Firm Point-to-Point Transmission Service that were submitted to the IDC by the time the TLR 3b was called will be allowed to start at as scheduled.

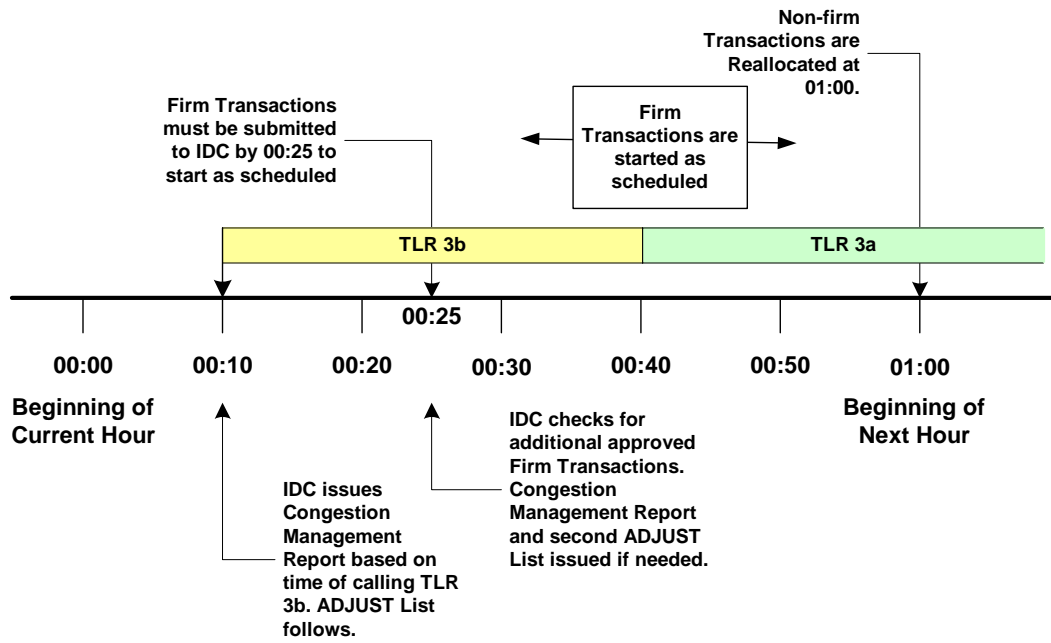
Interchange Transaction using Firm Point-to-Point Transmission Service that were submitted to the IDC after the TLR 3b was called will be held until the next issuance for TLR (either TLR 3b, 3a, or lower level).

Case 3. TLR 2 or higher is in effect, a TLR 3b is called after 00:25, and the Interchange Transaction using Firm Point-to-Point Transmission Service is submitted to the IDC by 00:25.



If a TLR 2 or higher has been issued and 3B is subsequently issued, then only those Interchange Transactions using Firm Point-to-Point Transmission Service that had been submitted to the IDC by 00:25 will be allowed to start as scheduled. All other Interchange Transactions are held.

Case 4. TLR 3b is called before 00:25 and the Interchange Transaction is submitted to the IDC by 00:25. TLR 3a is called at 00:40.



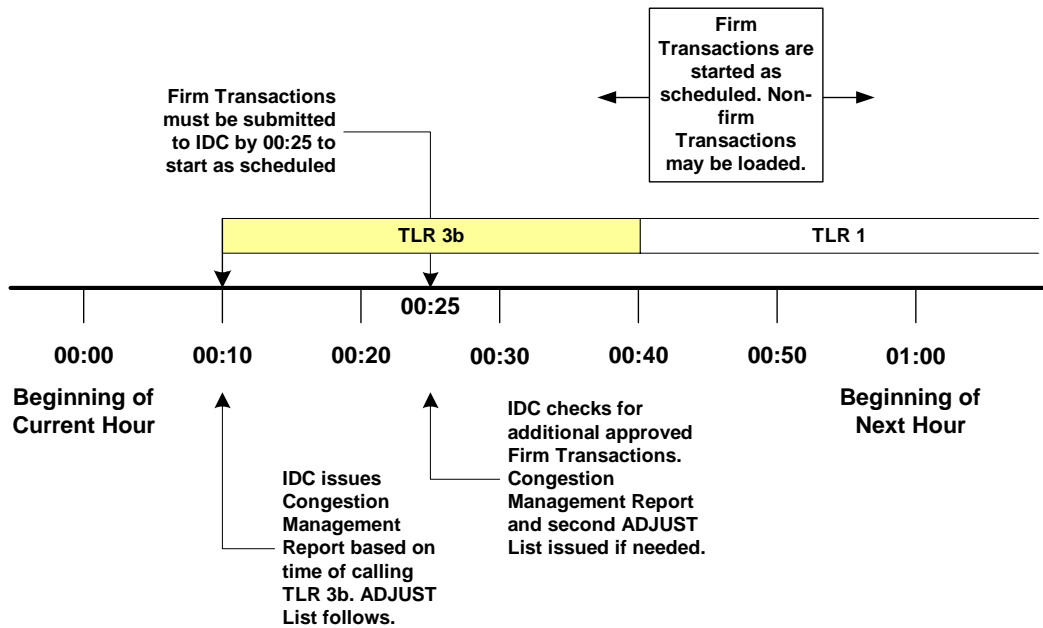
Same as Case 1, but TLR Level 3b ends at 00:40 and becomes TLR Level 3a.

All Interchange Transactions using Firm Point-to-Point Transmission Service will start as scheduled if in by the time the 3A is declared.

All Interchange Transactions using Non-firm Point-to-Point Transmission Service are reallocated at 01:00.



Case 5. TLR 3b is called before 00:25 and the Interchange Transaction is submitted to the IDC by 00:25. TLR 1 is called at 00:40.



Same as Case 1, but TLR Level 3b ends at 00:40 and becomes TLR Level 1.

All Interchange Transactions using Firm Point-to-Point Transmission Service will start as scheduled.

All Interchange Transactions using Non-firm Point-to-Point Transmission Service may be loaded immediately.

## **Exhibit C**

### **Standard Drafting Team Roster**

## Transmission Loading Relief Drafting Team

### Project 2006-08 — TLRDT

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## **Exhibit D**

### **Mapping of Proposed Changes To Attachment 1 of Approved IRO-006-3 Reliability Standard**

PLEASE NOTE: items designated for inclusion in the NAESB TLR business practice following completion of the standard revision are highlighted in gray. Items in yellow will be recommended to be an Attachment 2 to IRO-006-4 at a later time. Items in blue will be recommended for retirement.

## Attachment 1-IRO-006

### Transmission Loading Relief Procedure — Eastern Interconnection

#### Purpose

This standard defines procedures for curtailment and reloading of Interchange Transactions to relieve overloads on transmission facilities modeled in the Interchange Distribution Calculator. This process is defined in the requirements below, and is depicted in Appendix A. Examples of curtailment calculations using these procedures are contained in Appendix B.

#### Applicability

This standard only applies to the Eastern Interconnection.

#### 1. Transmission Loading Relief (TLR) Procedure

**1.1. Initiation only by Reliability Coordinator.** A Reliability Coordinator shall be the only entity authorized to initiate the TLR Procedure and shall do so at 1) the Reliability Coordinator’s own request, or 2) upon the request of a Transmission Operator.

The flexibility for ISOs and RTOs to use redispatch is contained explicitly in the NAESB business practice Section 1.3.

**1.2. Mitigating transmission constraints.** A Reliability Coordinator may utilize the TLR Procedure to mitigate potential or existing System Operating Limit (SOL) violations or to prevent Interconnection Reliability Operating Limit (IROL) violations on any transmission facility modeled in the IDC. However, the TLR procedure is an inappropriate and ineffective tool as a sole means to mitigate existing IROL violations. Effective alternatives to the use of the TLR procedure in situations involving an existing IROL violation include: reconfiguration, redispatch, and load shedding outside the TLR process.

Comment: see FERC Order No. 693 paragraph 964 regarding recommendation for using tools other than TLR to mitigate an actual IROL.

**1.2.1. Requesting relief on tie facilities.** Any Transmission Operator who operates the tie facility shall be allowed to request relief from its Reliability Coordinator.

**1.2.1.1. Interchange Transaction priority on tie facilities.** The priority of the Interchange Transaction(s) to be curtailed shall be determined by the Transmission Service reserved on the Transmission Service Provider’s system who requested the relief. *(Section 2.1 of NAESB Transmission Loading Relief Business Practice)*

**1.3. Order of TLR Levels and taking emergency action.** The Reliability Coordinator shall not be required to follow the TLR Levels in their numerical order (Section 2, “TLR Levels”). Furthermore, if a Reliability Coordinator deems that a transmission loading condition could jeopardize Bulk Electric System reliability, the Reliability Coordinator shall have the authority to enter TLR Level 6 directly, and immediately direct the Balancing Authorities or Transmission Operators to take such actions as redispatching generation, or reconfiguring transmission, or reducing load to mitigate the critical

condition until Interchange Transactions can be reduced utilizing the TLR Procedure or other methods to return the system to a secure state.

- 1.4. **Notification of TLR Procedure implementation.** The Reliability Coordinator initiating the use of the TLR Procedure shall notify other Reliability Coordinators and Balancing Authorities and Transmission Operators, and must post the initiation and progress of the TLR event on the appropriate NERC web page(s).
  - 1.4.1. **Notifying other Reliability Coordinators.** The Reliability Coordinator initiating the TLR Procedure shall inform all other Reliability Coordinators via the Reliability Coordinator Information System (RCIS) that the TLR Procedure has been implemented.
    - 1.4.1.1. **Actions expected.** The Reliability Coordinator initiating the TLR Procedure shall indicate the actions expected to be taken by other Reliability Coordinators.
  - 1.4.2. **Notifying Transmission Operators and Balancing Authorities.** The Reliability Coordinator shall notify Transmission Operators and Balancing Authorities in its Reliability Area when entering and leaving any TLR level.
  - 1.4.3. **Notifying Balancing Authorities.** The Reliability Coordinator for the sink Balancing Authority shall be responsible for directing the Sink Balancing Authority to curtail the Interchange Transactions as specified by the Reliability Coordinator implementing the TLR Procedure.
    - 1.4.3.1. **Notification order.** Within a Transmission Service Priority level, the Sink Balancing Authorities whose Interchange Transactions have the largest impact on the Constrained Facilities shall be notified first if practicable.
  - 1.4.4. **Updates.** At least once each hour, or when conditions change, the Reliability Coordinator implementing the TLR Procedure shall update all other Reliability Coordinators (via the RCIS). Transmission Operators and Balancing Authorities who have had Interchange Transactions impacted by the TLR will be updated by their Reliability Coordinator.
- 1.5. **Obligations.** All Reliability Coordinators shall comply with the request of the Reliability Coordinator who initiated the TLR Procedure, unless the initiating Reliability Coordinator agrees otherwise.
  - 1.5.1. **Use of TLR Procedure with “local” procedures.** A Reliability Coordinator shall be allowed to implement a local transmission loading relief or congestion management procedure simultaneously with an Interconnection-wide procedure. However, the Reliability Coordinator shall be obligated to follow the curtailments as directed by the Interconnection-wide procedure. If the Reliability Coordinator desires to use a local procedure as a substitute for Curtailments as directed by the Interconnection-wide procedure, it may do so only if such use is approved by the NERC Operating Committee. (*Sections 1.1, 1.2, 1.2.11 of NAESB Transmission Loading Relief Business Practice*)
- 1.6. **Consideration of Interchange Transactions.** The administration of the TLR Procedure shall be guided by information obtained from the IDC.

The approval of the NERC Operating Committee is contained in Requirement R3 of draft IRO-006-4 – note that the NERC Operating Committee was replaced with the ‘ERO’.

- 1.6.1. Interchange Transactions not in the IDC.** Reliability Coordinators shall also treat known Interchange Transactions that may not appear in the IDC in accordance with the procedures in this document.
- 1.6.2. Transmission elements not in IDC.** When a Reliability Coordinator is faced with an overload on a transmission element that is not modeled in the IDC, the Reliability Coordinator shall use the best information available to curtail Interchange Transactions in order to operate the system in a reliable manner. The Reliability Coordinator shall use its best efforts to ensure that Interchange Transactions with a Transfer Distribution Factor of less than the Curtailment Threshold on the transmission element not modeled in the IDC are not curtailed.
- 1.6.3. Questionable IDC results.** Any Reliability Coordinator (or Transmission Operator through its Reliability Coordinator) who believes the curtailment list from the IDC for a particular TLR event is incorrect shall use its best efforts to communicate those adjustments necessary to bring the curtailment list into conformance with the principles of this Procedure to the initiating Reliability Coordinator. Causes of questionable IDC results may include:
- Missing Interchange Transactions that are known to contribute to the Constraint.
  - Significant change in transmission system topology.
  - TDF matrix error.

Impacts of questionable IDC results may include:

- Curtailment that would have no effect on, or aggravate the constraint.
- Curtailment that would initiate a constraint elsewhere.

If other Reliability Coordinators are involved in the TLR event, all impacted Reliability Coordinators shall be in agreement before any adjustments to the Curtailment list are made.

- 1.6.4. Curtailment that would cause a constraint elsewhere.** A Reliability Coordinator shall be allowed to exempt an Interchange Transaction from Curtailment if that Reliability Coordinator is aware that the Interchange Transaction Curtailment directed by the IDC would cause a constraint to occur elsewhere. This exemption shall only be allowed after the Reliability Coordinator has consulted with the Reliability Coordinator who initiated the Curtailment.
- 1.6.5. Redispatch options.** The Reliability Coordinator shall ensure that Interchange Transactions that are linked to redispatch options are protected from Curtailment in accordance with the redispatch provisions. (*Section 1.3 of NAESB Transmission Loading Relief Business Practice*)
- 1.6.6. Reallocation.** The Reliability Coordinator shall consider for Reallocation any Transactions of higher priority that meet the approved tag submission deadline during a TLR Level 3A. The Reliability Coordinator shall consider for Reallocation any Transaction using Firm Transmission Service that has met the approved tag submission deadline during a TLR Level 5A. Note Reallocations for Dynamic Schedules are as follows: If an Interchange Transaction is identified as a Dynamic Schedule and the transmission service is considered firm according to the constrained path method, then it will not be held by the IDC during TLR



level 4 or lower. Adjustments to Dynamic Schedules in accordance with INT-004 R5 will not be held under TLR level 4 or lower. (Sections 3.3, 3.3.1, 3.3.1.2, 3.6, and for Dynamic Schedules for levels 4 and lower Sections 3.2.5, 3.3.1.2, 3.4.1.2, and 3.5.2.1 of NAESB Transmission Loading Relief Business Practice)

- 1.7 **IDC updates.** Any Interchange Transaction adjustments or curtailments that result from using this Procedure must be entered into the IDC.
- 1.8 **Logging.** The Reliability Coordinator shall complete the NERC Transmission Loading Relief Procedure Log whenever it invokes TLR Level 2 or above, and send a copy of the log via email to NERC within two business days of the TLR event for posting on the NERC website.
- 1.9 **TLR Event Review.** The Reliability Coordinator shall report the TLR event to the NERC Market Committee and Operating Reliability Subcommittee in accordance with TLR review processes established by NERC as required.
  - 1.9.1. **Providing information.** Transmission Operators and Balancing Authorities within the Reliability Coordinator's Area, and all other Reliability Coordinators, including Transmission Operators and Balancing Authorities within their respective Reliability Areas, shall provide information, as requested by the initiating Reliability Coordinator, in accordance with TLR review processes established by NERC.
  - 1.9.2. **Market Committee reviews.** The Market Committee may conduct reviews of certain TLR events based on the size and number of Interchange Transactions that are affected, the frequency that the TLR Procedure is called for a particular Constrained Facility, or other factors.
  - 1.9.3. **Operating Reliability Subcommittee reviews.** The Operating Reliability Subcommittee shall conduct reviews to ensure proper implementation and for "lessons learned."

## 2. Transmission Loading Relief (TLR) Levels

### Introduction

This section describes the various levels of the TLR Procedure. The description of each level begins with the circumstances that define the TLR Level, followed by the procedures to be followed.

The decision that a Reliability Coordinator makes in selecting a particular TLR Level often depends on the transmission loading condition and whether the Interchange Transaction is using Non-firm Point-to-Point Transmission Service or Firm Point-to-Point Transmission Service. There are further considerations that depend on whether the Constrained Facility is on or off the Contract Path. It is important to note that an Interchange Transaction using Firm Point-to-Point Transmission Service on all Contract Path links is considered a “firm” Interchange Transaction even if the Constrained Facility is off the Contract Path.

#### 2.1. TLR Level 1 — Notify Reliability Coordinators of potential SOL or IROL Violations

2.1.1. The Reliability Coordinator shall use the following circumstances to establish the need for TLR Level 1:

- The transmission system is secure.
- The Reliability Coordinator foresees a transmission or generation contingency or other operating problem within its Reliability Area that could cause one or more transmission facilities to approach or exceed their SOL or IROL.

2.1.2. **Notification procedures.** The Reliability Coordinator shall notify all Reliability Coordinators via the Reliability Coordinator Information System (RCIS) as soon as the condition is foreseen. All affected Reliability Coordinators shall check to ensure that Interchange Transactions are posted in the IDC.

#### 2.2. TLR Level 2 — Hold transfers at present level to prevent SOL or IROL Violations

2.2.1. The Reliability Coordinator shall use the following circumstances to establish the need for entering TLR Level 2:

- The transmission system is secure.
- One or more transmission facilities are expected to approach, or are approaching, or are at their SOL or IROL.

2.2.2. **Holding procedures.** The Reliability Coordinator shall be allowed to hold the implementation of any additional Interchange Transactions that are at or above the Curtailment Threshold. However, the Reliability Coordinator should allow additional Interchange Transactions that flow across the Constrained Facility if their flow reduces the loading on the Constrained Facility or has a Transfer Distribution Factor less than the Curtailment Threshold. All Interchange Transactions using Firm Point-to-Point Transmission Service shall be allowed to start. (*Sections 3.2.2, 3.2.3, and 3.2.4 of NAESB Transmission Loading Relief Business Practice*)

2.2.3. TLR Level 2 is a transient state, which requires a quick decision to proceed to higher TLR Levels (3 and above) to allow Interchange Transactions to be implemented according to their transmission reservation priority. The time for being in TLR Level 2 should be no more than 30 minutes, with the understanding that there may be circumstances where this time may be exceeded. If the time in TLR Level 2 exceeds 30 minutes, the Reliability Coordinator shall document this action on the TLR Log. **(Sections 3.2.1, 3.2.1.1, and 3.2.1.2 of NAESB Transmission Loading Relief Business Practice)**

**2.3. TLR Level 3a — Reallocation of Transmission Service by curtailing Interchange Transactions using Non-firm Point-to-Point Transmission Service to allow Interchange Transactions using higher priority Transmission Service**

2.3.1. The Reliability Coordinator shall use the following circumstances to establish the need for entering TLR Level 3a:

- The transmission system is secure.
- One or more transmission facilities are expected to approach, or are approaching, or are at their SOL or IROL.
- Transactions using Non-firm Point-to-Point Transmission Service are flowing that are at or above the Curtailment Threshold on those facilities.
- The Transmission Provider has previously approved a higher priority Point-to-Point Transmission Service reservation over which a Transmission Customer wishes to begin an Interchange Transaction.

2.3.2. **Reallocation procedures to allow Interchange Transactions using higher priority Point-to-Point Transmission Service to start.** The Reliability Coordinator with the constraint shall give preference to those Interchange Transactions using Firm Point-to-Point Transmission Service, followed by those using higher priority Non-firm Point-to-Point Transmission Service as specified in Section 3. “Interchange Transaction Curtailment Order.” Interchange Transactions that have been held or curtailed as prescribed in this Section shall be reallocated (reloaded) according to their Transmission Service priorities when operating conditions permit as specified in Section 6. “Interchange Transaction Reallocation During TLR Level 3a and 5a.” **(Sections 3.3 – 3.3.1.2 of NAESB Transmission Loading Relief Business Practice)**

2.3.2.1. The Reliability Coordinator shall displace Interchange Transactions with lower priority Transmission Service using Interchange Transactions having higher priority Non-firm or Firm Transmission Service. **(Sections 3.3.2 and 3.3.2.3 of NAESB Transmission Loading Relief Business Practice)**

2.3.2.2. The Reliability Coordinator shall not curtail Interchange Transactions using Non-firm Transmission Service to allow the start or increase of another Interchange Transaction having the same priority Non-firm Transmission Service. **(Sections 3.3.2.4 of NAESB Transmission Loading Relief Business Practice)**

2.3.2.3. If there are insufficient Interchange Transactions using Non-firm Point-to-Point Transmission Service that can be curtailed to allow for Interchange Transactions using Firm Point-to-Point Transmission Service to begin, the Reliability Coordinator shall proceed to TLR Level

5a. *(Sections 3.3.2.5 of NAESB Transmission Loading Relief Business Practice)*

**2.3.2.4.** The Reliability Coordinator shall reload curtailed Interchange Transactions prior to allowing the start of new or increased Interchange Transactions. *(Sections 3.3.2.6 of NAESB Transmission Loading Relief Business Practice)*

**2.3.2.4.1.** Interchange Transactions whose tags were submitted prior to the TLR Level 2 or Level 3a being called, but were subsequently held from starting, are considered to have been curtailed and thus would be reloaded the same time as the curtailed Interchange Transactions. *(Sections 3.3.2.6.1 of NAESB Transmission Loading Relief Business Practice)*

**2.3.2.5.** The Reliability Coordinator shall fill available transmission capability by reloading or starting eligible Transactions on a pro-rata basis. *(Sections 3.3.3.1 of NAESB Transmission Loading Relief Business Practice)*

**2.3.2.6.** The Reliability Coordinator shall consider transactions whose tags meet the approved tag submission deadline for Reallocation for the upcoming hour. Tags submitted after this deadline shall be considered for Reallocation the following hour. *(Sections 3.3.2.1 and 3.3.2.1.1 of NAESB Transmission Loading Relief Business Practice)*

**2.4. TLR Level 3b — Curtail Interchange Transactions using Non-Firm Transmission Service Arrangements to mitigate a SOL or IROL Violation**

**2.4.1.** The Reliability Coordinator shall use the following circumstances to establish the need for entering TLR Level 3b:

- One or more transmission facilities are operating above their SOL or IROL, or
- Such operation is imminent and it is expected that facilities will exceed their reliability limit unless corrective action is taken, or
- One or more Transmission Facilities will exceed their SOL or IROL upon the removal from service of a generating unit or another transmission facility.
- Transactions using Non-firm Point-to-Point Transmission Service are flowing that are at or above the Curtailment Threshold on those facilities.

**2.4.2. Curtailment procedures to mitigate an SOL or IROL.** The Reliability Coordinator shall curtail Interchange Transactions using Non-firm Point-to-Point Transmission Service that are at or above the Curtailment Threshold as specified in Section 3, “Interchange Transaction Curtailment Order” in the current hour to mitigate an SOL or IROL as well as reallocating, in accordance with Section 6 of this document, to a determined flow for the top of the next hour.

The Reliability Coordinator shall allow Interchange Transactions using Firm Point-to-Point Transmission Service to start if they are submitted to the IDC within specific time limits as explained in Section 7 “Interchange Transaction Curtailments during TLR Level 3b.” *(Sections 3.4.2 and 3.4.1 of NAESB Transmission Loading Relief Business Practice)*

**2.5. TLR Level 4 — Reconfigure Transmission**

**2.5.1.** The Reliability Coordinator shall use the following circumstances to establish the need for entering TLR Level 4:

- One or more Transmission Facilities are above their SOL or IROL, or
- Such operation is imminent and it is expected that facilities will exceed their reliability limit unless corrective action is taken.

**2.5.2. Holding new Interchange Transactions.** The Reliability Coordinator shall hold all new Interchange Transactions using Non-firm Point-to-Point Transmission Service that are at or above the Curtailment Threshold during the period of the SOL or IROL Violation. The Reliability Coordinator shall allow Interchange Transactions using Firm Point-to-Point Transmission Service to start if they are submitted to the IDC by 25 minutes past the hour or the time at which the TLR Level 4 is called, whichever is later. See Appendix E, Section E2 – Timing Requirements. (*Sections 3.5, 3.5.1, and 3.5.2 of NAESB Transmission Loading Relief Business Practice*)

**2.5.3. Reconfiguration procedures.** The issuance of a TLR Level 4 shall result in the curtailment, in the current hour and the next hour, of all Interchange Transactions using Non-firm Point-to-Point Transmission Service that are at or above the Curtailment Threshold that impact the Constrained Facilities. If a SOL or IROL violation is imminent or occurring, the Reliability Coordinator(s) shall request that the affected Transmission Operators reconfigure transmission on their system, or arrange for reconfiguration on other transmission systems, to mitigate the constraint. Specific details are explained in Section 4, “Principles for Mitigating Constraints On and Off the Contract Path”.

**2.6. TLR Level 5a — Reallocation of Transmission Service by curtailing Interchange Transactions using Firm Point-to-Point Transmission Service on a pro rata basis to allow additional Interchange Transactions using Firm Point-to-Point Transmission Service**

**2.6.1.** The Reliability Coordinator shall use the following circumstances to establish the need for entering TLR Level 5a:

- The transmission system is secure.
- One or more transmission facilities are at their SOL or IROL.
- All Interchange Transactions using Non-firm Point-to-Point Transmission Service that are at or above the Curtailment Threshold have been curtailed.
- The Transmission Provider has been requested to begin an Interchange Transaction using previously arranged Firm Transmission Service that would result in a SOL or IROL violation.
- No further transmission reconfiguration is possible or effective.

**2.6.2. Reallocation procedures to allow new Interchange Transactions using Firm Point-to-Point Transmission Service to start.** The Reliability Coordinator shall use the following three-step process for Reallocation of Interchange Transactions using Firm Point-to-Point Transmission Service: (*Section 3.6.2 of NAESB Transmission Loading Relief Business Practice*)

**2.6.2.1. Step 1 — Identify available redispatch options.** The Reliability Coordinator shall assist the Transmission Operator(s) in identifying those known redispatch options that are available to the Transmission Customer that will mitigate the loading on the Constrained Facilities. If such redispatch options are deemed insufficient to mitigate loading on the Constrained Facilities, the Reliability Coordinator shall proceed to implement these options while proceeding to Steps 2 and 3 below. *(Sections 3.6.2.1 and 3.6.2.1.1 of NAESB Transmission Loading Relief Business Practice)*

**2.6.2.2. Step 2 —** The Reliability Coordinator shall calculate the percent of the overload on the Constrained Facility caused by both Firm Point-to-Point Transmission Service (at or above the Curtailment Threshold) and the Transmission Provider's Network Integration Transmission Service and Native Load, as required by the Transmission Provider's filed tariff. This is described in Section 5, "Parallel Flow Calculation Procedure for Reallocating or Curtailing Firm Transmission Service." *(Section 3.6.2.2 of NAESB Transmission Loading Relief Business Practice)*

**2.6.2.3. Step 3 — Curtail Interchange Transactions using Firm Transmission Service.** The Reliability Coordinator shall curtail or reallocate on a pro-rata basis (based on the MW level of the MW total to all such Interchange Transactions), those Interchange Transactions as calculated in Section 7.2.2 over the Constrained Facilities. (See also Section 6, "Interchange Transaction Reallocation during TLR 3a and 5a.") The Reliability Coordinator shall assist the Transmission Provider in curtailing Transmission Service to Network Integration Transmission Service customers and Native Load if such curtailments are required by the Transmission Provider's tariff. Available redispatch options will continue to be implemented. *(Sections 3.6.2.3, 3.6.2.3.1, and 3.6.2.3.2 of NAESB Transmission Loading Relief Business Practice)*

**2.7. TLR Level 5b — Curtail Interchange Transactions using Firm Point-to-Point Transmission Service to mitigate an SOL or IROL violation**

**2.7.1.** The Reliability Coordinator shall use following circumstances to establish the need for entering TLR Level 5b:

- One or more Transmission Facilities are operating above their SOL or IROL, or
- Such operation is imminent, or
- One or more Transmission Facilities will exceed their SOL or IROL upon the removal from service of a generating unit or another transmission facility.
- All Interchange Transactions using Non-firm Point-to-Point Transmission Service that are at or above the Curtailment Threshold have been curtailed.
- No further transmission reconfiguration is possible or effective.

**2.7.2.** The Reliability Coordinator shall use the following three-step process for curtailment of Interchange Transactions using Firm Point-to-Point Transmission Service: *(Sections 3.7 and 3.7.1 of NAESB Transmission Loading Relief Business Practice)*

**2.7.2.1. Step 1 — Identify available redispatch options.** The Reliability Coordinator shall assist the Transmission Operator(s) in identifying those known redispatch options that are available to the Transmission Customer that will mitigate the loading on the Constrained Facilities. If such redispatch options are deemed insufficient to mitigate loading on the Constrained Facilities, the Reliability Coordinator shall proceed to implement these options while proceeding to Steps 2 and 3 below. *(Sections 3.7.1.1 and 3.7.1.1.1 of NAESB Transmission Loading Relief Business Practice)*

**2.7.2.2. Step 2 —** The Reliability Coordinator shall calculate the percent of the overload on the Constrained Facility caused by both Firm Point-to-Point Transmission Service (at or above the Curtailment Threshold) and the Transmission Provider's Network Integration Transmission Service and Native Load, as required by the Transmission Provider's filed tariff. This is described in Section 5, "Parallel Flow Calculation Procedure for Reallocating or Curtailing Firm Transmission Service." *(Sections 3.7.1.2 of NAESB Transmission Loading Relief Business Practice)*

**2.7.2.3. Step 3 — Curtailment of Interchange Transactions using Firm Transmission Service.** At this point, the Reliability Coordinator shall begin the process of curtailing Interchange Transactions as calculated in Section 2.7.2.2 over the Constrained Facilities using Firm Point-to-Point Transmission Service until the SOL or IROL violation has been mitigated. The Reliability Coordinator shall assist the Transmission Provider in curtailing Transmission Service to Network Integration Transmission Service customers and Native Load if such curtailments are required by the Transmission Providers' tariff. Available redispatch options will continue to be implemented. *(Sections 3.7.1.3 and 3.7.1.3.1, and 3.7.1.3.2 of NAESB Transmission Loading Relief Business Practice)*

**2.8. TLR Level 6 — Emergency Procedures**

**2.8.1.** The Reliability Coordinator shall use following circumstances to establish the need for entering TLR Level 6:

- One or more Transmission Facilities are above their SOL or IROL.
- One or more Transmission Facilities will exceed their SOL or IROL upon the removal from service of a generating unit or another transmission facility.

**2.8.2. Implementing emergency procedures.** If the Reliability Coordinator deems that transmission loading is critical to Bulk Electric System reliability, the Reliability Coordinator shall immediately direct the Balancing Authorities and Transmission Operators in its Reliability Area to redispatch generation, or reconfigure transmission, or reduce load to mitigate the critical condition until Interchange Transactions can be reduced utilizing the TLR Procedures or other procedures to return the system to a secure state. All Balancing Authorities and Transmission Operators shall comply with all requests from their Reliability Coordinator.

**2.9. TLR Level 0 — TLR concluded**

**2.9.1. Interchange Transaction restoration and notification procedures.** The Reliability Coordinator initiating the TLR Procedure shall notify all Reliability

Coordinators within the Interconnection via the RCIS when the SOL or IROL violations are mitigated and the system is in a reliable state, allowing Interchange Transactions to be reestablished at its discretion. Those with the highest transmission priorities shall be reestablished first if possible.



### 3. Interchange Transaction Curtailment Order for use in TLR Procedures

#### 3.1. Priority of Interchange Transactions

3.1.1. Interchange Transaction curtailment priority shall be determined by the Transmission Service reserved over the constrained facility(ies) as follows:

##### Transmission Service Priorities

- Priority 0. Next-hour Market Service — NX\*
- Priority 1. Service over secondary receipt and delivery points — NS
- Priority 2. Non-Firm Point-to-Point Hourly Service — NH
- Priority 3. Non-Firm Point-to-Point Daily Service — ND
- Priority 4. Non-Firm Point-to-Point Weekly Service — NW
- Priority 5. Non-Firm Point-to-Point Monthly Service — NM
- Priority 6. Network Integration Transmission Service from sources not designated as network resources — NN
- Priority 7. Firm Point-to-Point Transmission Service — F and Network Integration Transmission Service from Designated Resources — FN (*Section 2.1 of NAESB Transmission Loading Relief Business Practice*)

3.1.2. The curtailment priority for Interchange Transactions that do not have a Transmission Service reservation over the constrained facility(ies) shall be defined by the lowest priority of the individual reserved transmission segments. (*Section 2.2.1 of NAESB Transmission Loading Relief Business Practice*)

#### 3.2. Curtailment of Interchange Transactions Using Non-firm Transmission Service

3.2.1. The Reliability Coordinator shall direct the curtailment of Interchange Transactions using Non-firm Transmission Service that are at or above the Curtailment Threshold for the following TLR Levels (*Section 3.3 of the NAESB Transmission Loading Relief Business Practice*):

3.2.1.1. **TLR Level 3a.** Enable Interchange Transactions using a higher Transmission reservation priority to be implemented, or (*Section 3.3 of NAESB Transmission Loading Relief Business Practice*)

3.2.1.2. **TLR Level 3b.** Mitigate an SOL or IROL violation.

#### 3.3. Curtailment of Interchange Transactions Using Firm Transmission Service

3.3.1. The Reliability Coordinator shall direct the curtailment of Interchange Transactions using Firm Transmission Service that are at or above the Curtailment Threshold for the following TLR Levels:

3.3.1.1. **TLR Level 5a.** Enable additional Interchange Transactions using Firm Point-to-Point Transmission Service to be implemented after all Interchange Transactions using Non-firm Point-to-Point Service have been curtailed, or

**3.3.1.2. TLR Level 5b.** Mitigate a SOL or IROL violation that remains after all Interchange Transactions using Non-firm Transmission Service has been curtailed under TLR Level 3b, and following attempts to reconfigure transmission under TLR Level 4.

#### 4. Mitigating Constraints On and Off the Contract Path during TLR

##### Introduction

Reserving Transmission Service for an Interchange Transaction along a Contract Path may not reflect the actual distribution of the power flows over the transmission network from generation source to load sink. Interchange Transactions arranged over a Contract Path may, therefore, overload transmission elements on other electrically parallel paths.

The curtailment priority of an Interchange Transaction depends on whether the Constrained Facility is on or off the Contract Path as detailed below.

##### 4.1. Constraints ON the Contract Path (*Sections 2.2 of NAESB Transmission Loading Relief Business Practice*)

4.1.1. The Reliability Coordinator initiating TLR shall consider the entire Interchange Transaction non-firm if the transmission link (i.e., a segment on the Contract Path) on the Constrained Facility is Non-firm Point-to-Point Transmission Service, even if other links in the Contract Path are firm. When the Constrained Facility is on the Contract Path, the Interchange Transaction takes on the Transmission Service Priority of the Transmission Service link with the Constrained Facility regardless of the Transmission Service Priority on the other links along the Contract Path. (*Section 2.2.1.1 of NAESB Transmission Loading Relief Business Practice*)

**Discussion.** The Transmission Operator simply has to call its Reliability Coordinator, request the TLR Procedure be initiated, and allow the curtailments of all Interchange Transactions that are at or above the Curtailment Threshold to progress until the relief is realized. Firm Point-to-Point Transmission Service links elsewhere in the Contract Path do not obligate Transmission Providers providing Non-firm Point-to-Point Transmission Service to treat the transaction as firm. For curtailment purposes, the Interchange Transaction's priority will be the priority of the Transmission Service link with the Constrained Facility. (See Requirement 4.1.2 below.)

4.1.2. The Reliability Coordinator initiating TLR shall consider the entire Interchange Transaction firm if the transmission link on the Constrained Facility is Firm Point-to-Point Transmission Service, even if other links in the Contract Path are non-firm. (*Section 2.2.1.2 of NAESB Transmission Loading Relief Business Practice*)

**Discussion.** The curtailment priority of an Interchange Transaction on a Contract Path link is not affected by the Transmission Service Priorities arranged with other links on the Contract Path. If the Constrained Facility is on a Firm Point-to-Point Transmission Service Contract Path link, then the curtailment priority of the Interchange Transaction is considered firm regardless of the Transmission Service arrangements elsewhere on the Contract Path. If the Transmission Provider provides its services under the FERC pro forma tariff, it may also be obligated to offer its Transmission Customer alternate receipt and delivery points, thus allowing the customer to curtail its Transmission Service over the Constrained Facilities.

**4.2. Constraints OFF the Contract Path** (*Section 2.3 of NAESB Transmission Loading Relief Business Practice*)

**4.2.1.** The Reliability Coordinator initiating TLR shall consider the entire Interchange Transaction non-firm if none of the transmission links on the Contract Path are on the Constrained Facility and if any of the transmission links on the Contract Path are Non-firm Point-to-Point Transmission Service; the Interchange Transaction shall take on the lowest Transmission Service Priority of all Transmission Service links along the Contract Path. (*Section 2.3.1.1 of NAESB Transmission Loading Relief Business Practice*)

**Discussion.** An Interchange Transaction arranged over a Contract Path where one or more individual links consist of Non-firm Point-to-Point Transmission Service is considered to be a non-firm Interchange Transaction for Constrained Facilities off the Contract Path. Sufficient Interchange Transactions that are at or above the Curtailment Threshold will be curtailed before any Interchange Transactions using Firm Point-to-Point Transmission Service are curtailed. The priority level for curtailment purposes will be the lowest level of Transmission Service arranged for on the Contract Path.

**4.2.2.** The Reliability Coordinator initiating TLR shall consider the entire Interchange Transaction firm if all of the transmission links on the Contract Path are Firm Point-to-Point Transmission Service, even if none of the transmission links are on the Constrained Facility and shall not be curtailed to relieve a Constraint off the Contract Path until all non-firm Interchange Transactions that are at or above the Curtailment Threshold have been curtailed. (*Section 2.3.1.2 of NAESB Transmission Loading Relief Business Practice*)

**Discussion.** If the entire Contract Path is Firm Point-to-Point Transmission Service, then the TLR procedure will treat the Interchange Transaction as firm, even for Constraints off the Contract Path, and will not curtail that Interchange Transaction until all non-firm Interchange Transactions that are at or above the Curtailment Threshold have been curtailed. However, Transmission Providers off the Contract Path are not obligated to reconfigure their transmission system or provide other congestion management procedures unless special arrangements are in place. Because the Interchange Transaction is considered firm everywhere, the Reliability Coordinator may attempt to arrange for Transmission Operators to reconfigure transmission or provide other congestion management options or Balancing Authorities to redispatch, even if they are off the Contract Path, to try to avoid curtailing the Interchange Transaction that is using the Firm Point-to-Point Transmission Service.

## **5. Parallel Flow Calculation Procedure for Reallocating or Curtailing Firm Transmission Service during TLR**

### **Introduction**

The provision of Point-to-Point Transmission Service, Network Integration Transmission Service and service to Native Load results in parallel flows on the transmission network of other Transmission Operators. When a transmission facility becomes constrained curtailment of Interchange Transactions is required to allow Interchange Transactions of higher priority to be scheduled (Reallocation) or to provide transmission loading relief (Curtailment). An Interchange Transaction is considered for Reallocation or Curtailment if its Transfer Distribution Factor (TDF) exceeds the TLR Curtailment Threshold.

In compliance with the Transmission Service Provider tariffs, Interchange Transactions using Non-firm Point-to-Point Transmission Service are curtailed first (TLR Level 3a and 3b), followed by transmission reconfiguration (TLR Level 4), and then the curtailment of Interchange Transactions using Firm Point-to-Point Transmission Service, Network Integration Transmission Service and service to Native Load (TLR Level 5a and 5b). Curtailment of Firm Point-to-Point Transmission Service shall be accompanied by the comparable curtailment of Network Integration Transmission Service and service to Native Load to the degree that these three Transmission Services contribute to the Constraint.

### **5.1. Requirements**

A methodology, called the Per Generator Method without Counter Flow, or simply the Per Generator Method, has been programmed into the IDC to calculate the portion of parallel flows on any Constrained Facility due to service to Native Load of each Balancing Authority. The following requirements are necessary to assure comparable Reallocation or Curtailment of firm Transmission Service:

- 5.1.1.** The Reliability Coordinator initiating a curtailment shall identify for curtailment all firm Transmission Services (i.e. Point-to-Point, Network Integration and service to Native Load) that contribute to the flow on any Constrained Facility by an amount greater than or equal to the Curtailment Threshold on a pro rata basis. *(Section 3.11 of NAESB Transmission Loading Relief Business Practice)*
- 5.1.2.** For Firm Point-to-Point Transmission Services, the Transfer Distribution Factors must be greater than or equal to the Curtailment Threshold. *(Sections 3.11.1 and 3.11.1.1 of NAESB Transmission Loading Relief Business Practice)*
- 5.1.3.** For Network Integration Transmission Service and service to Native Load, the Generator-To-Load Distribution Factors must be greater than or equal to the Curtailment Threshold. *(Sections 3.11 and 3.11.1.1 of NAESB Transmission Loading Relief Business Practice)*
- 5.1.4.** The Per Generator Method shall assign the amount of Constrained Facility relief that must be achieved by each Balancing Authority's Network Integration Transmission Service or service to Native Load. It shall not specify how the reduction will be achieved. *(Sections 3.11.2.1, 3.11.2.1.1, 3.11.2.1.2, 3.11.2.1.3 and 3.11.2.1.4 of NAESB Transmission Loading Relief Business Practice)*
- 5.1.5.** All Balancing Authorities in the Eastern Interconnection shall be obligated to achieve the amount of Constrained Facility relief assigned to them by the Per Generator Method. *(Section 3.11.2.8 of NAESB Transmission Loading Relief Business Practice)*

**5.1.6.** The implementation of the Per Generator Method shall be based on transmission and generation information that is readily available. (*Section 3.11.2 of NAESB Transmission Loading Relief Business Practice*)

**5.2. Calculation Method**

The calculation of the flow on a Constrained Facility due to Network Integration Transmission Service or service to Native Load shall be based on the Generation Shift Factors (GSFs) of a Balancing Authority's assigned generation and the Load Shift Factors (LSFs) of its native load, relative to the system swing bus. The GSFs shall be calculated from a single bus location in the IDC. The IDC shall report all generators assigned to native load for which the GLDF is greater than or equal to the Curtailment Threshold. (*all Sections 3.11.2.2 of NAESB Transmission Loading Relief Business Practice*)

## 6. Interchange Transaction Reallocation During TLR Levels 3a and 5a

### Introduction

This section provides the details for implementing TLR Levels 3a and 5a, both of which provide a means for Reallocation of Transmission Service.

