

Summary Consideration: Based on the comments received with the first ballot of FAC-010 and FAC-011, the drafting team clarifies the intent of FAC-010:

- In the definition of 'Contingency,' the word, 'event' means 'failure or outage'.
- Level 4 non-compliance should refer to the applicable requirement (...in accordance with FAC-010 R6 and R7.).

The drafting team does not consider either of these changes to be major since they don't change the intent of the previously posted version of the standard.

Comments about the definition of Contingency

City of Tallahassee TAL

The definition that has been proposed for "Contingency" causes me great concern. The definition will result in the "single Contingency" requirements being retroactively applied to any system event, regardless of how many elements are lost during that single initiating event. The "lightning strike" referred to in the response to Draft 3 comments could very easily take out 2 or 3 elements and cause any system to be in extremis. This will now be defined as a "single contingency", and we should be prepared for it? A CONTINGENCY should be the loss of any single element. An EVENT should be the loss of all elements associated with any single initiating cause. An EVENT may result in multiple CONTINGENCIES. This will prevent having to plan at "ludicrous speed" for a world of possible EVENTS that could take out more than one element.

Response: The drafting team did not intend this broad interpretation and therefore modified the definition to clarify the intent. The word 'event' was replaced with 'failure or outage'.

FRCC

The FRCC does not support FAC-010-1 at this time. In this standard, the definition of contingency was changed and we believe it is now much too broad. The definition in the current reliability standards glossary is more appropriate. As a side note, looking back at the history of the changes on this standard, it appears that the definition was changed in draft 4. The change only showed on the redline version and the only comments asked for were on the implementation plan. We did not pick up on the change in reviewing the clean copy and believe if the change was noted on the comment form, we would have expressed our concerns so the drafting team would have been able to consider them before draft 5 was posted.

Response: The drafting team did not intend this broad interpretation and therefore modified the definition to clarify the intent. The word 'event' was replaced with 'failure or outage'.

Carolina Power & Light Company CPL

The definition of "contingency" has been changed from the current definition and could be read to include the loss of multiple elements for a single event. The applicability to the RC and RA assumes an RTO structure. The applicability should be changed to Transmission Operator and Transmission Planner. These are the entities that determine SOLs in non-RTO areas.

Response: The drafting team did not intend this broad interpretation and therefore modified the definition to clarify the intent. The word 'event' was replaced with 'failure or outage'.

(The drafting team assumes your note about applicability is referencing RC and PA rather than RC and RA.) This set of standards does not assume an RTO structure – these standards were written without the assumption of any particular corporate model. An RTO is a type of organization that may perform this function. The RC and PA may delegate the development of this methodology to others. The RC and PA are required functions regardless of the organizational structure. The RC and PA can delegate the task of developing SOLs to the TOP and TP.

Florida Power & Light FPL

Defininion of contingency needs work !

Response: The drafting team did not intend this broad interpretation and therefore modified the definition to clarify the intent. The word 'event' was replaced with 'failure or outage'.

JEA JEA

Definition of contingency is too broad, and may include unlikely multiple contingencies.

Response: The drafting team did not intend this broad interpretation and therefore modified the definition to clarify the intent. The word 'event' was replaced with 'failure or outage'.

JEA JEA

JEA is concerned with the broad definition of contingency that may include multiple outages.

Response: The drafting team did not intend this broad interpretation and therefore modified the definition to clarify the intent. The word 'event' was replaced with 'failure or outage'.

Florida Municipal Power Agency FMPA

Do not agree with the change of the term "Contingency". The existing definition of Contingency would be more acceptable than the revised term.

Response: The drafting team did not intend this broad interpretation and therefore modified the definition to clarify the intent. The word 'event' was replaced with 'failure or outage'.

Florida Power Corporation FPC

The definition of "contingency" has been changes from the current definition and could be read so as to include the loss of multiple elements for a single event. Applicability to the RC and RA assumes an RTO structure. Applicability needs to be revised to provide for applicability to Transmssion Operators and Transmission Planners. These entities determine SOLs in non-RTO areas.

Response: The drafting team did not intend this broad interpretation and therefore modified the definition to clarify the intent. The word 'event' was replaced with 'failure or outage'.

(The drafting team assumes your note about applicability is referencing RC and PA rather than RC and RA.) This set of standards does not assume an RTO structure – these standards were written without the assumption of any particular corporate model. An RTO is a type of organization that may perform this function. The RC and PA may delegate the development of this methodology to others. The RC and PA are required functions regardless of the organizational structure. The RC and PA can delegate the task of developing SOLs to the TOP and TP.

City of Lakeland PLKT

Tampa Electric Company TEC

The definition for "Contingency" is of particular concern and is a revision to what is already in the standard glossary. This new definition of contingency is much too broad and includes the loss of multiple elements by a single event.

Response: The drafting team did not intend this broad interpretation and therefore modified the definition to clarify the intent. The word 'event' was replaced with 'failure or outage'.

