

ATC/TTC/AFC and CBM/TRM Revisions (Project 2006-07)

[Registered Ballot Body](#) | [Related Files](#) | [Drafting Team Rosters](#)

Status:

The drafting team is working on responding to the comments received from the VRF Analysis and Recommendations Report that was posted for a 21-day comment period ending on January 28, 2009.

The NERC Board of Trustees adopted the MOD-001, MOD-008, MOD-028, MOD-029, and MOD-030 standards during its August 26, 2008 conference call. The standards have been filed with the FERC. The Board has deferred action on the Violation Risk Factors for these standards, pending further analysis.

Purpose/Industry Need

The ATC/TTC/AFC Revision SAR proposes changing MOD-001-0 by adding a requirement for transmission providers to coordinate the calculation of ATC and requires that specific reliability practices be incorporated into the ATC calculation and coordination methodologies. Such changes will enhance the reliable use of the transmission system without needlessly limiting commercial activity. This request adds a requirement for documentation of the methodologies used to coordinate ATC. In addition, a requirement is added for the enhanced documentation of the calculation methodology.

The CBM/TRM Revisions SAR proposes changing existing standards on TRM to require crisp and clear documentation of the calculation of TRM and make various components of the methodology mandatory so there is more consistency across methodologies.

MOD-030-2 Status:

The recirculation ballot results have been posted below. The standard was approved and will be submitted to the NERC Board of Trustees for adoption.

Purpose/Industry Need

Requirements 2 and 11 of MOD-030-1 will be modified.

Proposed Standard	Supporting Material	Comment Period	Comments Received	Response to Comments
<p>Announcement (19)</p> <p>Project 2006-07 – ATC/TTC and CMB/TRM Posted for 10-day Recirculation Ballot Window</p> <p>MOD-030-2 Clean (20) Redline (21) to Last Posting</p>	<p>Implementation Plan (22)</p>	<p>01/20/09 – 01/29/09 (closed)</p> <p>10-day Recirculation Ballot</p>		<p>Announcement (23)</p> <p>Ballot Results (24)</p>

<p style="text-align: center;">Announcement (13)</p> <p>Project 2006-07 — ATC/TTC and CMB/TRM Posted for 10-day Ballot Window</p> <p style="text-align: center;">MOD-030-2</p> <p>Clean (14) Redline (15) to Last Posting</p>		<p style="text-align: center;">12/01/08– 12/10/08 (closed)</p> <p style="text-align: center;">10-day Ballot Window</p>		<p style="text-align: center;">Announcement (16)</p> <p style="text-align: center;">Ballot Results (17)</p> <p style="text-align: center;">Response to Comments (18)</p>
<p style="text-align: center;">Announcement (9)</p> <p>Project 2006-07 — ATC/TTC and CMB/TRM Posted for 30-day Pre-ballot Review and Join Ballot Pool</p> <p style="text-align: center;">MOD-030-2</p> <p>Clean (10) Redline (11) to Last Posting</p>	<p style="text-align: center;">Implementation Plan (12)</p>	<p style="text-align: center;">10/28/08– 11/26/08 (closed)</p> <p style="text-align: center;">30-day Pre-ballot Review and Join Ballot Pool</p>		
<p style="text-align: center;">Announcement (1)</p> <p>Project 2006-07 — ATC/TTC and CBM/TRM Posted for 45-day Comment Period</p> <p style="text-align: center;">MOD-030-2</p> <p>Clean (2) Redline (3) to recirculation version</p> <p style="text-align: center;">SAR Version 1 (4)</p>	<p style="text-align: center;">Implementation Plan (5)</p>	<p style="text-align: center;">08/12/08 – 09/24/08 (closed)</p> <p style="text-align: center;">Electronic Comment Form</p> <p style="text-align: center;">Questions in Word Form (6)</p>	<p style="text-align: center;">Comments (7)</p>	<p style="text-align: center;">Response to Comments (8)</p>

Standards Announcement

Two Comment Periods Open

August 12, 2008

Comment Period for SAR and MOD-030-2 — Flowgate Methodology (Project 2006-07) Posted for 45-day Comment Period August 12–September 24, 2008

The “ATC” Standard Drafting Team has posted a new SAR, a new proposed version of [MOD-030-2 – Flowgate Methodology](#), and an implementation plan for a 45-day comment period through **September 24, 2008**.

This new version of the standard was developed based on stakeholder comments submitted with the initial ballot of MOD-030-1 conducted July 21–30, 2008. The drafting team’s responses to the comments submitted with the ballots for this standard are posted for stakeholder review. MOD-030-1 will continue through the recirculation ballot process at the same time this new version of the standard goes through the standards development process. As envisioned, the new version of MOD-030-2 will be approved by its ballot pool and filed for regulatory approval before MOD-030-1 becomes effective.

Please use this [electronic form](#) to submit comments on the SAR, standard and the associated implementation plan.

If you need an off-line, unofficial copy of the questions in the comment form, there is a copy of the comment form posted at the following site:

<http://www.nerc.com/~filez/standards/MOD-V0-Revision.html>

Please use only the electronic form to submit comments by **September 24, 2008**. If you experience any difficulties in using the electronic form, please contact Barbara Bogenrief at 609-452-8060.