**TLR Level 3a** accomplishes Reallocation by curtailing Interchange Transactions using Non-firm Point-to-Point Transmission Service to allow Interchange Transactions using higher priority Non-firm or Firm Point-to-Point Transmission Service to start. (See **Requirement 2.3, “TLR Level 3a.”**) When a TLR Level 3a is in effect, Reliability Coordinators shall reallocate Interchange Transactions according to the Transactions’ Transmission Service Priorities. Reallocation also includes the orderly reloading of Transactions by priority when conditions permit curtailed Transactions to be reinstated. [Recommended for deletion since this is redundant with NERC 2.3 and NAESB 3.3]

**TLR Level 5a** accomplishes Reallocation by curtailing Interchange Transactions using Firm Point-to-Point Transmission Service on a pro-rata basis to allow new Interchange Transactions using Firm Point-to-Point Transmission Service to begin, also on a pro-rata basis. (See **Requirement 2.6, “TLR Level 5a.”**) [Recommended for deletion since this is redundant with NERC 2.6 and NAESB 3.6]

### 6.1. Requirements

The basic requirements for Transaction Reallocation are as follows:

- 6.1.1.** When identifying transactions for Reallocation the Reliability Coordinator shall normally only involve Curtailments of Interchange Transactions using Non-firm Point-to-Point Transmission Service during TLR 3a. However, Reallocation may be used during TLR 5a to allow the implementation of additional Interchange Transactions using Firm Transmission Service on a pro-rata basis. (*Section 3 introduction, 3.3, and 3.6 of NAESB Transmission Loading Relief Business Practice*)
- 6.1.2.** When identifying transactions for Reallocation, the Reliability Coordinator shall only consider those Interchange Transactions at or above the Curtailment Threshold for which a TLR 2 or higher is called. (*Section 3.3.2.2 of NAESB Transmission Loading Relief Business Practice, which refers to Interconnection-wide procedure rather than TLR 2*)
- 6.1.3.** When identifying transactions for Reallocation, the Reliability Coordinator shall displace Interchange Transactions utilizing lower priority Transmission Service with Interchange Transactions utilizing higher Transmission Service Priority. (*Section 3.3.2.3 of NAESB Transmission Loading Relief Business Practice*)
- 6.1.4.** When identifying transactions for Reallocation, the Reliability Coordinator shall not curtail Interchange Transactions using Non-firm Transmission Service to allow the start or increase of another transaction having the same Non-Firm Transmission Service Priority (marginal “bucket”). (*Section 3.3.2.4 of NAESB Transmission Loading Relief Business Practice*)
- 6.1.5.** When identifying transactions for Reallocation, the Reliability Coordinator shall reload curtailed Interchange Transactions prior to starting new or increasing

existing Interchange Transactions. (*Section 3.3.2.6 of NAESB Transmission Loading Relief Business Practice*)

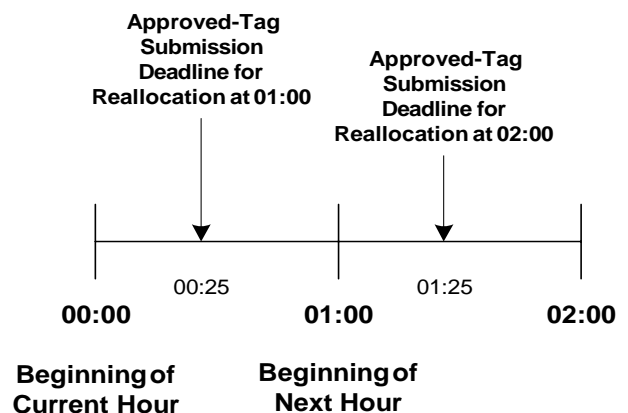
- 6.1.6.** Interchange Transactions whose tags were submitted prior to the TLR 2 or 3a being called, but were subsequently held from starting because they failed to meet the approved tag submission deadline for Reallocation (see Section 6.2, “Communications and Timing Requirements”), shall be considered to have been curtailed and thus would be eligible for reload at the same time as the curtailed Interchange Transaction. (*Section 3.3.2.6.1 of NAESB Transmission Loading Relief Business Practice*)
- 6.1.7.** The Reliability Coordinator shall reload or start all eligible Transactions on a pro-rata basis. (*intro to TLR level 5a in 3.6, and 3.3.3 Section of NAESB Transmission Loading Relief Business Practice*)
- 6.1.8.** Interchange Transactions whose tags meet the approved tag submission deadline for Reallocation (see Section 6.2, “Communications and Timing Requirements”) shall be considered for Reallocation for the upcoming hour. (*Sections 3.3.2.1 and 3.6.2.3 of NAESB Transmission Loading Relief Business Practice*) (However, Interchange Transactions using Firm Point-to-Point Transmission Service shall be allowed to start as scheduled.) Interchange Transactions whose tags are submitted to the IDC after the approved tag submission deadline for Reallocation shall be considered for Reallocation the following hour. This applies to Interchange Transactions using either Non-firm Point-to-Point Transmission Service or Firm Point-to-Point Transmission Service. If an Interchange Transaction using Firm Interchange Transaction is submitted after the approved tag submission deadline and after the TLR is declared, that Transaction shall be held and then allowed to start in the upcoming hour. (*Section 3.3.2.1.1 of NAESB Transmission Loading Relief Business Practice; Section 3.6.2.3 will be adjusted in next revision of business practice once NERC makes it Phase 3 revisions related to processing holds across the top of the hour.*)

It should be noted that calling a TLR 3a does not necessarily mean that Interchange Transactions using Non-firm Transmission Service will always be curtailed the next hour. However, TLR Levels 3a and 5a trigger the approved tag submission deadline for Reallocation requirements and allow for a coordinated assessment of all Interchange Transactions tagged to start the upcoming hour.

**6.2. Communication and Timing Requirements**

The following timeline shall be utilized to support Reallocation decisions during TLR Levels 3a or 5a. See Figures 2 and 3 for a depiction of the Reallocation Time Line.

- 6.2.1. Time Convention.** In this document, the beginning of the current hour shall be referenced as 00:00. The beginning of the next hour shall be referenced as 01:00. The end of the next hour shall



**Figure 1 - Timeline showing Approved-tag Submission Deadline for Reallocation**



be referenced as 02:00. See Figure 1.

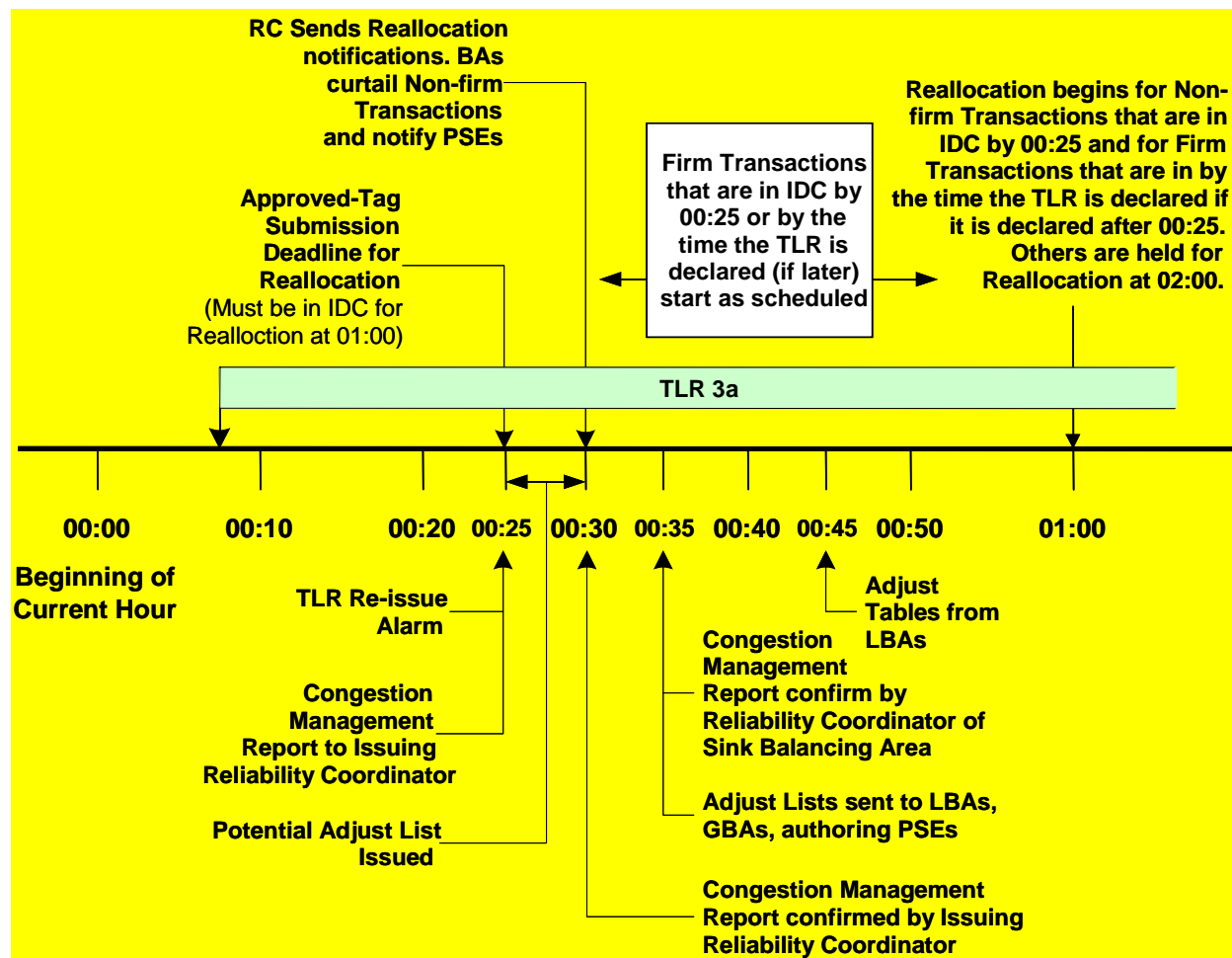
**6.2.2. Approved tag submission deadline for Reallocation** Reliability Coordinators shall consider all approved Tags for Interchange Transactions at or above the Curtailment Threshold that have been submitted to the IDC by 00:25 for Reallocation at 01:00. See Figure 1. However, Interchange Transactions using Firm Point-to-Point Transmission Service will be allowed to start as scheduled.

**6.2.2.1.** Reliability Coordinators shall consider all approved tags submitted to the IDC beyond these deadlines for Reallocation at 02:00 (for both Firm and Non-firm Point-to-Point Transmission Service). However, these Interchange Transactions will not be allowed to start or increase at 01:00.

**6.2.2.2.** The approved tag submission deadline for Reallocation shall cease to be in effect as soon as the TLR level is reduced to 1 or 0.

**6.2.3. Off-hour Transactions.** Interchange Transactions with a start time other than  $xx:00$  shall be considered for Reallocation at  $xx+1:00$ . For example, an Interchange Transaction with a start time of 01:05 and whose Tag was submitted at 00:15 will be considered for Reallocation at 02:00.

**6.2.4. Tag Evaluation Period.** Balancing Authorities and Transmission Providers shall evaluate all tags submitted for Reallocation and shall communicate approval or rejection by 00:25.



**Figure 2 — Reallocation Timing for TLR 3a Called at 00:08**

**6.2.5. Collective Scheduling Assessment Period.** At 00:25, the initiating Reliability Coordinator (the one who called and still has a TLR 3a or 5a in effect) shall run the IDC to obtain a three-part list of Interchange Transactions including their transaction status:

**6.2.5.1.** Interchange Transactions that may start, increase, or reload shall have a status of PROCEED, and

**6.2.5.2.** Interchange Transactions that must be curtailed or Interchange Transactions whose tags were submitted prior to the TLR 2 or higher being declared but were not permitted to start or increase shall have a status of CURTAILED, and

**6.2.5.3.** Interchange Transactions that are entered into the IDC after 00:25 shall have a status of HOLD and be considered for Reallocation at 02:00. Also, Interchange Transactions using Non-firm Point-to-Point Transmission Service submitted after TLR 2 or higher was declared (“post-tagged”) but have not been allowed to start shall retain the HOLD status until given permission to PROCEED or E-Tag expires. (Note:

TLR Level 2 does not hold Interchange Transactions using Firm Point-to-Point Transmission Service).

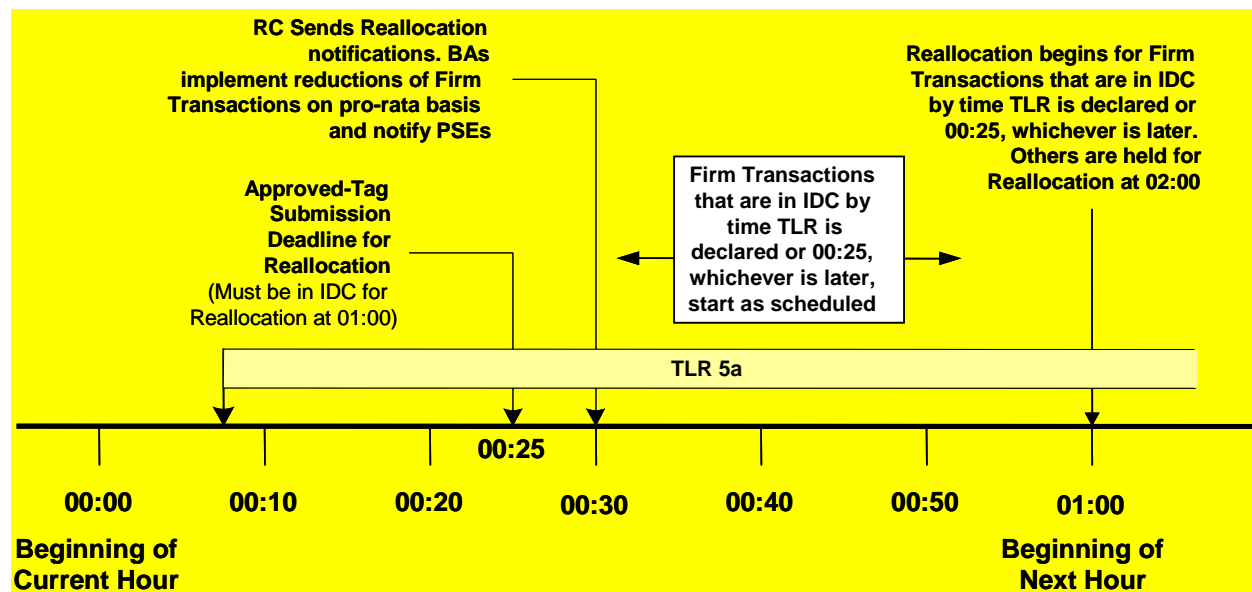


Figure 3 — Reallocation timing for TLR 5a called at 00:08.

6.2.5.4. The initiating Reliability Coordinator shall communicate the list of Interchange Transactions to the appropriate sink Reliability Coordinators via the IDC, who shall in turn communicate the list to the Sink Balancing Authorities at 00:30 for appropriate actions to implement Interchange Transactions (CURTAIL, PROCEED or HOLD). The IDC will prompt the initiating Reliability Coordinator to input the necessary information (i.e., maximum flowgate loading and curtailment requirement) into the IDC by 00:25.

6.2.5.5. Subsequent required reports before 01:00 shall allow the Reliability Coordinators to include those Interchange Transactions whose tags were submitted to the IDC after the Approved-Tag Submission Time for Reallocation and were given the HOLD status (not permitted to PROCEED). Transactions at or above the Curtailment Threshold that are not indicated as “PROCEED” on Reload/Reallocation Report shall not be permitted to start or increase the next hour.

**Discussion:** Note that TLR 2 does not initiate the approved tag submission deadline for Reallocation, but a TLR3a or 5a does. It is, however, important to recognize the time when a TLR 2 is called, where applicable, to determine the status of a held transaction – “CURTAILED” if tagged before the TLR was called but “HOLD” if tagged after the TLR was called.

6.2.5.6. In running the IDC, the Reliability Coordinator shall have an option to specify the maximum loading of the Constrained Facility by all Interchange Transactions using Point-to-Point Transmission Service.

**Discussion:** This allows the Reliability Coordinator to take into consideration SOLs or IROLs and changes in Transactions using other than Point-to-Point service taken under the Open Access Transmission Tariff. This option is needed to avoid loading the Constrained Facility to its limit with known Interchange Transactions while other factors push the facility into a SOL or IROL violation and hence triggering the declaration of a TLR 3b or 5b.

6.2.5.7. Notification of Interchange Transaction status shall be provided from the IDC to the Reliability Coordinators via an IDC Report. The Reliability Coordinators shall communicate this information to the Balancing Authorities and Transmission Operators.

Additional reporting and communications details on information posted from the IDC to the NERC TLR website are contained in Appendix E.

6.2.6. **Customer Preferences on Timing to Call TLR 3a or 5a.** Reliability Coordinators shall leave a TLR 2 and call a TLR 3a as soon as possible (but no later than 30 minutes) to initiate the Approved-Tag Submission Deadline and start reallocating Transactions. Nevertheless, recognizing the approved tag submission deadline for Reallocation, from a Transmission Customer perspective, it is preferable that the Reliability Coordinator call a TLR 3a within a certain time period to allow for tag preparation and submission. See Figure 4.

**Discussion:** A Reliability Coordinator calls a TLR 2 or 3a whenever it deems necessary to indicate that a transmission facility is approaching its SOL or IROL. It is envisioned, though not required, that a TLR 2 or 3a is preceded by a period of a TLR 1 declaration, hence Transmission Customers should normally have advance notice of a potential constraint. For example, a TLR 3a initiated during the period 01:00 to 01:25 would allow the Purchasing-Selling Entity to submit a Tag for entry into the IDC by the Approved-Tag Submission Deadline for Reallocation at 02:00. See Figure 4. However, the preferred time period to declare a TLR 3a or 5a would be between 00:40 (when tags for Next Hour Market have been submitted) and 01:15. This will allow the Transmission Customers a range of 15 to 35 minutes to prepare and submit tags. (Note: In this situation, the Reliability Coordinator would need to reissue the TLR 3a at 01:00.)

It must be emphasized that the preferred time period is not a requirement, and should not in any way impede a Reliability Coordinator's ability to declare a TLR 3a, 3b, 4, 5a, or 5b whenever the need arises.

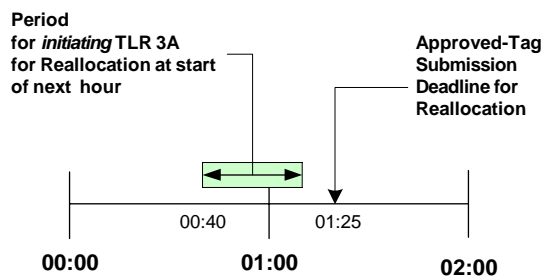


Figure 4. "Ideal" time for issuing TLR 3a for Reallocation at 02:00.

## 7. Interchange Transaction Curtailments During TLR Level 3b

### Introduction

This section provides the details for implementing TLR Level 3b, which curtails Interchange Transactions using Non-firm Point-to-Point Transmission Service to assist the Reliability Coordinator to recover from SOL or IROL violations.

TLR Level 3b curtails Interchange Transactions using Non-firm Point-to-Point Transmission Service that are at or above the Curtailment Threshold in the current hour while Reallocating to a determined flow for the top of the next hour (See **Requirement 2.4, “TLR Level 3b.”**).

### Requirements

- 7.1. The Reliability Coordinator shall be allowed to call a TLR 3b at any time to help mitigate a SOL or IROL violation.
- 7.2. The Reliability Coordinator shall consider only those Interchange Transactions at or above the Curtailment Threshold for curtailment or holding. (*Section 3.4.1.1 of NAESB Transmission Loading Relief Business Practice*)
- 7.3. The Reliability Coordinator shall curtail existing Interchange Transactions using Non-firm Point-to-Point Transmission Service as necessary to provide the required relief on the Constrained Facility for the current hour. (*Section 3.4.2 of NAESB Transmission Loading Relief Business Practice*)
- 7.4. The Reliability Coordinator shall Reallocate Interchange Transactions using Non-firm Point-to-Point Transmission Service in accordance with Section 6 of this document for the next hour to maintain the desired flow using Reallocation in accordance with the following timing specification:
  - 7.4.1. If issued prior to XX: 25, Non-firm Interchange Transactions will be curtailed to meet the desired current hour relief
    - 7.4.1.1. At XX: 25 a Reallocation will be performed to maintain the desired flow at the top of the following hour
  - 7.4.2. If issued after XX: 25, Non firm Interchange Transactions will be curtailed to meet the desired current hour relief and a Reallocation will be performed to maintain the target flow identified for the current hour.
  - 7.4.3. Transactions must be in the IDC by the Approved-tag Submission Deadline for Reallocation (see Requirement 6.2).
- 7.5. The Reliability Coordinator shall allow Interchange Transactions using Firm Point-to-Point Transmission Service to start as explained in Appendix F, “Considerations for Interchange Transactions using Firm Point-to-Point Transmission Service.” (*Section 3.4.3 of NAESB Transmission Loading Relief Business Practice*)
- 7.6. The Reliability Coordinator shall progress to TLR Level 5b as necessary if there is still insufficient transmission capacity for Interchange Transactions using Firm Point-to-Point Transmission Service to start as scheduled after all Interchange Transactions using Non-firm Point-to-Point Transmission Service have been curtailed. (*Section 3.4.4 of NAESB Transmission Loading Relief Business Practice*)

- 7.7. The IDC shall issue ADJUST Lists to the Generation and Load Balancing Authority Areas and the Purchasing-Selling Entity who submitted the tag. The ADJUST List will include: (recommended to be moved to Attachment 2)
  - 7.7.1. Interchange Transactions using Non-firm Point-to-Point Transmission Service that are to be curtailed or held during current and next hours. (recommended to be moved to Attachment 2)
  - 7.7.2. Interchange Transactions using Firm Point-to-Point Transmission Service that were entered after XX:25 or issuance of TLR 3b (see Case 3 in Appendix F). (recommended to be moved to Attachment 2)
- 7.8. The Sink Balancing Authority shall send the ADJUST Lists back to the IDC as soon as possible to ensure the most accurate calculations for actions subsequent to the TLR 3b being called. (recommend to be moved to Attachment 2)
- 7.9. The Reliability Coordinator will no longer be required to call a TLR Level 3a as soon as the SOL or IROL violation that caused the TLR 3b to be called has been mitigated due to the inherent next hour Reallocation that takes place for the top of the next hour in the TLR Level 3b. (recommend to be moved to Attachment 2)

## Appendices for Transmission Loading Relief Standard

Appendix A. Transaction Management and Curtailment Process. (stays at NERC)

Appendix B. Transaction Curtailment Formula. (NAESB TLR Business Practice Appendix C)

Appendix C. Sample NERC Transmission Loading Relief Procedure Log. (Recommended to be removed)

Appendix D. Examples for Parallel Flow Calculation Procedure for Reallocating or Curtailing Firm Transmission Service. (Appendix B of NAESB TLR Business Practice)

Appendix E. How the IDC Handles Reallocation.

Section E1: Summary of IDC Features that Support Transaction Reloading/Reallocation.

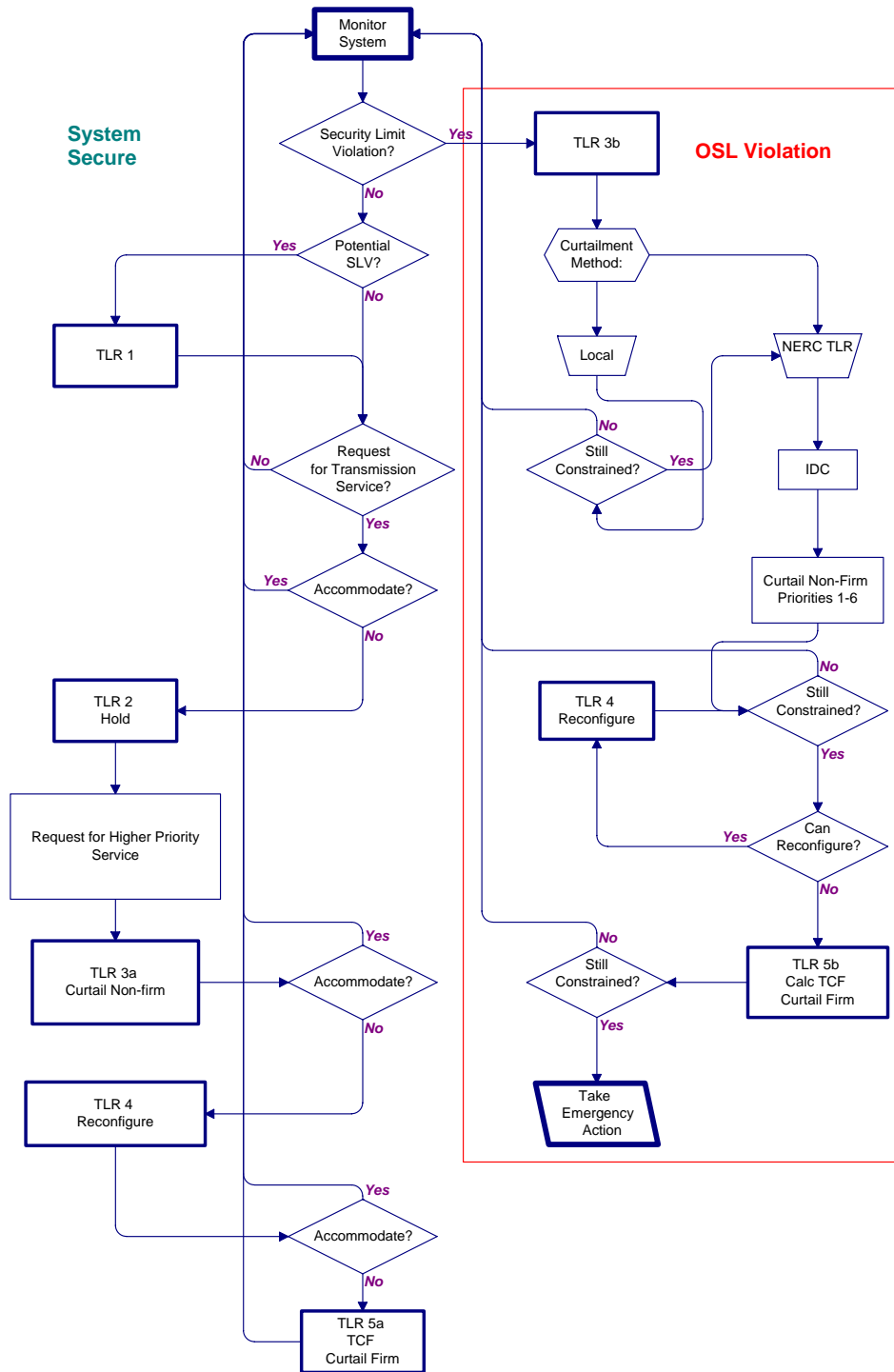
Section E2: Timing Requirements. (Recommended to be placed in Attachment 2, except for sub-priorities, which went to NAESB TLR Business Practice Section 3.3.5 and subparts)

Appendix F. Considerations for Interchange Transactions using Firm Point-to-Point Transmission Service. (Recommended to be placed in the Attachment 2)

Appendix G. Examples of On-Path and Off-Path Mitigation. (Appendix A of NAESB TLR Business Practice)

**Appendix A. Transaction Management and Curtailment Process**

This flowchart depicts an overview of the Transaction Management and Curtailment process. Detailed decisions are not shown.





**Appendix B. Transaction Curtailment Formula**

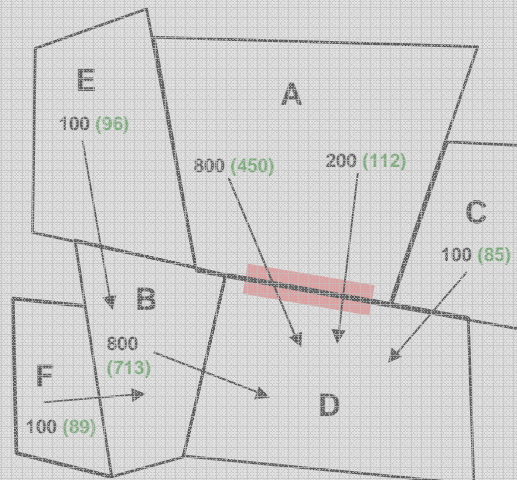
**Example**

This example is based on the premise that a transaction should be curtailed in proportion to its Transfer Distribution Factor on the Constraints. Its effect on the interface is a combination of its size in MW and its effect based on its distribution factor.

Column	Description
1. Initial Transaction	Interchange Transaction before the TLR Procedure is implemented.
2. Distribution Factor	Proportional effect of the Transaction over the constrained interface due to the physical arrangement and impedance of the transmission system.
3. Impact on the Interface	Result of multiplying the Transaction MW by the distribution factor. This yields the MW that flow through the constrained interface from the Transaction. Performing this calculation for each Transaction yields the total flow through the constrained interface from all the Interchange Transactions. In this case, 760 MW.
4. Impact Weighting Factor	“Normalization” of the total of the Distribution Factors in Column 2. Calculated by dividing the Distribution Factor for each Transaction by the total of the Distribution Factors.
5. Weighted Maximum Interface Reduction	Multiplying the Impact on the Interface from each Transaction by its Impact Weighting Factor yields a new proportion that is a combination of the MW Impact on the Interface and the Distribution Factor.
6. Interface Reduction	Multiplying the amount needed to reduce the flow over the constrained interface (280 MW) by the normalization of the Weighted Maximum Interface Reduction yields the actual MW reduction that each Transaction must <i>contribute</i> to achieve the total reduction.
7. Transaction Reduction	Now divide by the Distribution Factor to see how much the Transaction must be reduced to yield the result calculated in Column 7. Note that the reductions for the first two Interchange Transactions (A-D (1) and A-D (2) are in proportion to their size since their distribution factors are equal.
8. New Transaction Amount	Subtracting the Transaction Reduction from the Initial Transaction yields the New Transaction Amount.
9. Adjusted Impact on Interface	A check to ensure the new constrained interface MW flow has been reduced to the target amount.

**Mapping of Proposed Split of Attachment 1 - IRO-006**

Allocation based on Weighted Impact									
Transaction ID	1 Initial Transaction	2 Distribution Factor	3 (1)*(2) Impact On Interface	4 (2)/(2TOT) Impact weighting factor	5 (3)*(4) Weighted Max Interface Reduction	6 (5)*(Relief Requested)/(5 Tot) Interface Reduction	7 (6)/(2) Transaction Reduction	8 (1)-(7) New Transaction Amount	9 (8)*(2) Adjusted Impact On Interface
<b>Example 1</b>									
A-D(1)	800	0.6	480	0.34	164.57	209.73	349.54	450.46	270.27
A-D(2)	200	0.6	120	0.34	41.14	52.43	87.39	112.61	67.57
B-D	800	0.15	120	0.09	10.29	13.11	87.39	712.61	106.89
C-D	100	0.2	20	0.11	2.29	2.91	14.56	85.44	17.09
E-B	100	0.05	5	0.03	0.14	0.18	3.64	96.36	4.82
F-B	100	0.15	15	0.09	1.29	1.64	10.92	89.08	13.36
	<b>2100</b>	<b>1.75</b>	<b>760</b>		<b>219.71</b>	<b>280.00</b>	<b>553.45</b>	<b>1546.55</b>	<b>480.00</b>
<b>Example 2</b>									
A-D(1)	1000	0.6	600	0.52	313.04	262.16	436.93	563.07	337.84
B-D	800	0.15	120	0.13	15.65	13.11	87.39	712.61	106.89
C-D	100	0.2	20	0.17	3.48	2.91	14.56	85.44	17.09
E-B	100	0.05	5	0.04	0.22	0.18	3.64	96.36	4.82
F-B	100	0.15	15	0.13	1.96	1.64	10.92	89.08	13.36
	<b>2100</b>	<b>1.15</b>	<b>760</b>		<b>334.35</b>	<b>280.00</b>	<b>553.45</b>	<b>1546.55</b>	<b>480.00</b>
<b>Example 3</b>									
A-D(1A)	200	0.6	120	0.17	20.28	52.43	87.39	112.61	67.57
A-D(1B)	200	0.6	120	0.17	20.28	52.43	87.39	112.61	67.57
A-D(1C)	200	0.6	120	0.17	20.28	52.43	87.39	112.61	67.57
A-D(1D)	200	0.6	120	0.17	20.28	52.43	87.39	112.61	67.57
A-D(2)	200	0.6	120	0.17	20.28	52.43	87.39	112.61	67.57
B-D	800	0.15	120	0.04	5.07	13.11	87.39	712.61	106.89
C-D	100	0.2	20	0.06	1.13	2.91	14.56	85.44	17.09
E-B	100	0.05	5	0.01	0.07	0.18	3.64	96.36	4.82
F-B	100	0.15	15	0.04	0.63	1.64	10.92	89.08	13.36
	<b>2100</b>	<b>3.55</b>	<b>760</b>		<b>108.31</b>	<b>280.00</b>	<b>553.45</b>	<b>1546.55</b>	<b>480.00</b>





**Appendix D. Examples for Parallel Flow Calculation Procedure  
for Reallocating or Curtailing Firm Transmission Service**

The NERC “Parallel Flow Calculation Procedure Reference Document” provides additional information about the criteria used to include generators in the IDC calculation process.

**Example of Results of Calculation Method**

An example of the output of the IDC calculation of curtailment of firm Transmission Service is provided below for the specific Constrained Facility identified in the *Book of Flowgates* as Flowgate 1368. In this example, a total Firm Point-to-Point contribution to the Constrained Facility, as calculated by the IDC, is assumed to be 21.8 MW.

The table below presents a summary of each Balancing Authority’s responsibility to provide relief to the Constrained Facility due to its Network Integration Transmission Service and service to Native Load contribution to the Constrained Facility. In this example, Balancing Authority LAGN would be requested to curtail 17.3 MW of its total of 401.1 MW of flow contribution on the Constrained Facility. See the “Parallel Flow Calculation Procedure Reference Document” for additional details regarding the information illustrated in the table (e. g. Scaled P Max and Flowgate NNative Load MW).

In summary, Interchange transactions would be curtailed by a total of 21.8 MW and Network Integration Transmission Service and service to Native Load would be curtailed by a total of 178.2 MW by the five Balancing Authorities identified in the table. These curtailments would provide a total of 200.0 MW of relief to the Constrained Facility. (Appendix B of NAESB)

Sink Reliability Coordinator	Service Point	Scaled P Max	Flowgate NNative Load MW	Current NNative Load Relief	NNative Load Responsibility		NNative Load Responsibility Acknowledgement	
					Inc/Dec	Current Hr	Acknowledge Time	Total MW Resp.
EES	EES	8429.7	2991.4	0.0	128.9	128.9	13:44	128.9
EES	LAGN	1514.0	718.6	0.0	31.0	31.0	13:44	31.0
SOCO	SOCO	5089.2	401.1	0.0	17.3	17.3	13:44	17.3
SWPP	CLEC	235.7	18.0	0.0	0.8	0.8	13:42	0.8
SWPP	LEPA	22.8	4.1	0.0	0.2	0.2	13:42	0.2
<b>Total</b>				<b>0.0</b>				

(Appendix B of NAESB)

## **Appendix E. How the IDC Handles Reallocation**

The IDC algorithms reflect the Reallocation and reloading principles in this Appendix, as well as the reporting requirements, and status display. The IDC will obtain the Tag Submittal Time from the Tag Authority and post the Reloading/Reallocation information to the NERC TLR website.

A summary of IDC features that support the Reallocation process is provided in Attachment E1. Details on the interface and display features are provided in Attachment E2. Refer to Version 1.7.095 NERC Transaction Information Systems Working Group (TISWG) *Electronic Tagging Functional Specification* for details about the E-Tag system.

### **E1. Summary of IDC Features that Support Transaction Reloading/Reallocation**

The following is a summary of IDC features and E-Tag interface that support Reloading/Reallocation:

#### **Information posted from IDC to NERC TLR website.**

1. Restricted directions (all source/sink combinations that impact a Constrained Facility(ies) with TLR 2 or higher) will be posted to the NERC TLR website and updated as necessary.
2. TLR Constrained Facility status and Transfer Distribution Factors will continue to be posted to NERC TLR website.
3. Lowest priority of Interchange Transactions (marginal “bucket”) to be Reloaded/Reallocated next-hour on each TLR Constrained Facility will be posted on NERC TLR website. This will provide an indication to the market of priority of Interchange Transactions that may be Reloaded/Reallocated the following hours.

#### **IDC Logic, IDC Report, and Timing**

1. The Reliability Coordinator will run the IDC the Reloading/Reallocation report at approximately 00:26. The IDC will prompt the Reliability Coordinator to enter a maximum loading value. The IDC will alarm if the Reliability Coordinator does not enter this value and issue a report by 00:30 or change from TLR 3a Level. The Report will be distributed to Balancing Authorities and Transmission Operators at 00:30. This process repeats every hour as long as the approved tag submission deadline for Reallocation is in effect (or until the TLR level is reduced to 1 or 0).
2. For Interchange Transactions in the restricted directions, tags must be submitted to the IDC by the approved tag submission deadline for Reallocation to be considered for Reallocation next-hour. The time stamp by the Tag Authority is regarded the official tag submission time.
3. Tags submitted to IDC after the approved tag submission deadline for Reallocation will not be allowed to start or increase but will be considered for Reallocation the next hour.
4. Interchange Transactions in restricted directions that are not indicated as “PROCEED” on the Reload/Reallocation Report will not be permitted to start or increase next hour.

#### **Reloading/Reallocation Transaction Status**

Reloading/Reallocation status will be determined by the IDC for all Interchange Transactions. The Reloading/Reallocation status of each Interchange Transaction will be listed on IDC reports and NERC TLR website as appropriate. An Interchange Transaction is considered to be in a restricted direction if it is at or above the Curtailment Threshold. Interchange Transactions below the Curtailment Threshold are unrestricted and free to flow subject to all applicable Reliability Standards and tariff rules.

1. **HOLD.** Permission has not been given for Interchange Transaction to start or increase and is waiting for the next Reloading/Reallocation evaluation for which it is a candidate. Interchange Transactions with E-tags submitted to the Tag Authority prior to TLR 2 or higher being declared (pre-tagged) will change to CURTAILED Status upon evaluation that does not permit them to start or increase. Transactions with E-tags submitted to Tag Authority after TLR 2 or higher was declared (post-tagged) will retain HOLD Status until given permission to proceed or E-Tag expires.
2. **CURTAILED.** Transactions for which E-Tags were submitted to Tag Authority prior to TLR 2 or higher being declared (pre-tagged) and ordered to be curtailed totally, curtailed partially, not permitted to start, or not permitted to increase. Interchange Transactions (pre-tagged or post-tagged) that were flowing and ordered to be reduced or totally curtailed. The Balancing Authority will indicate to the IDC through the E-Tag adjustment table the Interchange Transaction's curtailed values.
3. **PROCEED:** Interchange Transaction is flowing or has been permitted to flow as a result of Reloading/Reallocation evaluation. The Balancing Authority will indicate through the E-Tag adjustment table to IDC if Interchange Transaction will reload, start, or increase next-hour per Purchasing-Selling Entity's energy schedule as appropriate.

#### **Reallocation/Reloading Priorities**

1. Interchange Transaction candidates are ranked for loading and curtailment by priority as per Section 4, "Principles for Mitigating Constraints On and Off the Contract Path." This is called the "Constrained Path Method," or CPM. (secondary, hourly, daily, ... firm etc). Interchange Transactions are curtailed and loaded pro-rata within priority level per TLR algorithm.
2. Reloading/Reallocation of Interchange Transactions are prioritized first by priority per CPM. E-Tags must be submitted to the IDC by the approved tag submission deadline for Reallocation of the hour during which the Interchange Transaction is scheduled to start or increase to be considered for Reallocation.
3. During Reloading/Reallocation, Interchange Transactions using lower priority Transmission Service will be curtailed pro-rata to allow higher priority transactions to reload, increase, or start. Equal priority Interchange Transactions will not reload, start, or increase by pro-rata Curtailment of other equal priority Interchange Transactions.
4. Reloading of Interchange Transactions using Non-firm Transmission Service with CURTAILED Status will take precedence over starting or increasing of Interchange Transactions using Non-firm Transmission Service of the same priority with PENDING Statuses.
5. Interchange Transactions using Firm Point-to-Point Transmission Service will be allowed to start as scheduled under TLR 3a as long as their E-Tag was received by the IDC by the approved tag submission deadline for Reallocation of the hour during which the Interchange Transaction is due to start or increase, regardless of whether the E-tag was submitted to the Tag Authority prior to TLR 2 or higher being declared or not. If this is the initial issuance of the TLR 3a, Interchange Transactions using Firm Point-to-Point Transmission Service will be allowed to start as scheduled as long as their E-Tag was received by the IDC by the time the TLR is declared.

#### **Total Flow Value on a Constrained Facility for Next Hour**

1. The Reliability Coordinator will calculate the change in net flow on a Constrained Facility due to Reallocation for the next hour based on:

- Present constrained facility loading, present level of Interchange Transactions, and Balancing Authorities NNative Load responsibility (TLR Level 5a) impacting the Constrained Facility,
  - SOLs or IROLs, known interchange impacts and Balancing Authority NNative Load responsibility (TLR Level 5a) on the Constrained Facility the next hour, and
  - Interchange Transactions scheduled to begin the next hour.
2. The Reliability Coordinator will enter a maximum loading value for the constrained facility into the IDC as part of issuing the Reloading/Reallocation report.
  3. The Reliability Coordinator is allowed to call for TLR 3a or 5a when approaching a SOL or IROL to allow maximum transactional flow next hour, and to manage flows without violating transmission limits.
  4. The simultaneous curtailment and Reallocation for a Constrained Facility is allowed. This reduces the flow over the Constrained Facility while allowing Interchange Transactions using higher priority Transmission Service to start or increase the next hour. This may be used to accommodate change in flow next-hour due to changes other than Point-to-Point Interchange Transactions while respecting the priorities of Interchange Transactions flowing and scheduled to flow the next hour. The intent is to reduce the need for using TLR 3b, which prevents new Interchange Transactions from starting or increasing the next hour.
  5. The Reliability Coordinator must allow Interchange Transactions to be reloaded as soon as possible. Reloading must be in an orderly fashion to prevent a SOL or IROL violation from (re)occurring and requiring holding or curtailments in the restricted direction.

## E2. Timing Requirements

### TLR Levels 3a and 5a Issuing/Processing Time Requirement

1. In order for the IDC to be reasonably certain that a TLR Level 3a or 5a re-allocation/reloading report in which all tags submitted by the approved tag submission deadline for Reallocation are included, the report must be generated no earlier than 00:25 to allow the 10-minute approval time for Transactions that start next hour.
2. In order to allow a Reliability Coordinator to declare a TLR Level 3a or 5a at any time during the hour, the TLR declaration and Reallocation/Reloading report distribution will be treated as independent processes by the IDC. That is, a Reliability Coordinator may declare a TLR Level 3a or 5a at any time during the course of an hour. However, if a TLR Level 3a or 5a is declared for the next hour prior to 00:25 (see Figure 5 at right), the Reallocation/Reloading report that is generated will be made available to the issuing Reliability Coordinator only for previewing purposes, and cannot be distributed to the other Reliability Coordinators or the market. Instead, the issuing Reliability Coordinator will be reminded by an IDC alarm at 00:25 to generate a new Reallocation/Reloading report that will include all tags submitted prior to the approved tag submission deadline for Reallocation.
3. A TLR Level 3a or 5a Reallocation/Reloading report must be confirmed by the issuing Reliability Coordinator prior to 00:30 in order to provide a minimum of 30 minutes for the Reliability Coordinators with tags sinking in its Reliability Area to coordinate the Reallocation and Reloading with the Sink Balancing Authorities. This provides only 5 minutes (from 00:25 to 00:30) for the issuing Reliability Coordinator to generate a Reallocation/Reloading report, review it, and approve it.
4. The TLR declaration time will be recorded in the IDC for evaluating transaction sub-priorities for Reallocation/Reloading purposes (see Subpriority Table, in the **IDC Calculations and Reporting** section below).

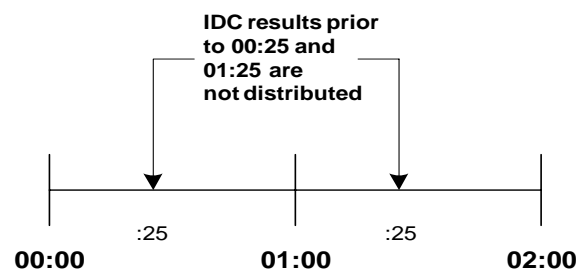


Figure 5 - IDC report may be run prior to 00:25, but results are not distributed.

### Re-Issuing of a TLR Level 2 or Higher

Each hour, the IDC will automatically remind the issuing Reliability Coordinator (via an IDC alarm) of a TLR level 2 or higher declared in the previous hour or earlier about re-issuing the TLR. The purpose of the reminder is to enable the Reliability Coordinator to Reallocate or reload currently halted or curtailed Interchange Transactions next hour. The reminder will be in the form of an alarm to the issuing Reliability Coordinator, and will take place at 00:25 so that, if the Reliability Coordinator re-issues the TLR as a TLR level 3a or 5a, all tags submitted prior to the approved tag submission deadline for Reallocation are available in the IDC.