Florida Power & Light FPL

The definition of Contingency is overly broad

Response: The drafting team did not intend this broad interpretation and therefore modified the definition to clarify the intent. The word 'event' was replaced with 'failure or outage'.

Southeastern Power Administration SEPA

Definition of "Contingency" is too Broad

Response: The drafting team did not intend this broad interpretation and therefore modified the definition to clarify the intent. The word 'event' was replaced with 'failure or outage'.

Progress Energy - Carolinas

-The definition of "contingency" has been changed from the current definition and could be read so as to include the loss of multiple elements for a single event. -Applicability to the RC and RA assumes an RTO structure. -Applicability needs to be revised to provide for applicability to Transmission Operators and Transmission Planners. These entities determine SOLs in non-RTO areas.

Response: The drafting team did not intend this broad interpretation and therefore modified the definition to clarify the intent. The word 'event' was replaced with 'failure or outage'.

(The drafting team assumes your note about applicability is referencing RC and PA rather than RC and RA.) This set of standards does not assume an RTO structure – these standards were written without the assumption of any particular corporate model. An RTO is a type of organization that may perform this function. The RC and PA may delegate the development of this methodology to others. The RC and PA are required functions regardless of the organizational structure. The RC and PA can delegate the task of developing SOLs to the TOP and TP.

Florida Municipal Power Agency FMPA

Prefer the old definition of contingency.

Response: The drafting team did not intend this broad interpretation and therefore modified the definition to clarify the intent. The word 'event' was replaced with 'failure or outage'.

Clay Electric Cooperative

Disagree with the new definition of "contingency". Definition is too broad....needs to be more specific.

Response: The drafting team did not intend this broad interpretation and therefore modified the definition to clarify the intent. The word 'event' was replaced with 'failure or outage'.

Comments about Dividing the Standards for Ballot

United Illuminating UICO

Process Concerns. not sure why standard set was divided at last moment

Response: As these standards were developed, they were reviewed on an individual basis so that balloters should already be familiar with the content and interdependencies. The reliability standards process is still a new process, and just because the Version 0 standards were balloted as a whole, this should not set a precedent that all sets of standards must be balloted as a whole. The drafting team does agree that if new standards have interdependencies, then those sets of interdependent standards should be balloted as a 'set' rather than individually. This is what the drafting team attempted to do in combining the ballot for FAC-008 with the ballot for FAC-009; and in combining the ballot for FAC-010 with that for FAC-011, etc.

Comments about Applicability

Nebraska Public Power District NPPD

FAC-010-1 R1 - The assignment of the SOL methodology to the Reliability Coordinator is not consistent with existing standards and inappropriate. Existing standards have this responsibility assigned to the local reliability entity. When the methodology was assigned to the RA in an earlier version of the standard it was consistent because the RA is a combination of regional and local reliability. If the drafting team does not feel it is appropriate to assign the responsibility to the local reliability entity (Transmission Operator) then it would be best to assign the responsibility to the Regional Reliability Organization to get consistent results throughout the Region. FAC-010-1 R8- there is no measurement for this requirement. This requirement should be incorporated into R7. FAC-010-1 R2 – By definition system operating limits are operating parameters. There is no such thing as a System Operating Limit in the planning horizon. TLP-001-0 thru TLP-005-0 addresses the requirements and actions during the planning period. Does the drafting team expect that Transmission Operators would operate to stay within SOL (as identified in TOP-004-0) that are developed in the planning horizon? Any reference to system operating limits in the planning horizon should be deleted from all the proposed standards.

Response: The planning and operating horizons may overlap one another. SOLs are used in both the planning horizon and the operating horizon. A SOL can be developed for any condition – real or studied. The RCs could delegate the development of SOLs to the TOP as indicated in the standard (R2).

Other Suggested Changes

Alberta Electric System Operator AESO

In FAC-010-1, R5.3, it would be useful to provide clarification and examples on what should be included in the description on "Level of detail of system models used to determine SOLs". In section D, subsections 2 and 3, Level 4 non-compliance, a specific reference should be made to R6 and R7 in order to clearly identify who are the "required entities". We appreciate the provisions added to FAC-010-1 to reflect the more stringent requirements in the Western Interconnection. However, for the sake of reliability for all systems under NERC, we would encourage the Standards Drafting Team to consider modifying the requirements to include the consideration of credible multiple element contingencies in establishing System Operating Limits, for all Interconnections.

[Response: Although we understand the concern with R5.3, an all inclusive list is not practical and a partial list is misleading so this was not changed.](#)

The drafting team will modify Level 4 as indicated.

Midwest Independent Transmission System Operator, Inc.

While this standard is fine in concept, we're unclear why information has to be provided to the CM within 5 days (for data issues and on request). What value is added by imposing this?