### IDC Assistance with Next Hour Point-to-Point Transactions

In order to assist a Reliability Coordinator in determining the MW relief required on a Constrained Facility for the next hour for a TLR level 3a or 5a, the IDC will calculate and present the total MW impact of all currently flowing and scheduled Point-to-Point Transactions for the next hour. In order to assist a Reliability Coordinator in determining the MW relief required on a Constrained Facility for the next hour during a TLR level 5a, the IDC will calculate and present the total MW impact of all currently flowing and scheduled Point-to-Point Transactions for the next hour as well as Balancing Authority with flows due to service to Network Customers and Native Load. The Reliability Coordinator will then be requested to provide the total incremental or decremental MW amount of flow through the Constrained Facility that can be allowed for the next hour. The value entered by the Reliability Coordinator and the



IDC-calculated amounts will be used by the IDC to identify the relief/reloading amounts (delta incremental flow value) on the constrained facility. The IDC will determine the Transactions to be reloaded, reallocated, or curtailed to make room for the Transactions using higher priority Transmission Service. The following examples show the calculation performed by IDC to identify the “delta incremental flow:”

**Example 1**

Flow to maintain on Facility	800 MW
Expected flow next hour from Transactions using Point-to-Point Transmission Service	950 MW
Contribution from flow next hour from service to Network customers and Native Load	-100 MW
Expected Net flow next hour on Facility	850 MW
Amount of Transactions using Point-to-Point Transmission Service to hold for Reallocation	$850 \text{ MW} - 800 \text{ MW} = 50 \text{ MW}$
Amount to enter into IDC for Transactions using Point-to-Point Transmission Service	$950 \text{ MW} - 50 \text{ MW} = 900 \text{ MW}$

**Example 2**

Flow to maintain on Facility	800 MW
Expected flow next hour from Transactions using Point-to-Point Transmission Service	950 MW
Contribution from flow next hour from service to Network customers and Native Load	50 MW
Expected Net flow next hour on Facility	1000 MW
Amount of Transactions using Point-to-Point Transmission Service to hold for Reallocation	$1000 \text{ MW} - 800 \text{ MW} = 200 \text{ MW}$
Amount to enter into IDC for Transactions using Point-to-Point Transmission Service	$950 \text{ MW} - 200 \text{ MW} = 750 \text{ MW}$

**Example 3**

Flow to maintain on Facility	800 MW
Expected flow next hour from Transactions using Point-to-Point Transmission Service	950 MW
Contribution from flow next hour from service to Network customers and Native Load	-200 MW
Expected Net flow next hour on Facility	750 MW
Amount of Transactions using Point-to-Point Transmission Service to hold for Reallocation	$750 \text{ MW} - 800 \text{ MW} = -50 \text{ MW}$ None are held

For a TLR levels 3b or 5b the IDC will request the Reliability Coordinator to provide the MW requested relief amount on the Constrained Facility, and will not present the current and next hour MW impact of Point-to-Point transactions. The Reliability Coordinator-entered requested relief amount will be used by the IDC to determine the Interchange Transaction Curtailments and flows due to service to Network Customers and Native Load (TLR Level 5b) in order to reduce the SOL or IROL violation on the Constrained Facility by the requested amount.

**IDC Calculations and Reporting**

At the time the TLR report is processed, the IDC will use all candidate Interchange Transactions for Reallocation that met the approved tag submission deadline for Reallocation plus those Interchange Transactions that were curtailed or halted on the previous TLR action of the same TLR event. The IDC will calculate and present an Interchange Transactions Halt/Curtailment list that will include reload and Reallocation of Interchange Transactions. The Interchange Transactions are prioritized as follows:

1. All Interchange Transactions will be arranged by Transmission Service Priority according to the Constrained Path Method. These priorities range from 1 to 6 for the various non-firm Transmission Service products (TLR levels 3a and 3b). Interchange Transactions using Firm Transmission Service (priority 7) are used only in TLR levels 5a and 5b. Next-Hour Market Service is included at priority 0. (Recommended to be placed in Attachment 2)
2. In a TLR Level 3a the Interchange Transactions using Non-firm Transmission Service in a given priority will be further divided into four sub-priorities, based on current schedule, current active schedule (identified by the submittal of a tag ADJUST message), next-hour schedule, and tag status. Solely for the purpose of identifying which Interchange Transactions to be loaded under a TLR 3a, various MW levels of an Interchange Transaction may be in different sub-priorities. The sub-priorities are shown in the following table: *(Section 3.3.5 and subparts of NAESB Transmission Loading Relief Business Practice)*

Priority	Purpose	Explanation and Conditions
S1	To allow a flowing Interchange Transaction to maintain or reduce its current MW amount in accordance with its energy profile.	The MW amount is the lowest between currently flowing MW amount and the next-hour schedule. The currently flowing MW amount is determined by the e-tag ENERGY PROFILE and ADJUST tables. If the calculated amount is negative, zero is used instead.
S2	To allow a flowing Interchange Transaction that has been curtailed or halted by TLR to reload to the lesser of its current-hour MW amount or next-hour schedule in accordance with its energy profile.	The Interchange Transaction MW amount used is determined through the e-tag ENERGY PROFILE and ADJUST tables. If the calculated amount is negative, zero is used instead.
S3	To allow a flowing Transaction to increase from its current-hour schedule to its next-hour schedule in accordance with its energy profile.	The MW amounts used in this sub-priority is determined by the e-tag ENERGY PROFILE table. If the calculated amount is negative, zero is used instead.

Priority	Purpose	Explanation and Conditions
S4	To allow a Transaction that had never started and was submitted to the Tag Authority after the TLR (level 2 or higher) has been declared to begin flowing (i.e., the Interchange Transaction never had an active MW and was submitted to the IDC after the first TLR Action of the TLR Event had been declared.)	The Transaction would not be allowed to start until all other Interchange Transactions submitted prior to the TLR with the same priority have been (re)loaded. The MW amount used is the sub-priority is the next-hour schedule determined by the e-tag ENERGY PROFILE table.

(equivalent to the table in (Section 3.4.2 and subparts of NAESB Transmission Loading Relief Business Practice))

Examples of Interchange Transactions using Non-firm Transmission Service sub-priority settings begin in the **Transaction Sub-priority Examples** following sections.

- All Interchange Transactions using Firm Transmission Service will be put in the same priority group, and will be Curtailed/Reallocated pro-rata, independent of their current status (curtailed or halted) or time of submittal with respect to TLR issuance (TLR level 5a). Under a TLR 5a, all Interchange Transactions using Non-firm Transmission Service that is at or above the Curtailment Threshold will have been curtailed and hence sub-prioritizing is not required.

All Interchange Transactions processed in a TLR are assigned one of the following statuses:

- PROCEED:** The Interchange Transaction has started or is allowed to start to the next hour MW schedule amount.
- CURTAILED:** The Interchange Transaction has started and is curtailed due to the TLR, or it had not started but it was submitted prior to the TLR being declared (level 2 or higher).
- HOLD:** The Interchange Transaction had never started and it was submitted after the TLR being declared – the Interchange Transaction is held from starting next hour or the transaction had never started and it was submitted to the IDC after the Approved-Tag Submission Deadline – the Interchange Transaction is to be held from starting next hour and is not included in the Reallocation calculations until following hour.

Upon acceptance of the TLR Transaction Reallocation/reloading report by the issuing Reliability Coordinator, the IDC will generate a report to be sent to NERC that will include the PSE name and Tag ID of each Interchange Transaction in the IDC TLR report. The Interchange Transaction will be ranked according to its assigned status of HOLD, CURTAILED or PROCEED. The reloading/Reallocation report will be made available at NERC’s public TLR website, and it is NERC’s responsibility to format and publish the report.

**Tag Reloading for TLR Levels 1 and 0**

When a TLR Level 1 or 0 is issued, the Constrained Facility is no longer under SOL or IROL violation and all Interchange Transactions are allowed to flow. In order to provide the Reliability Coordinators with a view of the Interchange Transactions that were halted or curtailed on previous TLR actions (level 2 or higher) and are now available for reloading, the IDC provides such information in the TLR report.

### **New Tag Alarming**

Those Interchange Transactions that are at or above the Curtailment Threshold and are *not* candidates for Reallocation because the tags for those Transactions were not submitted by the approved tag submission deadline for Reallocation will be flagged as HOLD and must not be permitted to start or increase during the next hour. To alert Reliability Coordinators of those Transactions required to be held, the IDC will generate a report (for viewing within the IDC only) at various times. The report will include a list of all HOLD Transactions. In order not to overwhelm the Reliability Coordinator with alarms, only those who issued the TLR and those whose Transactions sink within their Reliability Area will be alarmed. An alarm will be issued for a given tag only once and will be issued for all TLR levels for which halting new Transactions is required: TLR Level 2, 3a, 3b, 5a and 5b.

### **Tag Adjustment**

The Interchange Transactions with statuses of HOLD, CURTAILED or PROCEED must be adjusted by a Tag Authority or Tag Approval entity. Without the tag adjustments, the IDC will assume that Interchange Transactions were not curtailed/held and are flowing at their specified schedule amounts.

1. Interchange Transactions marked as CURTAILED should be adjusted to a cap equal to, or at the request of the originating PSE, less than the reallocated amount (shown as the MW CAP on the IDC report). This amount may be zero if the Transaction is fully curtailed.
2. Interchange Transaction marked as PROCEED should be adjusted to reload (NULL or to its MW level in accordance with its Energy Profile in the adjusted MW in the E-Tag) if the Interchange Transaction has been previously adjusted; otherwise, if the Interchange Transaction is flowing in full, the Tag Authority need not issue an adjust.
3. Interchange Transactions marked as HOLD should be adjusted to 0 MW.

### **Special Tag Status**

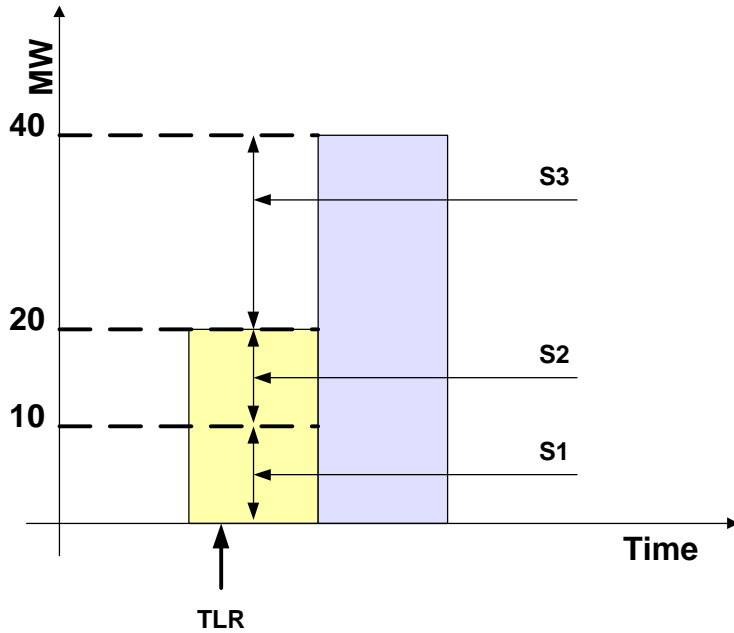
There are cases in which a tag may be marked with a composite state of ATTN\_REQD to indicate that tag Authority/Approval failed to communicate or there is an inconsistency between the validation software of different tag Authority/Approval entities. In this situation, the tag is no longer subject to passive approval and its status change to IMPLEMENT may take longer than 10 minutes. Under these circumstances, the IDC may have a tag that is issued prior to the Tag Submittal Deadline that will not be a candidate for Reallocation. Such tags, when approved by the Tag Authority, will be marked as HOLD and must be halted.

### **Transaction Sub-Priority Examples**

The following describes examples of Interchange Transactions using Non-firm Transmission Service sub-priority setting for an Interchange Transaction under different circumstances of current-hour and next-hour schedules and active MW flowing as modified by tag adjust table in E-Tag.

Example 1 – Transaction curtailed, next-hour Energy Profile is higher

Energy Profile: Current hour	20 MW
Actual flow following curtailment: Current hour	10 MW
Energy Profile: Next hour	40 MW

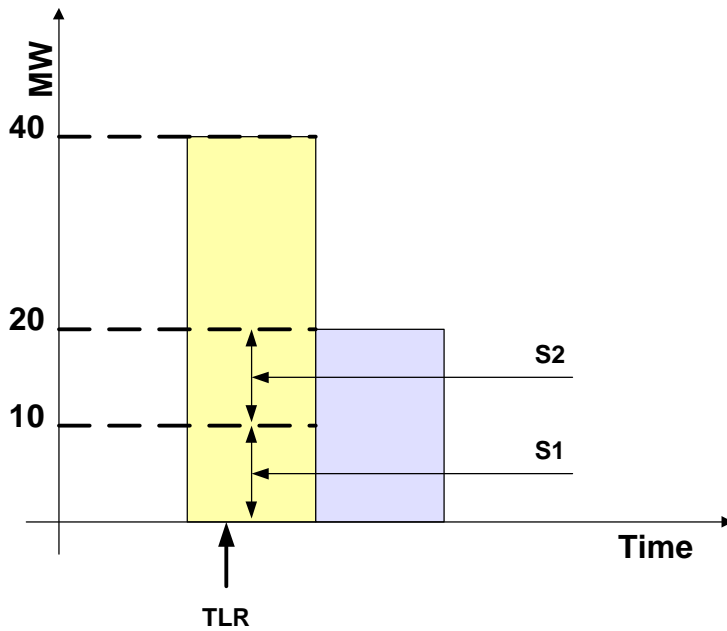


**Sub-priorities for Transaction MW:**

<i>Sub-Priority</i>	<i>MW Value</i>	<i>Explanation</i>
S1	10 MW	Maintain current curtailed flow
S2	+10 MW	Reload to current hour Energy Profile
S3	+20 MW	Load to next hour Energy Profile
S4		

**Example 2 – Transaction curtailed, next-hour Energy Profile is lower**

Energy Profile: Current hour	40 MW
Actual flow following curtailment: Current hour	10 MW
Energy Profile: Next hour	20 MW

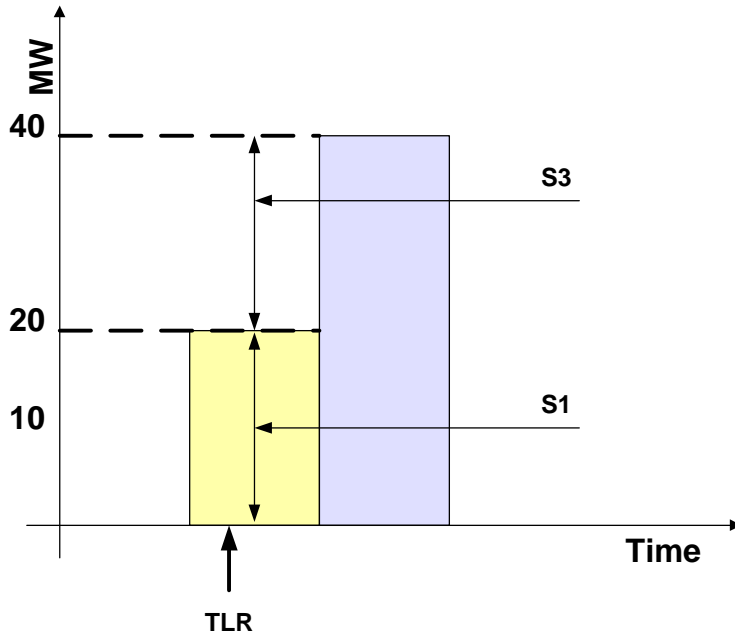


**Sub-priorities for Transaction MW:**

Sub-Priority	MW Value	Explanation
S1	10 MW	Maintain current curtailed flow
S2	+10 MW	Reload to <i>lesser</i> of current and next-hour Energy Profile
S3	+0 MW	Next-hour Energy Profile is 20MW, so no change in MW value
S4		

**Example 3 – Transaction not curtailed, next-hour Energy Profile is higher**

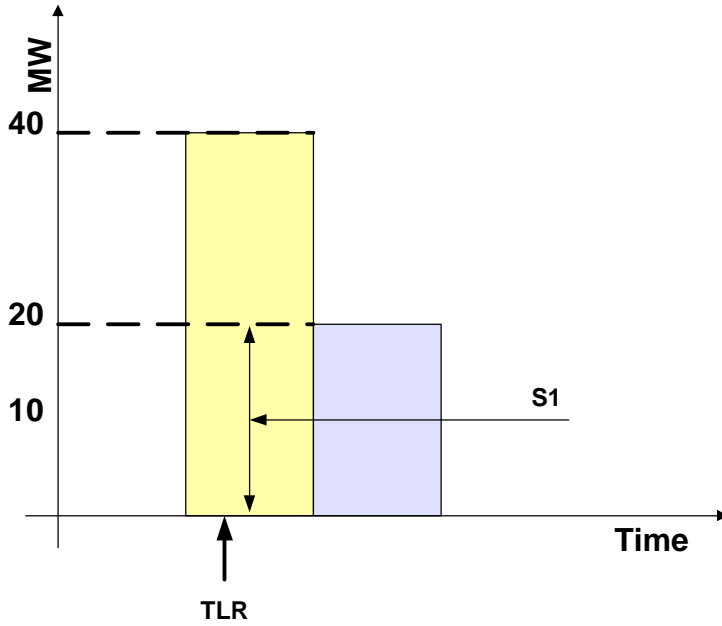
Energy Profile: Current hour	20 MW
Actual flow following curtailment: Current hour	20 MW (no curtailment)
Energy Profile: Next hour	40 MW



Sub-Priority	MW Value	Explanation
S1	20 MW	Maintain current flow (not curtailed)
S2	+0 MW	Reload to lesser of current and next-hour Energy Profile
S3	+20 MW	Next-hour Energy Profile is 40MW
S4		

**Example 4 – Transaction not curtailed, next-hour Energy Profile is lower**

Energy Profile: Current hour	40 MW
Actual flow following curtailment: Current hour	40 MW (no curtailment)
Energy Profile: Next hour	20 MW



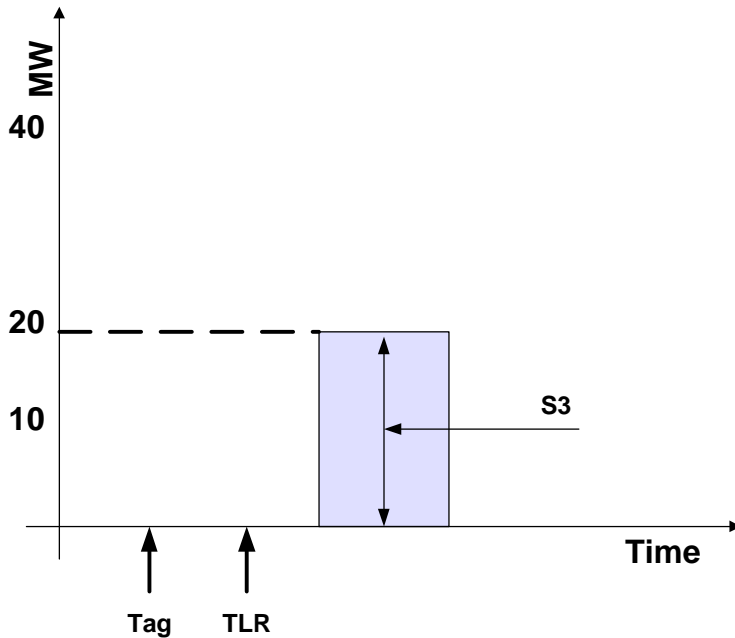
**Sub-priorities for Transaction MW:**

<i>Sub-Priority</i>	<i>MW Value</i>	<i>Explanation</i>
S1	20 MW	Reduce flow to next-hour Energy Profile (20MW)
S2	+0 MW	Reload to <i>lesser</i> of current and next-hour Energy Profile
S3	+0 MW	Next-hour Energy Profile is 20MW
S4		



**Example 5 — TLR Issued before Transaction was scheduled to start**

Energy Profile: Current hour	0 MW
Actual flow following curtailment: Current hour	0 MW (Transaction scheduled to start <i>after</i> TLR initiated)
Energy Profile: Next hour	20 MW



Sub-Priority	MW Value	Explanation
S1	0 MW	Transaction was not allowed to start
S2	+0 MW	Transaction was not allowed to start
S3	+20 MW	Next-hour Energy Profile is 20MW
S4	+0	Tag submitted prior to TLR

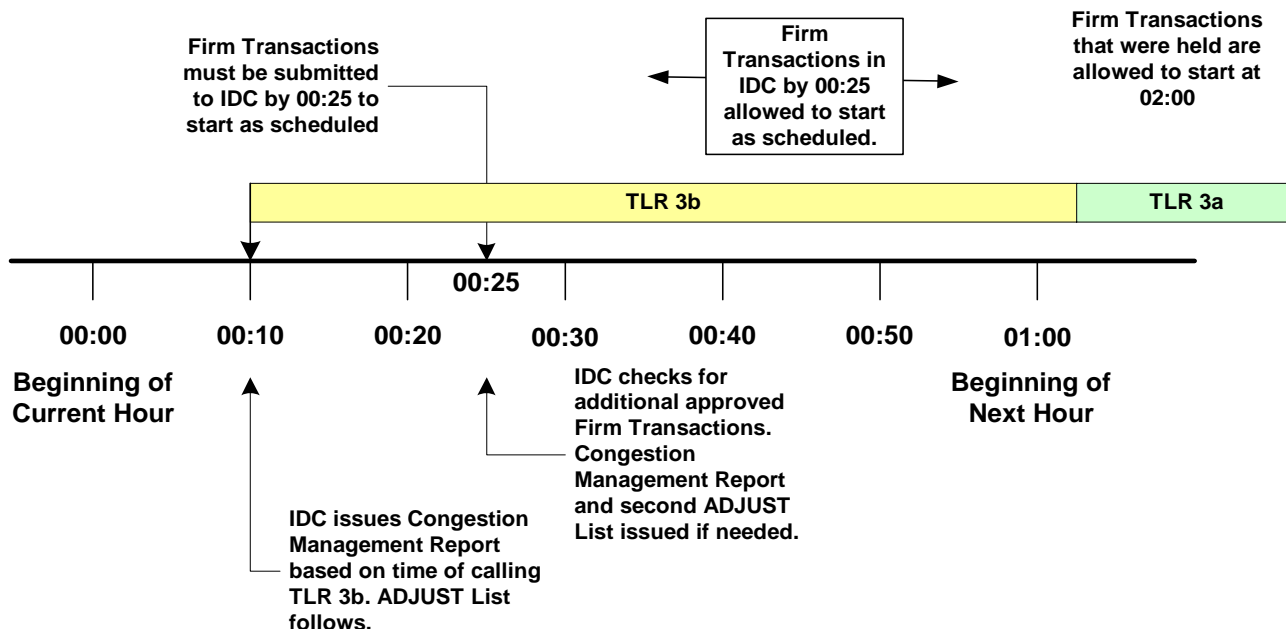
(These examples are recommended to be placed in the Attachment 2)

**Appendix F. Considerations for Interchange Transactions**

**Using Firm Point-to-Point Transmission Service**

The following cases explain the circumstances under which an Interchange Transaction using Firm Point-to-Point Transmission Service will be allowed to start as scheduled during a TLR 3b:

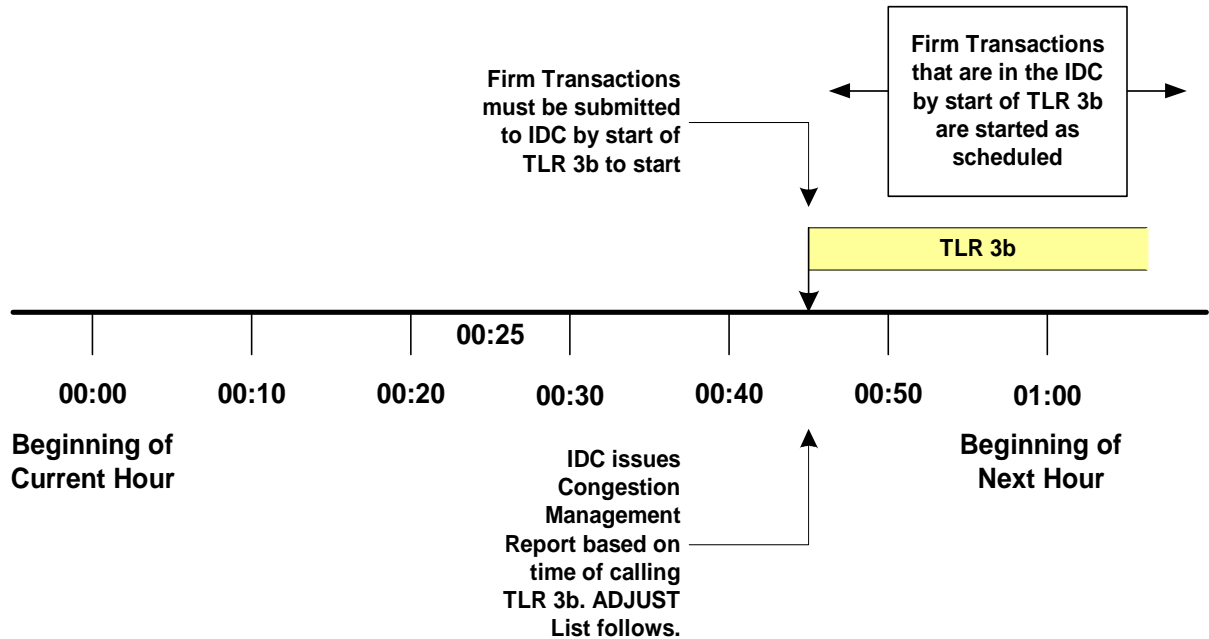
**Case 1: TLR 3b is called between 00:00 and 00:25 and the Interchange Transaction using Firm Point-to-Point Transmission Service is submitted to IDC by 00:25.**



1. The IDC will examine the current hour (00) and next hour (01) for all Interchange Transactions.
  2. The IDC will issue an ADJUST List based upon the time the TLR 3b is called. The ADJUST List will include curtailments of Interchange Transactions using Non-firm Point-to-Point Transmission Service as necessary to allow room for those Interchange Transactions using Firm Point-to-Point Transmission Service to start as scheduled.
  3. At 00:25, the IDC will check for additional Interchange Transactions using Firm Point-to-Point Transmission Service that were submitted to the IDC by that time and issue a second ADJUST List if those additional Interchange Transactions are found.
  4. All existing or new Interchange Transactions using Non-firm Point-to-Point Transmission Service that are increasing or expected to start during the current hour or next hour will be placed on HALT or HOLD. There is no Reallocation of lower-priority Interchange Transactions using Non-firm Point-to-Point Transmission Service.
- Need to reconcile where #4 goes in light of changes to IRO-006-3 (old 2.4.2 of NERC IRO-006-1)
5. Interchange Transactions using Firm Point-to-Point Transmission Service that were submitted to the IDC by 00:25 will be allowed to start as scheduled.

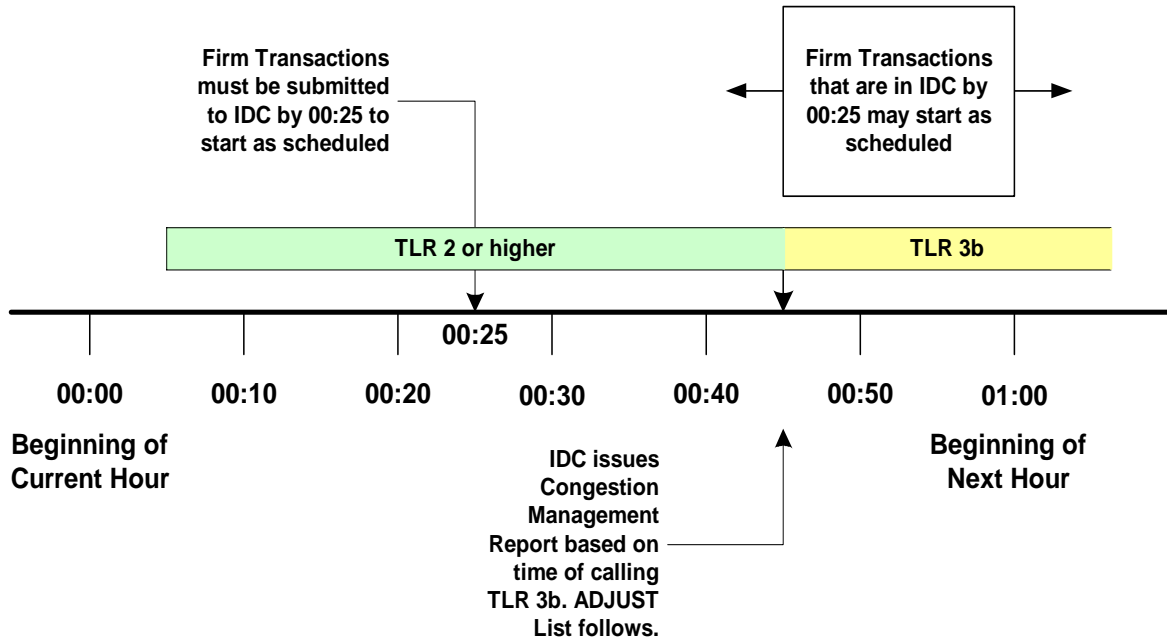
6. Interchange Transactions using Firm Point-to-Point Transmission Service that were submitted to the IDC after 00:25 will be held.
7. Once the SOL or IROL violation is mitigated, the Reliability Coordinator shall call a TLR Level 3a (or lower). If a TLR Level 3a is called:
  - a. Interchange Transactions using Firm Point-to-Point Transmission Service that were submitted to the IDC by 00:25 will be allowed to start as scheduled at 02:00.
  - b. Interchange Transactions using Non-firm Point-to-Point Transmission Service that were held may then be reallocated to start at 02:00.

**Case 2: TLR 3b is called after 00:25 and the Interchange Transaction using Firm Point-to-Point Transmission Service is submitted to the IDC no later than the time at which the TLR 3b is called.**



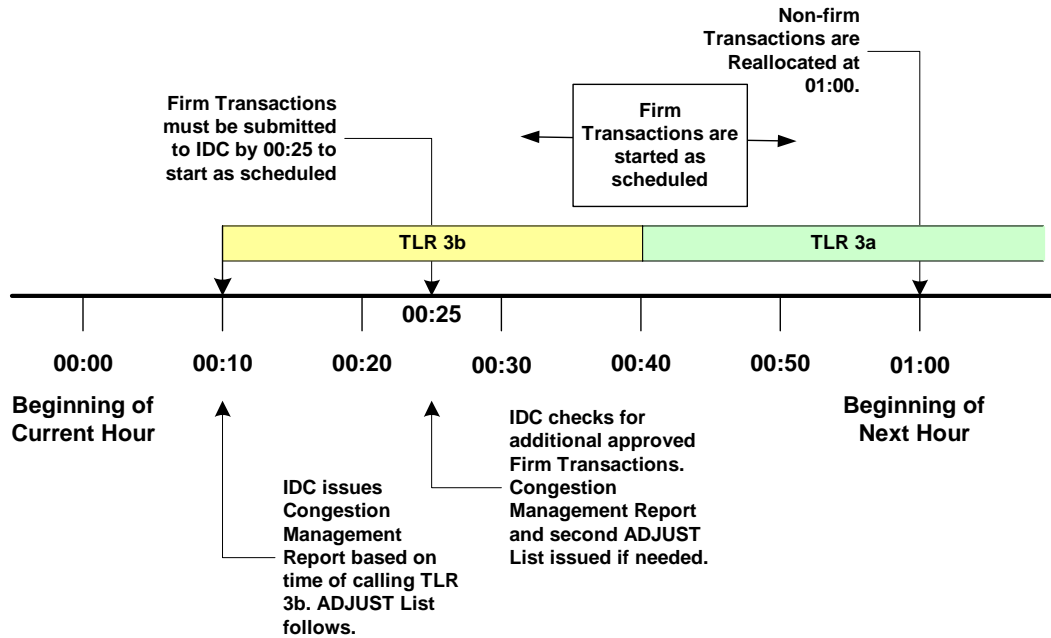
1. The IDC will examine the current hour (00) and next hour (01) for all Interchange Transactions.
2. The IDC will issue an ADJUST List at the time the TLR 3b is called. The ADJUST List will include additional curtailments of Interchange Transactions using Non-firm Point-to-Point Transmission Service as necessary to allow room for those Interchange Transactions using Firm Point-to-Point Transmission Service to start at as scheduled.
3. All existing or new Interchange Transactions using Non-firm Point-to-Point Transmission Service that are increasing or expected to start during the current hour or next hour will be placed on HALT or HOLD. There is no Reallocation of lower-priority Interchange Transactions using Non-firm Point-to-Point Transmission Service.
4. Interchange Transactions using Firm Point-to-Point Transmission Service that were submitted to the IDC by the time the TLR 3b was called will be allowed to start at as scheduled.
5. Interchange Transaction using Firm Point-to-Point Transmission Service that were submitted to the IDC after the TLR 3b was called will be held until the next issuance for TLR (either TLR 3b, 3a, or lower level).

**Case 3. TLR 2 or higher is in effect, a TLR 3b is called after 00:25, and the Interchange Transaction using Firm Point-to-Point Transmission Service is submitted to the IDC by 00:25.**



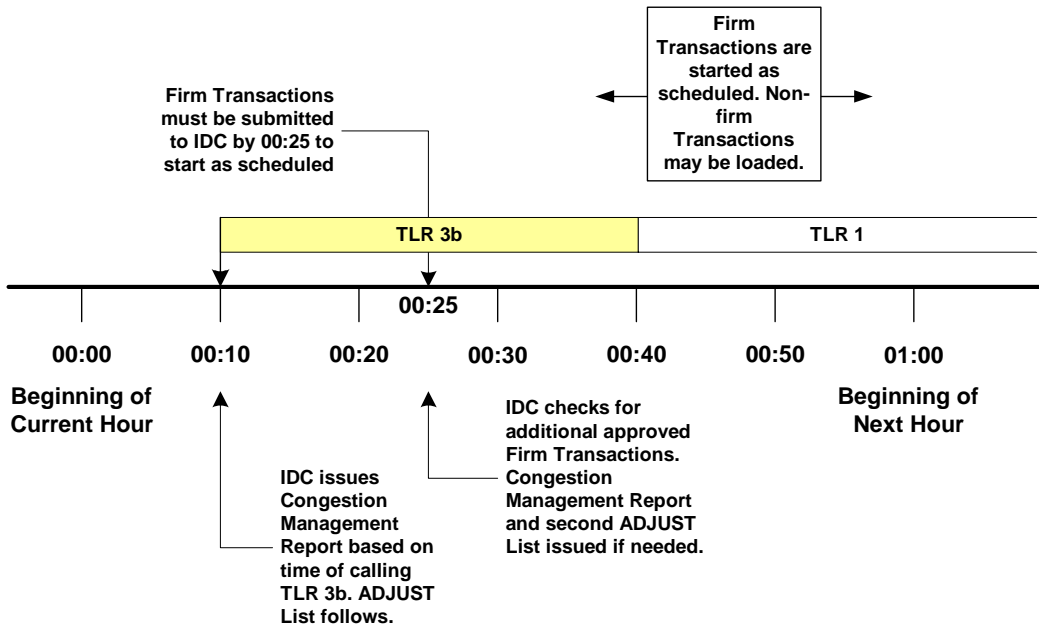
If a TLR 2 or higher has been issued and 3B is subsequently issued, then only those Interchange Transactions using Firm Point-to-Point Transmission Service that had been submitted to the IDC by 00:25 will be allowed to start as scheduled. All other Interchange Transactions are held.

Case 4. TLR 3b is called before 00:25 and the Interchange Transaction is submitted to the IDC by 00:25. TLR 3a is called at 00:40.



1. Same as Case 1, but TLR Level 3b ends at 00:40 and becomes TLR Level 3a.
2. All Interchange Transactions using Firm Point-to-Point Transmission Service will start as scheduled if in by the time the 3A is declared.
3. All Interchange Transactions using Non-firm Point-to-Point Transmission Service are reallocated at 01:00.

Case 5. TLR 3b is called before 00:25 and the Interchange Transaction is submitted to the IDC by 00:25. TLR 1 is called at 00:40.



1. Same as Case 1, but TLR Level 3b ends at 00:40 and becomes TLR Level 1.
2. All Interchange Transactions using Firm Point-to-Point Transmission Service will start as scheduled.
3. All Interchange Transactions using Non-firm Point-to-Point Transmission Service may be loaded immediately.

**Appendix G. Examples of On-Path and Off-Path Mitigation**

**Examples**

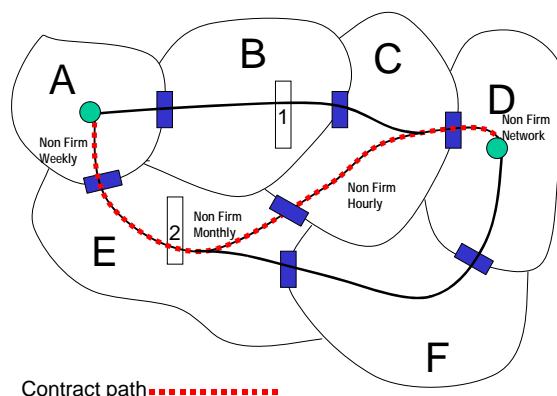
This section explains, by example, the obligations of the Transmission Service Providers on and off the Contract Path when calling for Transmission Loading Relief. (References to Principles refer to **Requirement 4, “Mitigating Constraints On and Off the Contract Path during TLR,”** on the preceding pages.) When Reallocating or curtailing Interchange Transactions using Firm Point-to-Point Transmission Service under TLR Level 5a or 5b, the Transmission Service Providers may be obligated to perform comparable curtailments of its Transmission Service to Network Integration and Native Load customers. See **Requirement 5, “Parallel Flow Calculation Procedure for Reallocating or Curtailing Firm Transmission Service during TLR.”**

**Scenario:**

- Interchange Transaction arranged from system A to system D, and assumed to be at or above the Curtailment Threshold.
- Contract path is A-E-C-D (except as noted).
- Locations 1 and 2 denote Constraints.

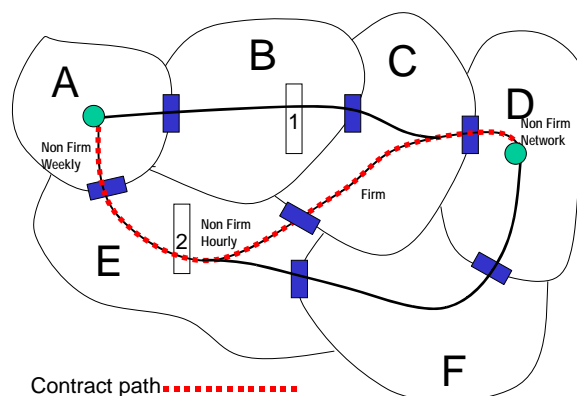
**Case 1: E is a non-firm Monthly path; C is non-firm Hourly; E has Constraint at #2**

- E may call its Reliability Coordinator for TLR to relieve overload at Constraint #2.
- Interchange Transaction A-D may be curtailed by TLR action as though it was being served by **Non-firm Monthly Point-to-Point Transmission Service**, even though it was using Non-firm Hourly Point-to-Point Transmission Service from C. That is, it takes on the priority of the link with the Constrained Facility along the Contract Path (Principle 1).



**Case 2: E is a non-firm hourly path, C is firm; E has Constraint at #2**

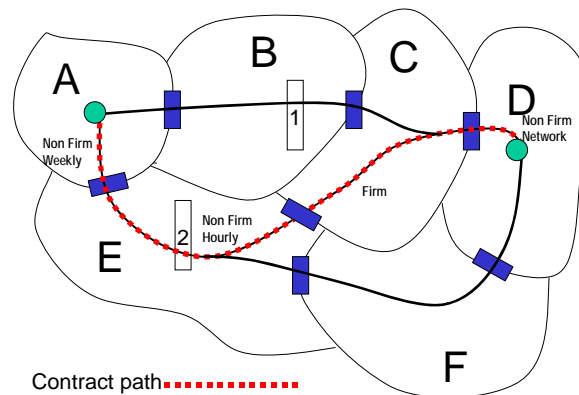
- Although C is providing Firm Service, the Constraint is not on C’s system; therefore E is not obligated to treat the Interchange Transaction as though it was being served by Firm Point-to-Point Transmission Service.
- E may call its Reliability Coordinator for TLR to relieve overload at Constraint #2.
- Interchange Transaction A-D may be curtailed by TLR action as though it was being served by Non-firm Hourly Point-to-Point Transmission Service, even though it was using firm service from C. That is, when the constraint is on the Contract Path, the Interchange Transaction takes on the priority of the link with the Constrained Facility (Principle 1).





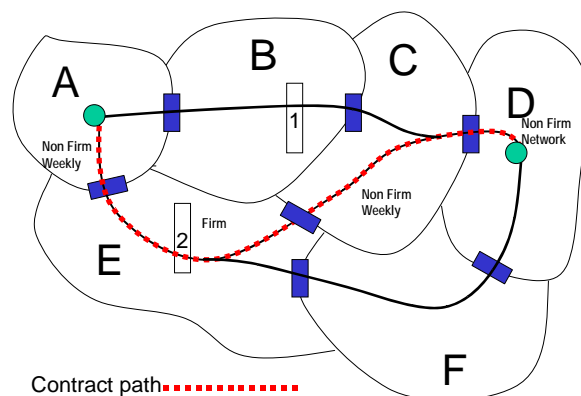
**Case 3: E is a non-firm hourly path, C is firm, B has Constraint at #1**

- B may call its Reliability Coordinator for TLR to relieve overload at Constraint #1.
- Interchange Transaction A-D may be curtailed by TLR action as though it was being served by Non-firm Hourly Transmission Service, even if it was using firm Transmission Service elsewhere on the path. When the constraint is off the Contract Path, the Interchange Transaction takes on the lowest priority reserved on the Contract Path (Principle 3).



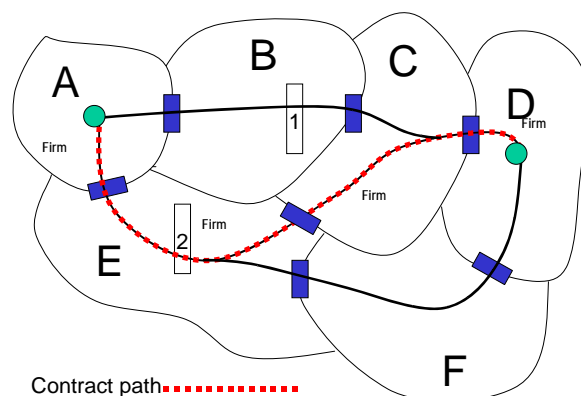
**Case 4: E is a firm path; A, D, and C are Non-firm; E has Constraint at #2**

- Interchange Transaction A – D is considered Firm priority for curtailment purposes.
- E may then call its Reliability Coordinator for TLR, which would curtail all Interchange Transactions using Non-firm Point-to-Point Transmission Service first.
- E is obligated to try to reconfigure transmission to mitigate Constraint #2 in E before E may curtail the Interchange Transaction as ordered by the TLR (Principle 2).



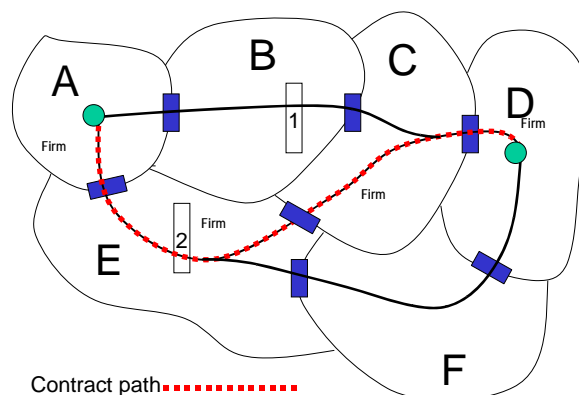
**Case 5: The entire path (A-E-C-D) is firm; E has Constraint at #2**

- Interchange Transaction A – D is considered Firm priority for curtailment purposes.
- E may call its Reliability Coordinator for TLR, which would curtail all Interchange Transactions using Non-firm Point-to-Point Transmission Service first.
- E is obligated to curtail Interchange Transactions using Non-firm Point-to-Point Transmission Service, and then reconfigure transmission on its system, or, if there is an agreement in place, arrange for reconfiguration or other congestion management options on another system, to mitigate Constraint #2 in E before the firm A-D transaction is curtailed (Principle 2).
- A, C, D, may be requested by E to try to reconfigure transmission to mitigate Constraint #2 in E at E's expense (Principle 2).



**Case 6: The entire path (A-E-C-D) is firm; B has Constraint at #1.**

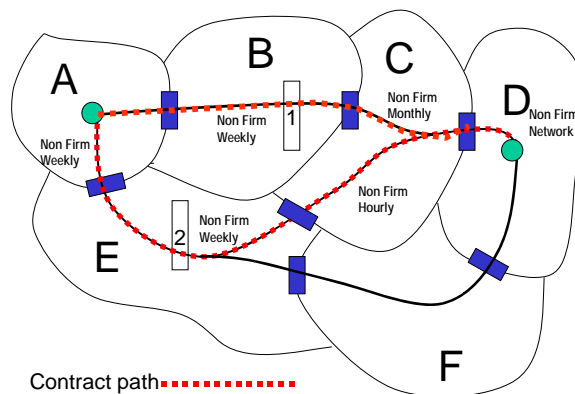
- Interchange Transaction A – D is considered Firm priority for curtailment purposes.
- B may call its Reliability Coordinator for TLR for all *non-firm* Interchange Transactions that contribute to the overload at Constraint #1.
- Following the curtailment of all non-firm Interchange Transactions, the Reliability Coordinator (ies) will determine which Transmission Operator(s) will reconfigure their transmission, if possible, to mitigate constraint #1 (Principle 4).



- A-D transaction may be curtailed as a result. However, the A-D transaction is treated as a firm Interchange Transaction and will be curtailed only after non-firm Interchange Transactions. (Note: This means that the firm Contract Path is respected by all parties, including those not on the Contract Path.) (Principle 4)

**Case 7: Two A-to-D transactions using A-B-C-D and A-E-C-D; A and B are non-firm; B has Constraint at #1**

- B is not obligated to reconfigure transmission to mitigate Constraint at #1. (Principle 1)
- B may call its Reliability Coordinator for TLR to relieve overload at Constraint #1.
- If both A – D Interchange Transactions have the same Transfer Distribution Factors across Constraint #1, then they both are subject to curtailment. However, Interchange Transaction A – D using the A-B-C-D path is assigned a higher priority (priority NW on B), and would not be curtailed until after the Interchange Transaction using the path A-E-C-D (priority NH on the Contract Path as observed by B who is off the Contract Path).



## **Exhibit E**

### **Supporting Reference Documents**

## Executive Summary

As filed with FERC, the NERC TLR Drafting Team has identified the reliability aspects of IRO-006 in a draft revision to the standard. The industry is being asked to review the proposed revision (and associated Attachment 1) to determine whether or not the reliability objectives associated with the original standard have been maintained. In order to ensure industry understanding of these efforts, the Drafting Team has prepared the following documents:

- The proposed reliability standard (both in redline and in clean formats),
- A proposed Attachment 1 (both in redline and in clean formats),
- A draft of the Joint Operator Manual to provide operators an integrated view of both the NERC and NAESB standards,
- A Violation Severity Guideline, to assist entities in complying with Attachment 1,
- A [reference](#)<sup>1</sup> to the approved NAESB business practices (to show where commercial aspects will be covered), and
- An annotated mark-up of the original IRO-006 (highlighting how each part of the standard was divided).

The work being presented for ballot is related only to the first phase of work that is to be undertaken by the drafting team, which is ensuring the division of the reliability and commercial aspects of IRO-006 continue to meet the needs of the industry. This includes the development of measures, compliance elements and other standard components to meet the requirements of the NERC Reliability Standards Development Procedure. Future phases are intended to provide support for changes to the MISO/PJM/SPP congestion management process, as well as improve the overall clarity of the standard.

In conducting the first phase of this work, the team attempted to retain the original requirements to the extent possible to avoid creating new elements that may precipitate lengthy debates hence delaying implementing the split. However, where in the judgment of the team the standard requirements as written were deemed to create difficulties in developing the necessary measures and compliance elements, the team modified the requirements to achieve those objectives.

Note that the team is only requesting approval of IRO-006-4 and Attachment 1. All other materials are being provided for reference only.

## Background

The original decision to separate the commercial and reliability standards was made in August, 2004, by the NERC Version 0 Standards Drafting Team and the NAESB

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<sup>1</sup> Please access [http://naesb.org/misc/fa\\_weq\\_r06002\\_attachment%202\\_.pdf](http://naesb.org/misc/fa_weq_r06002_attachment%202_.pdf) to review the NAESB TLR Business Practice Standards in conjunction with the proposed NERC TLR Reliability Standards to ensure that all relevant aspects of TLR standards are either included in the NERC proposal or in the NAESB business practices. Please note that the NAESB business practice standards are copyright protected. Should you need to obtain a copy of the NAESB standards for other purposes, please contact the NAESB office.

Business Practice Subcommittee (BPS). This decision was supported by the Joint Interface Committee, consisting of NERC, NAESB, and the IRC (ISO/RTO Council). The agreement was to begin with Version 0 standards for both organizations, meaning standards would be identical, and then to move to Version 1 by the end of 2005 which would totally separate commercial and reliability standards. Approval of Version 1 would then call for the retirement of the Version 0 standards. This decision was also endorsed by the NERC Operating Committee and the Standards Authorization Committee.

A Joint NERC/NAESB TLR Task Force was formed and held eight meetings to complete the separation. In June of 2005, this team voted unanimously on the separation and agreed that each organization would begin Version 1 work on their portion of the separated standards.

In June, 2005, the NAESB BPS began work on its portion of the split and completed its process with an approval of the Wholesale Electric Quadrant (WEQ) Executive Committee and a subsequent member ratification on April 10, 2006. The decision was made to hold the ratified business practice in abeyance until NERC completed its portion of the split so that both organizations could make their appropriate filings with the FERC at the same time.

NERC posted the approved split for industry comment and received 12 sets of comments, six in favor of the split and six against the split. Those submitting negative comments stated the following concerns: the future management and coordination of the standards; keeping the standards in one accessible location; and the inclusion of business practices in the Interchange Distribution Calculator (IDC) Reference Document. The Operating Reliability Subcommittee at that point asked NAESB to cease work on their business practices (November, 2005) but reconsidered their decision in May, 2006 and approved the development of a SAR and formation NERC TLR Drafting Team for the Standard Authorization Committee's (SAC's and now known as Standards Committee (SC)) consideration.

To address concerns stated by the industry surrounding the division of the commercial practices and reliability standards, NERC and NAESB Executive leadership developed a process for joint development and maintenance of standards. This process was approved by the NAESB Board in February, 2006 and the NERC Board of Trustees in May, 2006. In addition, both organizations filed reports with the FERC in February, 2006, stating they would use this process to complete the TLR split in February, 2006. The template outlines a joint process for the overall development of standards, the posting of draft standards, and the industry comment periods for those standards. It additionally provides for the joint publication of standards, if Executive Management so decides. The template/process will not change the rights of the ballot body to vote at NERC or the rights of the membership to vote at NAESB.

This template answers the concerns of the industry by providing a method by which standards that are joint can be maintained in realistic synchronization. The template for joint standards development also provides for a method to jointly publish standards when the industry provides feedback that one manual with both standards is necessary.

FERC placed additional emphasis on the NERC/NAESB joint development process in Order 676, stating "The WEQ also adopted business practice standards that

complement NERC's Version 0 reliability standards. The development of such standards will be of increasing importance in the future as the Commission approves reliability standards under the recently enacted Energy Policy Act of 2005 (EPAAct 2005).<sup>2</sup> Business practice and reliability standards must complement each other to support an efficient grid. Companies need to have means of conducting business that ensure compliance with the reliability standards. We, therefore, are pleased NERC and NAESB have developed operating protocols that synchronize their standards development to provide for efficient and coordinated implementation of their respective standards."<sup>3</sup>

The support of the Commission for joint standards development and the commitment by both NERC and NAESB to complete the joint standards drafting for TLR standards, illustrates the importance of the task at hand to the Commission and to the industry.

### **The Work Scope of the NERC Drafting Team**

NERC issued a SAR for TLR in December, 2006 to complete three phases of drafting work. The three phases include:

**Phase 1** — A coordinated effort with NAESB to clarify and refine the steps in the Transmission Loading Relief Procedure for the Eastern Interconnection to reaffirm the steps needed to support reliability and the steps needed to support the business practice. This should be accomplished as soon as possible and should not wait for other technical changes to the standard.

**Phase 2** — A second set of modifications to this standard involves further consideration of a change to the market flow calculation specified in PJM/MISO and SPP regional differences E.1 and E.2 in Standard IRO-006-03 to address a reliability issue when MISO, PJM and SPP are unable to meet their relief obligations during TLR. The proposed modification would change the market flow threshold for MISO, PJM and SPP from 0% to 3%. Based on stakeholder comments, (submitted with the SAR to Modify IRO-006 for Market Information), this change needs to be field tested to verify that it would not have any unforeseen adverse consequences. The field test will start June 1, 2007 for PJM; MISO and SPP will join the field test in September 2007. The field test is expected to end May 31, 2008. This change would replace the SPP Urgent Action Regional Difference to IRO-006. Since the end of the field test will not be completed before the SPP Urgent Action expires, SPP will need to take steps to extend the Urgent Action for one year. Since there was a delay in the start of the field test, changes related to Phase 2 will likely be introduced after the completion of Phase 3.

The PJM/MISO and SPP Regional Differences are also contained in the NAESB Business Practice, Appendix D – Sections A&B. Upon completion of the field test these Regional Differences will be removed from the NERC Standard.

**Phase 3** — A third set of modifications includes the changes needed to elevate the overall quality of the standard and to address the additional technical issues that have been posed with this standard by stakeholders and FERC (see Standard Review Form and Reliability Standard Review Guidelines). In addition to revising the IDC Reference Document, the development may include other improvements to the standards deemed

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<sup>2</sup> Energy Policy Act of 2005, Pub. L. No. 109-58, 119 Stat. 594 (2005), 42 U.S.C. 15801 *et seq.* See Order Nos. 672 and 672-A.

<sup>3</sup> See Order 676 at para. 14.

appropriate by the drafting team, with the consensus of stakeholders, consistent with establishing high quality, enforceable and technically sufficient bulk power system reliability standards.

Part of the team's task is to ensure the reliability portion of the standard is enforceable as a mandatory reliability standard with financial penalties — the applicability to bulk power system owners, operators, and users, and as appropriate particular classes of facilities, is clearly defined; the purpose, requirements, and measures are results-focused and unambiguous; the consequences of violating the requirements are clear. The team is also tasked with incorporating other general issues needed to elevate the quality of the standard and to bring the format of the standard into compliance with the ERO Rules of Procedure as described in the standards development work plan (see Standard Review Form and Standard Review Guidelines). IRO-006 was developed as a Version 0 standard and although it has been updated to address some specific technical concerns, the SARs associated with the changes made to the standard limited modifications to just those modifications that were immediately needed. As the electric reliability organization begins enforcing compliance with reliability standards under Section 215 of the Federal Power Act in the United States and applicable statutes and regulations in Canada, the industry needs a set of clear, measurable, and enforceable reliability standards. The Version 0 standards, while a good foundation, were translated from historical operating and planning policies and guides that were appropriate in an era of voluntary compliance. The Version 0 standards and recent updates were put in place as a temporary starting point to stand up the electric reliability organization and begin enforcement of mandatory standards. However, it is important to update the standards in a timely manner, incorporating improvements to make the standards more suitable for enforcement and to capture prior recommendations that were deferred during the Version 0 translation.

## Status

The team has drafted the NERC TLR Reliability Standard and is presenting it to the industry for ballot. Supporting documents are being posted so that industry participants can understand the history of how the decision was made and approved to split commercial and business practice language. These documents include:

- The proposed reliability standard (both in redline and in clean formats),
- A proposed Attachment 1 (both in redline and in clean formats),
- A draft of the Joint Operator Manual to provide operators an integrated view of both the NERC and NAESB standards,
- A Violation Severity Guideline, to assist entities in complying with Attachment 1,
- A [reference](#)<sup>4</sup> to the approved NAESB business practices (to show where commercial aspects will be covered), and
- An annotated mark-up of the original IRO-006 (highlighting how each part of the standard was divided).

Note that the team is only requesting approval of IRO-006-4 and Attachment 1. All other materials are being provided for reference only.

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<sup>4</sup> Please access [http://naesb.org/misc/fa\\_weq\\_r06002\\_attachment%202 .pdf](http://naesb.org/misc/fa_weq_r06002_attachment%202.pdf) to review the NAESB TLR Business Practice Standards in conjunction with the proposed NERC TLR Reliability Standards to ensure that all relevant aspects of TLR standards are either included in the NERC proposal or in the NAESB business practices. Please note that the NAESB business practice standards are copyright protected. Should you need to obtain a copy of the NAESB standards for other purposes, please contact the NAESB office.

**Next Steps**

Once the NERC community is comfortable with the reliability portion of the TLR standard and votes to approve, NERC will file the Phase 1 portion of the completed standards with the FERC. It is the suggestion of the joint drafting team that NAESB wait to file until NERC has completed its Phase 1 process; this recommendation is not intended to bind NAESB to a particular filing date.

Following the completion of this initial phase of work, the group will begin submitting Phase 2 and 3 changes to industry for comment and balloting.



5

**[TITLE SHEET]**

10

**Joint  
NERC/NAESB  
System Operator's  
Transmission Loading Relief (TLR)  
Reference Manual**

15

20

## **{Temporary Sheet}**

### **To The Reader:**

25 We have compiled this draft of the joint reference manual in a form we feel is complete for the purpose of posting with NERC Standard IRO-006-4. We have gone to great length to ensure that all present reliability and commercial components of the TLR process have been incorporated into this manual.

30 The structure of the manual is described in the Preface. Where necessary, we have inserted introductory or “flow”/transition language into the manual and have shown that language in red text. The manual is organized in the following manner:

- Title Sheet
- Table of Contents (to be completed once we finalize the document for publication)
- Preface
- 35 • Tab 1 -(To Be) Annotated Flowchart of Transaction Management and Curtailment Process
- Tab 2 - Requirements
- Tab 3 - Procedures (Attachment 1)
- Tab 4 - Glossary / Definitions of Terms Used
- 40 • Tab 5 - IDC Reference Document
- Tab 6 - NAESB Appendices
- Tab 7 - NERC Appendices

45 Following the July 20th posting, the Drafting Team will work to put the joint manual into a final “finished” form that can be published. To get the manual to its published form, the Drafting Team will continue working on formatting, pagination, Table of Contents, etc as well as a few enhancements that could not be completed prior to posting.

TLR Drafting Team

50

## **[TABLE OF CONTENTS]**

The Table of Contents will be added once the organization and content of the manual is final

55

## [PREFACE]

### Preface

60

#### Manual Objectives

- Understand overall TLR procedure - both reliability and commercial aspects
- Understand different levels of curtailment and associated reloading of interchange transactions
- Understand how to implement TLR procedure
- Understand the severity of violations for non-compliance

65

#### 70 Background and Purpose

In accordance with a decision made by the NERC Version 0 Drafting Team (SDT) and the NAESB Business Practice Subcommittee (BPS) in August of 2004, the TLR procedure was divided into two documents representing the aspects of IRO-006 that are reliability-related and those aspects that are commercial in nature and are related to how the process is implemented equally and without bias to all parties involved.

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This effort resulted in two documents - (1) NERC Document IRO-006 which defines the procedures for curtailing interchange transactions to relieve overloads on the transmission facilities modeled in the Interchange Distribution Calculator (IDC) and (2) the NAESB TLR Business Practice for the Eastern Interconnection that defines the commercial aspects of how curtailments and reloading of interchange transactions will be carried out.

80

Due to former industry concerns that the elements of this standard are extremely co-dependent, it was determined that a Joint Operator Manual would be created to merge the two documents together to provide an integrated view of both the NERC and NAESB standards. The purpose of this document is to assist the operator in obtaining a better understanding of the overall TLR process whether it is reliability (NERC) or a commercial aspect (NAESB).

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90

#### Operator Manual Structure

The operator manual is a combination of NERC and NAESB standards. It is developed from the NERC Reliability Standard IRO-006-4 and the NAESB Business Practice (Version 0). NERC standards are represented in black, non-italicized text, while the NAESB Standards are represented in blue, italicized text.

95

The “actual” wording for each representative standard has been taken and inserted into the document along with its respective standards numbering. However, some wording has been added in order to assist the reader in delineating from one aspect of the standard to another (reliability to commercial) and to allow the text to flow in a more understandable format.

100

105 This operator manual is not intended to replace the NERC-approved reliability standards or the NAESB-approved Business Practice Standards. It has been created to simplify the TLR process for system operators by combining all aspects of the process into one easy reference. The document may also simplify any operator training efforts on the overall TLR process.

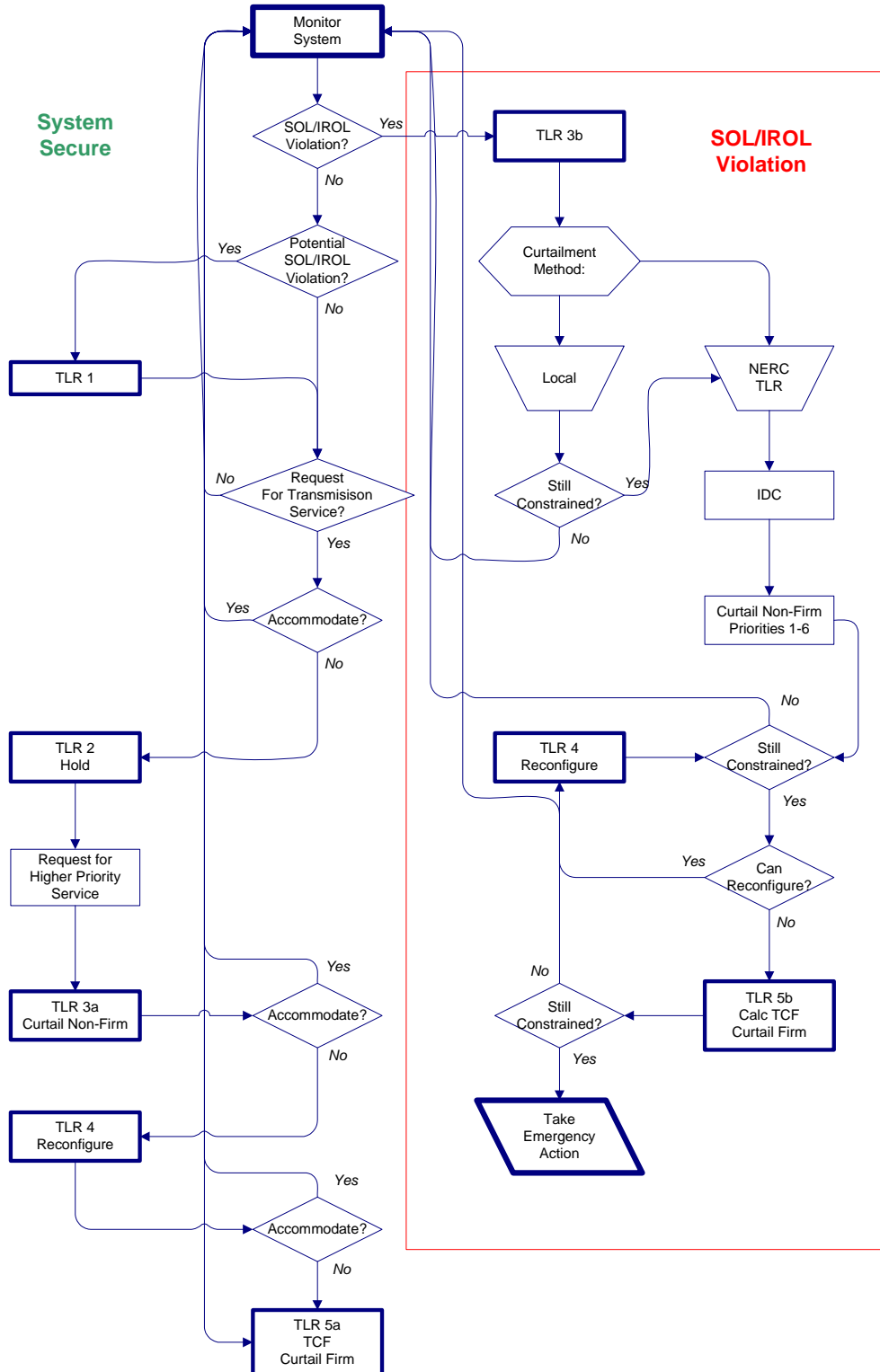
### **Future Maintenance of the Manual and Standards**

110

The joint operator manual will be maintained through an established Joint Standards Development Process between NERC and NAESB so that anytime one party considers making a change to their respective document, a joint meeting will be held to discuss implications and modifications, if any, which would be required to both standards. Upon receipt of either organization receiving a request for a change, the organization will invoke the Joint Standards Development Process and contact the other organization group to convene a meeting to address how the potential changes being requested might impact the two aspects of the standard - reliability and/or commercial. This process will allow the groups to work jointly on the request and ensure that both standards will stay in lock-step with each other.

120

**[TAB 1 – (To Be) ANNOTATED FLOWCHART OF TRANSACTION MANAGEMENT AND CURTAILMENT PROCESS]**



## [TAB 2 – REQUIREMENTS]

### Requirements:

#### Requirement 1 -

130 A Reliability Coordinator experiencing a potential or actual SOL or IROL violation within its Reliability Coordinator Area shall, with its authority and at its discretion, select one or more procedures to provide transmission loading relief. These procedures can be a “local” (regional, interregional, or sub-regional) transmission loading relief procedure or one of the following Interconnection-wide procedures:

[Violation Risk Factor: Medium]

135 [Time Horizon: Real-time Operations]

#### Requirement 1.1 –

140 The Interconnection-wide Transmission Loading Relief (TLR) procedure for use in the Eastern Interconnection is provided in Attachment 1-IRO-006-4. The TLR procedure alone is an inappropriate and ineffective tool to mitigate an IROL violation. Other acceptable and more effective procedures to mitigate actual IROL violations include: reconfiguration, re-dispatch, or load shedding.

#### Requirement 1.2

145 The Interconnection-wide transmission loading relief procedure for use in the Western Interconnection is the “WSCC Unscheduled Flow Mitigation Plan,” provided at: [http://www.wecc.biz/documents/library/UFAS/UFAS\\_mitigation\\_plan\\_rev\\_2001-clean\\_8-8-03.pdf](http://www.wecc.biz/documents/library/UFAS/UFAS_mitigation_plan_rev_2001-clean_8-8-03.pdf).

#### Requirement 1.3 -

150 The Interconnection-wide transmission loading relief procedure for use in ERCOT is provided as Section 7 of the ERCOT Protocols, posted at: <http://www.ercot.com/mktrules/protocols/current.html>

#### Requirement 2

155 The Reliability Coordinator shall only use local transmission loading relief or congestion management procedures to which the Transmission Operator experiencing the potential or actual SOL or IROL violation is a party.

[Violation Risk Factor: Low]

160 [Time Horizon: Operations Planning]

#### Requirement 3 –

165 A Reliability Coordinator may implement a local transmission loading relief or congestion management procedure simultaneously with an Interconnection-wide procedure. However, each Reliability Coordinator shall follow the curtailments as directed by the Interconnection-wide procedure. A Reliability Coordinator desiring to use a local procedure as a substitute for curtailments as directed by the Interconnection-wide procedure shall obtain prior approval by the ERO.

[Violation Risk Factor: Low]

170 [Time Horizon: Operations Planning]

**Requirement 4 –**

175 When Interconnection-wide procedures are implemented to curtail Interchange Transactions that cross an Interconnection boundary, each Reliability Coordinator shall comply with the provisions of the Interconnection-wide procedure.

[Violation Risk Factor: Medium]

[Time Horizon: Real-time Operations]

**Requirement 5 –**

180 During the implementation of relief procedures, and up to the point that emergency action is necessary, Reliability Coordinators and Balancing Authorities shall comply with applicable Interchange scheduling standards.

[Violation Risk Factor: Medium]

[Time Horizon: Real-time Operations]

185

**Measures:**

**Measure 1 -**

190 Each Reliability Coordinator shall be capable of providing evidence (such as logs) that demonstrate when Eastern Interconnection, WECC, or ERCOT Interconnection-wide transmission loading relief procedures are implemented, the implementation follows the respective established procedure as specified in this standard (R1, R1.1, R1.2 and R1.3).

**Measure 2 -**

195 Each Reliability Coordinator shall be capable of providing evidence (such as written documentation) that the Transmission Operator experiencing the potential or existing SOL or IROL violations is a party to the local transmission loading relief or congestion management procedures when these procedures have been implemented (R2).

**Measure 3 -**

200 Each Reliability Coordinator shall be capable of providing evidence (such as NERC meeting minutes) that the local procedure has received prior approval by the ERO when such procedure is used as a substitute for curtailment as directed by the Interconnection-wide procedure (R3).

**Measure 4 -**

205 Each Reliability Coordinator shall be capable of providing evidence (such as logs) that the responding Reliability Coordinator complied with the provisions of the Interconnection-wide procedure as requested by the initiating Reliability Coordinator when requested to curtail an Interchange Transaction that crosses an Interconnection boundary (R4).

210

**Measure 5 -**

215 Each Reliability Coordinator and Balancing Authority shall be capable of providing evidence (such as Interchange Transaction Tags, operator logs, voice recordings or transcripts of voice recordings, electronic communications, computer printouts) that they have complied with applicable Interchange scheduling standards INT-001, INT-003, and INT-004 during the implementation of relief procedures, up to the point emergency action is necessary (R5).



**Compliance:**

220 1. Compliance Monitoring Process -  
The Regional Entity shall have responsibility for compliance monitoring.

1.1 Compliance Monitoring Responsibility:  
Regional Entity.

225

1.2 Compliance Monitoring Period and Reset Time Frame  
Compliance Monitoring Period: One calendar year.  
Reset Period: One month without a violation.

230

1.3 Data Retention

The Reliability Coordinator shall maintain data for eighteen months for M1, M4, and M5.

The Reliability Coordinator shall maintain data for the duration the Transmission Operator is party to the procedure in effect plus one calendar year thereafter for M2.

235

The Reliability Coordinator shall maintain data for the approved duration of the procedure in effect plus one calendar year thereafter for M3.

1.4 Additional Compliance Information

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Each Reliability Coordinator and Balancing Authority shall demonstrate compliance through self-certification submitted to its Compliance Monitor annually and reporting by exception. The Compliance Monitor may also use scheduled on-site reviews every three years, and investigations upon complaint, to assess performance.

245

Each Reliability Coordinator and Balancing Authority shall have the following available for its Compliance Monitor to inspect during a scheduled, on-site review or within 5 days of a request as part of an investigation upon complaint:

250

1.4.1 Operations logs, voice recordings or transcripts of voice recordings or other documentation providing the evidence of its compliance to all the requirements for all Interconnection-wide TLR procedures that it has implemented during the review period.

1.4.2 TLR reports.

2. Violation Severity Levels -

255

2.1 Lower. There shall be a lower violation severity level if any of the following conditions exist:

2.1.1 For each TLR in the Eastern Interconnection, the Reliability Coordinator violates one (1) requirement of the applicable Interconnection-wide procedure (R1)

260

2.1.2 The Reliability Coordinators or Balancing Authorities did not comply with applicable Interchange scheduling standards during the implementation of the relief procedures, up to the point emergency action is necessary (R5).

2.2 Moderate.

265 2.2.1 For each TLR in the Eastern Interconnection, the Reliability Coordinator violates two (2) to three (3) requirements of the applicable Interconnection-wide procedure (R1).

2.3 High. There shall be a high violation severity level if any of the following conditions exist:

270 2.3.1 For each TLR in the Eastern Interconnection, the applicable Reliability Coordinator violates four (4) to five (5) requirements of the applicable Interconnection-wide procedure (R1).

275 2.3.2 When requested to curtail an Interchange Transaction that crosses an Interconnection boundary utilizing an Interconnection-wide procedure, the responding Reliability Coordinator did not comply with provisions of the Interconnection-wide procedure as requested by the initiating Reliability Coordinator (R4).

2.4 Severe. There shall be a severe violation severity level if any of the following conditions exist:

280 2.4.1 For each TLR in the Eastern Interconnection, the Reliability Coordinator violates six (6) or more of the requirements of the applicable Interconnection-wide procedure (R1).

285 2.4.2 A Reliability Coordinator implemented local transmission loading relief or congestion management procedures to relieve congestion but the Transmission Operator experiencing the congestion was not a party to those procedures (R2).

290 2.4.3 A Reliability Coordinator implemented local transmission loading relief or congestion management procedures as a substitute for curtailment as directed by the Interconnection-wide procedure but the local procedure had not received prior approval by the ERO (R3).

295 2.4.4 While attempting to mitigate an existing IROL violation in the Eastern Interconnection, the Reliability Coordinator applied TLR as the sole remedy for an existing IROL violation.

295 2.4.5 While attempting to mitigate an existing constraint in the Western Interconnection using the “WSCC Unscheduled Flow Mitigation Plan”, the Reliability Coordinator did not follow the procedure correctly.

295 2.4.6 While attempting to mitigate an existing constraint in ERCOT using Section 7 of the ERCOT Protocols, the Reliability Coordinator did not follow the procedure correctly.

## [TAB 3 – PROCEDURES (ATTACHMENT 1)]

### 300 **Transmission Loading Relief (TLR) Procedures – Eastern Interconnection:**

#### **Purpose**

305 This document defines procedures for curtailment and reloading of Interchange Transactions to relieve overloads on transmission facilities modeled in the Interchange Distribution Calculator. This process is defined in the requirements shown under Tab 2 - Requirements, and is depicted in NERC Appendix A – Transaction Management and Curtailment Process. Examples of curtailment calculations using these procedures are contained in NAESB Appendix C – Transaction Curtailment Formula.

#### 310 **Applicability**

This standard only applies to the Eastern Interconnection.

### **1. Transmission Loading Relief (TLR) Procedures**

315 **1.1. Initiation only by Reliability Coordinator.** A Reliability Coordinator shall be the only entity authorized to initiate the TLR Procedure and shall do so at 1) the Reliability Coordinator's own request, or 2) upon the request of a Transmission Operator.

320 **1.1.1 Curtailment Threshold.** The curtailment threshold to be utilized by the Reliability Coordinator for curtailments in the Eastern Interconnection is specified in [*Section 3.10 of the NAESB Transmission Loading Relief Business Practice Standard – Curtailment Threshold*].

*3.10 The Curtailment Threshold for the Eastern Interconnection shall be 0.05 (5%).*

325 **1.2. Mitigating transmission constraints.** A Reliability Coordinator may utilize the TLR Procedure to mitigate potential or existing System Operating Limit (SOL) violations or to prevent Interconnection Reliability Operating Limit (IROL) violations on any transmission facility modeled in the IDC. However, the TLR procedure is an inappropriate and ineffective tool as a sole means to mitigate existing IROL violations. Effective alternatives to the use of the TLR procedure in situations involving an existing IROL violation include: reconfiguration, re-dispatch, and load shedding outside the TLR process.

330 **1.2.1. Requesting relief on tie facilities.** Any Transmission Operator who operates the tie facility shall be allowed to request relief from its Reliability Coordinator.

335 **1.2.1.1 Interchange Transaction Priority on Tie Facilities** as used for curtailment purposes shall be determined by the Transmission Service reserved on the Transmission Service Provider's system who requested the relief in accordance with [*Section 2.1, and its sub-parts, of the NAESB Transmission Loading Relief Business Practice Standard - Priority of Interchange Transactions.*]

340 **2.1** *The Reliability Coordinator shall recognize the Interchange Transaction priority determined by the Transmission Service reserved as follows:*

*2.1.1 Priority 0. Next-hour Market Service – NX (if offered by Transmission Service Provider)*

- 345                                    *2.1.2 Priority 1. Service over secondary receipt and delivery points  
– NS*
- 2.1.3 Priority 2. Non-Firm Point-to-point Hourly Service – NH*
- 2.1.4 Priority 3. Non-Firm Point-to-point Daily Service – ND*
- 350                                    *2.1.5 Priority 4. Non-Firm Point-to-point Weekly Service – NW*
- 2.1.6 Priority 5. Non-Firm Point-to-point Monthly Service – NM*
- 2.1.7 Priority 6. Network Integration Transmission Service from  
sources not designated as network resources – NN*
- 355                                    *2.1.8 Priority 7. Firm Point-to-point Transmission Service - (F) and  
Network Integration Transmission Service from Designated  
Resources – (FN)*

360                                    **1.3. Order of TLR Levels and taking emergency action.** The Reliability Coordinator shall not be required to follow the TLR Levels [Shown in Procedures (Attachment 1) – NERC Section 2) in their numerical order. Furthermore, if a Reliability Coordinator deems that a transmission loading condition could jeopardize Bulk Electric System reliability, the Reliability Coordinator shall have the authority to enter TLR Level 6 directly, and immediately direct the Balancing Authorities or Transmission Operators to take such actions as re-dispatching generation, or reconfiguring transmission, or reducing load to mitigate the critical condition until Interchange Transactions can be reduced utilizing the TLR Procedure or other methods to return the system to a secure state.

365                                    **1.4. Notification of TLR Procedure implementation.** The Reliability Coordinator initiating the use of the TLR Procedure shall notify other Reliability Coordinators and Balancing Authorities and Transmission Operators, and must post the initiation and progress of the TLR event on the appropriate NERC web page(s).

370                                    **1.4.1. Notifying other Reliability Coordinators.** The Reliability Coordinator initiating the TLR Procedure shall inform all other Reliability Coordinators via the Reliability Coordinator Information System (RCIS) that the TLR Procedure has been implemented.

375                                    **1.4.1.1. Actions expected.** The Reliability Coordinator initiating the TLR Procedure shall indicate the actions expected to be taken by other Reliability Coordinators.

**1.4.2. Notifying Transmission Operators and Balancing Authorities.** The Reliability Coordinator shall notify Transmission Operators and Balancing Authorities in its Reliability Area when entering and leaving any TLR level.

380                                    **1.4.3. Notifying Balancing Authorities.** The Reliability Coordinator for the sink Balancing Authority shall be responsible for directing the Sink Balancing Authority to curtail the Interchange Transactions as specified by the Reliability Coordinator implementing the TLR Procedure.

385                                    **1.4.3.1. Notification order.** Within a Transmission Service Priority level, the Sink Balancing Authorities whose Interchange Transactions have the largest impact on the Constrained Facilities shall be notified first if practicable.

390                                    **1.4.4. Updates.** At least once each hour, or when conditions change, the Reliability Coordinator implementing the TLR Procedure shall update all other Reliability Coordinators (via the RCIS). Transmission Operators and Balancing Authorities who have had Interchange Transactions impacted by the TLR will be updated by their Reliability Coordinator.

395 **1.5. Obligations.** All Reliability Coordinators shall comply with the request of the Reliability Coordinator who initiated the TLR Procedure, unless the initiating Reliability Coordinator agrees otherwise.

400 **1.5.1. Use of TLR Procedure with “local” procedures.** *[Sections 1.1, 1.2, and 1.2.1 of the NAESB Transmission Loading Relief Business Practice Standard]* shall apply in the use of TLR Procedure with “local” procedures.

400 **1.1 Use of Interconnection-wide TLR procedures.** *All Reliability Coordinators shall be obligated to follow the transmission loading relief procedures associated with the appropriate Interconnection-wide TLR procedure for their Interconnection.*

405 **1.2 Use of local procedures.** *A Reliability Coordinator shall be allowed to implement a local transmission loading relief or congestion management procedure simultaneously with the Interconnection-wide TLR procedure.*

410 **1.2.1** *The Reliability Coordinator shall revert back to the Interconnection-wide TLR procedure in the event local procedures do not adequately alleviate the Interconnection Reliability Operating Limits (IROL) or System Operating Limits (SOL) violation.*

415 **1.5.2 Commercial Notifications.** Commercial notifications shall be implemented in accordance with *[Section 1.5 of the NAESB Transmission Loading Relief Business Practice Standard]*

415 **1.5** *The Reliability Coordinator shall simultaneously notify all parties affected by the invocation of a local congestion management procedure or the Interconnection-wide TLR procedure, using the notification method as specified by NERC (e.g. – the Reliability Coordinator Information System or successor).*

420 **1.6. Consideration of Interchange Transactions.** The administration of the TLR Procedure shall be guided by information obtained from the IDC.

425 **1.6.1. Interchange Transactions not in the IDC.** Reliability Coordinators shall also treat known Interchange Transactions that may not appear in the IDC in accordance with the procedures in this document.

430 **1.6.2. Transmission elements not in IDC.** When a Reliability Coordinator is faced with an overload on a transmission element that is not modeled in the IDC, the Reliability Coordinator shall use the best information available to curtail Interchange Transactions in order to operate the system in a reliable manner. The Reliability Coordinator shall use its best efforts to ensure that Interchange Transactions with a Transfer Distribution Factor of less than the Curtailment Threshold on the transmission element not modeled in the IDC are not curtailed.

435 **1.6.3. Questionable IDC results.** Any Reliability Coordinator (or Transmission Operator through its Reliability Coordinator) who believes the curtailment list from the IDC for a particular TLR event is incorrect shall use its best efforts to communicate those adjustments necessary to bring the curtailment list into conformance with the principles of this Procedure to the initiating Reliability Coordinator. Causes of questionable IDC results may include:

- Missing Interchange Transactions that are known to contribute to the Constraint.
- Significant change in transmission system topology.
- TDF matrix error.

440 Impacts of questionable IDC results may include:

- Curtailment that would have no effect on, or aggravate the constraint.
- Curtailment that would initiate a constraint elsewhere.

If other Reliability Coordinators are involved in the TLR event, all impacted Reliability Coordinators shall be in agreement before any adjustments to the Curtailment list are made.

**1.6.4. Curtailment that would cause a constraint elsewhere.** A Reliability Coordinator shall be allowed to exempt an Interchange Transaction from Curtailment if that Reliability Coordinator is aware that the Interchange Transaction Curtailment directed by the IDC would cause a constraint to occur elsewhere. This exemption shall only be allowed after the Reliability Coordinator has consulted with the Reliability Coordinator who initiated the Curtailment.

**1.6.5. Re-Dispatch Options** are implemented according to [*Sections 1.3, 1.3.1, 1.3.1.1 and 1.3.2 of the NAESB Transmission Loading Relief Business Practice Standard*]

**1.3 Market-based congestion management or re-dispatch procedures.**  
*Regulatory-approved market-based congestion management or re-dispatch procedures shall be allowed as a supplement to, or substitute for, the Interconnection-wide TLR procedure.*

**1.3.1** *The Reliability Coordinator shall ensure that transactions associated with Point-to-point Transmission Service, Network Integration Transmission Service, and Transmission Service associated with Native Load, having been identified as linked with a Regulatory-approved Market-based congestion management procedure, are protected from curtailment to the extent that the Regulatory-approved Market-based congestion management procedure allows.*

**1.3.1.1** *The Interchange Transaction shall retain its original transmission service priority for purposes of curtailment when the transmission service is not reserved on the Constrained Facility or Flowgate.*

**1.3.2** *The Reliability Coordinator shall revert back to the Interconnection-wide TLR procedure in the event Market-based procedures do not adequately alleviate the IROL or SOL violations.*

**1.6.6. Reallocation.** The Reliability Coordinator shall consider for Reallocation any Transactions of higher priority that meet the approved tag submission deadline during a TLR Level 3A. The Reliability Coordinator shall consider for Reallocation any Transaction using Firm Transmission Service that has met the approved tag submission deadline during a TLR Level 5A. Note Reallocations for Dynamic Schedules are as follows: If an Interchange Transaction is identified as a Dynamic Schedule and the transmission service is considered firm according to the constrained path method, then it will not be held by the IDC during TLR level 4 or lower. Adjustments to Dynamic Schedules, in accordance with the current version of INT-004, will not be held under TLR level 4 or lower.

Reallocation is implemented according to *Sections 3.3, 3.3.1, 3.3.1.2 and 3.6 of the NAESB Transmission Loading Relief Business Practice Standard and is described in the individual TLR level descriptions in Section 2 of this Reference Manual.*

Reallocation is implemented *for Dynamic Schedules for Levels 4 and Lower* in accordance with [Sections 3.2.5, 3.3.1.2, 3.4.1.2 and 3.5.2.1 of the NAESB Transmission Loading Relief Business Practice Standard]

490 **1.6.7 Parallel Flow Calculation Procedure for Reallocating or Curtailing Firm Transmission Service.** The Reliability Coordinator shall use the Per Generator Method to calculate parallel flows when reallocating interchange Transactions as described in [Sections 3.11 through 3.11.2.8 of the NAESB Transmission Loading Relief Business Practice Standard]

495 3.11 *The Reliability Coordinator initiating a curtailment shall identify for curtailment all firm transmission services (i.e. PTP, NI, and service to NL) that contribute to the flow on any Constrained Facility or Flowgate by an amount greater than or equal to the Curtailment Threshold on a pro rata basis.*

500 3.11.1 *The Reliability Coordinator shall use Transfer Distribution Factors (TDF's) to calculate the portion of parallel flows on any Constrained Facility or Flowgate due to Interchange Transactions using Firm Transmission Service.*

505 3.11.1.1 *Only those Interchange Transactions with TDF's greater than or equal to the Curtailment Threshold shall be considered.*

510 3.11.2 *The Reliability Coordinator shall use the Per Generator Method to calculate the portion of parallel flows on any Constrained Facility or Flowgates due to Network Integrated (NI) transmission service customers and service to Native Load (NL) customers for each Balancing Authority (See NAESB Appendix B for examples).*

515 3.11.2.1 *The Reliability Coordinator shall assign the amount of Constrained Facility or Flowgate relief that must be achieved by each NI transmission service or NL customers within a given Balancing Authority.*

520 3.11.2.1.1 *For each NI transmission service or NL customer, the Reliability Coordinator shall determine the amount of flow contributing to the Constrained Facility or Flowgate from those generators assigned to that customer using Generator-to-Load Distribution Factors (GLDFs) for those generators.*

525 3.11.2.1.2 *The GLDF for each generator shall determine the impact that generator has on the Constrained Facility or Flowgate.*

530 3.11.2.1.3 *The sum of the contributions to the Constrained Facility or Flowgate from all generators assigned to the NI transmission service or NL customer shall be the amount of relief assigned to that customer.*

3.11.2.1.4 *The Reliability Coordinator shall not specify how the reduction will be achieved.*

3.11.2.2 *GLDFs shall be calculated for each NI transmission service and NL customer as the Generation Shift Factors*

- 535 (GSFs) of the NI transmission service or NL customer's  
assigned generation minus its Load Shift Factors (LSFs).
- 3.11.2.2.1 GSFs shall be calculated from a single bus  
in the study case.
- 3.11.2.2.2 LSFs shall be calculated by scaling load.
- 540 3.11.2.2.3 The GLDFs must be greater than or equal to  
the Curtailment Threshold to be considered.
- 3.11.2.2.4 GLDFs whose contributions are counter to  
the constraint (i.e. counter flow) shall be  
ignored for the purposes of the calculation.
- 545 3.11.2.3 Each generator shall be assigned to a given NI  
transmission service or NL customer within a Balancing  
Authority Area for the purposes of calculating their  
contribution to a given constraint. Exceptions may  
include special cases where generators are only included  
550 for case modeling purposes.
- 3.11.2.4 For a given generator bus, all generators modeled at  
that bus shall be assumed online and operating at their  
maximum MVA value except as noted otherwise in this  
procedure.
- 555 3.11.2.4.1 At the time of calculation, daily operating  
reliability information will be used to update  
the calculation for transmission line outages,  
generator outage or derate information, and  
daily load forecasts as appropriate.
- 560 3.11.2.4.2 Only those generator buses whose aggregate  
modeled capacity exceeds 20MW shall be  
considered. Generator buses whose  
aggregate modeled capacity does not exceed  
20MW shall be excluded.
- 565 3.11.2.5 Generators shall be assigned to a given NI transmission  
service or NL customer based upon the customer's  
controlling interest in the facility and may include partial  
facilities or facilities from Balancing Authority Areas  
external to the customer's host Balancing Authority.
- 570 3.11.2.6 If the total amount of generation from the generation  
facilities assigned to a given NI transmission service or  
NL customer exceed the total load for that customer, the  
generation shall be scaled down to match that  
customer's total load.
- 575 3.11.2.7 If the total amount of generation from the generation  
facilities assigned to a given NI transmission service or  
NL customer is less than the total load for that customer,  
it shall be assumed that the imports necessary to meet  
total load are being scheduled on Point-to-point  
580 Transmission Service. Generation shall not be scaled to  
meet load in this instance.



3.11.2.8 *All NI transmission service and NL customers in the Eastern Interconnection, working with their respective Balancing Authorities, shall be obligated to achieve the amount of relief assigned to them by the Reliability Coordinator via the Per Generator Method.*

585

**1.7 IDC updates.** Any Interchange Transaction adjustments or curtailments that result from using this Procedure must be entered into the IDC.