[Response: The proposed standards requires the information to be provided within 15 days \(not 5 days\) and is intended to provide a prompt response to a complaint.](#)

MidAmerican Energy Company MEC

MidAmerican continues to be concerned that the RC or PA is to provide a written response to a commenter within 45 days of receipt of comments on SOL Methodology in FAC-010. MidAmerican notes that the Drafting Team extended this from 30 days to 45 days. We still fail to see the reliability consequences if comments are not provided within 45 days. We are voting yes in spite of these concerns.

[Response: The intent in setting a timeframe was to ensure that the timeframe was short enough that the comments would not linger without attention for too long, while also being long enough to provide the developer of the methodology an opportunity to research the validity of the comments.](#)

Consumers Energy CETR

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These standards should make system operating limits like SOLs (System Operating Limit) and IROLs (Interconnection Reliability Operating Limit) available to Distribution Providers and Load Serving Entities. The standards as currently rewritten only require that entities determining these limits (like Planning Authorities, Reliability Coordinators, and Transmission Planners) communicate this information to Planning Authorities, Reliability Coordinators, and Transmission Planners. If system conditions warrant shedding load or some other extreme measure, the Distribution Providers and Load Serving Entities should be made aware of system limits well ahead of time so that they can be aware of the risk to their customers' reliability.

[Response: This standard does not preclude the SOLs from being distributed to DPs and LSEs but does not require this distribution because the team doesn't believe the DPs and LSEs have a BES related need for the SOLs.](#)

Comments about Category C contingencies

New York State Reliability Council

The New York State Reliability Council (NYSRC) has voted NO on proposed Standards FAC-008-1, 009-1, 012-1, and 013-1 because of the concerns addressed below.

1. There are interrelations and dependencies between the three groups of DFR standards. For example, the Transfer Capability standard requires that "Transfer Capabilities must respect all applicable System

Operating Limits (SOLs)". If the Transfer Capability standards were adopted without the SOL standards (FAC-010-1), there would be no NERC SOL methodology standard basis for determining Transfer Capabilities. Although the Regions may have their own SOL requirements, NERC has no compliance review requirements for such Regional requirements. Further, certain Regional SOL requirements may not require Category C Contingency assessments, that we believe would result in excessive Transfer Capabilities.

The drafting team does not see where the standards (FAC-008 through FAC-012) must all be implemented at the same time. While FAC-0012 does require that the Transfer Capability methodology developed ensure that SOLs are not exceeded, SOLs are developed and exist today and should be respected in the development of Transfer Capabilities, even if the proposed standard for the development of an SOL methodology is not approved. The reliability standards process is still a new process, and just because the Version 0 standards were balloted as a whole, this should not set a precedent that all sets of standards must be balloted as a whole. The drafting team does agree that if new standards have interdependencies, then those sets of interdependent standards should be balloted as a 'set' rather than individually. This is what the drafting team attempted to do in combining the ballot for FAC-008 with the ballot for FAC-009; and in combining the ballot for FAC-010 with that for FAC-011, etc. FAC-008 and FAC-009 are basic and surely could move forward without any of the other standards in this series.

2. Implementation Plan. There is no indication of how NERC would revise the DFR implementation plan if only one or two of the DFR groups were adopted.

The implementation plan doesn't include any cross references between standards and therefore does not need to be modified if only one or two of the DFR sets of standards were adopted.

3. Lack of Review Time. Because of NERC's last minute voting group change there was insufficient time for RRS to completely review the above two issues. Also, the NYSRC was unable to provide NY voting entities balloting recommendations in time for their vote. If the decision to ballot the DFR standards in three groups had been made a few weeks earlier, the NYSRC would have had time to consider these issues.

The Standards Process Manual does not address this area, however as per the implementation plan there is no cross reference between the standards that should preclude approving one set with or without the other sets of standards.

4. Process Concerns. We believe that NERC's last minute announcement on October 4, 2005, the first day of balloting - to ballot the six DFR standards in three groups instead of one group as previously announced - was unacceptable. We believe that this action either violated NERC's own standard development procedure, or if not, circumvented the intent of the process.

The Standards Process Manual does not address this area and we do not believe there has been any violation of the process.

Hydro-Quebec HQT

The proposed standard is not consistent with a critical recommendation in the Final Report on the August 14, 2003 Blackout in the United States and Canada, prepared by the U.S.-Canada Power System Outage Task Force. Recommendation #25 that states that the NERC process to reevaluate its standards should "not dilute the content of the existing standards." The draft Standard FAC-010-1 does not include "the imposition of multiple element Category C" contingencies which are in the current TPL-003-0 standards. This standard is less reliable than the existing version 0 standard. The standard FAC-010-1 Requirement R2 states as follows: "The PA shall have a documented SOL methodology for use in developing SOL's within its Planning Authority Area. The PA's SOL Methodology shall be: (i) applicable for developing SOL's used in planning horizon and (ii) state that SOLs shall not exceed associated facility ratings". It is in the above context that we feel that there are inconsistencies pertaining to FAC-010-1 and TPL-003-0, resulting in confusion. As per requirement R2 of FAC-010-1 requiring SOL Methodology to be, questions and concerns arise: The recently adopted Version 0 Standards - specifically Standard TPL-003-0, "System Performance Following Loss of Two or More BES Elements" - include Category C contingencies. Adoption

of FAC-010-1 in its present form without considering these contingencies would be inconsistent with Standard TPL-003-0 and a weakening of existing NERC standards.