590

**1.8 Logging.** The Reliability Coordinator shall complete the NERC Transmission Loading Relief Procedure Log (automatically performed by the IDC) whenever it invokes TLR Level 2 or above, and send a copy of the log via email to NERC (automatically performed by the IDC) within two business days of the TLR event for posting on the NERC website.

595

**1.8.1 Access to procedure logs.** Access to procedure logs shall be implemented according to *[Section 1.6 of the NAESB Transmission Loading Relief Business Practice Standard]*

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*1.6 The Reliability Coordinator shall ensure that NERC TLR logs specifying the details associated with the initiation of TLR level 2 or higher and/or the invocation of the Interconnection-wide TLR procedure are available, subject to applicable confidentiality requirements, to all market participants, regardless of the procedure used to achieve that relief.*

605

**1.9 TLR Event Review.** The Reliability Coordinator shall report the TLR event to the NERC Market Committee and Operating Reliability Subcommittee in accordance with TLR review processes established by NERC as required. [Note: References to the NERC Market Committee (only) will be removed as the Market Committee no longer exists]

610

**1.9.1. Providing information.** Transmission Operators and Balancing Authorities within the Reliability Coordinator’s Area, and all other Reliability Coordinators, including Transmission Operators and Balancing Authorities within their respective Reliability Areas, shall provide information, as requested by the initiating Reliability Coordinator, in accordance with TLR review processes established by NERC.

615

**1.9.2. Market Committee reviews.** The Market Committee may conduct reviews of certain TLR events based on the size and number of Interchange Transactions that are affected, the frequency that the TLR Procedure is called for a particular Constrained Facility, or other factors. [Note: References to the NERC Market Committee (only) will be removed as the Market Committee no longer exists]

620

**1.9.3. Operating Reliability Subcommittee reviews.** The Operating Reliability Subcommittee shall conduct reviews to ensure proper implementation and for “lessons learned.”

625

**1.10 Interchange Transaction priority when Transmission Service IS reserved on the Constrained Facility(ies) or Flowgate(s)** shall be implemented according to *[Sections 2.2, 2.2.1, 2.2.1.1, 2.2.1.2 of the NAESB Transmission Loading Relief Business Practice Standard]*. For specific examples of On Path / Off Path Mitigation please see NAESB Appendix A - Mitigating Constraints On and Off the Contract Path during TLR.

**2.2 Interchange Transaction priority when Transmission Service is reserved on the Constrained Facility(ies) or Flowgate(s).** *The Reliability Coordinator shall use the following procedure to establish the priority of an Interchange*

630 Transaction when Transmission Service is reserved on a Contract Path that includes the Constrained Facility(ies) or Flowgate(s): (See NAESB Appendix A for examples)

635 2.2.1 The Reliability Coordinator shall assign priority to the Interchange Transaction based upon the Transmission Service priority of the Transmission Service link with the Constrained Facility or Flowgate regardless of the Transmission Service priority on the other links along the Contract Path.

640 2.2.1.1 The Reliability Coordinator shall consider the entire Interchange Transaction Non-Firm if the transmission link (i.e. a segment on the Contract Path) on the Constrained Facility or Flowgate is Non-Firm Transmission Service, even if other links in the Contract Path are Firm.

645 2.2.1.2 The Reliability Coordinator shall consider the entire Interchange Transaction Firm if the transmission link on the Constrained Facility or Flowgate is Firm Transmission Service, even if other links in the Contract Path are Non-Firm.

650 1.11 Interchange Transaction priority when Transmission Service IS NOT reserved on the Constrained Facility(ies) or Flowgate(s) shall be implemented according to [Sections 2.3, 2.3.1, 2.3.1.1, 2.3.1.2 of the NAESB Transmission Loading Relief Business Practice Standard]. For specific examples of On Path / Off Path Mitigation please see NAESB Appendix A - Mitigating Constraints On and Off the Contract Path during TLR.

655 2.3 Interchange Transaction priority when Transmission Service is not reserved on the Constrained Facility(ies) or Flowgate(s). The Reliability Coordinator shall use the following procedure to establish the priority of an Interchange Transaction when Transmission Service is reserved on a Contract Path that does not include the Constrained Facility or Flowgate: (See NAESB Appendix A for examples)

660 2.3.1 The Reliability Coordinator shall assign priority to the Interchange Transaction based upon the lowest Transmission Service priority of all Transmission Service links along the Contract Path.

665 2.3.1.1 The Reliability Coordinator shall consider the entire Interchange Transaction Non-Firm if any of the transmission links on the Contract Path are Non-Firm Transmission Service.

670 2.3.1.2 The Reliability Coordinator shall consider the entire Interchange Transaction Firm if all of the transmission links on the Contract Path are Firm Transmission Service, even if none of the transmission links are on the Constrained Facility or Flowgate, and shall not be curtailed to relieve a Constraint off the Contract Path until all Non-Firm Interchange Transactions that are at or above the Curtailment Threshold have been curtailed.

675 1.12 Sub-priorities during Reallocation shall be implemented according to [Sections 2.4, 2.4.1, 2.4.2, 2.4.3 and 2.4.4 of the NAESB Transmission Loading Relief Business Practice Standard – Sub-priorities during Reallocation]. Please see descriptions located under TLR Level 3A for greater detail on Sub-Priorities.

680 **2.4 Sub-priorities during Reallocation.** *During Reallocation, the Reliability Coordinator shall utilize the following sub-priorities as established in the IDC, listed from highest priority to lowest priority, within each Non-Firm Transmission Service priority for determining how pending Interchange Transactions with equal or higher priority Transmission Service shall be loaded:*

685 **2.4.1 Sub-priority S1.** *Sub-priority S1 shall be assigned to that portion of an Interchange Transaction that is already flowing.*

690 **2.4.2 Sub-priority S2.** *Sub-priority S2 shall be assigned to that portion of an Interchange Transaction that has been curtailed or held by the Interconnection-wide TLR procedure.*

695 **2.4.3 Sub-priority S3.** *Sub-priority S3 shall be assigned to that incremental portion of an already flowing Interchange Transaction that is scheduled to increase from its current hour schedule in the upcoming hour in accordance with its energy profile, or schedules submitted prior to the implementation of the Interconnection-wide TLR procedure.*

**2.4.4 Sub-priority S4.** *Sub-priority S4 shall be assigned to a new or revised Interchange Transaction that is submitted after the Interconnection-wide TLR procedure has been declared.*

## 2. Transmission Loading Relief (TLR) Levels

### Introduction

700 This section describes the various levels of the TLR Procedure. The description of each  
level begins with the circumstances that define the TLR Level, followed by the procedures  
to be followed. The decision that a Reliability Coordinator makes in selecting a particular  
TLR Level often depends on the transmission loading condition and whether the  
Interchange Transaction is using Non-firm Point-to- Point Transmission Service or Firm  
705 Point-to-Point Transmission Service. There are further considerations that depend on  
whether the Constrained Facility is on or off the Contract Path. It is important to note that  
an Interchange Transaction using Firm Point-to-Point Transmission Service on all Contract  
Path links is considered a “firm” Interchange Transaction even if the Constrained Facility is  
off the Contract Path.

### 710 2.1. TLR Level 1 — Notify Reliability Coordinators of potential SOL or IROL

#### Violations

715 2.1.1. The Reliability Coordinator shall use the following circumstances to establish the  
need for TLR Level 1:

- The transmission system is secure.
- The Reliability Coordinator foresees a transmission or generation  
contingency or other operating problem within its Reliability Area that could  
cause one or more transmission facilities to approach or exceed their SOL or  
IROL.

720 2.1.2. **Notification procedures.** The Reliability Coordinator shall notify all Reliability  
Coordinators via the Reliability Coordinator Information System (RCIS) as soon  
as the condition is foreseen. All affected Reliability Coordinators shall check to  
ensure that Interchange Transactions are posted in the IDC.

725 2.1.3 **Treatment of Interchange Transactions during TLR Level 1.** The treatment  
of Interchange Transactions during TLR Level 1 is prescribed by [*Section 3.1 of  
the NAESB Transmission Loading Relief Business Practice Standard – Eastern  
Interconnection Procedure for Physical Curtailment of Interchange  
Transactions*]

730 3.1 *When a Reliability Coordinator has initiated a TLR level 1 (Notify all  
Reliability Coordinators of potential SOL or IROL Violations), the Reliability  
Coordinator shall take no action against any Interchange Transaction.*

**2.2. TLR Level 2 — Hold transfers at present level to prevent SOL or IROL Violations**

**2.2.1.** The Reliability Coordinator shall use the following circumstances to establish the need for entering TLR Level 2:

735

- The transmission system is secure.
- One or more transmission facilities are expected to approach, or are approaching, or are at their SOL or IROL.

**2.2.2. Holding Procedures.** Holding procedures shall be implemented during TLR Level 2 according to [Sections 3.2.2, 3.2.3, 3.2.4 and 3.2.5 of the NAESB Transmission Loading Relief Business Practice Standard]

740

**3.2.2** *The Reliability Coordinator shall hold the implementation of any additional Interchange Transactions using Non-Firm Transmission Service that are at or above the Curtailment Threshold.*

745

**3.2.3** *The Reliability Coordinator shall allow additional Interchange Transactions that flow across the Constrained Facility or Flowgate to be initiated if their flow reduces the loading on the Constrained Facility or Flowgate or has a Transfer Distribution Factor (TDF) less than the Curtailment Threshold.*

750

**3.2.4** *The Reliability Coordinator shall allow all Interchange Transactions using Firm Transmission Service to be initiated.*

755

**3.2.5** *If an Interchange Transaction is identified as a Dynamic Schedule and the Transmission Service is considered Firm according to the constrained path method, then it will not be held by the IDC during TLR level 4 or lower. Adjustments to Dynamic Schedules in accordance with the current version of NERC INT-004 will not be held under TLR level 4 or lower.*

**2.2.3.** *When a Reliability Coordinator has initiated a TLR level 2 (Hold transfers at present level to prevent SOL or IROL Violations), the Reliability Coordinator shall ensure the following actions as prescribed in [Sections 3.2.1, 3.2.1.1, and 3.2.1.2 of the NAESB Transmission Loading Relief Business Practice Standard]*

760

**3.2.1** *The Reliability Coordinator should ensure that TLR level 2 is a transient state so that Interchange Transactions are properly initiated according to their transmission reservation priority.*

765

**3.2.1.1** *The Reliability Coordinator should make best efforts possible to ensure that TLR level 2 does not exceed 30 minutes in duration.*

**3.2.1.2** *If TLR level 2 exceeds 30 minutes in duration, the Reliability Coordinator shall document this action on the NERC TLR log.*

770

**2.3. TLR Level 3A — Reallocation of Transmission Service by curtailing Interchange Transactions using Non-firm Point-to-Point Transmission Service to allow Interchange Transactions using higher priority Transmission Service**

**2.3.1.** The Reliability Coordinator shall use the following circumstances to establish the need for entering TLR Level 3A:

775

- The transmission system is secure.
- One or more transmission facilities are expected to approach, or are approaching, or are at their SOL or IROL.
- Transactions using Non-firm Point-to-Point Transmission Service are flowing that are at or above the Curtailment Threshold on those facilities.
- The Transmission Provider has previously approved a higher priority Point-to-Point Transmission Service reservation over which a Transmission Customer wishes to begin an Interchange Transaction.

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**2.3.2. TLR Level 3A** accomplishes Reallocation by curtailing Interchange Transactions using Non-firm Point-to-Point Transmission Service to allow Interchange Transactions using higher priority Non-firm or Firm Point-to-Point Transmission Service to start. When a TLR Level 3A is in effect, Reliability Coordinators shall reallocate Interchange Transactions according to the Transmission Service Priorities of the relevant Interchange Transactions. Reallocation also includes the orderly reloading of Transactions by priority when conditions permit curtailed Transactions to be reinstated. *[Section 3.3.2.2 of the NAESB Transmission Loading Relief Business Practice Standard]* states that “*The Reliability Coordinator shall only consider those Interchange Transactions at or above the Curtailment Threshold for which the Interconnection-wide TLR procedure is called.*”

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Reallocation of Interchange Transactions shall take place according to *[Sections 3.3 – 3.3.1.2 of the NAESB Transmission Loading Relief Business Practice Standard]*, as described below

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**3.3 TLR level 3A.** *When a Reliability Coordinator has initiated a TLR level 3A (Reallocation of Transmission Service by curtailing Interchange Transactions using Non-Firm Transmission Service to allow Interchange Transactions using higher priority Transmission Service to start), the Reliability Coordinator shall take the following actions:*

800

**3.3.1** *The Reliability Coordinator shall allow those Interchange Transactions using Firm Transmission Service that have been submitted prior to the NERC-approved tag submission deadline for Reallocation (as found in the current version of NERC IRO-006) to be initiated as scheduled.*

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**3.3.1.1** *The Reliability Coordinator shall hold an Interchange Transaction using Firm Transmission Service if the Interchange Transaction is submitted after the NERC-approved tag submission deadline for Reallocation during TLR level 3A, but shall allow the transaction to start in the following hour.*

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**3.3.1.2** *Reallocations for Dynamic Schedules are as follows: If an Interchange Transaction is identified as a Dynamic Schedule and the Transmission Service is considered Firm according to the constrained path method, then it will not be held by the IDC during TLR level 4 or lower. Adjustments to Dynamic Schedules in accordance with the current version of NERC INT-004 will not be held under TLR level 4 or lower.*

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820 NAESB Business Practice Standards found within NERC Sections 2.3.2.1,  
2.3.2.2, 2.3.2.3, 2.3.2.4, 2.3.2.5 and 2.3.2.6 shall apply to TLR Level 3A

**2.3.2.1. [Sections 3.3.2 and 3.3.2.3 of the NAESB Transmission Loading Relief  
Business Practice Standard]**

825 **3.3.2** *The Reliability Coordinator with the constraint shall consider for  
curtailment those Interchange Transactions using lower priority  
Non-Firm Transmission Service as specified in Requirement 2,  
“Interchange Transaction Priorities for use with Interconnection-  
wide TLR procedures” to allow higher priority Transmission  
Service schedules to start.*

830 **3.3.2.3** *The Reliability Coordinator shall displace Interchange  
Transactions utilizing lower priority Transmission Service with  
Interchange Transactions utilizing higher priority Non-Firm or  
Firm Transmission Service.*

**2.3.2.2. [Section 3.3.2.4 of the NAESB Transmission Loading Relief Business  
Practice Standard]**

835 **3.3.2.4** *The Reliability Coordinator shall not curtail Interchange  
Transactions using Non-Firm Transmission Service to allow the  
initiation or increase of another transaction having the same  
Non-Firm Transmission Service priority.*

**2.3.2.3. [Section 3.3.2.5 of the NAESB Transmission Loading Relief Business  
Practice Standard]**

840 **3.3.2.5** *If all Interchange Transactions using Non-Firm Transmission  
Service have been curtailed and there are additional requests to  
allow Interchange Transactions using Firm Transmission Service  
to begin that cannot be accommodated without violating an  
SOL/IROL, the Reliability Coordinator shall initiate TLR level 4  
or level 5A, as appropriate.*

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**2.3.2.4. [Sections 3.3.2.6 of the NAESB Transmission Loading Relief Business  
Practice Standard]**

850 **3.3.2.6** *The Reliability Coordinator shall reload curtailed Interchange  
Transactions prior to starting new or increasing existing  
Interchange Transactions.*

**2.3.2.4.1 [Sections 3.3.2.6.1 of the NAESB Transmission Loading Relief  
Business Practice Standard]**

855 **3.3.2.6.1** *Interchange Transactions that were submitted prior  
to the initiation of the Interconnection-wide TLR  
procedure but were subsequently held from starting  
because they failed to meet the NERC-approved tag  
submission deadline for Reallocation during TLR  
level 3A or were held over from a TLR level 2, shall  
be considered to have been curtailed and thus would  
be eligible for reload at the same time as the  
curtailed Interchange Transaction.*

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**2.3.2.5. [Sections 3.3.3 and 3.3.3.1 of the NAESB Transmission Loading Relief  
Business Practice Standard]**

865 **3.3.3** *The Reliability Coordinator shall consider for Reallocation and/or  
reload Interchange Transactions that have been held or curtailed*

*as prescribed in this business practice standard according to their Transmission Service priorities when operating conditions permit.*

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**3.3.3.1** *The Reliability Coordinator shall fill available transmission capability by reloading or starting eligible Transactions using the Sub-priorities assigned in Requirements 2.4.1 through 2.4.4. In case all of the transactions in a sub-priority cannot be reloaded, the transactions in that sub-priority shall be loaded based on a pro rata basis by allocating the remaining available transmission capability in proportion to the scheduled amount.*

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**2.3.2.6** *[Sections 3.3.2.1 and 3.3.2.1.1 of the NAESB Transmission Loading Relief Business Practice Standard]*

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**3.3.2.1** *The Reliability Coordinator shall consider only those Interchange Transactions that have been submitted prior to the NERC-approved tag submission deadline for Reallocation during TLR level 3A for the upcoming hour.*

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**3.3.2.1.1** *Interchange Transactions submitted after this deadline shall be considered for Reallocation for the following hour. This applies to Interchange Transactions using either Non-firm Transmission Service or Firm Transmission Service. If an Interchange Transaction using Firm Transmission Service is submitted after the NERC-approved tag submission deadline and after the TLR is declared, that Transaction shall be held and then allowed to start in the upcoming hour.*

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**2.3.2.7** *Sub-Priority Consideration in TLR 3A shall be implemented as described in [Sections 3.3.5, 3.3.5.1, 3.3.5.2, 3.3.5.3 and 3.3.5.4 of the NAESB Transmission Loading Relief Business Practice Standard] and depicted in the Sub-Priority Table that follows.*

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**3.3.5** *In considering transactions using Non-Firm Transmission Service for curtailment and/or Reallocation, the Reliability Coordinator shall consider transaction sub-priorities as follows:*

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**3.3.5.1** *Interchange Transactions with sub-priority S1 shall be allowed to continue flowing at the lesser of its current hour MW level or the MW level specified in the schedule for the upcoming hour. For calculated values less than zero, zero shall be used.*

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**3.3.5.2** *Interchange Transactions with sub-priority S2 shall be allowed to reload to the lesser of its current hour MW level or the MW level specified in the schedule for the upcoming hour. For calculated values less than zero, zero shall be used.*

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**3.3.5.3** *Interchange Transactions with sub-priority S3 shall be allowed to increase from its current hour MW level to the MW level specified in its schedule for the upcoming hour. For calculated values less than zero, zero shall be used.*

915

**3.3.5.4** *Interchange Transactions with sub-priority S4 shall be allowed to start once all other Interchange Transactions*



*with the same Transmission Service priority submitted prior to the initiation of the Interconnection-wide TLR procedure have been (re-)loaded.*

<b>Priority</b>	<b>Purpose</b>	<b>Explanation and Conditions</b>
S1	To allow a flowing Interchange Transaction to maintain or reduce its current MW amount in accordance with its energy profile.	The MW amount is the lowest between currently flowing MW amount and the next-hour schedule. The currently flowing MW amount is determined by the e-tag ENERGY PROFILE and ADJUST tables. If the calculated amount is negative, zero is used instead.
S2	To allow a flowing Interchange Transaction that has been curtailed or halted by TLR to reload to the <i>lesser</i> of its current-hour MW amount or next-hour schedule in accordance with its energy profile.	The Interchange Transaction MW amount used is determined through the e-tag ENERGY PROFILE and ADJUST tables. If the calculated amount is negative, zero is used instead.
S3	To allow a flowing Transaction to increase from its current-hour schedule to its next-hour schedule in accordance with its energy profile.	The MW amounts used in this sub-priority is determined by the e-tag ENERGY PROFILE table. If the calculated amount is negative, zero is used instead.
S4	To allow a Transaction that had never started and was submitted to the Tag Authority after the TLR (level 2 or higher) has been declared to begin flowing (i.e., the Interchange Transaction never had an active MW and was submitted to the IDC <i>after</i> the first TLR Action of the TLR Event had been declared.)	The Transaction would not be allowed to start until all other Interchange Transactions submitted prior to the TLR with the same priority have been (re)loaded. The MW amount used <del>is the</del> in this sub-priority is the next-hour schedule determined by the e-tag ENERGY PROFILE table.

**2.4. TLR Level 3B — Curtail Interchange Transactions using Non-Firm Transmission Service Arrangements to mitigate a SOL or IROL Violation**

**2.4.1.** The Reliability Coordinator shall use the following circumstances to establish the need for entering TLR Level 3B:

- 925 • One or more transmission facilities are operating above their SOL or IROL,  
or
- Such operation is imminent and it is expected that facilities will exceed their reliability limit unless corrective action is taken, or
- 930 • One or more Transmission Facilities will exceed their SOL or IROL upon the removal from service of a generating unit or another transmission facility.
- Transactions using Non-firm Point-to-Point Transmission Service are flowing that are at or above the Curtailment Threshold on those facilities.

**2.4.2. Curtailment Procedures to mitigate an SOL or IROL.** *[The Introduction to Section 3.4 of the NAESB Transmission Loading Relief Business Practice Standard] states, “When a Reliability Coordinator has initiated a TLR level 3B (curtail Interchange Transactions using Non-Firm Transmission Service arrangements to mitigate a SOL or IROL violation), the Reliability Coordinator shall take the following actions” according to [Sections 3.4.1, 3.4.1.1, 3.4.1.2, 3.4.2, 3.4.3 and 3.4.4 of the NAESB Transmission Loading Relief Business Practice Standard]*

**3.4.1** *The Reliability Coordinator shall allow Interchange Transactions using Firm Transmission Service to start if they are submitted prior to the NERC-approved tag submission deadline during TLR level 3B.*

**3.4.1.1** *The Reliability Coordinator shall only consider those Interchange Transactions at or above the Curtailment Threshold for which the Interconnection-wide TLR procedure is called.*

**3.4.1.2** *Reallocations for Dynamic Schedules are as follows: If an Interchange Transaction is identified as a Dynamic Schedule and the Transmission Service is considered Firm according to the constrained path method, then it will not be held by the IDC during TLR level 4 or lower. Adjustments to Dynamic Schedules in accordance with the current version of NERC INT-004 will not be held under TLR level 4 or lower.*

**3.4.2** *To mitigate a SOL or IROL in the current hour, the Reliability Coordinator shall curtail Interchange Transactions using Non-Firm Transmission Service that are at or above the Curtailment Threshold as defined in Section 3.10 and use the Interchange Transaction priorities as specified in Requirement 2 “Interchange Transaction Priorities for use with Interconnection-wide TLR procedures.”*

**3.4.3** *To continue mitigation of the SOL or IROL for the beginning of the next hour, the Reliability Coordinator shall curtail additional Interchange Transactions using Non-Firm Transmission Service to provide transmission capacity for Interchange Transactions using Firm Transmission Service or Interchange Transaction using higher priority Non-Firm Transmission Service utilizing the Reallocation procedures as specified in Requirement 3.3.*

**3.4.4** *If all Interchange Transactions using Non-Firm Transmission Service have been curtailed and there are additional requests to allow Interchange Transactions using Firm Transmission Service to begin that cannot be*

970 *accommodated without violating an SOL/IROL, the Reliability Coordinator shall initiate TLR level 4, level 5A, or level 5B as appropriate.*

**2.4.3 Interchange Transaction Curtailments During TLR 3B**

975 TLR Level 3B curtails Interchange Transactions using Non-firm Point-to-Point Transmission Service that are at or above the Curtailment Threshold in the current hour while Reallocating to a determined flow for the top of the next hour.

**2.4.3.1** The Reliability Coordinator shall Reallocate Interchange Transactions using Non-firm Point-to-Point Transmission Service in accordance with Section 6 of this document for the next hour to maintain the desired flow using Reallocation in accordance with the following timing specification:

980 **2.4.3.1.1** If issued prior to XX: 25, Non-firm Interchange Transactions will be curtailed to meet the desired current hour relief

**2.4.3.1.1.1** At XX: 25 a Reallocation will be performed to maintain the desired flow at the top of the following hour

985 **2.4.3.1.2** If issued after XX: 25, Non firm Interchange Transactions will be curtailed to meet the desired current hour relief and a Reallocation will be performed to maintain the target flow identified for the current hour.

990 **2.4.3.1.3** Transactions must be in the IDC by the Approved-tag Submission Deadline for Reallocation (see IDC Reference Document).

## 2.5. TLR Level 4 — Reconfigure Transmission

995 2.5.1. The Reliability Coordinator shall use the following circumstances to establish the need for entering TLR Level 4:

- One or more Transmission Facilities are above their SOL or IROL, or
- Such operation is imminent and it is expected that facilities will exceed their reliability limit unless corrective action is taken.

1000 2.5.2. **Holding new Interchange Transactions.** The holding of new Interchange Transactions shall be performed as described in [Sections 3.5, 3.5.1, 3.5.2 and 3.5.2.1 of the NAESB Transmission Loading Relief Business Practice Standard]

3.5 When a Reliability Coordinator has initiated a TLR level 4 (Reconfigure Transmission), the Reliability Coordinator shall take the following actions:

1005 3.5.1 The Reliability Coordinator shall hold (not implement) all new Interchange Transactions using Non-Firm Transmission Service that are at or above the Curtailment Threshold.

3.5.2 The Reliability Coordinator shall allow Interchange Transactions using Firm Transmission Service to start if they are submitted prior to the NERC-approved tag submission deadline during TLR level 3B.

1010 3.5.2.1 If an Interchange Transaction is identified as a Dynamic Schedule and the Transmission Service is considered Firm according to the constrained path method, then it will not be held by the IDC during TLR level 4 or lower. Adjustments to Dynamic Schedules in accordance with the current version of NERC INT-004 will not be held under TLR level 4 or lower.

1015 2.5.3. **Reconfiguration procedures.** The issuance of a TLR Level 4 shall result in the curtailment, in the current hour and the next hour, of all Interchange Transactions using Non-firm Point-to-Point Transmission Service that are at or above the Curtailment Threshold that impact the Constrained Facilities. If a SOL or IROL violation is imminent or occurring, the Reliability Coordinator(s) shall request that the affected Transmission Operators reconfigure transmission on their system, or arrange for reconfiguration on other transmission systems, to mitigate the constraint. Specific details are explained in NAESB Appendix A - Mitigating Constraints On and Off the Contract Path during TLR.

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**2.6. TLR Level 5A — Reallocation of Transmission Service by curtailing Interchange Transactions using Firm Point-to-Point Transmission Service on a pro rata basis to allow additional Interchange Transactions using Firm Point-to-Point Transmission Service**

- 1030 **2.6.1.** The Reliability Coordinator shall use the following circumstances to establish the need for entering TLR Level 5A:
- The transmission system is secure.
  - One or more transmission facilities are at their SOL or IROL.
  - All Interchange Transactions using Non-firm Point-to-Point Transmission Service that are at or above the Curtailment Threshold have been curtailed.
  - The Transmission Provider has been requested to begin an Interchange Transaction using previously arranged Firm Transmission Service that would result in a SOL or IROL violation.
  - No further transmission reconfiguration is possible or effective.
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- 1040 **2.6.2. Reallocation Procedures to allow new Interchange Transactions using Firm Point-to-Point Transmission to Start.** Reallocation Procedures (a 3 Step Process) to allow new Interchange Transactions using Firm Point-to-Point Transmission to Start shall be implemented according to [*Sections 3.6, 3.6.1 and 3.6.2 of the NAESB Transmission Loading Relief Business Practice Standard*].
- 1045 **3.6 TLR level 5A.** *When a Reliability Coordinator has initiated a TLR level 5A, the Reliability Coordinator shall allow additional Interchange Transactions using Firm Transmission Service to be implemented after all Interchange Transactions using Non-Firm Transmission Service have been curtailed. The Reliability Coordinator shall reallocate Transmission Service by curtailing on a pro rata basis Interchange Transactions using Firm Transmission Service to allow additional Interchange Transactions using Firm Transmission Service to start on a pro rata basis. These actions shall be taken in accordance with the NERC-approved tag submission deadline for Reallocation. The Reliability Coordinator shall hold an Interchange Transaction using Firm Transmission Service if the Interchange Transaction is submitted after the NERC-approved tag submission deadline for Reallocation during TLR level 5A, but shall allow the transaction to start in the following hour.*
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- 1055
- 1060 **3.6.1** *The Reliability Coordinator shall only consider those Interchange Transactions at or above the Curtailment Threshold for which the Interconnection-wide TLR procedure is called.*
- 3.6.2** *The Reliability Coordinator shall use the following process for reallocation of Interchange Transactions using Firm Transmission Service:*
- 1065 **2.6.2.1. Step 1 (Sections 3.6.2.1 and 3.6.2.1.1 of NAESB Transmission Loading Relief Business Practice)**
- 3.6.2.1** *The Reliability Coordinator shall assist the Transmission Operator(s) in identifying known re-dispatch options that are available to the Transmission Customer that will mitigate the loading on the Constrained Facilities or Flowgates.*
- 1070 **3.6.2.1.1** *If such re-dispatch options are deemed insufficient to mitigate loading on the Constrained Facilities or Flowgates, the Reliability Coordinator shall continue to implement these re-dispatch options while*

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*simultaneously implementing other actions as described in this requirement.*

**2.6.2.2. Step 2 (Section 3.6.2.2 of NAESB Transmission Loading Relief Business Practice)**

*3.6.2.2 The Reliability Coordinator shall calculate the percent of the overload on the Constrained Facility or Flowgate caused by Interchange Transactions utilizing Firm Transmission Service that are at or above the Curtailment Threshold and the Transmission Provider's Native Load and untagged Network Integration Transmission Service, as required by the Transmission Provider's filed tariff and as described in NAESB Requirement 3.11, "Parallel flow calculation procedure for reallocating or curtailing Firm Transmission Service." [Found in this Document in NERC Section 1.6.7]*

**2.6.2.3. Step 3 (Sections 3.6.2.3, 3.6.2.3.1, and 3.6.2.3.2 of NAESB Transmission Loading Relief Business Practice)**

*3.6.2.3 The Reliability Coordinator shall curtail or reallocate Interchange Transactions utilizing Firm Transmission Service and ask for relief from the Transmission Provider's Native Load and untagged Network Integration Transmission Service as identified in requirement 3.6.2.2 to allow the start of additional Interchange Transactions utilizing Firm Transmission Service provided those transactions were submitted in accordance to the NERC-approved tag submission deadline for Reallocation during TLR level 5A.*

*3.6.2.3.1 The Reliability Coordinator shall assist the Transmission Provider in curtailing Transmission Service to Network Integration Transmission Service customers and Native Load if such curtailments are required by the Transmission Provider's tariff.*

*3.6.2.3.2 The Reliability Coordinator will assist the Transmission Provider to ensure that available re-dispatch options will continue to be implemented.*

**2.6.3** The Reliability Coordinator shall direct the curtailment of Interchange Transactions using Firm Transmission Service that are at or above the Curtailment Threshold for the following TLR Levels:

**2.6.3.1. TLR Level 5A.** Enable additional Interchange Transactions using Firm Point-to-Point Transmission Service to be implemented after all Interchange Transactions using Non-firm Point-to-Point Service have been curtailed

**2.7. TLR Level 5B — Curtail Interchange Transactions using Firm Point-to-Point Transmission Service (a 3 Step Process) to mitigate an SOL or IROL violation**

**2.7.1.** The Reliability Coordinator shall use following circumstances to establish the need for entering TLR Level 5B:

- 1120 • One or more Transmission Facilities are operating above their SOL or IROL, or
- Such operation is imminent, or
- One or more Transmission Facilities will exceed their SOL or IROL upon the removal from service of a generating unit or another transmission facility.
- 1125 • All Interchange Transactions using Non-firm Point-to-Point Transmission Service that are at or above the Curtailment Threshold have been curtailed.
- No further transmission reconfiguration is possible or effective.

**2.7.2.** [Sections 3.7 and 3.7.1 of NAESB Transmission Loading Relief Business Practice]

1130 **3.7 TLR level 5B.** When a Reliability Coordinator has initiated a TLR level 5B (curtail Interchange Transactions using Firm Transmission Service to mitigate a SOL or IROL violation), the Reliability Coordinator shall take the following actions:

1135 **3.7.1** The Reliability Coordinator shall use the following process for curtailment of Interchange Transactions using Firm Transmission Service:

**2.7.2.1. Step 1 (Sections 3.7.1.1 and 3.7.1.1.1 of the NAESB Transmission Loading Relief Business Practice Standard)**

1140 **3.7.1.1** The Reliability Coordinator shall assist the Transmission Operator(s) in identifying those known re-dispatch options that are available to the Transmission Customer that will mitigate the loading on the Constrained Facilities or Flowgates.

1145 **3.7.1.1.1** If such re-dispatch options are deemed insufficient to mitigate loading on the Constrained Facilities or Flowgates, the Reliability Coordinator shall continue to implement these re-dispatch options while simultaneously implementing other actions as described in this requirement.

1150 **2.7.2.2. Step 2 (Sections 3.7.1.2 of NAESB Transmission Loading Relief Business Practice)**

1155 **3.7.1.2** The Reliability Coordinator shall calculate the percent of the overload on the Constrained Facility or Flowgate caused by Interchange Transactions utilizing Firm Transmission Service that are at or above the Curtailment Threshold and the Transmission Provider's Native Load and untagged Network Integration Transmission Service, as required by the Transmission Provider's filed tariff and as described in NAESB Requirement 3.11, "Parallel flow calculation procedure for reallocating or curtailing Firm Transmission Service." [Found

1160 in this Document in NERC Section 1.6.7]

**2.7.2.3. Step 3 (Sections 3.7.1.3 and 3.7.1.3.1, and 3.7.1.3.2 of NAESB Transmission Loading Relief Business Practice)**

1165 **3.7.1.3** *The Reliability Coordinator shall curtail Firm Interchange Transactions utilizing Firm Transmission Service and shall ask for relief from the Transmission Provider's Native Load and untagged Network Integration Transmission Service as calculated in requirement 3.7.1.2 until the SOL or IROL violation has been mitigated.*

1170 **3.7.1.3.1** *The Reliability Coordinator will assist the Transmission Provider to ensure that available re-dispatch options will continue to be implemented.*

1175 **3.7.1.3.2** *The Reliability Coordinator shall assist the Transmission Provider in curtailing Transmission Service to Native Load and untagged Network Integration Transmission Service customers if such curtailments are required by the Transmission Provider's tariff.*

1180 **2.7.3** The Reliability Coordinator shall direct the curtailment of Interchange Transactions using Firm Transmission Service that are at or above the Curtailment Threshold for the following TLR Levels:

1185 **2.7.3.1. TLR Level 5B.** Mitigate a SOL or IROL violation that remains after all Interchange Transactions using Non-firm Transmission Service has been curtailed under TLR Level 3B, and following attempts to reconfigure transmission under TLR Level 4.



## 2.8. TLR Level 6 — Emergency Procedures

1190 2.8.1. The Reliability Coordinator shall use following circumstances to establish the need for entering TLR Level 6:

- One or more Transmission Facilities are above their SOL or IROL.
- One or more Transmission Facilities will exceed their SOL or IROL upon the removal from service of a generating unit or another transmission facility.

1195 2.8.2. **Implementing emergency procedures.** If the Reliability Coordinator deems that transmission loading is critical to Bulk Electric System reliability, the Reliability Coordinator shall immediately direct the Balancing Authorities and Transmission Operators in its Reliability Area to redispatch generation, or reconfigure transmission, or reduce load to mitigate the critical condition until Interchange Transactions can be reduced utilizing the TLR Procedures or other procedures to return the system to a secure state. All Balancing Authorities and Transmission Operators shall comply with all requests from their Reliability Coordinator.

1200 2.8.3 **All Parties to Comply** as described in [*Section 3.8 of the NAESB Transmission Loading Relief Business Practice Standard*]

1205 3.8 *When a Reliability Coordinator initiates a TLR level 6 (emergency conditions), all parties shall comply with the Reliability Coordinator's (s') requests to return the system to a secure state.*

**2.9. TLR Level 0 — TLR concluded**

1210 **2.9.1. Interchange Transaction restoration and notification procedures.** The Reliability Coordinator initiating the TLR Procedure shall notify all Reliability Coordinators within the Interconnection via the RCIS when the SOL or IROL violations are mitigated and the system is in a reliable state, allowing Interchange Transactions to be reestablished at its discretion. Those with the highest transmission priorities shall be re-established first if possible.

1215 **2.9.2 Notification of Affected Parties.** Notification of affected parties shall include notification prescribed in [*Sections 3.9 and 3.9.1 of the NAESB Transmission Loading Relief Business Practice Standard*]

*3.9 The Reliability Coordinator shall notify all affected parties when the Reliability Coordinator has returned the system to a reliable state.*

1220 *3.9.1 The Reliability Coordinator shall re-establish Interchange Transactions at its discretion. Those with the highest transmission priorities shall be re-established first, as described in NAESB Requirement 2.1, as practicable.*

**3. Interchange Transaction Curtailment Order for use in TLR Procedures**

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The specific TLR components of former Section 3 have been moved to their respective TLR Level descriptions within Sections 1 and 2 of Attachment 1 in this document.

**4. Mitigating Constraints On and Off the Contract Path during TLR**

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The discussion of On Contract Path / Off Contract Path has been moved to NAESB Appendix A – Mitigating Constraints On and Off the Contract Path during TLR.

**5. Parallel Flow Calculation Procedure for Reallocating or Curtailing Firm Transmission Service during TLR**

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Section 5 is now contained in NAESB Appendix B and to Section 1.6.7 of Attachment 1 in this document.

**6. Interchange Transaction Reallocation During TLR Levels 3A and 5A**

Information formerly shown in this section is now included under Section 3.3 – TLR 3A and Section 3.6 – TLR 5A, or is contained in the IDC Reference Document.

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**7. Interchange Transaction Curtailments during TLR Level 3B**

Information formerly shown in this section is now included under Sections 2.4.1, 2.4.2 and 2.4.3 – TLR 3B in Attachment 1 or is contained in the IDC Reference Document.

1245 **Appendices for Transmission Loading Relief Standard**

Appendix A. Transaction Management and Curtailment Process. (See NERC Appendix A)

Appendix B. Transaction Curtailment Formula. (See NAESB Appendix C)

Appendix C. Sample NERC Transmission Loading Relief Procedure Log. (Removed - Obsolete)

1250 Appendix D. Examples for Parallel Flow Calculation Procedure for Reallocating or Curtailing Firm Transmission Service. (See NAESB Appendix B)

Appendix E. How the IDC Handles Reallocation. (See IDC Reference Document Under Tab 4 – Reference/Support Documents)

Section E1: Summary of IDC Features that Support Transaction Reloading/Reallocation.

1255 Section E2: Timing Requirements. (See IDC Reference Document Under Tab 4 – Reference/Support Documents)

Section E2: Sub-Priorities. (See Section 3.3.5, and its sub-parts, of the NAESB Business Practice Standard)

1260 Appendix F. Considerations for Interchange Transactions using Firm Point-to-Point Transmission Service. (See IDC Reference Document Under Tab 4 – Reference/Support Documents)

Appendix G. Examples of On-Path and Off-Path Mitigation. (NAESB Appendix A)

## [TAB 4 – GLOSSARY / DEFINITIONS OF TERMS USED]

### 1265 Glossary of Terms / Definitions:

[NOTE: Source is noted following each definition]

1270 **Approval Entity** – An entity that has approval rights for an Interchange Transaction Tag. This includes Transmission Service Providers (TSPs), Balancing Authorities (BAs), Purchasing-Selling Entities (PSEs), and Load Serving Entities (LSEs) involved in the Interchange Transaction. *[Definition Section - NAESB Business Practice Standard]*

**Area Control Error (ACE)** – The instantaneous difference between a Balancing Authority’s net actual and scheduled interchange, taking into account the effects of Frequency Bias and correction for meter error. *[Definition Section - NAESB Business Practice Standard]*

1275 **Automatic Generation Control (AGC)** – Equipment that automatically adjusts generation in a Balancing Authority Area from a central location to maintain the Balancing Authority’s interchange schedule plus Frequency Bias. AGC may also accommodate automatic inadvertent payback and time error correction. *[Definition Section - NAESB Business Practice Standard]*

1280 **Balancing Authority (BA)** – The entity responsible for integrating resource plans ahead of time, maintaining load-interchange-generation balance within a Balancing Authority Area, and supporting Interconnection frequency in real time. *[Definition Section - NAESB Business Practice Standard]*

1285 **Balancing Authority Area (BAA)** - An electrical system bounded by Interconnection (tie-line) metering and telemetry, where the Balancing Authority controls (either directly or by contract) generation to maintain its Interchange Schedule with other Balancing Authority Areas and contributes to frequency regulation of the Interconnection. *[Definition Section - NAESB Business Practice Standard]*

1290 **Bulk Electric System** – The electrical generation resources, transmission lines, interconnections with neighboring systems, and associated equipment, generally operated at voltages of 100 kV or higher. Radial transmission facilities serving only load with one transmission source are generally not included in this definition. *[Definition Section - NAESB Business Practice Standard]*

**Constrained Facility** – A transmission facility (line, transformer, breaker, etc.) that is approaching, is at, or is beyond its SOL or IROL. *[Definition Section - NAESB Business Practice Standard]*

1295 **Constrained Flowgate** - A Flowgate that is approaching, is at, or is beyond System Operating Limits (SOL) or Interconnection Reliability Operating Limits (IROL). *[Definition Section - NAESB Business Practice Standard]*

**Constraint** – A limitation placed on Interchange Transactions that flow over a Constrained Facility or Flowgate. *[Definition Section - NAESB Business Practice Standard]*

1300 **Contract Path** - A predetermined Transmission Service electrical path between contiguous Transmission Service Providers established for scheduling and commercial settlement purposes that represents the continuous flow of electrical energy between the parties to a transaction. *[Definition Section - NAESB Business Practice Standard]*

1305 **Curtailment Threshold** – The minimum Transfer Distribution Factor which, if exceeded, will subject an Interchange Transaction to curtailment to relieve a transmission facility Constraint. *[Definition Section - NAESB Business Practice Standard]*

- 1310 **Dynamic Schedule** – A telemetered reading or value that is updated in real time and used as a schedule in the AGC/ACE equation and the integrated value of which is treated as a schedule for interchange accounting purposes. Commonly used for scheduling jointly owned generation to or from another Balancing Authority Area. *[Definition Section - NAESB Business Practice Standard]*
- 1315 **Firm Transmission Service** - The highest quality service offered to customers under a filed rate schedule that anticipates no planned interruption. Firm Transmission Service includes Firm Point-to-point Transmission Service and Firm Network Integration Transmission Service. *[Definition Section - NAESB Business Practice Standard]*
- Flowgate** – A designated point of the transmission system through which the Interchange Distribution Calculator calculates the power flow from Interchange Transactions. *[Definition Section - NAESB Business Practice Standard]*
- 1320 **Frequency Bias** – A value, usually expressed in megawatts per 0.1 hertz (MW/0.1 Hz), associated with a Balancing Authority Area that approximates the Balancing Authority Area’s response to Interconnection and frequency error. *[Definition Section - NAESB Business Practice Standard]*
- 1325 **Generation Shift Factor (GSF)** – A factor to be applied to a generator’s expected change in output to determine the amount of flow contribution that change in output will impose on an identified transmission facility or monitored Flowgate. *[Definition Section - NAESB Business Practice Standard]*
- Generator-to-Load Distribution Factor (GLDF)** - The algebraic sum of a GSF and an LSF to determine to total impact of an Interchange Transaction on an identified transmission facility or monitored Flowgate. *[Definition Section - NAESB Business Practice Standard]*
- 1330 **Interchange Distribution Calculator (IDC)** – The mechanism used by Reliability Coordinators in the Eastern Interconnection to calculate the distribution of Interchange Transactions over specific transmission interfaces, which are known as “Flowgates.” It includes a database of all Interchange Transactions and a matrix of the Distribution Factors for the Eastern Interconnection. *[Definition Section - NAESB Business Practice Standard]*
- 1335 **Interchange Transaction** - A transaction that crosses one or more Balancing Authorities’ boundaries. The planned energy exchange between two adjacent Balancing Authorities. *[Definition Section - NAESB Business Practice Standard]*
- 1340 **Interchange Transaction Tag (Tag)** – An Interchange Transaction being submitted for implementation according to NERC “Electronic Tagging Functional Specification”, version 1.7.095. *[Definition Section - NAESB Business Practice Standard]*
- Interconnection** – Any one of the three major electric system networks in North America: Eastern, Western, and ERCOT. *[Definition Section - NAESB Business Practice Standard]*
- 1345 **Interconnection Reliability Operating Limit (IROL)** – The value (such as MW, MVar, Amperes, Frequency or Volts) derived from, or a subset of, the System Operating Limit, which if exceeded, could expose a widespread area of the Bulk Electric System to instability, uncontrolled separation(s) or cascading outages. *[Definition Section - NAESB Business Practice Standard]*
- 1350 **Load Shift Factor (LSF)** - A factor to be applied to a load’s expected change in demand to determine the amount of flow contribution that change in demand will impose on an identified transmission facility or monitored Flowgate. *[Definition Section - NAESB Business Practice Standard]*

- 1355 **Native Load (NL)** - The demand imposed on an electric utility or an entity by the requirements of all customers located within a franchised service territory that the electric utility or entity has statutory or contractual obligation to serve. *[Definition Section - NAESB Business Practice Standard]*
- NERC** – North American Electric Reliability Council *[Definition Section - NAESB Business Practice Standard]*
- 1360 **Network Integration (NI) Transmission Service** – As specified in the Transmission Service Provider’s tariff, service that allows an electric Transmission Customer to integrate, plan, economically dispatch and regulate its network resources in a manner comparable to that in which the transmission owner serves Native Load customers. *[Definition Section - NAESB Business Practice Standard]*
- 1365 **Non-Firm Transmission Service** - As specified in the Transmission Service Provider’s tariff, transmission service that is reserved and scheduled on an as-available basis and is subject to curtailment or interruption, and has less priority than Firm Transmission. *[Definition Section - NAESB Business Practice Standard]*
- 1370 **Per Generator Method** – A methodology used by the IDC to calculate the portion of parallel flows on any Constrained Facility or Flowgate due to Network Integrated (NI) transmission service customers and service to Native Load (NL) customers for each Balancing Authority. *[Definition Section - NAESB Business Practice Standard]*
- Point-to-point (PTP) Transmission Service** - As specified in the Transmission Service Providers tariff, Transmission Service reserved and/or scheduled between specified points of receipt and delivery. *[Definition Section - NAESB Business Practice Standard]*
- 1375 **Purchasing-Selling Entity (PSE)** – The entity that purchases or sells and takes title to energy capacity and interconnected operations services. PSE’s may be affiliated or unaffiliated merchants and may and may not own generating facilities. *[Definition Section - NAESB Business Practice Standard]*
- 1380 **Reliability Coordinator Information System (RCIS)** –The system that Reliability Coordinators use to post messages and share operating information in real time. *[Definition Section - NAESB Business Practice Standard]*
- Reallocation** – The process used to totally or partially curtail Transactions during TLR levels 3A, 3B or 5A events to allow Transactions using equal or higher priority to be implemented. *[Definition Section - NAESB Business Practice Standard]*
- 1385 **Reliability Area** - The collection of generation, transmission, and loads within the boundaries of a Reliability Coordinator. Its boundary coincides with one or more Balancing Authority Areas. *[Definition Section - NAESB Business Practice Standard]*
- 1390 **Reliability Coordinator (RC)** - An entity that provides the security assessment and emergency operations coordination for a group of Balancing Authorities, Transmission Service Providers, and Transmission Operators. *[Definition Section - NAESB Business Practice Standard]*
- Sink Balancing Authority** - The Balancing Authority in which the load (Sink) is located for an Interchange Transaction. (This will also be a receiving Balancing Authority for the resulting Interchange Schedule). *[Definition Section - NAESB Business Practice Standard]*
- 1395 **System Operating Limit (SOL)** - The value (such as MW, MVar, Amperes, Frequency or Volts) that satisfies the most limiting of the prescribed operating criteria for a specified system configuration to ensure operation within acceptable reliability criteria. System Operating Limits

are based upon certain operating criteria. *[Definition Section - NAESB Business Practice Standard]*

**Tie Facility(ies)** – The transmission facility(ies) interconnecting Balancing Authority Areas. *[Definition Section - NAESB Business Practice Standard]*

1400 **Transfer Distribution Factor (TDF)** - The portion of an Interchange Transaction, expressed in percent that flows across a transmission facility (Flowgate). *[Definition Section - NAESB Business Practice Standard]*

1405 **Transmission Customer** - Any eligible customer (or its designated agent) that can or does execute a transmission service agreement or can or does receive transmission service. *[Definition Section - NAESB Business Practice Standard]*

**Transmission Loading Relief (TLR)** - A procedure used in the Eastern Interconnection to relieve potential or actual loading on a Constrained Facility or Flowgate. *[Definition Section - NAESB Business Practice Standard]*

1410 **Transmission Operator** – The entity that operates or directs the operations of transmission facilities. *[Definition Section - NAESB Business Practice Standard]*

**Transmission Service** – Services needed to move energy from a receipt point to a delivery point provided to Transmission Customers by Transmission Service Providers. *[Definition Section - NAESB Business Practice Standard]*

1415 **Transmission Service Provider (TSP) or Transmission Provider (TP)** - The entity that administers the transmission tariff and provides transmission services to qualified Transmission Customers under applicable transmission service agreements. *[Definition Section - NAESB Business Practice Standard]*



## IDC Reference Document

### Section A How the IDC Handles Reallocation

1425 The IDC algorithms reflect the reallocation and reloading principles presented in this Reference Documentation, as well as the reporting requirements, and status display. The IDC will obtain the tag submittal time from the tag authority, and post the reloading/reallocation information to the NERC TLR site.