[Response: The Version 0 TPL standards are for planning purposes and presume a pre-contingency condition of all facilities in service. In the operating horizon, there are almost always multiple outages including both planned and unplanned. Mixing the two pre-contingency conditions is not technically sound.](#)

Manitoba Hydro

Manitoba Hydro supports the NYSRC position outlined in their September 26, 2005 letter to the Ballot Body Members registered to Vote on NERC Determine Facility Ratings Standard.

[Response: Please see the response to NYSRC comments.](#)

New York Power Authority NYPA

I don't believe the ballot should have been split at this late hour. I am also in support of the NPCC & NYSRC opinion about the Category C issues.

[Response: Response: As these standards were developed, they were reviewed on an individual basis so that balloters should already be familiar with the content and interdependencies. The reliability standards process is still a new process, and just because the Version 0 standards were balloted as a whole, this should not set a precedent that all sets of standards must be balloted as a whole. The drafting team does agree that if new standards have interdependencies, then those sets of interdependent standards should be balloted as a 'set' rather than individually. This is what the drafting team attempted to do in combining the ballot for FAC-008 with the ballot for FAC-009; and in combining the ballot for FAC-010 with that for FAC-011, etc.](#)

[Please see the response to NYSRC comments.](#)

New York State Electric and Gas Corporation NYET

See NYSRC comments

[Response: Please see the response to NYSRC comments.](#)

Northeast Utilities NU

Category C contingencies are not addressed in the proposed System Operating Limits Standard thereby decreasing the overall reliability of the Bulk Electric System. Also, the proposed standard needs to clarify whether under certain specific emergency operating conditions some Category C contingencies could be exempted. As an example, if one of the Category C contingencies (loss of multiple circuits on a common transmission structure) does not have an inter-Area impact, can that contingency be exempted or must the Control Area always respect and operate to that and all other Category C contingencies irrespective of whether the contingency has or does not have inter-Area impact.

[Response: The Version 0 TPL standards are for planning purposes and presume a pre-contingency condition of all facilities in service. In the operating horizon, there are almost always multiple outages including both planned and unplanned. Mixing the two pre-contingency conditions is not technically sound.](#)

Nova Scotia Power NSPI

We feel that it is necessary that Category C contingencies be included in the standards

[Response: The Version 0 TPL standards are for planning purposes and presume a pre-contingency condition of all facilities in service. In the operating horizon, there are almost always multiple outages including both planned and unplanned. Mixing the two pre-contingency conditions is not technically sound.](#)

Avista Corp. Washington Water Power Division AVWP

The standard does not require the evaluation of credible multiple contingency events in determining SOLs. The requirement to study multiple contingency events needs to be added to the standard to meet

the Northeast Blackout recommendations. Experience shows that multiple contingencies have resulted in significant system events including area blackouts.

During the development of this standard, the drafting team asked stakeholders to consider whether credible multiple contingencies should be addressed in FAC-010. From comments, it was clear that the minimal standard for evaluation of limits was a consideration of **only** first contingencies. It is also clear that system reliability requires further considerations in some regions but these considerations do not form a consistent subset of contingencies categorized as level C considerations across all regions. The wording in the posted draft of the standard provides:

- An enabler for regions to have credible multiple contingencies evaluated in the determination of system operating limits and for this list for contingencies to be less than the full set of Table 1 category C Contingencies. The list could have no entries or it could be as specific as detailing only certain contingencies at certain buses.
- A reduction in the need for a series of regional differences to be embedded in the standard. Similarly, there is a reduced need for those responsible for establishing the methodology for the calculation of system operating limits or those responsible for the determination of limits to have to be aware of regional standards and to develop methodologies consistent with both the NERC and the regional standard.
- An enabler for the regions to require different contingencies to be considered for planning and operating studies and for the criteria for evaluation of the contingencies to be different for each.
- While not a direct factor, this wording reflects current reliability practice and ensures that it can continue.

Note that there are no criteria for the establishment of SOLs used in the operating horizon, so developing a standard that does establish criteria is a step **forward**, not a reduction in reliability. The language in the proposed FAC-010-1 represents a compromise aimed at reaching the best consensus.

Manitoba Hydro Electric Board MHEB

The proposed Standard FAC-010-1 would result in a weakening of existing Version 0 Standard TPL-003-0 with regard to consideration of credible multiple element contingencies (Category C contingencies).

Response: The Version 0 TPL standards are for planning purposes and presume a pre-contingency condition of all facilities in service. In the operating horizon, there are almost always multiple outages including both planned and unplanned. Mixing the two pre-contingency conditions is not technically sound.

National Association of Regulatory Utility Commissioners New York State Public Service Commission Public Service Commission of South Carolina

The proposed standard falls short in ensuring a process to operate the system reliably by failing to adequately address multiple-outage contingencies and by allowing individual regions to operate to a lower standard from what is required in the planning process.

During the development of this standard, the drafting team asked stakeholders to consider whether credible multiple contingencies should be addressed in FAC-010. From comments, it was clear that the minimal standard for evaluation of limits was a consideration of **only** first contingencies. It is also clear that system reliability requires further considerations in some regions but these considerations do not form a consistent subset of contingencies categorized as level C considerations across all regions. The wording in the posted draft of the standard provides:

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- An enabler for the regions to require different contingencies to be considered for planning and operating studies and for the criteria for evaluation of the contingencies to be different for each.
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Note that there are no criteria for the establishment of SOLs used in the operating horizon, so developing a standard that does establish criteria is a step **forward**, not a reduction in reliability. The language in the proposed FAC-010-1 represents a compromise aimed at reaching the best consensus.

Northeast Power Coordinating Council

NPCC is on record, through its multiple comments during the drafting process, as opposing FAC-010-1 because it does not require consideration of credible multiple element contingencies (Category C) in the determination of System Operating Limits. The standard in its present form is inconsistent with TPL-003-0 and with recommendations in the 2003 Blackout Report.

Response: The Version 0 TPL standards are for planning purposes and presume a pre-contingency condition of all facilities in service. In the operating horizon, there are almost always multiple outages including both planned and unplanned. Mixing the two pre-contingency conditions is not technically sound.

Hydro One Networks Inc.

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Hydro One is voting Negative on this standard due to concerns related with an outstanding issue in not requiring the evaluation of all Category "C" contingencies when determining SOLs.

Response: The Version 0 TPL standards are for planning purposes and presume a pre-contingency condition of all facilities in service. In the operating horizon, there are almost always multiple outages including both planned and unplanned. Mixing the two pre-contingency conditions is not technically sound.

Manitoba Hydro MHEB

The specific issue is that proposed Standard FAC-010-1 would result in a weakening of existing Version 0 Standard TPL-003-0 with regard to consideration of credible multiple element contingencies (Category C contingencies).

Response: The Version 0 TPL standards are for planning purposes and presume a pre-contingency condition of all facilities in service. In the operating horizon, there are almost always multiple outages including both planned and unplanned. Mixing the two pre-contingency conditions is not technically sound.

Niagara Mohawk NMPC

The omission of a requirement to operate to credible Category C contingencies has a negative impact on reliability across North America. See attached.

Response: The Version 0 TPL standards are for planning purposes and presume a pre-contingency condition of all facilities in service. In the operating horizon, there are almost always multiple outages including both planned and unplanned. Mixing the two pre-contingency conditions is not technically sound.

California Energy Commission

Sacramento Municipal Utility District SMUD

Salt River Project SRP

Seattle City Light SCL

Seattle City Light SCL

Southern California Edison SCET

Tucson Electric Power Company TEPC

Western Electricity Coordinating Council

While the Interconnection Wide Regional Differences identified in FAC-010-1 adequately reflect the more stringent requirements in the Western Interconnection, for the good of the industry and the sake of reliability, the Standards Drafting Team should consider modifying the requirements of the NERC Standard to require the consideration of credible multiple element contingencies, similar to those identified in the Western Interconnection Wide Regional Differences, in establishing System Operating Limits.

During the development of this standard, the drafting team asked stakeholders to consider whether credible multiple contingencies should be addressed in FAC-010. From comments, it was clear that the minimal standard for evaluation of limits was a consideration of **only** first contingencies. It is also clear that system reliability requires further considerations in some regions but these considerations do not form a consistent subset of contingencies categorized as level C considerations across all regions. The wording in the posted draft of the standard provides:

- An enabler for regions to have credible multiple contingencies evaluated in the determination of system operating limits and for this list for contingencies to be less than the full set of Table 1 category C Contingencies. The list could have no entries or it could be as specific as detailing only certain contingencies at certain buses.
- A reduction in the need for a series of regional differences to be embedded in the standard. Similarly, there is a reduced need for those responsible for establishing the methodology for the calculation of system operating limits or those responsible for the determination of limits to have to be aware of regional standards and to develop methodologies consistent with both the NERC and the regional standard.
- An enabler for the regions to require different contingencies to be considered for planning and operating studies and for the criteria for evaluation of the contingencies to be different for each.
- While not a direct factor, this wording reflects current reliability practice and ensures that it can continue.

Note that there are no criteria for the establishment of SOLs used in the operating horizon, so developing a standard that does establish criteria is a step **forward**, not a reduction in reliability. The language in the proposed FAC-010-1 represents a compromise aimed at reaching the best consensus.