1430 Section C (IDC Features that Support Transaction Reloading/Reallocation) provides a summary of IDC features that support the reallocation process, and Section D (Timing Requirements) provides the details on the interface and display features. Refer to Version 1.7.095 NERC Transaction Information Systems Working Group (TISWG) Electronic Tagging Functional Specification for details about the E-Tag system.

1435

### Section B Communication and Timing Requirements to Support Reallocation

1440 This section covers the communication and timing requirements to support reallocation during TLR Levels 3A and 5A. It should be noted that calling a TLR 3A does not necessarily mean that Interchange Transactions using Non-firm Transmission Service will always be curtailed the next hour. However, TLR Levels 3A and 5A trigger the approved tag submission deadline for Reallocation requirements and allow for a coordinated assessment of all Interchange Transactions tagged to start the upcoming hour.

1445 The following timeline shall be utilized to support reallocation decisions during TLR Levels 3A or 5A. See Figures 2 and 3 for a depiction of the reallocation time line.

1450 1. **Time Convention.** In this section, the beginning of the current hour shall be referenced as 00:00. The beginning of the next hour shall be referenced as 01:00. The end of the next hour shall be referenced as 02:00. See Figure 1.

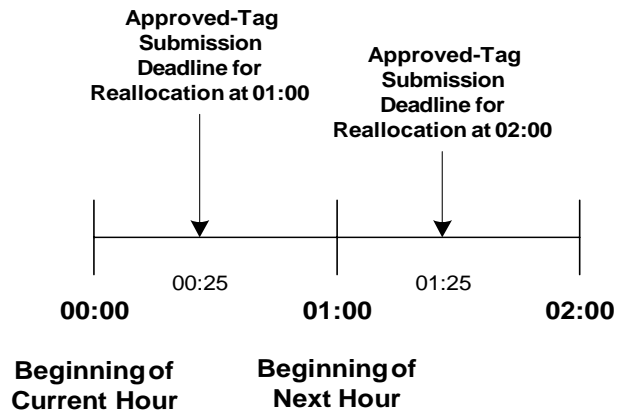


Figure 1 - Timeline showing Approved-tag Submission Deadline for Reallocation

1455 2. **Approved tag submission deadline for reallocation.** The reliability coordinators shall consider all approved tags for interchange transactions at or above the curtailment threshold that have

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been submitted to the IDC by 00:25 for reallocation at 01:00. See Figure 1. However, interchange transactions using firm point-to-point transmission service will be allowed to start as scheduled.

- 1465
- a. Reliability coordinators shall consider all approved tags submitted to the IDC beyond these deadlines for reallocation at 02:00 (for both firm and non-firm point-to-point transmission service). However, these interchange transactions will not be allowed to start or increase at 01:00.
  - b. The approved tag submission deadline for reallocation shall cease to be in effect as soon as the TLR level is reduced to 1 or 0.
- 1470
3. **Off-hour Transactions.** Interchange transactions with a start time other than *xx:00* shall be considered for reallocation at *xx+1:00*. For example, an interchange transaction with a start time of 01:05 and whose tag was submitted at 00:15 will be considered for reallocation at 02:00.
  4. **Tag Evaluation Period.** Balancing authorities and transmission providers shall evaluate all tags submitted for reallocation and shall communicate approval or rejection by 00:25.
- 1475

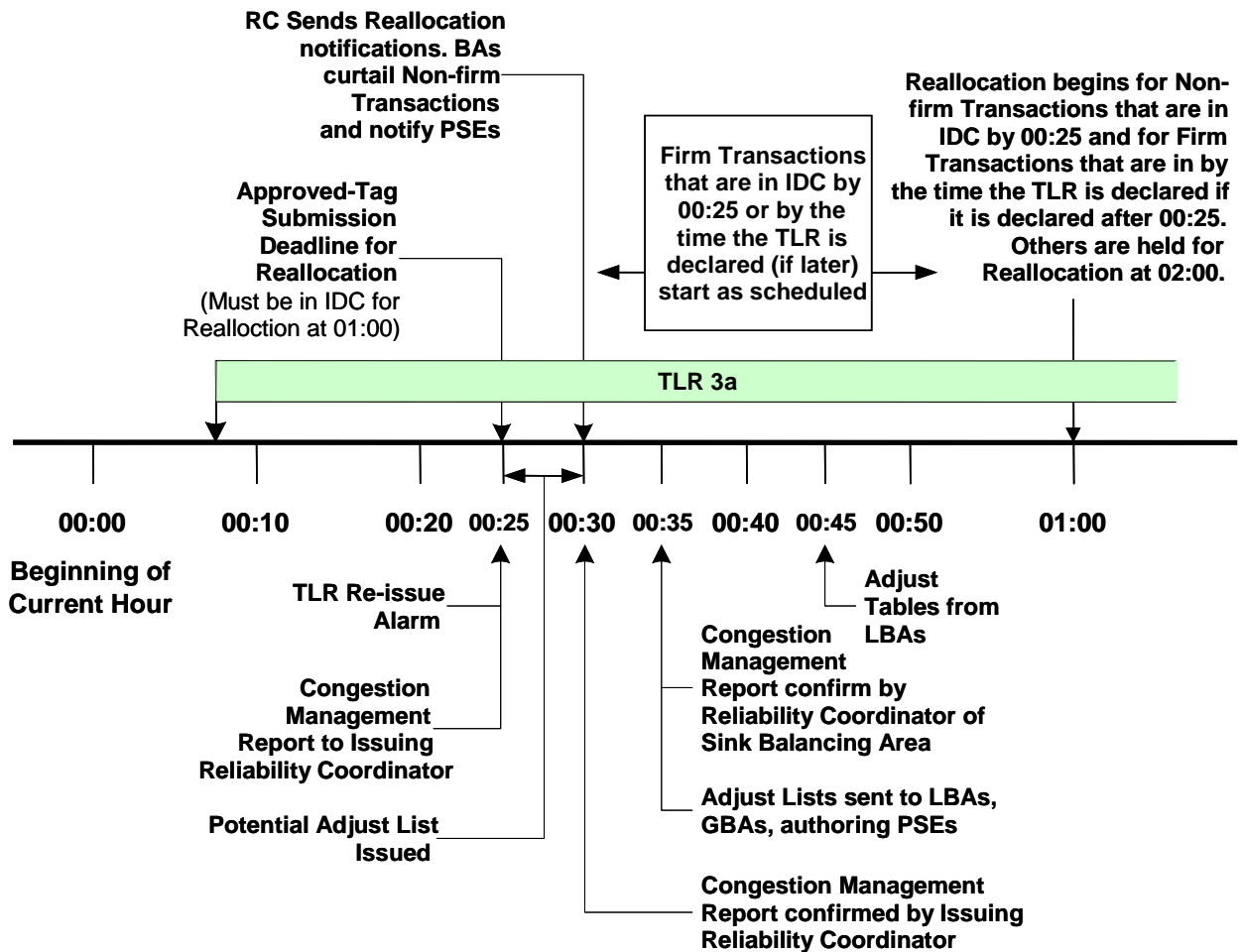
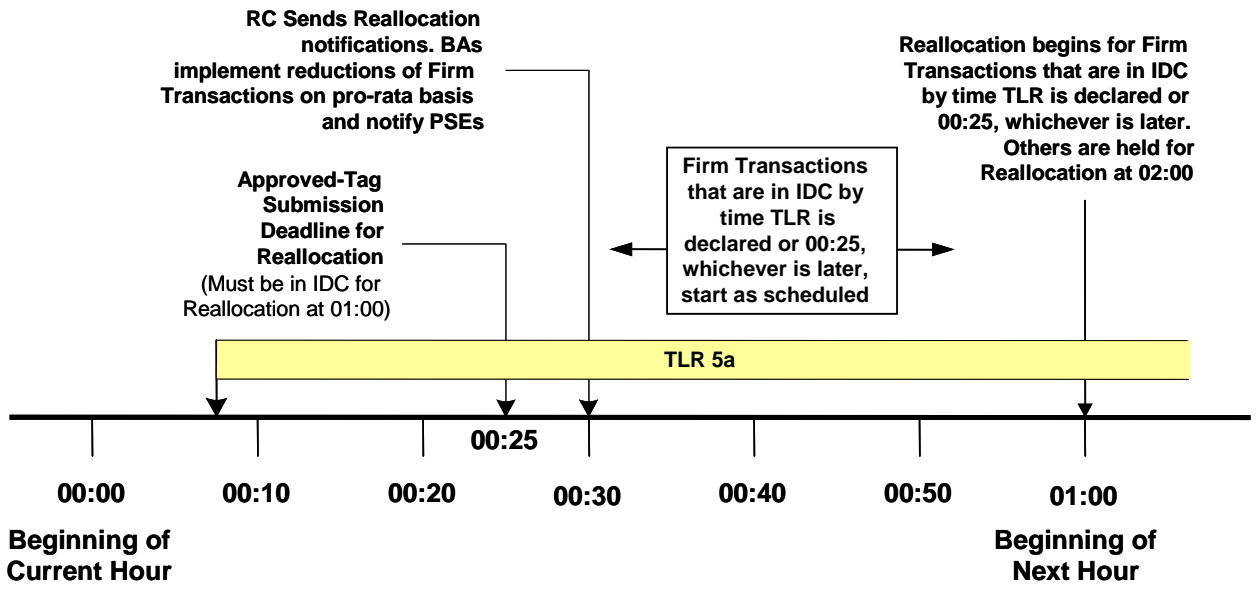


Figure 2 — Reallocation Timing for TLR 3A Called at 00:08

- 1480 5. **Collective Scheduling Assessment Period.** At 00:25, the initiating reliability coordinator (the one who called and still has a TLR 3A or 5A in effect) shall run the IDC to obtain a three-part list of interchange transactions including their transaction status:
- 1485 a. Interchange transactions that may start, increase, or reload shall have a status of PROCEED, and
  - 1490 b. Interchange transactions that must be curtailed or interchange transactions whose tags were submitted prior to the TLR 2 or higher being declared but were not permitted to start or increase shall have a status of CURTAILED, and
  - 1495 c. Interchange transactions that are entered into the IDC after 00:25 shall have a status of HOLD and be considered for reallocation at 02:00. Also, interchange transactions using non-firm point-to-point transmission service submitted after TLR 2 or higher was declared (“post-tagged”) but have not been allowed to start shall retain the HOLD status until given permission to PROCEED or e-tag expires. (Note: TLR Level 2 does not hold interchange transactions using firm point-to-point transmission service).



**Figure 3 — Reallocation timing for TLR 5A called at 00:08.**

- 1500 d. The initiating reliability coordinator shall communicate the list of interchange transactions to the appropriate sink reliability coordinators via the IDC, who shall in turn communicate the list to the sink balancing authorities at 00:30 for appropriate actions to implement interchange transactions (CURTAIL, PROCEED or HOLD). The IDC will prompt the initiating reliability coordinator to input the necessary information (i.e., maximum flowgate loading and curtailment requirement) into the IDC by
- 1505 00:25.

1510 e. Subsequent required reports before 01:00 shall allow the reliability coordinators to include those interchange transactions whose tags were submitted to the IDC after the approved tag submission time for reallocation and were given the HOLD status (not permitted to PROCEED). Transactions at or above the curtailment threshold that are not indicated as PROCEED on reload/reallocation report shall not be permitted to start or increase the next hour.

1515 **Discussion:** Note that TLR 2 does not initiate the approved tag submission deadline for reallocation, but a TLR3A or 5A does. It is, however, important to recognize the time when a TLR 2 is called, where applicable, to determine the status of a held transaction – “CURTAILED” if tagged before the TLR was called but “HOLD” if tagged after the TLR was called.

1520 f. In running the IDC, the reliability coordinator shall have an option to specify the maximum loading of the constrained facility by all interchange transactions using point-to-point transmission service.

1525 **Discussion:** This allows the reliability coordinator to take into consideration SOLs or IROLs and changes in interchange transactions using other than point-to-point transmission service taken under the open access transmission tariff. This option is needed to avoid loading the constrained facility to its limit with known interchange transactions while other factors push the facility into a SOL or IROL violation and hence triggering the declaration of a TLR 3B or 5B.

1530 g. Notification of interchange transaction status shall be provided from the IDC to the reliability coordinators via an IDC report. The reliability coordinators shall communicate this information to the balancing authorities and transmission operators.

1535 6. **Customer Preferences on Timing to Call TLR 3A or 5A.** Reliability coordinators shall leave a TLR 2 and call a TLR 3A as soon as possible (but no later than 30 minutes) to initiate the approved tag submission deadline and start reallocating interchange transactions. Nevertheless, recognizing the approved tag submission deadline for reallocation, from a transmission customer perspective, it is preferable that the reliability coordinator calls a TLR 3A within a certain time period to allow for tag preparation and submission. See Figure 4.

1540 **Discussion:** A reliability coordinator calls a TLR 2 or 3A whenever it deems necessary to indicate that a transmission facility is approaching its SOL or IROL. It is envisioned, though not required, that a TLR 2 or 3A is preceded by a period of a TLR 1 declaration, hence transmission customers should normally have advance notice of a potential constraint. For example, a TLR 3A initiated during the period  
1545 01:00 to 01:25 would allow the purchasing-selling entity to submit a tag for entry into the IDC by the approved tag submission deadline for reallocation at 02:00. See Figure 4. However, the preferred time period to declare a TLR 3A or 5A would be

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between 00:40 (when tags for next hour market have been submitted) and 01:15. This will allow the transmission customers a range of 15 to 35 minutes to prepare and submit tags. (Note: In this situation, the reliability coordinator would need to reissue the TLR 3A at 01:00.)

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It must be emphasized that the preferred time period is not a requirement, and should not in any way impede a reliability coordinator's ability to declare a TLR 3A, 3B, 4, 5A, or 5B whenever the need arises.

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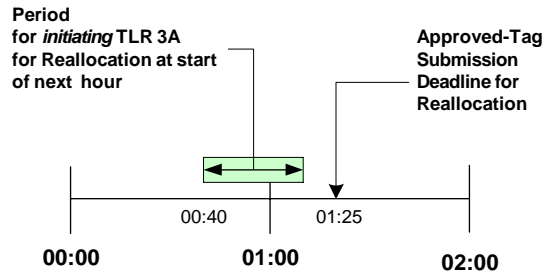


Figure 4. "Ideal" time for issuing TLR 3A for Reallocation at 02:00.

1565 **Section C: IDC Features that Support Transaction  
Reloading/Reallocation**

Following is a summary of IDC features and E-Tag interface that support reloading/reallocation:

1570 ***Information posted from IDC to NERC TLR site.***

1. Restricted directions (all source/sink combinations that impact a constrained facility(ies) with TLR 2 or higher) will be posted to the NERC TLR site and updated as necessary.
- 1575 2. TLR constrained facility status and transfer distribution factors (TDFs) will continue to be posted to NERC TLR site.
3. Lowest priority of interchange transactions (marginal “bucket”) to be reloaded/reallocated next-hour on each TLR constrained facility will be posted on NERC TLR site. This will provide an indication to the market of priority of interchange transactions that may be reloaded/reallocated the following hours.

1580 ***IDC Logic, IDC Report, and Timing***

1. The reliability coordinator will run the IDC the reloading/reallocation report at approximately 00:26. The IDC will prompt the reliability coordinator to enter a maximum loading value. The IDC will alarm if the reliability coordinator doesn't enter this value and issue a report by 00:30 or change from TLR 3A Level. The report will be distributed to balancing authorities and transmission operators at 00:30. This process repeats every hour as long as the approved tag submission deadline for reallocation is in effect (or until the TLR level is reduced to 1 or 0).  
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2. For interchange transactions in the restricted directions, tags must be submitted to the IDC by the approved tag submission deadline for reallocation to be considered for reallocation next-hour. The time stamp by the tag authority is regarded the official tag submission time.  
1590
3. Tags submitted to IDC after the approved tag submission deadline for reallocation will not be allowed to start or increase but will be considered for reallocation the next hour.
- 1595 4. Interchange transactions in restricted directions that are not indicated as “PROCEED” on the reload/reallocation report will not be permitted to start or increase next hour.

***Reloading/Reallocation Transaction Status***

1600 Reloading/Reallocation status will be determined by the IDC for all interchange transactions. The reloading/reallocation status of each interchange transaction will be listed

on IDC reports and NERC TLR site as appropriate. An interchange transaction is considered to be in a restricted direction if it is at or above the curtailment threshold. Interchange transactions below the curtailment threshold are unrestricted and free to flow subject to all applicable reliability standards, business practices, and transmission tariff rules.

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1. **HOLD.** Permission has not been given for the interchange transaction to start or increase, and it is waiting for the next reloading/reallocation evaluation for which it is a candidate. Interchange transactions with E-tags submitted to the tag authority prior to TLR 2 or higher being declared (pre-tagged) will change to *CURTAILED* Status upon evaluation that does not permit them to start or increase. Interchange transactions, with E-tags submitted to the tag authority after TLR 2 or higher was declared (post-tagged), will retain *HOLD* Status until given permission to proceed or the E-Tag expires.

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2. **CURTAILED.** Interchange transactions for which E-Tags were submitted to tag authority prior to TLR 2 or higher being declared (pre-tagged) and ordered to be curtailed totally, curtailed partially, not permitted to start, or not permitted to increase. Interchange transactions (pre-tagged or post-tagged) that were flowing and ordered to be reduced or totally curtailed. The balancing authority will indicate to the IDC through the E-Tag adjustment table the interchange transaction's curtailed values.

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1620

3. **PROCEED:** Interchange transaction is flowing or has been permitted to flow as a result of Reloading/Reallocation evaluation. The balancing authority will indicate through the E-Tag adjustment table to IDC if the interchange transaction will reload, start, or increase next-hour per PSE's energy schedule as appropriate.

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### ***Reallocation/Reloading Priorities***

1. Interchange transaction candidates are ranked for loading and curtailment by priority. This is called the "Constrained Path Method," or CPM. (secondary, hourly, daily, ... firm etc). Interchange transactions are curtailed and loaded pro-rata within priority level per TLR algorithm.

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2. Reloading/Reallocation of interchange transactions are prioritized first by priority per CPM. E-Tags must be submitted to the IDC by the approved tag submission deadline for reallocation of the hour during which the interchange transaction is scheduled to start or increase to be considered for reallocation.

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3. During reloading/reallocation, interchange transactions using lower priority transmission service will be curtailed pro-rata to allow higher priority transactions to reload, increase, or start. Equal priority interchange transactions will not reload, start, or increase by pro-rata curtailment of other equal priority interchange transactions.

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4. Reloading of interchange transactions using non-firm transmission service with *CURTAILED* Status will take precedence over starting or increasing of interchange

transactions using non-firm transmission service of the same priority with *PENDING* Status.

- 1645 5. Interchange transactions using firm point-to-point transmission service will be allowed to start as scheduled under TLR 3A as long as their E-Tag was received by the IDC by the approved tag submission deadline for reallocation of the hour during which the interchange transaction is due to start or increase, regardless of whether the E-tag was submitted to the tag authority prior to TLR 2 or higher being declared or not. If this is the initial issuance of the TLR 3A, interchange transactions using firm point-to-point transmission service will be allowed to start as scheduled as long as their E-Tag was received by the IDC by the time the TLR is declared.
- 1650

***Total Flow Value on a Constrained Facility for Next Hour***

- 1655 1. The reliability coordinator will calculate the change in net flow on a constrained facility due to reallocation for the next hour based on:
- 1.1. Present constrained facility loading, present level of interchange transactions, and balancing authorities NNL responsibility (TLR Level 5A) impacting the constrained facility,
  - 1.2. SOLs or IROLs, known interchange impacts and balancing authority NNL responsibility (TLR Level 5A) on the constrained facility the next hour, and
  - 1.3. Interchange transactions scheduled to begin the next hour.
- 1660 2. The reliability coordinator will enter a maximum loading value for the constrained facility into the IDC as part of issuing the reloading/reallocation report.
3. The reliability coordinator is allowed to call for TLR 3A or 5A when approaching a SOL or IROL to allow maximum transactional flow next hour, and to manage flows without violating transmission limits.
- 1665 4. The simultaneous curtailment and reallocation for a constrained facility is allowed. This reduces the flow over the constrained facility while allowing interchange transactions using higher priority transmission service to start or increase the next hour. This may be used to accommodate change in flow next-hour due to changes other than point-to-point interchange transactions while respecting the priorities of interchange transactions flowing and scheduled to flow the next hour. The intent is to reduce the need for using TLR 3B, which prevents new interchange transactions from starting or increasing the next hour.
- 1670
- 1675 5. The reliability coordinator must allow interchange transactions to be reloaded as soon as possible. Reloading must be in an orderly fashion to prevent a SOL or IROL violation from (re)occurring and requiring holding or curtailments in the restricted direction.



## Section D: Timing Requirements

### *TLR Levels 3A and 5A Issuing/Processing Time Requirement*

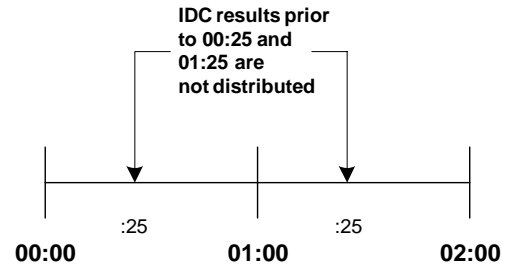
1680 1. In order for the IDC to be reasonably certain that a TLR Level 3A or 5A re-allocation/reloading report in which all tags submitted by the approved-Tag submission deadline for reallocation are included, the report must be generated no earlier than 00:25 to allow the 10-minute approval time for interchange transactions that start next hour.

1685 2. In order to allow a reliability coordinator to declare a TLR Level 3A or 5A any time during the hour, the TLR declaration and re-allocation/reloading report distribution will be treated as independent processes by IDC. That is, a reliability coordinator may declare a TLR Level 3A or 5A at any time during the course of an hour. However, if a TLR Level 3A or 5A is declared for the next hour prior to 00:25 (see Figure 5 at right), the re-allocation/reloading report that is generated will be made available to the issuing reliability coordinator only for previewing purposes, and can not be distributed to the other reliability coordinators or the market. Instead, the issuing reliability coordinator will be reminded by an IDC alarm at 00:25 to generate a new re-allocation/reloading report that will include all tags submitted prior to the approved tag submission deadline for reallocation.

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**Figure 5 - IDC report may be run prior to 00:25, but results are not distributed.**

1705 3. A TLR Level 3A or 5A re-allocation/reloading report must be confirmed by the issuing reliability coordinator prior to 00:30 in order to provide a minimum of 30 minutes for the reliability coordinators with tags sinking in its reliability area to coordinate the re-allocation and reloading with the sink balancing authorities. This provides only 5 minutes (from 00:25 to 00:30) for the issuing reliability coordinator to generate a re-allocation/reloading report, review it, and approve it.

1710 4. The TLR declaration time will be recorded in the IDC for evaluating transaction sub-priorities for re-allocation/reloading purposes (see Sub-priority Table, in the **IDC Calculations and Reporting** section below).

### *Re-Issuing of a TLR Level 2 or Higher*

Each hour, the IDC will automatically remind the issuing reliability coordinator (via an IDC alarm) of a TLR level 2 or higher declared in the previous hour or earlier about re-issuing the TLR. The purpose of the reminder is to enable the reliability coordinator to reallocate or reload currently halted or curtailed interchange transactions next hour. The reminder will be in the form of an alarm to the issuing reliability coordinator, and will take place at 00:25 so that, if the reliability coordinator re-issues the TLR as a TLR level 3A or 5A, all tags

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submitted prior to the approved tag submission deadline for reallocation are available in the IDC.

1720 ***IDC Assistance with Next Hour Point-to-Point Transactions***

In order to assist a reliability coordinator in determining the MW relief required on a constrained facility for the next hour for a TLR level 3A or 5A, the IDC will calculate and present the total MW impact of all currently flowing and scheduled point-to-point interchange transactions for the next hour. In order to assist a reliability coordinator in determining the MW relief required on a constrained facility for the next hour during a TLR level 5A, the IDC will calculate and present the total MW impact of all currently flowing and scheduled point-to-point interchange transactions for the next hour as well as balancing authorities with flows due to service to network customers and native load. The reliability coordinator will then be requested to provide the total incremental or decremental MW amount of flow through the constrained facility that can be allowed for the next hour. The value entered by the reliability coordinator and the IDC-calculated amounts will be used by the IDC to identify the relief/reloading amounts (delta incremental flow value) on the constrained facility. The IDC will determine the interchange transactions to be reloaded, reallocated, or curtailed to make room for the interchange transactions using higher priority transmission service. The following examples show the calculation performed by IDC to identify the delta incremental flow:

**Example 1**

Flow to maintain on constrained facility	800 MW
Expected flow next hour from interchange transactions using point-to-point transmission service	950 MW
Contribution to flow next hour from service to network customers and native load	-100 MW
Expected net flow next hour on constrained facility	850 MW
Amount of interchange transactions using point-to-point transmission service to hold for reallocation	$850 \text{ MW} - 800 \text{ MW} = 50 \text{ MW}$
Amount to enter into IDC for interchange transactions using point-to-point transmission service	$950 \text{ MW} - 50 \text{ MW} = 900 \text{ MW}$

**Example 2**

Flow to maintain on constrained facility	800 MW
Expected flow next hour from interchange transactions using point-to-point transmission service	950 MW
Contribution to flow next hour from service to network customers and native load	50 MW
Expected net flow next hour on constrained facility	1000 MW
Amount of interchange transactions using point-to-point transmission service to hold for reallocation	1000 MW – 800 MW = 200 MW
Amount to enter into IDC for interchange transactions using point-to-point transmission service	950 MW – 200 MW = 750 MW

1740 **Example 3**

Flow to maintain on constrained facility	800 MW
Expected flow next hour from interchange transactions using point-to-point transmission service	950 MW
Contribution to flow next hour from service to network customers and native load	-200 MW
Expected net flow next hour on constrained facility	750 MW
Amount of interchange transactions using point-to-point transmission service to hold for reallocation	750 MW – 800 MW = -50 MW None are held

1745 For a TLR levels 3B or 5B the IDC will request the reliability coordinator to provide the MW requested relief amount on the constrained facility, and will not present the current and next hour MW impact of point-to-point interchange transactions. The reliability coordinator-entered requested relief amount will be used by IDC to determine the interchange transaction curtailments and flows due to service to network customers and native load (TLR Level 5B) in order to reduce the SOL or IROL violation on the constrained facility by the requested amount.

***IDC Calculations and Reporting***

1750 At the time the TLR report is processed, the IDC will use all candidate interchange transactions for reallocation that met the approved tag submission deadline for reallocation plus those interchange transactions that were curtailed or halted on the previous TLR action of the same TLR event. The IDC will calculate and present an interchange transactions halt/curtailment list that will include reload and reallocation of interchange transactions.

1755 The interchange transactions are prioritized as follows:

1. All interchange transactions will be arranged by transmission service priority according to the constrained path method. These priorities range from 1 to 6 for the

1760 various non-firm transmission service products (TLR levels 3A and 3B).  
interchange transactions using firm transmission service (priority 7) are used only in  
TLR levels 5A and 5B. Next-hour market service is included at priority 0 (zero)

1765 2. In a TLR Level 3A the interchange transactions using non-firm transmission service  
in a given priority will be further divided into four sub-priorities, based on current  
schedule, current active schedule (identified by the submittal of a tag ADJUST  
message), next-hour schedule, and tag status. Solely for the purpose of identifying  
which interchange transactions to be loaded under a TLR 3A, various MW levels of  
an interchange transaction may be in different sub-priorities. The sub-priorities are  
shown in the table on the following page, and examples of interchange transactions  
using non-firm transmission service sub-priority settings are shown in the

1770 ***Transaction Sub-priority Examples*** section below.

<b><i>Sub-Priority</i></b>	<b><i>Purpose</i></b>	<b><i>Explanation and Conditions</i></b>
S1	To allow a flowing interchange transaction to maintain or reduce its current MW amount in accordance with its energy profile.	The MW amount is the lowest between currently flowing MW amount and the next-hour schedule. The currently flowing MW amount is determined by the e-tag ENERGY PROFILE and ADJUST tables. If the calculated amount is negative, zero is used instead.
S2	To allow a flowing interchange transaction that has been curtailed or halted by TLR to reload to the <i>lesser</i> of its current-hour MW amount or next-hour schedule in accordance with its energy profile.	The interchange transaction MW amount used is determined through the e-tag ENERGY PROFILE and ADJUST tables. If the calculated amount is negative, zero is used instead.
S3	To allow a flowing interchange transaction to increase from its current-hour schedule to its next-hour schedule in accordance with its energy profile.	The MW amount used in this sub-priority is determined by the e-tag ENERGY PROFILE table. If the calculated amount is negative, zero is used instead.
S4	To allow an interchange transaction that had never started and was submitted to the tag authority after the TLR (level 2 or higher) has been declared to begin flowing (i.e., the interchange transaction never had an active MW and was submitted to the IDC <i>after</i> the first TLR Action of the TLR event had been declared.)	The interchange transaction would not be allowed to start until all other interchange transactions submitted prior to the TLR with the same priority have been (re)loaded. The MW amount used in this sub-priority is the next-hour schedule determined by the e-tag ENERGY PROFILE table.

3. All interchange transactions using firm transmission service will be put in the same priority group, and will be curtailed/reallocated pro-rata, independent of their current status (curtailed or halted) or time of submittal with respect to TLR issuance (TLR level 5A). Under a TLR 5A, all interchange transactions using non-firm transmission service that are at or above the curtailment threshold will have been curtailed and hence sub-prioritizing is not required.

1775

***Assignment of Interchange Transaction Status***

All interchange transactions processed in a TLR are assigned one of the following statuses:

- 1780 PROCEED: The interchange transaction has started or is allowed to start to the next hour MW schedule amount.
- CURTAILED: The interchange transaction has started and is curtailed due to the TLR, or it had not started but it was submitted prior to the TLR being declared (level 2 or higher).
- 1785 HOLD: The interchange transaction had never started and it was submitted after the TLR being declared – the interchange transaction is held from starting next hour, or the interchange transaction had never started and it was submitted to the IDC after the approved tag submission deadline – the interchange transaction is to be held from starting next hour and is not included in the reallocation calculations until following hour.
- 1790

1795 Upon acceptance of the TLR interchange transaction reallocation/reloading report by the issuing reliability coordinator, the IDC will generate a report to be sent to NERC that will include the PSE name and Tag ID of each interchange transaction in the IDC TLR report. The interchange transaction will be ranked according to its assigned status of HOLD, CURTAILED or PROCEED. The reloading/reallocation report will be made available at NERC’s public TLR site, and it is NERC’s responsibility to format and publish the report.

***Tag Reloading for TLR Levels 1 and 0***

1800 When a TLR Level 1 or 0 is issued, the constrained facility is no longer under SOL or IROL violation, and all interchange transactions are allowed to flow. In order to provide the reliability coordinators with a view of the interchange transactions that were halted or curtailed on previous TLR actions (level 2 or higher), and are now available for reloading, the IDC provides such information in the TLR report.

***1805 New Tag Alarming***

Those interchange transactions that are at or above the curtailment threshold and are *not* candidates for reallocation because the tags for those interchange transactions were not submitted by the approved tag submission deadline for reallocation will be flagged as HOLD and must not be permitted to start or increase during the next hour. To alert 1810 reliability coordinators of those interchange transactions required to be held, the IDC will generate a report (for viewing within the IDC only) at various times. The report will include a list of all HOLD interchange transactions. In order not to overwhelm the reliability coordinator with alarms, only those who issued the TLR and those whose interchange transactions sink within their reliability area will be alarmed. An alarm will be 1815 issued for a given tag only once and will be issued for all TLR levels for which halting of new interchange transactions is required: TLR Levels 2, 3A, 3B, 5A and 5B.

### ***Tag Adjustment***

1820 The interchange transactions with statuses of HOLD, CURTAILED or PROCEED must be adjusted by a tag authority or tag approval entity. Without the tag adjustments, the IDC will assume that interchange transactions were not curtailed/held and are flowing at their specified schedule amounts.

1825 1. Interchange transactions marked as CURTAILED should be adjusted to a cap equal to, or at the request of the originating PSE, less than the reallocated amount (shown as the MW CAP on the IDC report). This amount may be zero if the interchange transaction is fully curtailed.

2. Interchange transactions marked as PROCEED should be adjusted to reload (NULL or to its MW level in accordance with its energy profile in the adjusted MW in the tag) if the interchange transaction has been previously adjusted; otherwise, if the interchange transaction is flowing in full, the tag authority need not issue an adjust.

1830 3. Interchange transactions marked as HOLD should be adjusted to 0 MW.

### ***Special Tag Status***

1835 There are cases in which a tag may be marked with a composite state of ATTN\_REQD to indicate that tag authority/approval failed to communicate or there is an inconsistency between the validation software of different tag authority/approval entities. In this situation, the tag is no longer subject to passive approval and its status change to IMPLEMENT may take longer than 10 minutes. Under these circumstances, the IDC may have a tag that is issued prior to the tag submittal deadline that will not be a candidate for reallocation. Such tags, when approved by the tag authority, will be marked as HOLD and must be halted.

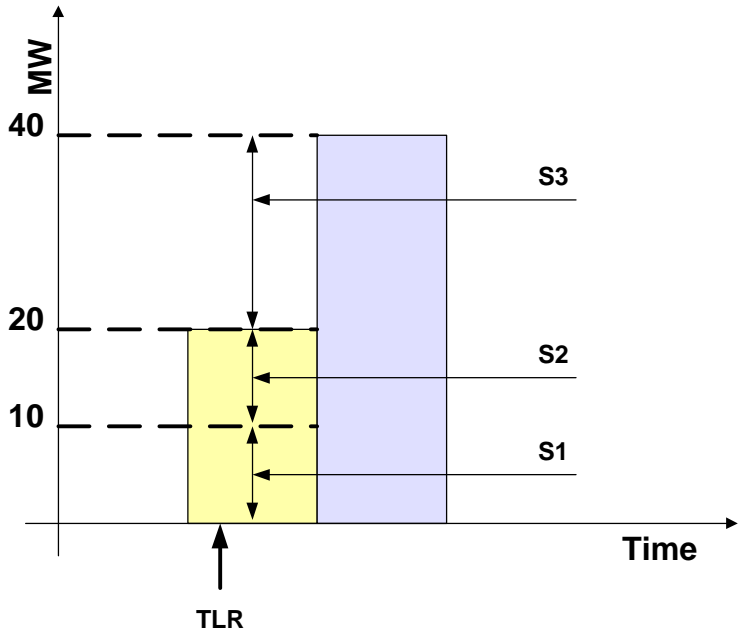
### ***Transaction Sub-Priority Examples***

1840 The following describes examples of interchange transactions using non-firm transmission service sub-priority setting for an interchange transaction under different circumstances of current-hour and next-hour schedules and active MW flowing as modified by tag adjust table in e-tag.

1845

**Example 1 – Interchange transaction curtailed, next-hour energy profile is higher**

Energy profile: current hour	20 MW
Actual flow following curtailment: current hour	10 MW
Energy profile: next hour	40 MW

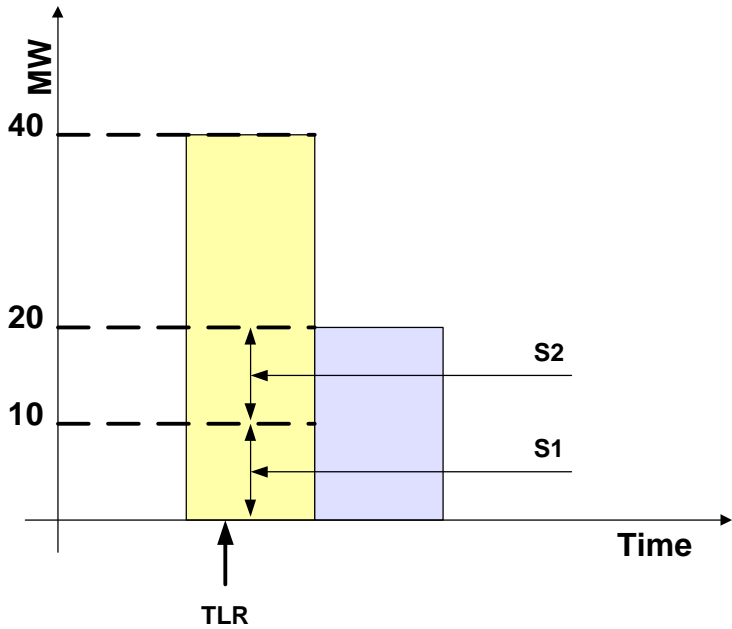


<i>Sub-priorities for Interchange Transaction (MW)</i>		
<i>Sub-Priority</i>	<i>MW Value</i>	<i>Explanation</i>
S1	10 MW	Maintain current curtailed flow
S2	+10 MW	Reload to current hour energy profile
S3	+20 MW	Load to next hour energy profile
S4		



**Example 2 – Transaction curtailed, next-hour energy profile is lower**

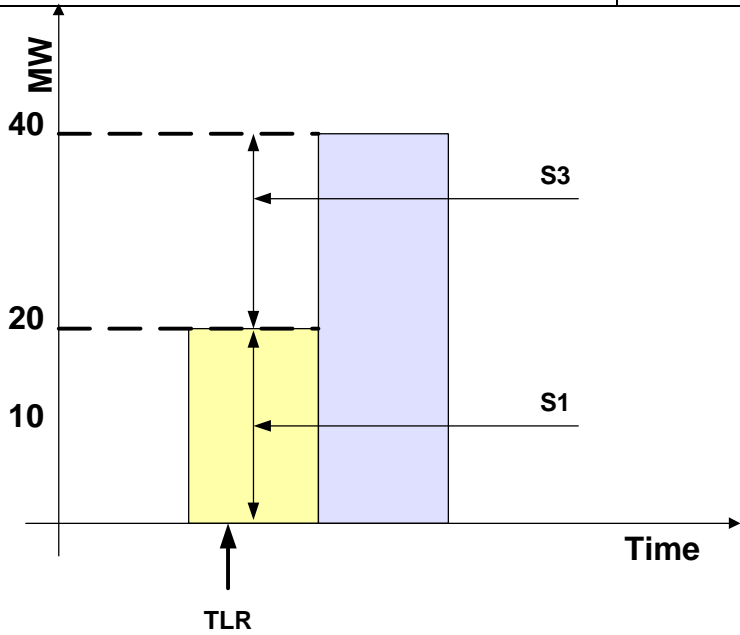
Energy profile: current hour	40 MW
Actual flow following curtailment: current hour	10 MW
Energy profile: next hour	20 MW



<i>Sub-priorities for Interchange Transaction (MW)</i>		
<i>Sub-Priority</i>	<i>MW Value</i>	<i>Explanation</i>
S1	10 MW	Maintain current curtailed flow
S2	+10 MW	Reload to <i>lesser</i> of current and next-hour energy profile
S3	+0 MW	Next-hour energy profile is 20MW, so no change in MW value
S4		

**Example 3 – Transaction not curtailed, next-hour energy profile is higher**

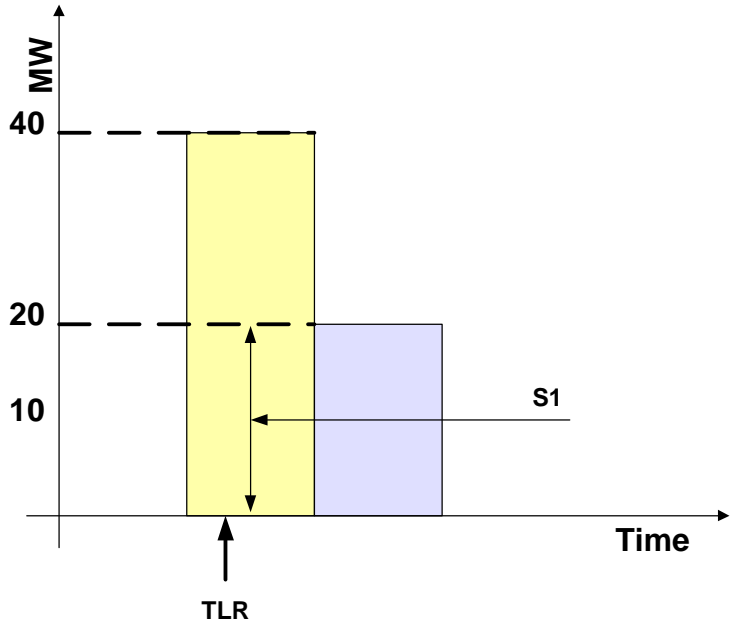
Energy profile: current hour	20 MW
Actual flow following curtailment: current hour	20 MW (no curtailment)
Energy profile: next hour	40 MW



<i>Sub-priorities for Interchange Transaction (MW)</i>		
<i>Sub-Priority</i>	<i>MW Value</i>	<i>Explanation</i>
S1	20 MW	Maintain current flow (not curtailed)
S2	+0 MW	Reload to <i>lesser</i> of current and next-hour energy profile
S3	+20 MW	Next-hour energy profile is 40MW
S4		

**Example 4 – Transaction not curtailed, next-hour energy profile is lower**

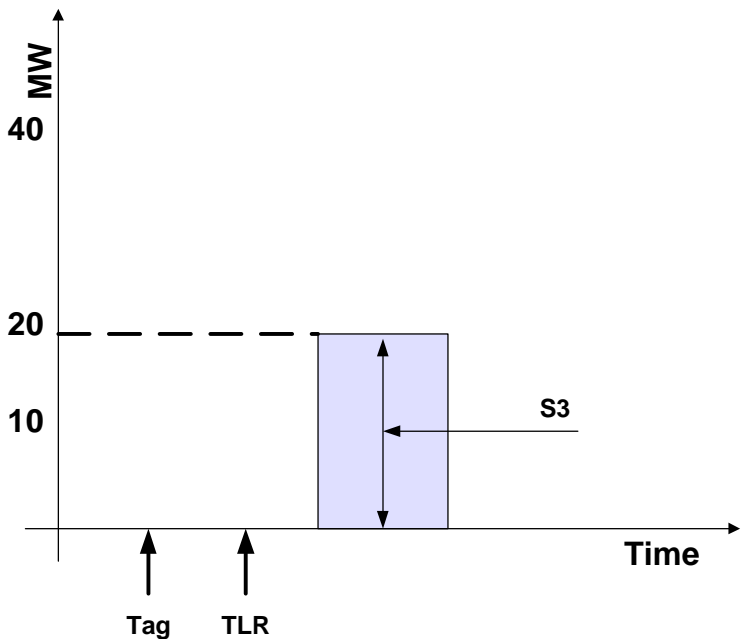
Energy profile: current hour	40 MW
Actual flow following curtailment: current hour	40 MW (no curtailment)
Energy profile: next hour	20 MW



<i>Sub-priorities for Interchange Transaction (MW)</i>		
<i>Sub-Priority</i>	<i>MW Value</i>	<i>Explanation</i>
S1	20 MW	Reduce flow to next-hour energy profile (20MW)
S2	+0 MW	Reload to <i>lesser</i> of current and next-hour energy profile
S3	+0 MW	Next-hour energy profile is 20MW
S4		

**Example 5 – TLR Issued before Interchange Transaction was scheduled to start**

Energy profile: current hour	0 MW
Actual flow following curtailment: current hour	0 MW (interchange transaction scheduled to start <i>after</i> TLR initiated) 1860
Energy profile: next hour	20 MW



<i>Sub-priorities for Interchange Transaction (MW)</i>		
<i>Sub-Priority</i>	<i>MW Value</i>	<i>Explanation</i>
S1	0 MW	Interchange transaction was not allowed to start
S2	+0 MW	Interchange transaction was not allowed to start
S3	+20 MW	Next-hour energy profile is 20MW
S4	+0	Tag submitted prior to TLR

## Section E: Interchange Transaction Curtailments During TLR Level 3B

1865 This section provides the details for implementing TLR Level 3B, which curtail interchange transactions using non-firm point-to-point transmission service to assist the reliability coordinator to recover from SOL or IROL violations.

The IDC shall issue ADJUST Lists to the Generation and Load Balancing Authorities and the Purchasing-Selling Entity who submitted the tag. The ADJUST List will include:

- 1870
1. Interchange transactions using non-firm point-to-point transmission service that are to be curtailed or held during current and next hours.
  2. Interchange transactions using firm point-to-point transmission service that were entered after 00:25 or issuance of TLR 3B (see Case 3 in Section F: Considerations for Interchange Transactions Using Firm Point-to-Point Transmission Service).

1875 The sink balancing authority shall send the ADJUST lists back to the IDC as soon as possible to ensure the most accurate calculations for actions subsequent to the TLR 3B being called.

1880 The reliability coordinator shall be allowed to call a TLR Level 3A as soon as the SOL or IROL violation, which caused the TLR 3B to be called, has been mitigated.

1. If the TLR Level 3A is called before the hour 01, then a reallocation shall be computed for the start of that hour.
- 1890 2. Interchange transactions must be in the IDC by the approved tag submission deadline for reallocation (see Section D: Timing Requirements).
- 1895

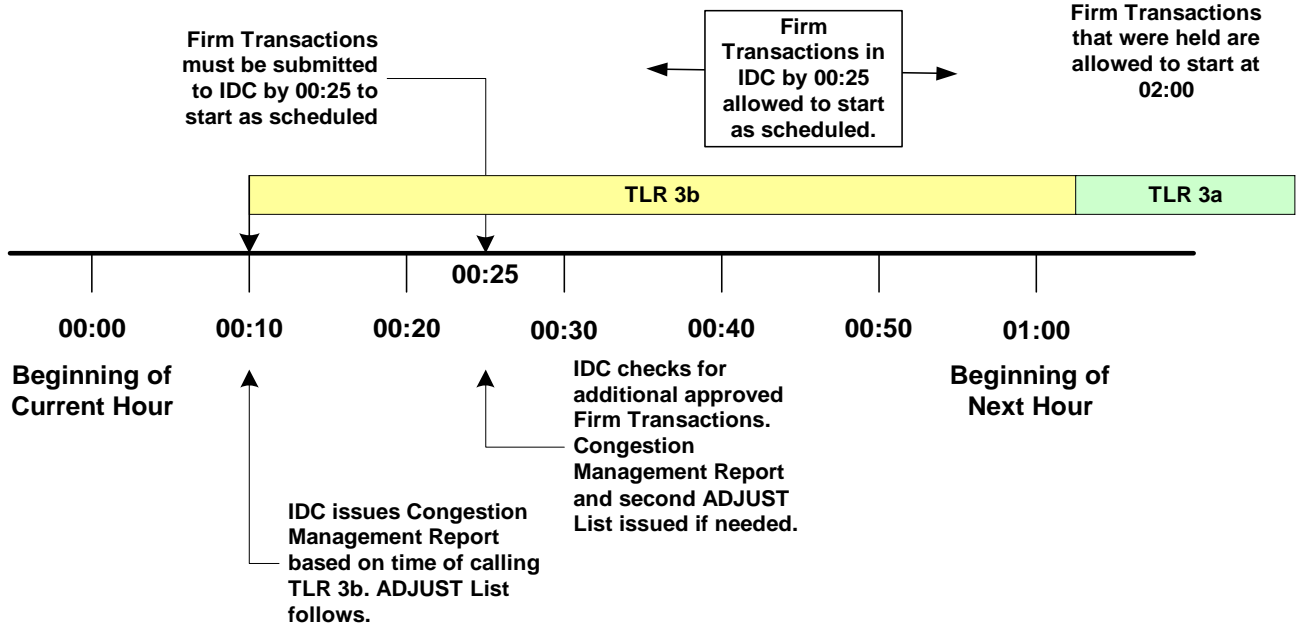
This section was removed from IRO-006-3, but is still a valid functionality within the IDC.

1900 The Reliability Coordinator will no longer be required to call a TLR Level 3A as soon as the SOL or IROL violation that caused the TLR 3B to be called has been mitigated due to the inherent next hour Reallocation that takes place for the top of the next hour in the TLR Level 3B

## Section F: Considerations for Interchange Transactions Using Firm Point-to-Point Transmission Service

1905 The following cases explain the circumstances under which an interchange transaction using firm point-to-point transmission service will be allowed to start as scheduled during a TLR 3B:

**Case 1: TLR 3B is called between 00:00 and 00:25 and the Interchange Transaction using Firm Point-to-Point Transmission Service is submitted to IDC by 00:25.**



1910

1. The IDC will examine the current hour (00) and next hour (01) for all Interchange Transactions.
2. The IDC will issue an ADJUST List based upon the time the TLR 3B is called. The ADJUST List will include curtailments of Interchange Transactions using Non-firm Point-to-Point Transmission Service as necessary to allow room for those Interchange Transactions using Firm Point-to-Point Transmission Service to start as scheduled.
3. At 00:25, the IDC will check for additional Interchange Transactions using Firm Point-to-Point Transmission Service that were submitted to the IDC by that time and issue a second ADJUST List if those additional Interchange Transactions are found. At 00:25, a reallocation will be performed to maintain the desired flow at the top of the following hour.
4. Interchange Transactions using Firm Point-to-Point Transmission Service that were submitted to the IDC by 00:25 will be allowed to start as scheduled.
5. Interchange Transactions using Firm Point-to-Point Transmission Service that were submitted to the IDC after 00:25 will be held.

1915

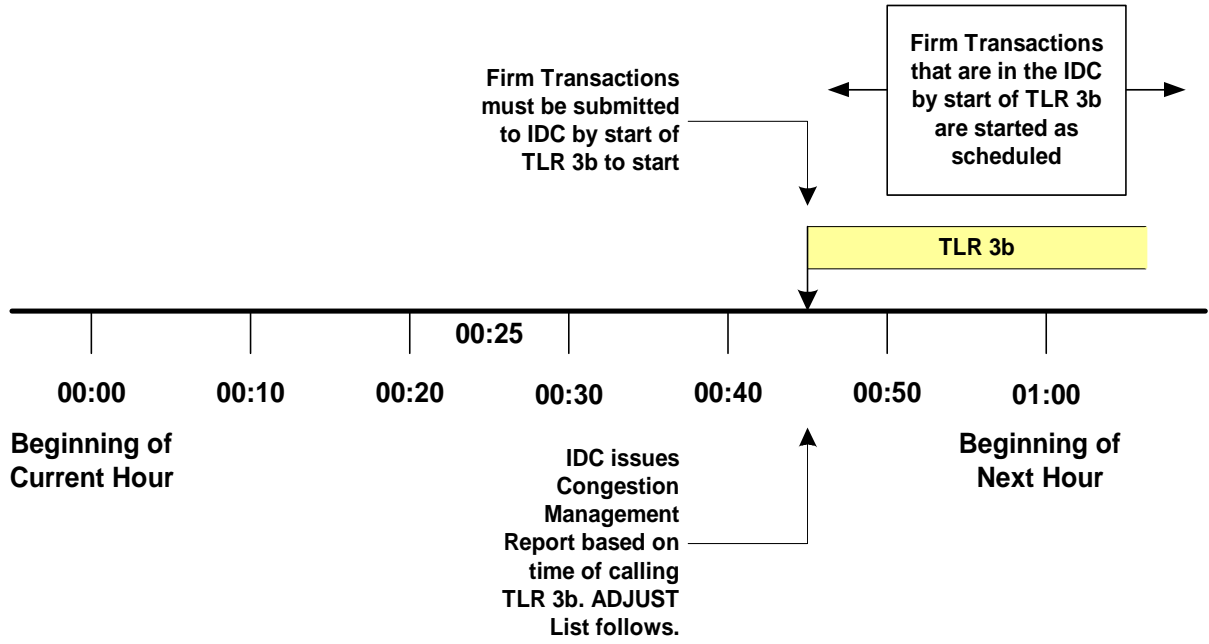
1920

1925

1930

6. Once the SOL or IROL violation is mitigated, the Reliability Coordinator shall call a TLR Level 3A (or lower). If a TLR Level 3A is called:
  - a. Interchange Transactions using Firm Point-to-Point Transmission Service that were submitted to the IDC by 00:25 will be allowed to start as scheduled at 02:00.
  - b. Interchange Transactions using Non-firm Point-to-Point Transmission Service that were held may then be reallocated to start at 02:00.

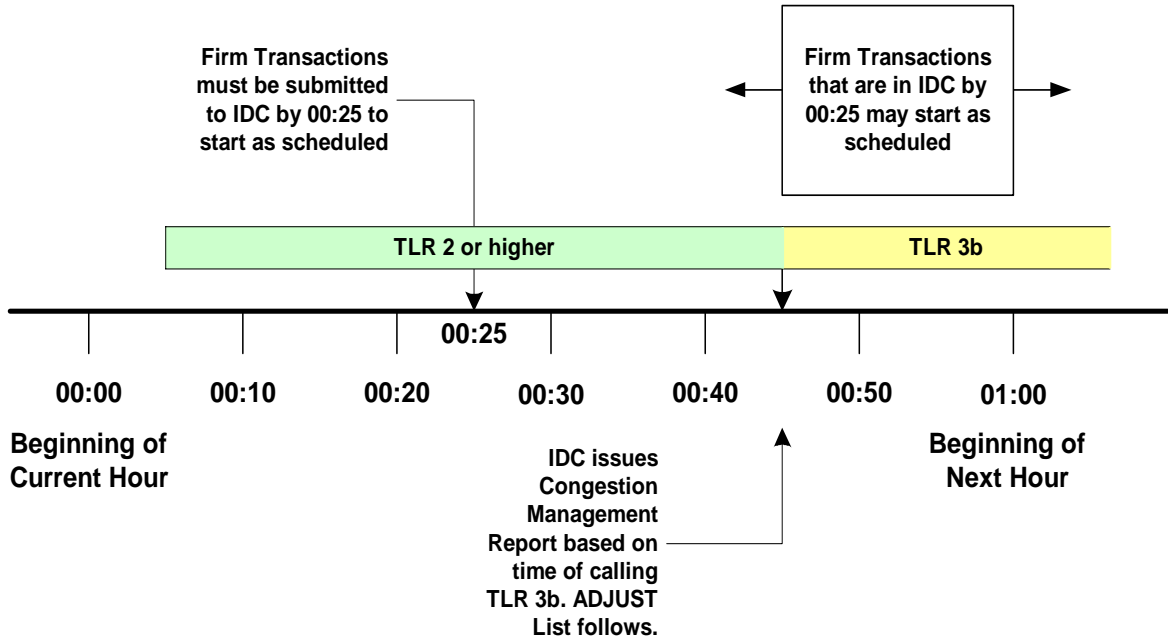
1935 **Case 2: TLR 3B is called after 00:25 and the Interchange Transaction using Firm Point-to-Point Transmission Service is submitted to the IDC no later than the time at which the TLR 3B is called.**



- 1940
1. The IDC will examine the current hour (00) and next hour (01) for all Interchange Transactions.
  2. The IDC will issue an ADJUST List at the time the TLR 3B is called. The ADJUST List will include additional curtailments of Interchange Transactions using Non-firm Point-to-Point Transmission Service as necessary to allow room for those
- 1945
3. After 00:25, non-firm interchange transactions will be curtailed to meet the desired current hour relief and a reallocation will be performed to maintain the target flow identified for the current hour.
- 1950
4. Interchange Transactions using Firm Point-to-Point Transmission Service that were submitted to the IDC by the time the TLR 3B was called will be allowed to start at as scheduled.
  5. Interchange Transaction using Firm Point-to-Point Transmission Service that were submitted to the IDC after the TLR 3B was called will be held until the next
- 1955
- issuance for TLR (either TLR 3B, 3A, or lower level).



**Case 3. TLR 2 or higher is in effect, a TLR 3B is called after 00:25, and the Interchange Transaction using Firm Point-to-Point Transmission Service is submitted to the IDC by 00:25.**

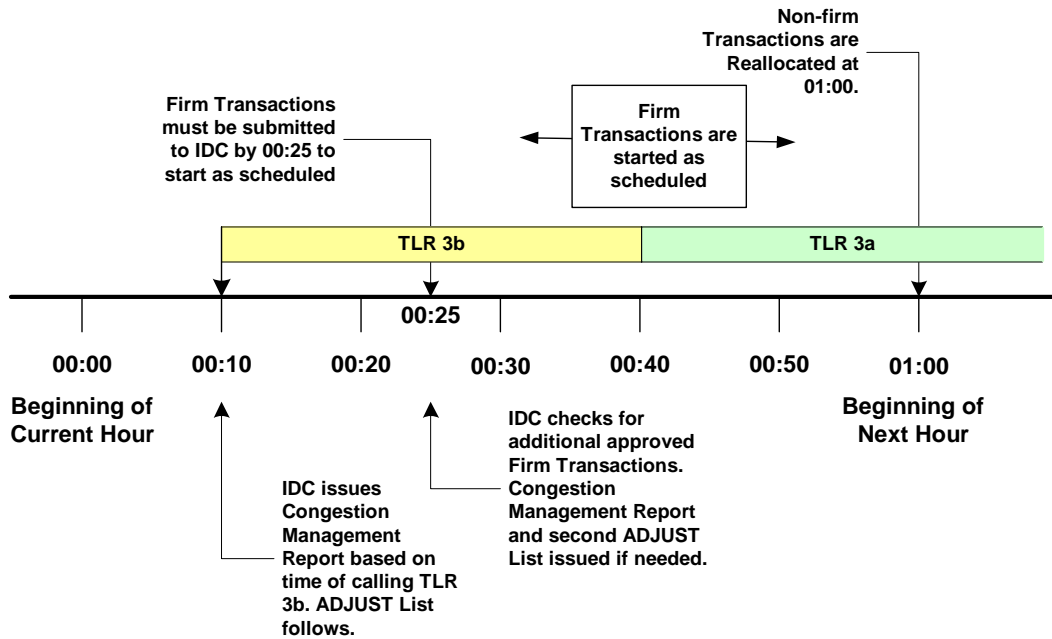


1960

1965 If a TLR 2 or higher has been issued and 3B is subsequently issued, then only those Interchange Transactions using Firm Point-to-Point Transmission Service that had been submitted to the IDC by 00:25 will be allowed to start as scheduled. All other Interchange Transactions are held.

**Case 4. TLR 3B is called before 00:25 and the Interchange Transaction is submitted to the IDC by 00:25. TLR 3A is called at 00:40.**

1970

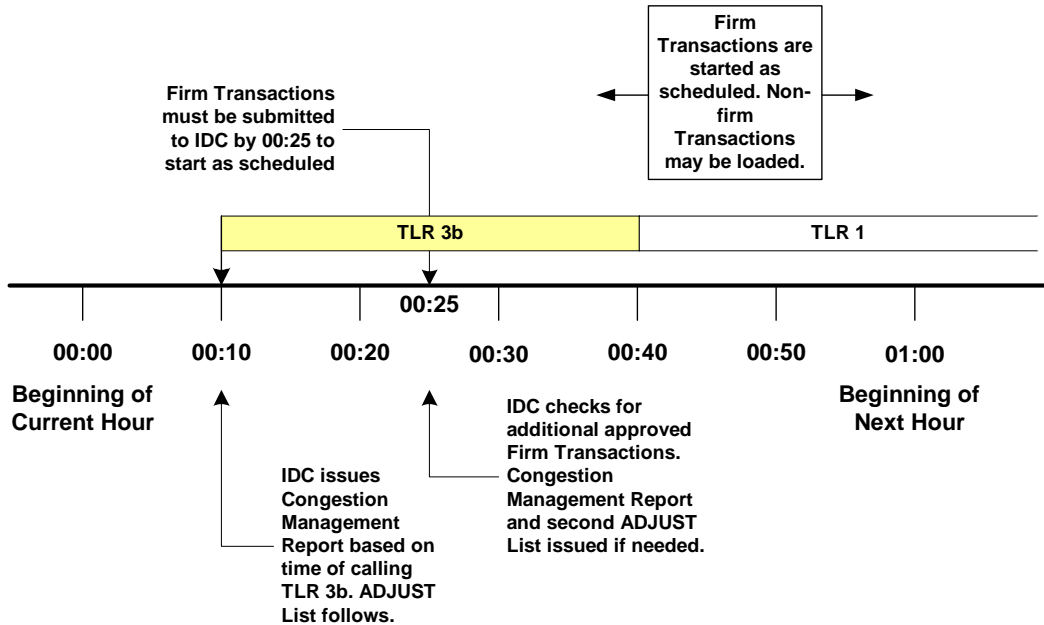


1. Same as Case 1, but TLR Level 3B ends at 00:40 and becomes TLR Level 3A.
2. All Interchange Transactions using Firm Point-to-Point Transmission Service will start as scheduled if in by the time the 3A is declared.
3. All Interchange Transactions using Non-firm Point-to-Point Transmission Service are reallocated at 01:00.

1975

**Case 5. TLR 3B is called before 00:25 and the Interchange Transaction is submitted to the IDC by 00:25. TLR 1 is called at 00:40.**

1980



1985

1. Same as Case 1, but TLR Level 3B ends at 00:40 and becomes TLR Level 1.
2. All Interchange Transactions using Firm Point-to-Point Transmission Service will start as scheduled.
3. All Interchange Transactions using Non-firm Point-to-Point Transmission Service may be loaded immediately.

## Section G: IDC Treatment of TLR Level 6

1990 In order for all reliability coordinators to understand how the IDC handles the issuance of a TLR Level 6 this section describes the IDC functionality that currently exists and options that the reliability coordinator has when declaring this critical TLR Level. This will help ensure the correct action is taken for the given event.

1995 When a reliability coordinator issues a TLR Level 6 on a flowgate in the IDC, the application will search the non-firm and firm tags that are in the IDC database for those that affect the flowgate greater than or equal to 5%. It will create two sets of tags from this list for the reliability coordinator to curtail:

1. If the tag has an active MW amount in the current hour it will be curtailed to zero MW.

2000 2. If the tag is planned to start the next hour it will not be allowed to start and will be curtailed to zero for the next hour.

Once this report is created and displayed as the congestion management report, the reliability coordinator will then have three options to move forward with the TLR Level 6:

2005 1. Confirm the curtailment list that contains the non-firm and firm complete curtailments for the current and next hour.

2010 1.1. This will alert the other reliability coordinators that a TLR Level 6 has been declared and that there are curtailments that need to be acknowledged for implementation.

2015 1.2. Once the sinking reliability coordinators acknowledge the curtailments the IDC will send a reliability cap of zero to the balancing authorities on the tags for curtailment implementation.

2. Exclude some or all of the tag curtailments from the congestion management report before declaring a TLR Level 6.

2020 2.1. This can be done by the issuing reliability coordinator using the “Re-issue/Exclude” option in the congestion management report.

2.2. This will give the issuing reliability coordinator the option of selecting those transactions they wish to exclude from the TLR issuance.

2025 2.3. Once the appropriate tags are selected the reliability coordinator will re-issue the TLR and the list of excluded tags will appear on the congestion management report, but will not be in the curtailed state.

2030 The reliability coordinator will then have to confirm the TLR to send the TLR Level 6 notification to the other reliability coordinators.

**2.4.** Any tags that were not chosen for exclusion will be sent out to the other reliability coordinators for acknowledgement and curtailment.

**2.5.** This option allows the reliability coordinator to declare a TLR Level 6 without implementing tag curtailments.

2035

**3.** Disregard some or all of the tag curtailments from the congestion management report while acknowledging the curtailments of a TLR Level 6:

2040

**3.1.** The sinking reliability coordinator can only do this for each tag curtailment after they receive a TLR Level 6 congestion management report from the issuing reliability coordinator.

2045

**3.2.** The sinking reliability coordinator will select the “Disregard” option for the tags they wish not to curtail. This is done in the acknowledgement screen.

2050

**3.3.** When the “Disregard” option is chosen and the “Acknowledgement” button selected the IDC will update the congestion management report to identify to all reliability coordinators that the sinking reliability coordinator has disregarded the curtailment and does not plan on implementing it.

2055

**3.4.** This will prompt the issuing reliability coordinator to initiate a conversation with the sinking reliability coordinator for further clarification on why the suggested curtailment will not take place.

## [TAB 6 – NAESB APPENDICES]

### NAESB Appendix A –

#### 2060 Mitigating Constraints On and Off the Contract Path during TLR

##### Section 1 – On and Off Contract Path Constraints

###### Introduction

2065 Reserving Transmission Service for an Interchange Transaction along a Contract Path may not  
reflect the actual distribution of the power flows over the transmission network from generation  
source to load sink. Interchange Transactions arranged over a Contract Path may, therefore,  
overload transmission elements on other electrically parallel paths. The curtailment priority of an  
Interchange Transaction depends on whether the Constrained Facility is on or off the Contract Path  
2070 as detailed below.

###### **A.1 Constraints ON the Contract Path (*Sections 2.2 of NAESB Transmission Loading Relief Business Practice*)**

**A.1.1** The Reliability Coordinator initiating TLR shall consider the entire Interchange  
Transaction non-firm if the transmission link (i.e., a segment on the Contract Path) on the  
2075 Constrained Facility is Non-firm Point-to-Point Transmission Service, even if other links  
in the Contract Path are firm. When the Constrained Facility is on the Contract Path, the  
Interchange Transaction takes on the Transmission Service Priority of the Transmission  
Service link with the Constrained Facility regardless of the Transmission Service Priority  
on the other links along the Contract Path. (*Section 2.2.1.1 of NAESB Transmission  
2080 Loading Relief Business Practice*)

**Discussion.** The Transmission Operator simply has to call its Reliability  
Coordinator, request the TLR Procedure be initiated, and allow the curtailments  
of all Interchange Transactions that are at or above the Curtailment Threshold to  
progress until the relief is realized. Firm Point-to-Point Transmission Service  
2085 links elsewhere in the Contract Path do not obligate Transmission Providers  
providing Non-firm Point-to-Point Transmission Service to treat the transaction  
as firm. For curtailment purposes, the Interchange Transaction’s priority will be  
the priority of the Transmission Service link with the Constrained Facility. (See  
Requirement 4.1.2 below.)

**A.1.2** The Reliability Coordinator initiating TLR shall consider the entire Interchange  
Transaction firm if the transmission link on the Constrained Facility is Firm Point-to-  
Point Transmission Service, even if other links in the Contract Path are non-firm. *Section  
2.2.1.2 of NAESB Transmission Loading Relief Business Practice*)

**Discussion.** The curtailment priority of an Interchange Transaction on a Contract Path  
link is not affected by the Transmission Service Priorities arranged with other links on the  
Contract Path. If the Constrained Facility is on a Firm Point-to- Point Transmission  
Service Contract Path link, then the curtailment priority of the Interchange Transaction is  
considered firm regardless of the Transmission Service arrangements elsewhere on the  
Contract Path. If the Transmission Provider provides its services under the FERC pro  
2100 forma tariff, it may also be obligated to offer its Transmission Customer alternate receipt  
and delivery points, thus allowing the customer to curtail its Transmission Service over  
the Constrained Facilities.

**A.2 Constraints OFF the Contract Path (Section 2.3 of NAESB Transmission Loading Relief Business Practice)**

- 2105     **A.2.1** The Reliability Coordinator initiating TLR shall consider the entire Interchange Transaction non-firm if none of the transmission links on the Contract Path are on the Constrained Facility and if any of the transmission links on the Contract Path are Non-firm Point-to-Point Transmission Service; the Interchange Transaction shall take on the lowest Transmission Service Priority of all Transmission Service links along the Contract Path. *(Section 2.3.1.1 of NAESB Transmission Loading Relief Business Practice)*
- 2110             **Discussion.** An Interchange Transaction arranged over a Contract Path where one or more individual links consist of Non-firm Point-to-Point Transmission Service is considered to be a non-firm Interchange Transaction for Constrained Facilities off the Contract Path. Sufficient Interchange Transactions that are at or above the Curtailment Threshold will be
- 2115             curtailed before any Interchange Transactions using Firm Point-to-Point Transmission Service are curtailed. The priority level for curtailment purposes will be the lowest level of Transmission Service arranged for on the Contract Path.
- 2120     **A.2.2** The Reliability Coordinator initiating TLR shall consider the entire Interchange Transaction firm if all of the transmission links on the Contract Path are Firm Point-to-Point Transmission Service, even if none of the transmission links are on the Constrained Facility and shall not be curtailed to relieve a Constraint off the Contract Path until all non-firm Interchange Transactions that are at or above the Curtailment Threshold have been curtailed. *(Section 2.3.1.2 of NAESB Transmission Loading Relief Business Practice)*
- 2125             **Discussion.** If the entire Contract Path is Firm Point-to-Point Transmission Service, then the TLR procedure will treat the Interchange Transaction as firm, even for Constraints off the Contract Path, and will not curtail that Interchange Transaction until all non-firm Interchange Transactions that are at or above the Curtailment Threshold have been
- 2130             curtailed. However, Transmission Providers off the Contract Path are not obligated to reconfigure their transmission system or provide other congestion management procedures unless special arrangements are in place. Because the Interchange Transaction is considered firm everywhere, the Reliability Coordinator may attempt to arrange for Transmission Operators to reconfigure transmission or provide other congestion
- 2135             management options or Balancing Authorities to re-dispatch, even if they are off the Contract Path, to try to avoid curtailing the Interchange Transaction that is using the Firm Point-to-Point Transmission Service.

**SECTION 2 - Examples of On-Path and Off-Path Mitigation**

2140

This section explains, by example, the obligations of the Transmission Service Providers on and off the Contract Path when calling for Transmission Loading Relief. When Reallocating or curtailing Interchange Transactions using Firm Transmission Service under TLR level 5A or 5B, the Transmission Service Providers may be obligated to perform comparable curtailments of its Transmission Service to Network Integration and Native Load customers.

2145

**Scenario:**

- Interchange Transaction arranged from system A to system D, and assumed to be at or above the Curtailment Threshold
- Contract Path is A-E-C-D (except as noted)
- Locations 1 and 2 denote Constraints

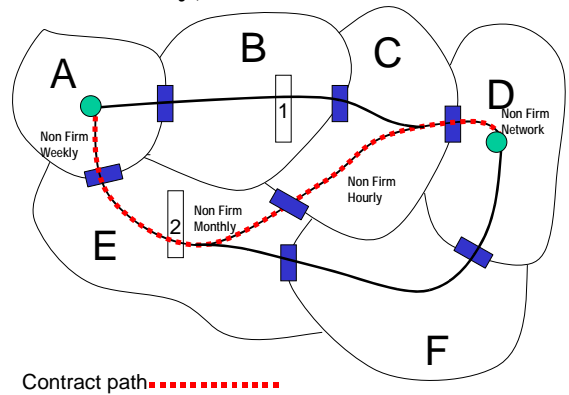
2150

**Case 1: E is a Non-Firm Monthly path, C is Non-Firm Hourly; E has Constraint at #2.**

2155

- E may call Reliability Coordinator for TLR Procedure to relieve overload at Constraint #2.
- Interchange Transaction A-D may be curtailed by TLR action as though it was being served by **Non-Firm monthly Point-to-point Transmission Service**, even though it was using Non-Firm hourly Point-To-Point Transmission Service from C. That is, it takes on the priority of the link with the Constrained Facility or Flowgate along the Contract Path. (See Section 2.2.)

2160



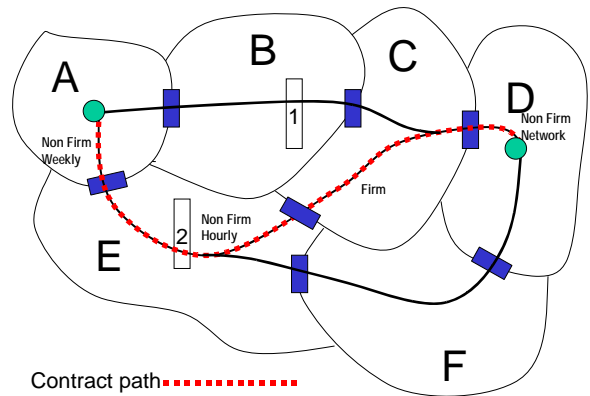
2165

**Case 2: E is a Non-Firm Hourly path, C is Firm; E has Constraint at #2.**

2170

- Although C is providing Firm Transmission Service, the Constraint is not on C's system; therefore, E is not obligated to treat the Interchange Transaction as though it was being served by Firm Transmission Service.
- E may call Reliability Coordinator for TLR Procedure to relieve overload at Constraint #2.
- Interchange Transaction A-D may be curtailed by TLR action as though it was being served by Non-Firm hourly Point-to-point Transmission Service, even though it was using Firm Transmission Service from C. That is, when the Constraint is on the Contract Path, the Interchange Transaction takes on the priority of the link with the Constrained Facility or Flowgate. (See section 2.2.)

2175

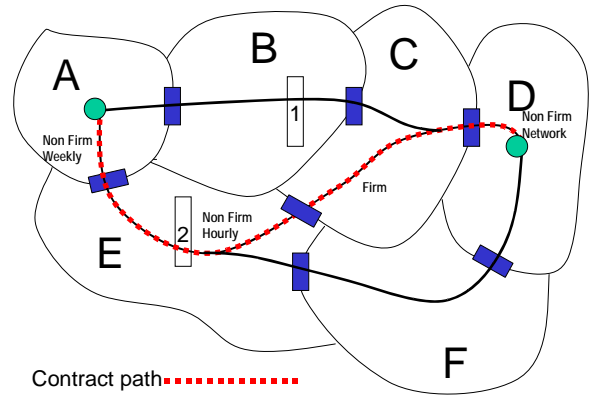


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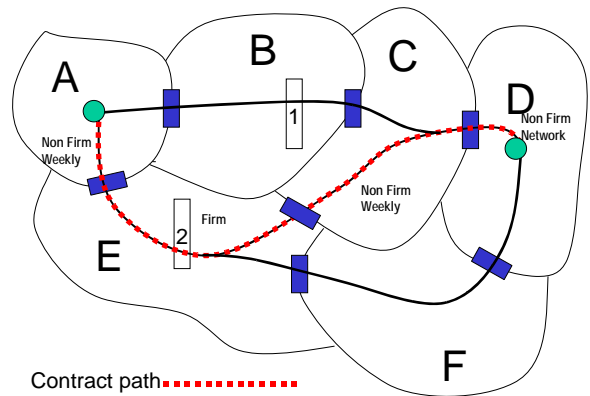
**Case 3: E is a Non-Firm hourly path, C is Firm, B has Constraint at #1.**

- 2185
- B may call Reliability Coordinator for TLR Procedure to relieve overload at Constraint #1.
  - Interchange Transaction A-D may be curtailed by TLR action as though it was being served by Non-Firm hourly Transmission Service, even if it was using Firm Transmission Service elsewhere on the path. When the Constraint is off the Contract Path, the Interchange Transaction takes on the lowest priority reserved on the Contract Path. (See section 2.3.)
- 2190
- 2195



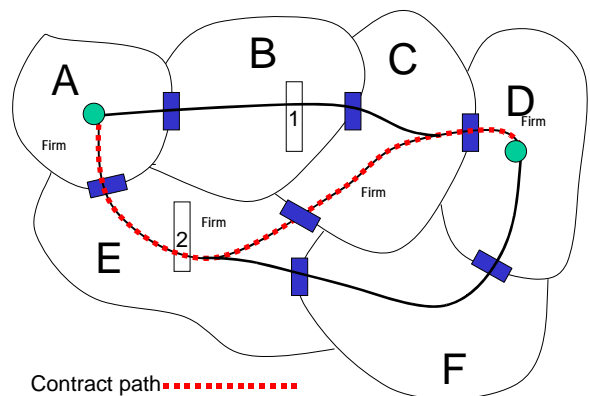
**Case 4: E is a Firm path; A, D, and C are Non-Firm; E has Constraint at #2.**

- 2200
- Interchange Transaction A – D is considered Firm priority for curtailment purposes.
  - E may then call Reliability Coordinator for TLR, which would curtail all Interchange Transactions using Non-Firm Transmission Service first.
  - E is obligated to try to reconfigure transmission to mitigate Constraint #2 in E before E may curtail the Interchange Transaction as ordered by the TLR. (See Section 2.2)
- 2205



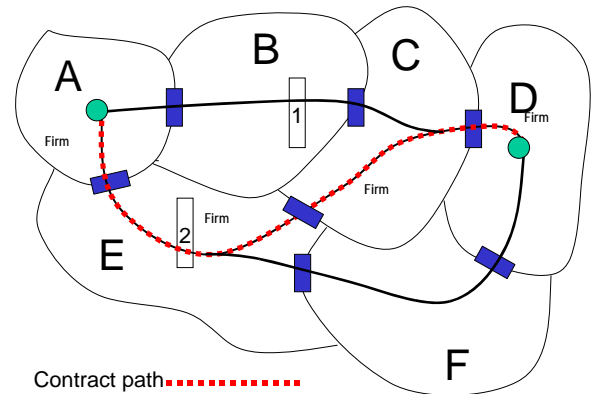
**Case 5: The entire path (A-E-C-D) is Firm; E has Constraint at #2.**

- 2210
- Interchange Transaction A – D is considered Firm priority for curtailment purposes.
  - E may call Reliability Coordinator for TLR, which would curtail all Interchange Transactions using Non-Firm Transmission Service first.
- 2215
- E is obligated to curtail Interchange Transactions using Non-Firm Transmission Service, and then reconfigure transmission on its system, or, if there is an agreement in place, arrange for reconfiguration or other congestion management options on another system, to mitigate Constraint #2 in E before the Firm A-D transaction is curtailed. (See section 2.2.)
- 2220
- A, C, D, may be requested by E to try to reconfigure transmission to mitigate Constraint #2 in E at E's expense. (See section 2.2.)
- 2225



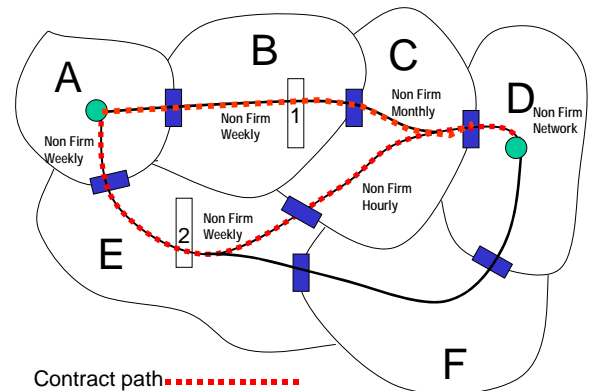
**Case 6: The entire path (A-E-C-D) is Firm; B has Constraint at #1.**

- Interchange Transaction A – D is considered Firm priority for curtailment purposes.
- 2230 • B may call Reliability Coordinator for TLR Procedure for all *Non-Firm* Interchange Transactions that contribute to the overload at Constraint #1.
- 2235 • Following the curtailment of all Non-Firm Interchange Transactions, the Reliability Coordinator(s) will determine which Transmission Operator(s) will reconfigure their transmission, if possible, to mitigate Constraint #1. (See section 2.3.)
- 2240 • A-D transaction may be curtailed as a result. However, the A-D transaction is treated as a Firm Interchange Transaction and will be curtailed only after Non-Firm Interchange Transactions. (Note: This means that the Firm Contract Path is respected by all parties, including those not on the Contract Path.) (See section 2.3.)



**Case 7: Two A-to-D transactions using A-B-C-D and A-E-C-D; A and B are Non-Firm; B has Constraint at #1**

- 2245 • B is not obligated to reconfigure transmission to mitigate Constraint at #1. (See section 2.2.)
- B may call for TLR Procedure to relieve overload at Constraint #1.
- 2250 • If both A – D Interchange Transactions have the same TDF across Constraint #1, then they both are subject to curtailment. However, Interchange Transaction A – D using the A-B-C-D path is assigned a higher priority (priority NW on B), and would not be curtailed until after the Interchange Transaction using the path A-E-C-D (priority NH on the Contract Path as observed by B who is off the Contract Path).
- 2255



2260

## **NAESB Appendix B –**

### **Section 1 Parallel Flow Calculation Procedure for Reallocating or Curtailing Firm Transmission Service**

#### **Introduction**

2265 The provision of Point-to-Point Transmission Service, Network Integration Transmission Service and service to Native Load results in parallel flows on the transmission network of other Transmission Operators. When a transmission facility becomes constrained curtailment of Interchange Transactions is required to allow Interchange Transactions of higher priority to be scheduled (Reallocation) or to provide transmission loading relief (Curtailment). An Interchange Transaction is considered for Reallocation or Curtailment if its Transfer Distribution Factor (TDF) exceeds the TLR Curtailment Threshold. In compliance with the Transmission Service Provider tariffs, Interchange Transactions using Non-firm Point-to-Point Transmission Service are curtailed first (TLR Level 3A and 3B), followed by transmission reconfiguration (TLR Level 4), and then the curtailment of Interchange Transactions using Firm Point-to-Point Transmission Service, Network Integration Transmission Service and service to Native Load (TLR Level 5A and 5B). Curtailment of Firm Point-to-Point Transmission Service shall be accompanied by the comparable curtailment of Network Integration Transmission Service and service to Native Load to the degree that these three Transmission Services contribute to the Constraint.

#### **B.1 Requirements**

2280 A methodology, called the Per Generator Method without Counter Flow, or simply the Per Generator Method, has been programmed into the IDC to calculate the portion of parallel flows on any Constrained Facility due to service to Native Load of each Balancing Authority. The following requirements are necessary to assure comparable Reallocation or Curtailment of firm Transmission Service:

2285 **B.1.1** The Reliability Coordinator initiating a curtailment shall identify for curtailment all firm Transmission Services (i.e. Point-to-Point, Network Integration and service to Native Load) that contribute to the flow on any Constrained Facility by an amount greater than or equal to the Curtailment Threshold on a pro rata basis. (*Section 3.11 of NAESB Transmission Loading Relief Business Practice*)

2290 **B.1.2** For Firm Point-to-Point Transmission Services, the Transfer Distribution Factors must be greater than or equal to the Curtailment Threshold. (*Sections 3.11.1 and 3.11.1.1 of NAESB Transmission Loading Relief Business Practice*)

2295 **B.1.3** For Network Integration Transmission Service and service to Native Load, the Generator-To-Load Distribution Factors must be greater than or equal to the Curtailment Threshold. (*Sections 3.11 and 3.11.1.1 of NAESB Transmission Loading Relief Business Practice*)

2300 **B.1.4** The Per Generator Method shall assign the amount of Constrained Facility relief that must be achieved by each Balancing Authority's Network Integration Transmission Service or service to Native Load. It shall not specify how the reduction will be achieved. (*Sections 3.11.2.1, 3.11.2.1.1, 3.11.2.1.2, 3.11.2.1.3 and 3.11.2.1.4 of NAESB Transmission Loading Relief Business Practice*)

**B.1.5** All Balancing Authorities in the Eastern Interconnection shall be obligated to achieve the amount of Constrained Facility relief assigned to them by the Per Generator Method. (*Section 3.11.2.8 of NAESB Transmission Loading Relief Business Practice*)

2305 **B.1.6** The implementation of the Per Generator Method shall be based on transmission and generation information that is readily available. (*Section 3.11.2 of NAESB Transmission Loading Relief Business Practice*)

## B.2 Calculation Method

2310 The calculation of the flow on a Constrained Facility due to Network Integration Transmission  
Service or service to Native Load shall be based on the Generation Shift Factors (GSFs) of a  
Balancing Authority's assigned generation and the Load Shift Factors (LSFs) of its native load,  
relative to the system swing bus. The GSFs shall be calculated from a single bus location in the  
IDC. The IDC shall report all generators assigned to native load for which the GLDF is greater  
than or equal to the Curtailment Threshold. (*all Sections 3.11.2.2 of the NAESB Transmission  
Loading Relief Business Practice Standard*)

2315

## Section 2 Example Calculations of the Per Generator Method

### Example 1: The Per Generator Method Calculation

2320 An example of calculating Firm transaction curtailments using the Per Generator Method is  
provided in this section, assuming that the Constrained Flowgate is #3006 (Eau Claire-Arpin 345  
kV circuit). The Generator-to-Load Distribution Factors (GLDFs) for this Flowgate are presented in  
Table B-1. In this example, a total Firm (PTP and tagged NI transactions) contribution of 708.85  
MW is assumed to be given by the IDC.