United States Bureau of Reclamation

Consider modifying the requirements of FAC-010-1 to consider credible multiple element contingencies, similar to those identified in the Western Interconnection-Wide Regional Differences, in establishing System Operating Limits.

During the development of this standard, the drafting team asked stakeholders to consider whether credible multiple contingencies should be addressed in FAC-010. From comments, it was clear that the minimal standard for evaluation of limits was a consideration of **only** first contingencies. It is also clear that system reliability requires further considerations in some regions but these considerations do not form a consistent subset of contingencies categorized as level C considerations across all regions. The wording in the posted draft of the standard provides:

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Salt River Project SRP

FAC-010-1 properly identifies the Western Interconnection more stringent criteria. However, I recommend incorporation of credible multiple element contingencies in establishing System Operating Limits.

During the development of this standard, the drafting team asked stakeholders to consider whether credible multiple contingencies should be addressed in FAC-010. From comments, it was clear that the minimal standard for evaluation of limits was a consideration of **only** first contingencies. It is also clear that system reliability requires further considerations in some regions but these considerations do not form a consistent subset of contingencies categorized as level C considerations across all regions. The wording in the posted draft of the standard provides:

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Note that there are no criteria for the establishment of SOLs used in the operating horizon, so developing a standard that does establish criteria is a step **forward**, not a reduction in reliability. The language in the proposed FAC-010-1 represents a compromise aimed at reaching the best consensus.

SaskPower SPC

SaskPower supports these standards, however we share similar concerns to those expressed by the New York State Reliability Council regarding potential seams issues related to the methodology for setting System Operating Limits and coordination with the system performance requirements set forth in TPL-003-0.

Response: The Version 0 TPL standards are for planning purposes and presume a pre-contingency condition of all facilities in service. In the operating horizon, there are almost always multiple outages including both planned and unplanned. Mixing the two pre-contingency conditions is not technically sound.

British Columbia Transmission Corporation

We commend the Drafting Team for incorporating the Western Interconnection requirements in FAC-010. We encourage other interconnections to consider using these WI requirements in determining their SOLs.

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Proposed Comment to Accompany NYSRC’s “No” Vote on NERC
Standards FAC-010-1 & FAC-011-1

The New York State Reliability Council (NYSRC) has voted NO on proposed standards FAC-010-1 and FAC-011-1 because of the concerns addressed below.

Our concerns specifically address standard FAC-010-1, “System Operating Limits Methodology”. These concerns were expressed in our comments on previous drafts to the DFR standard drafting team (SDT), and continue not to be addressed in Draft #5 that has been balloted. The fundamental issue is our concern that the required methodology in the standard for determining System Operating Limits (SOLs) does not include a requirement to consider credible multiple element contingencies. Similar concerns have been expressed by the Northeast Power Coordinating Council (NPCC) and other entities.

The NYSRC believes that the proposed standard is not consistent with a critical recommendation in the *Final Report on the August 14, 2003 Blackout in the United States and Canada*, prepared by the U.S.-Canada Power System Outage Task Force. Recommendation #25 states that the NERC process to reevaluate its standards should “not dilute the content of the existing standards.” The report’s support for this recommendation uses a quote from a commenter on the Interim Report as follows: “A strong transmission system designed and operated in accordance with weakened criteria would be disastrous. Instead, a concerted effort should be undertaken to determine if existing reliability criteria should be strengthened...Only through strong standards and careful engineering can unacceptable power failures like August 14, 2003 be avoided in the future.” Standard FAC-010-1, because it does not require consideration of credible multiple element contingencies, does not meet this principle, for the following reasons:

1. Section R2 of proposed standard FAC-010-1 states that the standard’s required methodology “shall be applicable to development of SOLs during the planning horizon”. However, the recently adopted Version 0 transmission system planning standard TPL-003-0, “System Performance Following Loss of Two or More BES Elements”, includes a requirement to assess so-called Category C contingencies, i.e., events resulting in the loss of two or more (multiple) elements. Therefore, adoption of FAC-010-1 in its present form, without considering Category C contingencies, would be inconsistent with Standard TPL-003-0 and would thus result in a weakening of existing NERC standards.

Response: The Version 0 TPL standards are for planning purposes and presume a pre-contingency condition of all facilities in service. In the operating horizon, there are almost always multiple outages including both planned and unplanned. Mixing the two pre-contingency conditions is not technically sound.

2. Category C contingencies should be applied to the operation of the bulk electric system, as well as to planning. We are aware of the contention that in operations often there is a facility already out of service, and therefore consideration of multiple element contingencies, in addition, could be overly restrictive. We agree that there could be certain situations where consideration of Category C (multi-element) contingencies would result in unacceptable restrictions; however, if such a condition did arise an exception could always be requested.

Response: The typical operating condition is to have one or more facilities out of service.