2325 From Table B-1, the untagged NI/NL contributions of all Balancing Authority Areas that impact the  
Constrained Facility or Flowgate are listed below:

$$\text{ALTE} = 27.0 \text{ MW}$$

$$\text{ALTW} = 41.1 \text{ MW}$$

$$\text{NSP} = 33.1 \text{ MW}$$

2330

$$\text{WPS} = 26.2 \text{ MW}$$

$$\text{Total NL \& untagged NI contribution} = 127.4 \text{ MW}$$

$$\text{Total Firm (PTP and NI/NL) contribution} = 127.4 \text{ MW} + 708.85 \text{ MW} = 836.25 \text{ MW}$$

$$\text{NL \& NI portion of total Firm contribution} = 127.4/836.25 = 15.2\%$$

$$\text{PTP and tagged NI portion of total Firm contribution} = 708.85/836.25 = 84.47\%$$

2335 Allocation of relief of the Constrained Facility or Flowgate to each Balancing Authority Area with  
impactive untagged NI/NL contribution is given below:

$$\text{ALTE} = 27.0 / 127.4 \times 0.152 = 3.2\%$$

$$\text{ALTW} = 41.1 / 127.4 \times 0.152 = 4.9\%$$

$$\text{NSP} = 33.1 / 127.4 \times 0.152 = 3.9\%$$

2340

$$\text{WPS} = 26.2 / 127.4 \times 0.152 = 3.1\%$$

Assume that 50 MW of relief is needed. Then those Balancing Authority Areas that impact NI/NL  
contribution and Firm Transmission Service are responsible for the providing the following amounts  
of Flowgate relief:

$$\text{Relief provided by removing Firm PTP and tagged NI} = 0.845 \times 50 = 42.25 \text{ MW}$$

2345

$$\text{Relief provided by removing NL and untagged NI contributions ALTE} = 0.032 \times 50 = 1.60 \text{ MW}$$

$$\text{Relief provided by removing NL and untagged NI contributions ALTW} = 0.049 \times 50 = 2.45 \text{ MW}$$

$$\text{Relief provided by removing NL and untagged NI contributions NSP} = 0.039 \times 50 = 1.95 \text{ MW}$$

$$\text{Relief provided by removing NL and untagged NI contributions WPS} = 0.031 \times 50 = 1.55 \text{ MW}$$

2350 **Table B-1**

**Native Load Responsibilities**

Flowgate #: 3006 **Flowgate Name: EAU CLAIRE-ARPIN 345 KV**

Common Name	Generator Reference System	Generator Shift Factor (GSF)	Percent Assigned	GLDF Gen to Load Factor	Pmax (MW)	Energy on Flowgate
<b>ALTE #364</b>	Avail Assigned Gen: 1,514 Load Level: 1,796 Scaling: 1.000	ALTE_LD Load Shift Factor: -0.097				
NED G1 13.8--1 CA=ALTE	39000_NED_G1	0.022	100	.1195	113.0	13.5
NED G2 13.8--2 CA=ALTE	39001_NED_G2	0.022	100	.1195	113.0	13.5
<b>Summary</b>						<b>27.0</b>
<b>WPS #366</b>	Avail Assigned Gen: 1,691 Load Level: 1,910 Scaling: 1.000	WPS_LD Load Shift Factor: -0.193				
COL G1 22.0--1 CA=ALTE	39152_COL_G1	-0.094	32	.0993	525.0	16.6
COL G2 22.0--2 CA=ALTE	39153_COL_G2	-0.094	32	.0993	525.0	16.6
EDG G4 22.0--4 CA=ALTE	39207_EDG_G4	-0.118	32	.0752	331.0	7.9
<b>Summary</b>						<b>41.1</b>
<b>NSP #623</b>	Avail Assigned Gen: 8,492 Load Level: 8,484 Scaling: 0.999	NSP_LD Load Shift Factor: 0.206				
WHEATON5 161--1 CA=NSP	61870_WHEATO	0.298	100	.0919	55.0	5.0
WHEATON5 161--2 CA=NSP	61870_WHEATO	0.298	100	.0919	63.0	5.8
WHEATON5 161--3 CA=NSP	61870_WHEATO	0.298	100	.0919	55.0	5.0
WHEATON5 161--4 CA=NSP	61870_WHEATO	0.298	100	.0919	55.0	5.0
WHEATON5 161--5 CA=NSP	61871_WHEATO	0.293	100	.0874	57.0	5.0
WHEATON5 161--6 CA=NSP	61871_WHEATO	0.293	100	.0874	57.0	5.0
WISSOTAG69.0--1 CA=NSP	69168_WISSOT	0.266	100	.0601	37.0	2.2
<b>Summary</b>						<b>33.1</b>
<b>ALTW #631</b>	Avail Assigned Gen: 2,337 Load Level: 3,640 Scaling: 1.000	ALTW_LD Load Shift Factor: 0.065				
FOXLK53G13.8--3 CA=ALTW	62016_FOXLK5	0.147	100	.0819	88.5	7.3
LANS5 4G22.0--4 CA=ALTW	62057_LANS5_	0.116	100	.0506	277.0	14.0
LANS5 3G22.0--3 CA=ALTW	62058_LANS5_	0.116	100	.0505	35.8	1.8
FAIRMONT69.0--3 CA=ALTW	65816_FAIRMO	0.151	100	.0857	5.0	0.4
FAIRMONT69.0--4 CA=ALTW	65816_FAIRMO	0.151	100	.0857	6.0	0.5

Common Name	Generator Reference System	Generator Shift Factor (GSF)	Percent Assigned	GLDF Gen to Load Factor	Pmax (MW)	Energy on Flowgate
FAIRMONT69.0--5 CA=ALTW	65816_FAIRMO	0.151	100	.0857	12.0	1.0
FAIRMONT69.0--6 CA=ALTW	65816_FAIRMO	0.151	100	.0857	7.0	0.6
FAIRMONT69.0--7 CA=ALTW	65816_FAIRMO	0.151	100	.0857	6.5	0.6
<b>Summary</b>	.	.	.	.	.	<b>26.2</b>
.	.	.	.	.	.	.
<b>TOTAL Summary</b>	.	.	.	.	.	<b>127.4</b>

2355 **Example 2: Use of Per Generator Method while Simultaneously Curtailing Transmission Service**

2360 An example of the output of the IDC calculation of curtailment of Firm Transmission Service is provided below for the specific Constrained Facility or Flowgate identified in the NERC Book of Flowgates as Flowgate 1368. In this example, a total Firm PTP and tagged NI contribution to the Constrained Facility or Flowgate, as calculated by the IDC, is assumed to be 21.8 MW.

2365 The Table B-2 below presents a summary of each Balancing Authority’s responsibility to provide relief to the Constrained Facility or Flowgate due to its untagged NI Transmission Service and service to NL contribution to the Constrained Facility or Flowgate. In this example, Balancing Authority LAGN would be requested to curtail 17.3 MW of its total of 401.1 MW of flow contribution on the Constrained Facility or Flowgate.

In summary, Interchange Transactions would be curtailed by a total of 21.8 MW and untagged NI Transmission Service and service to NL would be curtailed by a total of 178.2 MW by the five Balancing Authorities identified in the table. These curtailments would provide a total of 200.0 MW of relief to the Constrained Facility or Flowgate.

2370 **Table B-2**

<i>Sink Reliability Coordinator</i>	<i>Service Point</i>	<i>Scaled P Max</i>	<i>Flowgate untagged NI &amp;NL MW</i>	<i>Current untagged NI &amp;NL Relief</i>	<i>untagged NI &amp;NL Responsibility</i>		<i>untagged NI &amp;NL Responsibility Acknowledgement</i>	
					<i>Inc/Dec</i>	<i>Current Hr</i>	<i>Acknowledge Time</i>	<i>Total MW Resp.</i>
EES	EES	8429.7	2991.4	0.0	128.9	128.9	13:44	128.9
EES	LAGN	1514.0	718.6	0.0	31.0	31.0	13:44	31.0
SOCO	SOCO	5089.2	401.1	0.0	17.3	17.3	13:44	17.3
SWPP	CLEC	235.7	18.0	0.0	0.8	0.8	13:42	0.8
SWPP	LEPA	22.8	4.1	0.0	0.2	0.2	13:42	0.2
<b>Total</b>		<b>15291.4</b>	<b>4133.2</b>	<b>0.0</b>	<b>178.2</b>	<b>178.2</b>		<b>178.2</b>

**NAESB Appendix C –  
Transaction Curtailment Formula**

2375

**Example**

This example is based on the premise that a transaction should be curtailed in proportion to its Transfer Distribution Factor (TDF) on the Constraints. Its effect on the interface is a combination of its size in MW and its effect based on its distribution factor.

2380

<i>Column</i>	<i>Description</i>
1. Initial transaction	Interchange Transaction before the TLR Procedure is implemented.
2. Distribution factor	Proportional effect of the transaction over the constrained interface due to the physical arrangement and impedance of the transmission system.
3. Impact on the interface	Result of multiplying the transaction MW by the distribution factor. This yields the MW that flow through the constrained interface from the transaction. Performing this calculation for each transaction yields the total flow through the constrained interface from all the Interchange Transactions. In this case, 760 MW.
4. Impact weighting factor	“Normalization” of the total of the distribution factors in column 2. Calculated by dividing the distribution factor for each transaction by the total of the distribution factors.
5. Weighted maximum interface reduction	Multiplying the impact on the interface from each transaction by its impact weighting factor yields a new proportion that is a combination of the MW impact on the interface and the distribution factor.
6. Interface reduction	Multiplying the amount needed to reduce the flow over the constrained interface (280 MW) by the normalization of the weighted maximum interface reduction yields the actual MW reduction that each transaction must <i>contribute</i> to achieve the total reduction.
7. Transaction reduction	Divide by the distribution factor to see how much the transaction must be reduced to yield result we calculated in column 7. Note that the reductions for the first two Interchange Transactions (A-D (1) and A-D (2) are in proportion to their size since their distribution factors are equal.
8. New transaction amount	Subtracting the transaction reduction from the initial transaction yields the new transaction amount.
9. Adjusted impact on interface	A check to ensure the new constrained interface MW flow has been reduced to the target amount.



**Allocation Based on Weighted Impact**

		1	2	3	4	5	6	7	8	9
Transaction ID		Initial Transaction	Distribution Factor	(1)*(2) Impact on Interface	(2)/(2TOT) Impact Weighting Factor	(3)*(4) Weighted Max Interface Reduction	(5)*(Relief Requested)/(5 TOT) Interface Reductions	(6)/(2) Transaction Reductions	(1)-(7) New Transaction Amount	(8)*(2) Adjusted Impact on Interface
<b>EXAMPLE 1</b>	A-D(1)	800	0.60	480.00	0.34	164.57	209.73	349.54	450.46	270.27
	A-D(2)	200	0.60	120.00	0.34	41.14	52.43	87.39	112.61	67.57
	B-D	800	0.15	120.00	0.09	10.29	13.11	87.39	712.61	106.89
	C-D	100	0.20	20.00	0.11	2.29	2.91	14.56	85.44	17.09
	E-B	100	0.05	5.00	0.03	0.14	0.18	3.64	96.36	4.82
	F-B	100	0.15	15.00	0.09	1.29	1.64	10.92	89.08	13.36
<b>TOTAL</b>		<b>2100</b>	<b>1.75</b>	<b>760.00</b>		<b>219.71</b>	<b>280.00</b>	<b>553.45</b>	<b>1546.55</b>	<b>480.00</b>
<b>EXAMPLE 2</b>	A-D(1)	1000	0.60	600.00	0.52	313.04	262.16	436.93	563.07	337.84
	B-D	800	0.15	120.00	0.13	15.65	13.11	87.39	712.61	106.89
	C-D	100	0.20	20.00	0.17	3.48	2.91	14.56	85.44	17.09
	E-B	100	0.05	5.00	0.04	0.22	0.18	3.64	96.36	4.82
	F-B	100	0.15	15.00	0.13	1.96	1.64	10.92	89.08	13.36
	<b>TOTAL</b>		<b>2100</b>	<b>1.15</b>	<b>760.00</b>		<b>334.35</b>	<b>280.00</b>	<b>553.45</b>	<b>1546.55</b>
<b>EXAMPLE 3</b>	A-D(1A)	200	0.60	120.00	0.17	20.28	52.43	87.39	112.61	67.57
	A-D(1B)	200	0.60	120.00	0.17	20.28	52.43	87.39	112.61	67.57
	A-D(1C)	200	0.60	120.00	0.17	20.28	52.43	87.39	112.61	67.57
	A-D(1D)	200	0.60	120.00	0.17	20.28	52.43	87.39	112.61	67.57
	A-D(2)	200	0.60	120.00	0.17	20.28	52.43	87.39	112.61	67.57
	B-D	800	0.15	120.00	0.04	5.07	13.11	87.39	712.61	106.89
	C-D	100	0.20	20.00	0.06	1.13	2.91	14.56	85.44	17.09
	E-B	100	0.05	5.00	0.01	0.07	0.18	3.64	96.36	4.82
	F-B	100	0.15	15.00	0.04	0.63	1.64	10.92	89.08	13.36
	<b>TOTAL</b>		<b>2100</b>	<b>3.55</b>	<b>760.00</b>		<b>108.31</b>	<b>280.00</b>	<b>553.45</b>	<b>1546.55</b>

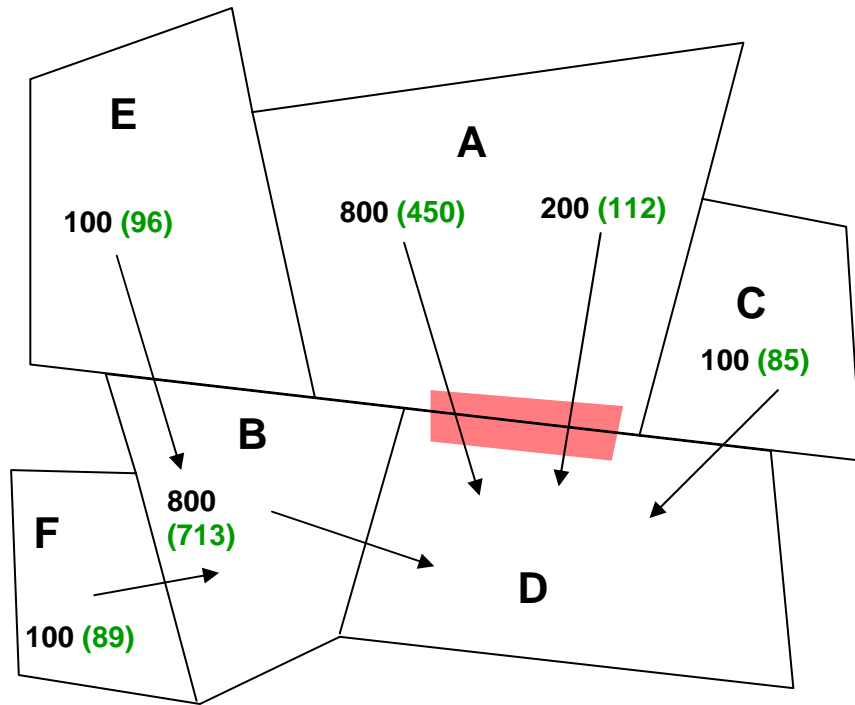
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2410 **NAESB Appendix D –**  
**Regional Differences**

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**Section A**

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2415 **PJM/Midwest ISO, Inc.** – Enhanced Congestion Management Method  
(Curtailement/Reload/Reallocation)

**Organization**

The Balancing Authority participants of:

- Midwest ISO, Inc. (Hereafter referred to as MISO)
- PJM Interconnection, L.L.C. (Hereafter referred to as PJM)

2420 **Business Practice**

This methodology implements a Multi-Balancing Authority Energy Market, simplifies transaction information requirements for market participants, and allows for a means of providing Reliability Coordinators with appropriate information for security analysis and curtailments/reloads/reallocations and re-dispatch requirements.

2425 To accommodate a Multi-Balancing Authority Energy Market, this methodology provides for regional differences from the NERC and NAESB specific standards listed below.

2430 This methodology also applies in the event that the above Balancing Authorities are combined into fewer Balancing Authorities or into one Balancing Authority. This methodology is required to realize the benefits of a LMP market operation while increasing the level of granularity of information provided to the NAESB and NERC Transmission Loading Relief standards. The concepts contained within the PJM/MISO paper, “Managing Congestion to Address Seams,” (see footnote 1) meet the requirements specified in this standard, its related appendices, and NERC Standards.

The processes proposed in this methodology affect the following specific sections:

- 2435
- **IDC Reference Document “How the IDC Handles Reallocation” of the current version of NERC IRO-006.**
  - **IDC Reference Document “Timing Requirements (IDC Calculations and Reporting Requirements)” of the current version of NERC IRO-006.**

2440 **Appendix C “Transaction Curtailment Formula” of this document Section 6 “Interchange Transaction Reallocation During TLR Levels 3A and 5A” of the current version of NERC IRO-006,** For the purposes of clarity, this methodology describes many actions as those of the “RTO.” It should be noted that “RTO” refers to the market-operating entity in which the subject Balancing Authorities participate.

**Assignment of Sub-Priorities**

2445 **Requirements**

- Requirements 3.3 and 3.6 of this document and as found in the current version of NERC IRO-006, IDC Reference Document.

**Explanation**

2450 The “IDC Calculations and Reporting Requirements” section of the current version of NERC IRO-006, IDC Reference Document “Timing Requirements” states that “In a TLR Level 3A the Interchange Transactions using Non-firm Transmission Service in a given priority will be further divided into four sub-priorities, based on current schedule, current active schedule (identified by the submittal of a tag ADJUST message), next-hour schedule, and tag status.”



2470 **Pro Rata Curtailment of Non-Firm Market Flow Impacts**

**Requirements**

- NAESB Appendix C of this document “Transaction Curtailment Formula”

**Explanation**

2475 Appendix C of this document “Transaction Curtailment Formula” details the formula used to apply a weighted impact to each Non-Firm tagged transaction (priorities 1 thru 6 as defined in section 2.1 of this business practice standard) for the purposes of curtailment by the IDC. For the purpose of curtailment, the non-firm market flow impacts (priorities 1 thru 6) submitted to the IDC by the RTO shall be curtailed pro rata as is done for Interchange Transactions using Firm Transmission Service. This method shall be used, because several of the values needed to assign a weighted impact using the process listed in Appendix C of this document “Transaction Curtailment Formula” will not be available:

- 2480
- Distribution factor (no tag to calculate this value from)
  - Impact on interface value (cannot be calculated without distribution factor)
  - Impact weighting factor (cannot be calculated without distribution factor)

2485

  - Weighted maximum interface reduction (cannot be calculated without distribution factor)
  - Interface reduction (cannot be calculated without distribution factor)
  - Transaction reduction (cannot be calculated without distribution factor)

2490 While the Non-Firm market flow impacts submitted to the IDC would be curtailed pro rata under this methodology, the impacting Non-Firm tagged transactions could still use the existing processes to assign the weighted impact value. Example 2 (below) illustrates how this would be accomplished.

## EXAMPLE 2

Contents of “Sub Priority 3” within non-firm priority (2 or 6) on Flowgate “A”

Sub Priority 3

S3 - Increase

S1

S2

S3 - 6-NN

S4

5-NM

4-NW

3-ND

2-NH

1-NS

- Transactional-flow  $\geq$  5% & Market-flow impacts = 100MW
- Market Flow impacts equal 30MW (or 30%)
- Transaction-flow impacts equal 70MW (or 70%)
- Total relief required from Sub Priority (SP) 3 of Non-firm Priority (P) 6-NN for Flowgate A under TLR 3A equals **10MW**
- SP-3/P-6 Market Flow impacts reduced pro-rata (30%) or 3MW
- SP-3/P-6 Transactional Flow impacts reduced using current “weighted impact” calculation to achieve 7MW (70%) of the 10MW relief requested

## **NNL Calculation**

### 2495 **Requirements**

- **Requirement 3.11 “Parallel flow calculation procedure of reallocating or curtailing Firm Transmission Service” of this document** ‘Parallel Flow Calculation Procedure for Reallocating or curtailing Firm Transmission Service’
- **NERC “Parallel Flow Calculation Procedure Reference Document”, version 1 – section C** (Calculation Method), approved November 16, 2000, as found in the NERC Operating Manual.

### **Explanation**

2505 Requirement 3.11 of this document and the NERC “Parallel Flow Calculation Procedure Reference Document”, version 1 – section C (Calculation Method), approved November 16, 2000, as found in the NERC Operating Manual, currently require that the “Per Generator Method Without Counter Flow” (see footnote 1, PJM/MISO “Managing Congestion at the Seams” White Paper ) methodology be utilized to calculate the portion of parallel flows on any Constrained Facility due to Network Integration (NI) transmission service and service to Native Load (NL) of each Balancing Authority.

2510 The RTO shall use a “Market Flow Calculation” methodology to calculate the portion of parallel flows on all facilities included in the RTO’s “Coordinated Flowgate List”<sup>3</sup> due to NI service or service to NL of each Balancing Authority.

The “Market Flow Calculation” differs from the Per Generator Method in the following ways:

- The contribution from all market area generators shall be taken into account.
- 2515 • In the Per Generator Method, only generators having a GLDF greater than 5% are included in the calculation. Additionally, generators are included only when the sum of the maximum generating capacity at a bus is greater than 20 MW. The market flow calculations shall use all positively impacting flows down to 0% with no threshold. Counter flows shall not be included in the market flow calculation.
- 2520 • The contribution of all market area generators is based on the present output level of each individual unit.
- The contribution of the market area load is based on the present demand at each individual bus.

2525 By expanding on the Per Generator Method, the market flow calculation evolves into a methodology very similar the “Per Generator Method” method, while providing granularity on the order of the most granular method developed by the NERC IDC Granularity Task Force. Counter flows are also calculated and tracked in order to account for and recognize that either the positive market flows may be reduced or counter flows may be increased to provide appropriate relief on a Flowgate. Under this methodology, the use of real-time values in concert with the market flow calculation effectively implements the most accurate and detailed method of the six IDC granularity options<sup>4</sup> considered by the NERC IDC Granularity Task Force.

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<sup>3</sup> See footnote 1. The RTO will conduct sensitivity studies to determine which external Flowgates (outside the RTO’s footprint) are significantly impacted by the market flows of the RTO’s control zones (currently the balancing authorities that exist today in the IDC). The RTO shall perform the four studies (described in the MISO/PJM paper “Managing Congestion to Address Seams,” Version 3.2) to determine which external Flowgates the RTO shall monitor and help control. An external Flowgate selected by one of these studies will be considered a Coordinated Flowgate (CF).

<sup>4</sup> The NERC IDC Granularity Task Force drafted “White Paper on the Future of Congestion Management”, draft version 2.1, completed June of 2004 (located on the NAESB website at [http://www.naesb.org/pdf/weq\\_bps120904a3.doc](http://www.naesb.org/pdf/weq_bps120904a3.doc)). Although the task force originally discussed six options for granularity, three options were included in the paper as possible options.

Units assigned to serve a market area's load do not need to reside within the RTO's market area footprint to be considered in the market flow calculation. However, units outside of the RTO's market area shall not be considered when those units have tags associated with their transfers.

2535 These NNL values shall be provided to the IDC to be included and represented with the calculated NNL values of all non-RTO Balancing Authorities for the purposes identifying and obtaining required NNL relief across a Flowgate in congestion under a TLR Level 5A/5B.

### **5% Curtailment Threshold**

#### **Requirements**

- 2540
- Requirements 3.3.2.2, 3.4.1.1, and 3.6.1 of this document.
  - Requirement 3.10 "Curtailment Threshold" of this document.

#### **Explanation**

2545 **Requirements 3.3.2.2, 3.4.1.1, and 3.6.1 of this document** state the following: "The Reliability Coordinator shall only consider those Interchange Transactions at or above the Curtailment Threshold for which the Interconnection-wide TLR procedure is called.

The Curtailment Threshold stated in requirement 3.10 is "5%".

The RTO intends to use a "Market Flow Calculation" methodology to calculate the amount of energy flowing across all facilities included in the RTO's "Coordinated Flowgate List"<sup>5</sup> that is associated with the operation of the RTO market. This energy is identified as "Market Flow".

2550 The RTO intends to provide to the IDC any market flows with an impact of greater than 0% on a coordinated Flowgate. These market flows shall be represented and made available for curtailment under the appropriate TLR Levels. Hence, for the purposes of curtailment and reallocation, the RTO shall observe an impact threshold of 0% instead of 5% for its market flows across any Flowgate in the RTO Coordinated Flowgate List (see footnote 1).

2555 The reason for this lower threshold is because of the size and scope of a large non-tagged energy market, such as the Multi-Balancing Authority market, and an impact of less than 5% on a Flowgate could still represent a large amount of the total capacity of that Flowgate. Therefore, to limit the Curtailment Threshold on these market flows to 5% could result in a Reliability Coordinator's inability to obtain the amount of relief that is needed to prevent the Flowgate from exceeding its operating limits.

2560

Below is an example of how a market flow curtailment threshold of less than 5% could substantially contribute to congestion on a Flowgate:

#### **Example:**

- 2565
- Energy market flows of 1,000 MW impact Flowgate A by 4% — or 40 MW
  - Flowgate A operating limit is 100 MW
  - Fully 40% of the flow across Flowgate A is not identified and represented in the IDC, and therefore not available for curtailment under the TLR process.

### **Current Operating Reliability**

There are no reliability implications from this regional difference.

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<sup>5</sup> See footnote 1. The RTO shall conduct sensitivity studies to determine which external Flowgates (outside the RTO's footprint) are significantly impacted by the market flows of the RTO's control zones (currently the control areas that exist today in the IDC). The RTO shall perform the 4 studies (described in the MISO/PJM "Managing Congestion to Address Seams" Whitepaper Version 3.2) to determine which external Flowgates the RTO will monitor and help control. An external Flowgate selected by one of these studies will be considered a coordinated Flowgate (CF).

## Section B

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### Southwest Power Pool (SPP) – Enhanced Congestion Management Method (Curtailed/Reload/Reallocation)

The SPP regional difference, which is equivalent to the PJM/MISO waiver, shall apply within the SPP region as follows:

This regional difference impacts actions on behalf of those SPP Balancing Authorities that are participating in the SPP market. This regional difference does not impact those Balancing Authorities for which SPP will continue to act as the Reliability Coordinator but that are not participating in the SPP market.

SPP shall calculate the impacts of SPP market flow on all facilities included in SPP's Coordinated Flowgate List. SPP shall conduct sensitivity studies to determine which external flowgates (outside SPP's footprint) are significantly impacted by the market flows of SPP's control zones (currently the balancing areas that exist today in the IDC). SPP shall perform studies to determine which external flowgates SPP will monitor and help control. An external flowgate selected by one of the studies will be considered a Coordinated Flowgate (CF).

In its calculation, SPP shall consider market flow impacts as the impacts of energy dispatched by the SPP market and self-dispatched energy serving load in the market footprint, but not tagged. SPP shall use a method equivalent to the PJM/MISO Market Flow Calculation methodology identified in the PJM/MISO regional difference. Impacts of tagged transactions representing delivery of energy not dispatched by the SPP market and energy dispatched by the market but delivered outside the footprint will not be included in market flow.

SPP shall separate the market flow impacts for current hour and next hour into their appropriate priorities and shall provide those market flow impacts to the IDC. The market flows will be represented in the IDC and made available for curtailment under the appropriate TLR Levels. The market flow impacts will not be represented by conventional interchange transaction tags.

The SPP method will impact the following sections of the TLR Procedure:

**Network and Native Load (NNL) Calculations** — The SPP regional difference modifies Section A of this appendix for the SPP region.

Section A of this appendix requires that the “Per Generator Method without Counter Flow” methodology be utilized to calculate the portion of parallel flows on any Constrained Facility due to Network Integration (NI) transmission service and service to Native Load (NL) of each balancing authority.

SPP shall use a “Market Flow Calculation” methodology to calculate the portion of parallel flows on all facilities included in the RTO's “Coordinated Flowgate List” due to NI service or service to NL of each balancing authority.

#### **The Market Flow Calculation differs from the Per Generator Method in the following ways:**

- The contribution from all market area generators will be taken into account.
- In the Per Generator Method, only generators having a GLDF greater than 5% are included in the calculation. Additionally, generators are included only when the sum of the maximum generating capacity at a bus is greater than 20 MW. The market flow calculations will use all positively impacting flows down to 0% with no threshold. Counter flows will not be included in the market flow calculation.
- The contribution of all market area generators is based on the present output level of each individual unit.
- The contribution of the market area load is based on the present demand at each individual bus.

By expanding on the Per Generator Method, the market flow calculation evolves into a methodology very similar to the “Per Generator Method” method, while providing increased Interchange Distribution Calculator (IDC) granularity. Counter flows are also calculated and tracked in order to account for and recognize that either the positive market flows may be reduced or counter flows may be increased to provide appropriate relief on a flowgate.

These NNL values will be provided to the IDC to be included and represented with the calculated NNL values of other Balancing Authorities for the purposes of identifying and obtaining required NNL relief across a flowgate in congestion under a TLR Level 5A/5B.

**Pro Rata Curtailment of Non-Firm Market Flow Impacts** — The SPP regional difference modifies Section A for the SPP region.

NAESB Appendix C “Transaction Curtailment Formula” of this document details the formula used to apply a weighted impact to each non-firm tagged Interchange Transaction (Priorities 1 thru 6) for the purposes of Curtailment by the IDC. For the purpose of Curtailment, the non-firm market flow impacts (Priorities 2 and 6) submitted to the IDC by SPP should be curtailed pro-rata as is done for Interchange Transaction using firm transmission service. This is because several of the values needed to assign a weighted impact using the process listed in Appendix C will not be available:

- Distribution Factor (no tag to calculate this value from)
- Impact on Interface value (cannot be calculated without Distribution Factor)
- Impact Weighting Factor (cannot be calculated without Distribution Factor)
- Weighted Maximum Interface Reduction (cannot be calculated without Distribution Factor)
- Interface Reduction (cannot be calculated without Distribution Factor)
- Transaction Reduction (cannot be calculated without Distribution Factor)

While the non-firm market flow impacts submitted to the IDC are to be curtailed pro rata, the impacting non-firm tagged Interchange Transactions could still use the existing processes to assign the weighted impact value.

**Assignment of Sub-Priorities** — The SPP regional difference modifies NERC’s Attachment 1-IRO-006-1 IDC Reference Document “How the IDC Handles Reallocation”, Section E2 “Timing Requirements”, for the SPP region and requirements 3.3 and 3.6 of this business practice standard.

Under the header “IDC Calculations and Reporting” in Section E2 of the IDC Reference Document NERC IRO-006, IDC Reference Document to Attachment 1-IRO-006-1, the following requirement exists: “In a TLR Level 3A the Interchange Transactions using Non-firm Transmission Service in a given priority will be further divided into four sub-priorities, based on current schedule, current active schedule (identified by the submittal of a tag ADJUST message), next-hour schedule, and tag status. Solely for the purpose of identifying which Interchange Transactions to be loaded under a TLR 3A, various MW levels of an Interchange Transaction may be in different sub-priorities. The sub-priorities are shown in the following table:

<b>Priority</b>	<b>Purpose</b>	<b>Explanation and Conditions</b>
S1	To allow a flowing Interchange Transaction to maintain or reduce its current MW amount in accordance with its energy profile.	The MW amount is the lowest between currently flowing MW amount and the next-hour schedule. The currently flowing MW amount is determined by the e-tag ENERGY PROFILE and ADJUST tables. If the calculated amount is negative, zero is used instead.
S2	To allow a flowing Interchange Transaction that has been curtailed or halted by TLR to reload to the <i>lesser</i> of its current-hour MW amount or next-hour schedule in accordance with its energy profile.	The Interchange Transaction MW amount used is determined through the e-tag ENERGY PROFILE and ADJUST tables. If the calculated amount is negative, zero is used instead.
S3	To allow a flowing Transaction to increase from its current-hour schedule to its next-hour schedule in accordance with its energy profile.	The MW amounts used in this sub-priority is determined by the e-tag ENERGY PROFILE table. If the calculated amount is negative, zero is used instead.



S4	To allow a Transaction that had never started and was submitted to the Tag Authority after the TLR (level 2 or higher) has been declared to begin flowing (i.e., the Interchange Transaction never had an active MW and was submitted to the IDC <i>after</i> the first TLR Action of the TLR Event had been declared.)	The Transaction would not be allowed to start until all other Interchange Transactions submitted prior to the TLR with the same priority have been (re)loaded. The MW amount used in this sub-priority is the next-hour schedule determined by the e-tag ENERGY PROFILE table.
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SPP shall use a “Market Flow Calculation” methodology to calculate the amount of energy flowing across all facilities included in the RTO’s “Coordinated Flowgate List” that is associated with the operation of the SPP market. This energy is identified as “market flow.”

These market flow impacts for current hour and next hour will be separated into their appropriate priorities and provided to the IDC by SPP. The market flows will then be represented and made available for curtailment under the appropriate TLR Levels.

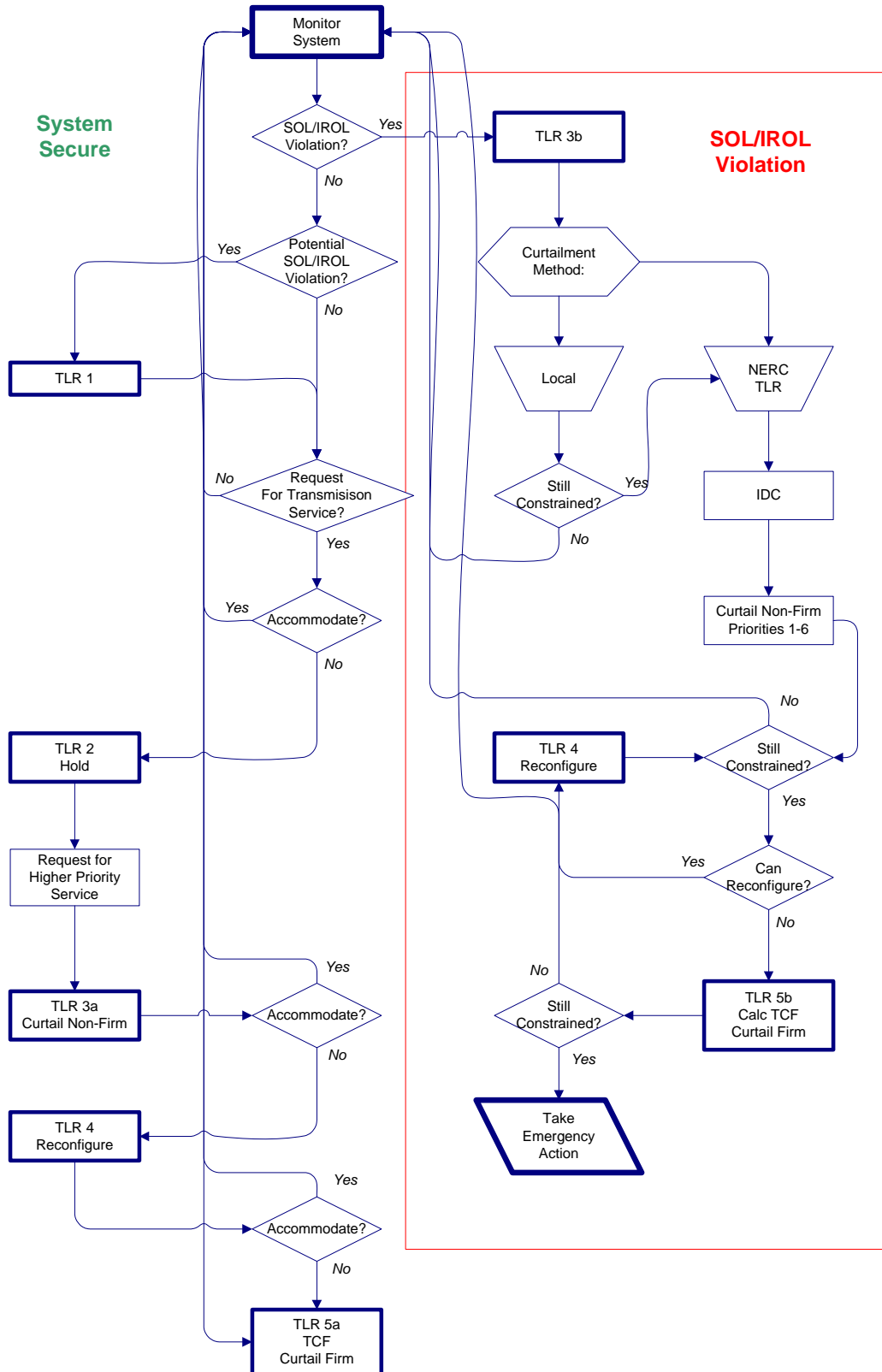
Even though these market flow impacts (separated into appropriate priorities) will not be represented by conventional “tags,” the impacts and their desired levels will still be provided to the IDC for current hour and next hour. Therefore, for the purposes of reallocation, a sub-priority (S1 thru S4) should be assigned to these market flow impacts by the NERC IDC as follows, using comparable logic as would be used if the impacts were in fact tagged transactions.

Priority	Purpose	Explanation and Conditions
S1	To allow existing market flow to maintain or reduce its current MW amount.	The currently flowing MW amount is the amount of market flow existing after the RTO has recognized the constraint for which TLR has been called. If the calculated amount is negative, zero is used instead.
S2	To allow market flow that has been curtailed or halted by TLR to reload to its desired amount for the current-hour.	This is the difference between the current hour unconstrained market flow and the current market flow. If the current-hour unconstrained market flow is not available, the IDC will use the most recent market flow since the TLR was first issued or, if not available, the market flow at the time the TLR was first issued.
S3	To allow a market flow to increase to its next-hour desired amount.	This is the difference between the next hour and current hour unconstrained market flow.

# [TAB 7 – NERC APPENDICES]

## NERC Appendix A – Transaction Management and Curtailment Process

This flowchart depicts an overview of the Transaction Management and Curtailment process. Detailed decisions are not shown.



**Violation Severity Level Guideline for  
 IRO-006-4 Attachment 1**

These guidelines are intended to assist regional entities in evaluating TLR performance. They are not intended to mandate any specific requirements upon compliance or penalty assessment. Reliability Coordinators are expected to review each TLR event and self-report to their regional entity all occurrences of requirement violations.

Evaluation of the violation of IRO-006 Attachment 1 by regional entities will be based on a sample of the TLRs experienced within a month. A sample will consist of ten TLR events during the month. This sample will be made up of the following:

- Up to five TLR events with a known problem. A known problem is defined as a TLR 5 or TLR 6 event, TLR used when an IROL violation occurred or where there was a deviation from the Interconnection-wide procedure.
- The remainder to be made up of randomly selected TLR events.
- If the total number for TLR events is less than ten, then all TLR events should be used.

Each TLR event in the sample will be reviewed for violations of the Attachment 1 requirements using the level of importance described in Appendix A for each violation. The levels of importance indicate how a violation of that requirement would impact reliability. Each violation will be assigned a violation score as described below:

- Low - Contributes 0.25 to a violation (these are mainly administrative issues not associated with reliability).
- Medium - Contributes 0.5 to a violation.
- High - Contributes 1 to a violation.

The sum of all violation scores will be rounded to the closest whole number (the default is to round up for values ending in .5) for each TLR event, and that total violation score will be used to determine the Violation Severity Level as described below. However, at no point will the score round down to zero; if any violation occurs, the minimum Violation Severity Level is 1.

<b>VSL</b>	<b>Number of Accumulated Violations Based on All TLR Events in Reset Period</b>
Lower	One violation of applicable Interconnection-wide procedure.
Moderate	Two to three violations of applicable Interconnection-wide procedure.
High	Four to five violations of applicable Interconnection-wide procedure.
Severe	Six or more violations of applicable Interconnection-wide procedure.

## Appendix A

### NERC TLR Standard Non-Compliance Criteria

The requirements described in IRO-006 Attachment 1 are assigned a level of importance with a higher number of violations allowed for low level of importance areas (minor infractions) and a lower number of violations allowed for a high level of importance areas (major infractions).

#### 1.0 TLR Procedure

##### 1.1 Initiation Only by RC – Not a requirement

###### 1.1.1 Requesting relief on transmission facilities. – Not a requirement

##### 1.2 Mitigating SOL & IROL Violations – High (if TLR was used as the sole means to mitigate an existing IROL)

##### 1.3 Sequencing – High (if the entity doesn't have authority to directed Balancing Authorities and Transmission Operators during Level 6)

##### 1.4 Notification of TLR Procedure Implementation

###### 1.4.1 Notifying Other Reliability Coordinators – Low (this process is now automated)

###### 1.4.1.1 Actions Expected – High (notification of expected actions)

###### 1.4.2 Notifying Transmission Operators and Balancing Authorities – Low (this process is now automated)

###### 1.4.3 Notifying Link Balancing Authorities – High (sink Reliability Coordinator is responsible to notify sink Balancing Authority to curtail)

###### 1.4.3.1 Notification Order – Not requirement

###### 1.4.4 Updates – Low (this process is now automated)

##### 1.5 Obligations – High

##### 1.6 Consideration of Interchange Transactions – Not requirement

###### 1.6.1 Interchange Transactions Not in the IDC – Medium

###### 1.6.2 Transmission Elements Not in IDC – Medium

###### 1.6.3 Questionable IDC Results – Medium

###### 1.6.4 Curtailment that Would Cause a Constraint Elsewhere – High (responding Reliability Coordinator fails to notify initiating Reliability Coordinator that a transaction curtailment will cause a constraint to occur elsewhere)

##### 1.7 Logging – Low (log creation is automated in IDC)

##### 1.8 TLR Event Review – Low

###### 1.8.1 Providing Information – Low

###### 1.8.2 Market Committee Review – Not a requirement

###### 1.8.3 Operating Reliability Subcommittee Review – Low

#### 2.0 Transmission Loading Relief (TLR) Levels

##### 2.1 TLR Level 1

###### 2.1.1 Medium (if a TLR is called without the condition present)

###### 2.1.2 Notification Procedures – Low (IDC does automatic notification)

##### 2.2 TLR Level 2

###### 2.2.1 Medium (if a TLR is called without the condition present)

##### 2.3 TLR Level 3a

###### 2.3.1 – Medium (if a TLR is called without the condition present)

##### 2.4 TLR Level 3b

- 2.4.1 Medium (if a TLR is called without the condition present)
- 2.5 TLR Level 4 – Reconfigure Transmission
  - 2.5.1 Medium (if a TLR is called without the condition present)
  - 2.5.2 Reconfiguration Procedures – Medium (if reconfiguration is not requested)
- 2.6 TLR Level 5a
  - 2.6.1 Medium (if a TLR is called without the condition present)
- 2.7 TLR Level 5b
  - 2.7.1 Medium (if a TLR is called without the condition present)
- 2.8 Curtailment of Interchange Transactions Using Firm Transmission Service
  - 2.8.1 High
    - 2.8.1.1 TLR Level 5a – High
    - 2.8.1.2 TLR Level 5b – High
- 2.9 TLR Level 6
  - 2.9.1 Medium (if a TLR is called without the condition present)
  - 2.9.2 Implementing Emergency Procedures – High
- 2.10 TLR Level 0 – TLR Concluded
  - 2.10.1 Interchange Transaction Restoration and Notification Procedure – Low (IDC does automatic notification)
- 3.1 Not a requirement
- 3.2 Medium
- 3.3 Not a requirement
- 3.4 Medium
- 3.5 Not a requirement