3. NYSRC agrees that Category C contingencies need not be applied when key transmission elements are already out of service. Traditionally, NPCC members and many other systems have used “normal operating criteria,” which include Category C contingencies, for determining SOLs when all key transmission elements are in service. When one or more key transmission elements are out of service, “emergency operating criteria,” which do *not* include Category C (multi-element) contingencies, would be used. Since the latter condition would normally apply for only a small percentage of the total hours of the year, Category C (multi-element) contingencies would and should be used for determining SOLs most of the time.

Response: The typical operating condition is to have one or more facilities out of service.

4. Another reason for requiring Category C contingencies to apply to operations is that a system designed to these criteria should also be operated to it. It makes no sense to invest in and construct a transmission system based on Category C requirements in accordance with NERC transmission system planning standard TPL-003-0, and then operate the same system using weaker criteria as proposed in Standard FAC-010-1.

Response: An operating condition with all facilities in service would be so rare that it would be impractical to detect that condition and change the analysis process to accommodate this.

5. We recognize that the SDT has included a provision in section R4.4 that allows a Region to establish criteria requiring consideration of credible multiple element contingencies. However, we believe that reliability standards recognizing this class of contingencies should be maintained in *all* of North America, not only certain Regions. A weakening of reliability standards in any Region could adversely affect the reliability in another Region, even if the other Region has adopted more stringent standards.

In conclusion, the NYSRC strongly believes that adoption of proposed standard FAC-010-1, as presently proposed, would weaken present NERC criteria, and in light of 2003 Blackout lessons-learned, would result in an unacceptable reliability impact for the North American bulk electric system.

Response: During the development of this standard, the drafting team asked stakeholders to consider whether credible multiple contingencies should be addressed in FAC-010. From comments, it was clear that the minimal standard for evaluation of limits was a consideration of **only** first contingencies. It is also clear that system reliability requires further considerations in some regions but these considerations do

not form a consistent subset of contingencies categorized as level C considerations across all regions. The wording in the posted draft of the standard provides:

- An enabler for regions to have credible multiple contingencies evaluated in the determination of system operating limits and for this list for contingencies to be less than the full set of Table 1 category C Contingencies. The list could have no entries or it could be as specific as detailing only certain contingencies at certain buses.
- A reduction in the need for a series of regional differences to be embedded in the standard. Similarly, there is a reduced need for those responsible for establishing the methodology for the calculation of system operating limits or those responsible for the determination of limits to have to be aware of regional standards and to develop methodologies consistent with both the NERC and the regional standard.
- An enabler for the regions to require different contingencies to be considered for planning and operating studies and for the criteria for evaluation of the contingencies to be different for each.
- While not a direct factor, this wording reflects current reliability practice and ensures that it can continue.

Note that there are no criteria for the establishment of SOLs used in the operating horizon, so developing a standard that does establish criteria is a step **forward**, not a reduction in reliability. The language in the proposed FAC-010-1 represents a compromise aimed at reaching the best consensus.

**IESO’s SUBMISSION ON NERC STANDARD:
“DETERMINE FACILITY RATINGS, SYSTEM OPERATING LIMITS, AND
TRANSFER CAPABILITIES”**

Introduction

The IESO congratulates the Standards Drafting Team for their work in the development of this standard.

IESO’s Ballot Position on Standards # FAC-008-1 & FAC-009-1: “YES”

IESO’s Ballot Position on Standards # FAC-010-1 & FAC-011-1: “NO with Comments”

IESO’s Ballot Position on Standards # FAC-012-1 & FAC-013-1: “YES”

While recognizing the substantial effort made by the drafting team in developing this standard, we must nevertheless submit a NEGATIVE ballot (No with comments) to standard FAC-010-1 & FAC-011-1 in light of the shortcomings noted below.

Comments and Discussion:

1). Standard FAC-010-1, requirement # R4.2.2 state that the *"Loss of any generator, line, transformer, or shunt device without a Fault." must be observed for requirement 4.2 [R4.2 states: "Following the single Contingencies identified in Reliability Standard FAC-010- 1_R4.2.1 through R4.2.3, the system shall demonstrate transient, dynamic and voltage stability; all Facilities shall be operating within their Facility Ratings and within their thermal, voltage and stability limits; and Cascading Outages or uncontrolled separation shall not occur"]*. This requirement appears to exclude the loss of any single bus or an inadvertent breaker opening. Either of these are single contingencies that can remove additional BES equipment or reconfigure the BES to the point where the BES could be in a cascading situation. It needs to be clarified whether the exclusion of a single bus or an inadvertent breaker is deliberate from Requirement R4.2.2.

Response: The existing standard includes the following language in a footnote to Requirement 4.2 to indicate that the list of contingencies identified in the standard is not intended to be all inclusive:

² The Contingencies identified in FAC-010 R4.2.1 through R4.2.3 are the minimum contingencies that must be studied but are not necessarily the only Contingencies that should be studied.

2). Moreover, Standard FAC-010-1, requirement # R4.2.2 is inconsistent with TPL series of version 0 standards, which state that "B" contingencies must be observed. The table highlights those requirements stated in FAC-010-1 R4.2.2 and 4.2.3, and specifically identifies "Loss of an Element without a Fault", as a requirement to be met.

Response: As noted in response to comment 1), the existing standard includes language to indicate that the list of contingencies identified in the standard is not intended to be all inclusive

3). Furthermore it is the IESO's view that the proposed standard is inconsistent with a critical recommendation of the joint U.S.-Canada Power System Outage Task Force in its *Final Report of the August 14, 2003 Blackout*. Specifically, recommendation #25 which states that the NERC process to re-evaluate its standards should "not dilute the content of the existing standards."

Standard FAC-010-1 Requirement R2 states: "The PA shall have a documented SOL methodology for use in developing SOL's within its Planning Authority Area. The PA's SOL Methodology shall be: (i) applicable for developing SOL's used in planning horizon and (ii) state that SOLs shall not exceed associated facility ratings". It is in the above context that we believe there are inconsistencies between FAC-010-1 and existing standard TPL-003-0, resulting in confusion in the industry. It is specifically with respect to requirement R2 of FAC-010-1 requiring SOL Methodology to be established that a number of questions/concerns arise:

The recently adopted Version 0 Standard TPL-003-0, "**System Performance Following Loss of Two or More BES Elements**" - includes Category "C" contingencies. Adoption of FAC-010-1 in its present form without the requirement for consideration of these Category "C" contingencies would be inconsistent with Standard TPL-003-0 thus weakening existing NERC standards.

Response: The Version 0 TPL standards are for planning purposes and presume a pre-contingency condition of all facilities in service. In the operating horizon, there are almost always multiple outages including both planned and unplanned. Mixing the two pre-contingency conditions is not technically sound.

Suggestions/Recommendations:

- It needs to be clarified whether the exclusion of a single bus or an inadvertent breaker is deliberate from Requirement R4.2.2 and if so why?
- We believe that we understand and agree with the goals of requirement 4.2, but do not support the requirement as stated. It currently states that "Following contingencies... all facilities shall be operating within their facility ratings and within their thermal, voltage and stability limits." It is impractical to expect to be operating within all limits immediately following a contingency. Assuming the goal is to clarify the standard we propose the following changes:

R4.2. Following the single Contingencies identified in FAC-010 Requirement 4.2.1 through Requirement 4.2.3, the system shall demonstrate transient, dynamic and voltage stability; all Facilities shall be operating within their applicable Facility Ratings and within their emergency thermal ratings, and voltage limits and stability limits; and Cascading Outages or uncontrolled separation shall not occur. All Facilities loadings shall be returned to applicable thermal, voltage and stability limits within the applicable re-preparation time (Interconnection Reliability Operating Limit T_v (IROL T_v)).

R4.2.1. Single line to ground or 3-phase Fault (whichever is more severe), with Normal Clearing, on any Faulted generator, line, transformer, or shunt device.

R4.2.2. Loss of any generator, line, transformer, or shunt device without a Fault.

R4.2.3. Single pole block, with Normal Clearing, in a monopolar or bipolar high voltage direct current system.

Response: The original language provided as much clarity and specificity as proposed.

- We suggest that “Category C” contingencies needs to be included in the standard FAC-010-1 for SOL methodology for use in developing SOL’s within its Planning Authority Area, in order to be consistent with standard TPL-003. Such an inclusion would maintain the credibility and reliability of the new standard.

Response: During the development of this standard, the drafting team asked stakeholders to consider whether credible multiple contingencies should be addressed in FAC-010. From comments, it was clear that the minimal standard for evaluation of limits was a consideration of **only** first contingencies. It is also clear that system reliability requires further considerations in some regions but these considerations do not form a consistent subset of contingencies categorized as level C considerations across all regions. The wording in the posted draft of the standard provides:

- An enabler for regions to have credible multiple contingencies evaluated in the determination of system operating limits and for this list for contingencies to be less than the full set of Table 1 category C Contingencies. The list could have no entries or it could be as specific as detailing only certain contingencies at certain buses.
- A reduction in the need for a series of regional differences to be embedded in the standard. Similarly, there is a reduced need for those responsible for establishing the methodology for the calculation of system operating limits or those responsible for the determination of limits to have to be aware of regional standards and to develop methodologies consistent with both the NERC and the regional standard.
- An enabler for the regions to require different contingencies to be considered for planning and operating studies and for the criteria for evaluation of the contingencies to be different for each.
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Note that there are no criteria for the establishment of SOLs used in the operating horizon, so developing a standard that does establish criteria is a step **forward**, not a reduction in reliability. The language in the proposed FAC-010-1 represents a compromise aimed at reaching the best consensus.

Conclusion

Once again, we thank the standards drafting team for their efforts and commend the team for the many improvements this standard incorporates.

The IESO appreciates the opportunity to table these comments and looks forward to participating further in the standards development process.