Comment Period for SAR for Credible Multiple Contingencies (Project 2008-05) Posted for 30-day Comment Period August 12–September 10, 2008

Draft 2 of the [SAR for Credible Multiple Contingencies](#) is posted for a 30-day comment period through **September 10, 2008**. The revised SAR proposes modifying FAC-011-2 — System Operating Limit Methodology for the Operations Horizon to require:

- The consideration of common mode Contingencies that result in loss of two or more (multiple) elements that are associated with potential IROL conditions, and
- That the System Operating Limit (SOL) methodology addresses the SOLs received from the Planning Authority.

To aid in understanding the revised scope of modifications, the SAR drafting team has posted a red line version of FAC-011-2 with the proposed changes.

Please use this [electronic form](#) to submit comments on the SAR.

If you need an off-line, unofficial copy of the questions in the comment form, there is a copy of the comment form posted at the following site:

http://www.nerc.com/filez/standards/Facility_Ratings_Project_2008-05.html

Please use only the electronic form to submit comments by **September 10, 2008**. If you experience any difficulties in using the electronic form, please contact Barbara Bogenrief at 609-452-8060.

*For more information or assistance, please contact Maureen Long,
Standards Process Manager, at maureen.long@nerc.net or at (813) 468-5998.*

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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 posting the concurrent posting of the SAR and proposed standard on August 8, 2008.
2. SDT posted SAR and first draft of MOD-030-2 for a 45-day comment period from August 12, 2008 through September 24, 2008.

Description of Current Draft:

This is the first draft of the proposed standard posted for stakeholder comments. This draft includes consideration of stakeholder comments from the initial ballot of MOD-030-1 and applicable FERC directives from FERC Order 693, Order 890, and Order 890-A.

Future Development Plan:

Anticipated Actions	Anticipated Date
1. Respond to Comments.	To be determined
2. Posting for 30-day Pre-Ballot Review.	To be determined
3. Initial Ballot.	To be determined
4. Respond to comments.	To be determined
5. Recirculation ballot.	To be determined
6. Board adoption.	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.

None.

A. Introduction

1. **Title:** Flowgate Methodology
2. **Number:** MOD-030-02
3. **Purpose:** To increase consistency and reliability in the development and documentation of transfer capability calculations for short-term use performed by entities using the Flowgate Methodology to support analysis and system operations.
4. **Applicability:**
 - 4.1.1 Each Transmission Operator that uses the Flowgate Methodology to support the calculation of Available Flowgate Capabilities (AFCs) on Flowgates.
 - 4.1.2 Each Transmission Service Provider that uses the Flowgate Methodology to calculate AFCs on Flowgates.
5. **Proposed Effective Date:** The date upon which MOD-030-01 is currently scheduled to become effective.

B. Requirements

- R1. The Transmission Service Provider shall include in its “Available Transfer Capability Implementation Document” (ATCID): [*Violation Risk Factor: Lower*] [*Time Horizon: Operations Planning*]
 - R1.1. The criteria used by the Transmission Operator to identify sets of Transmission Facilities as Flowgates that are to be considered in Available Flowgate Capability (AFC) calculations.
 - R1.2. The following information on how source and sink for transmission service is accounted for in AFC calculations including:
 - R1.2.1. Define if the source used for AFC calculations is obtained from the source field or the Point of Receipt (POR) field of the transmission reservation.
 - R1.2.2. Define if the sink used for AFC calculations is obtained from the sink field or the Point of Delivery (POD) field of the transmission reservation.
 - R1.2.3. The source/sink or POR/POD identification and mapping to the model.
 - R1.2.4. If the Transmission Service Provider’s AFC calculation process involves a grouping of generators, the ATCID must identify how these generators participate in the group.
- R2. The Transmission Operator shall perform the following: [*Violation Risk Factor: Lower*] [*Time Horizon: Operations Planning*]
 - R2.1. Include Flowgates used in the AFC process based, at a minimum, on the following criteria:
 - R2.1.1. Results of a first Contingency transfer analysis for ATC Paths internal to a Transmission Operator’s system up to the path capability such that at a minimum the first three limiting Elements and their worst associated

Contingency combinations with an OTDF of at least 5% and within the Transmission Operator's system are included as Flowgates.

R2.1.1.1. Use first Contingency criteria consistent with those first Contingency criteria used in planning of operations for the applicable time periods, including use of Special Protection Systems.

R2.1.1.2. Only the most limiting element in a series configuration needs to be included as a Flowgate.

R2.1.1.3. If any limiting elements or Contingencies are already protected by another Flowgate, then no new Flowgates need to be established for such limiting elements or Contingencies.

R2.1.2. Results of a first Contingency transfer analysis from all adjacent Balancing Authority source and sink (as defined in the ATCID) combinations up to the path capability such that at a minimum the first three limiting Elements and their worst associated Contingency combinations with an Outage Transfer Distribution Factor (OTDF) of at least 5% and within the Transmission Operator's system are included as Flowgates unless the interface between such adjacent Balancing Authorities is accounted for using another ATC methodology.

R2.1.2.1. Use first Contingency criteria consistent with those first Contingency criteria used in planning of operations for the applicable time periods, including use of Special Protection Systems.

R2.1.2.2. Only the most limiting element in a series configuration needs to be included as a Flowgate.

R2.1.2.3. If any limiting elements or Contingencies are already protected by another Flowgate, then no new Flowgates need to be established for such limiting elements or Contingencies.

R2.1.3. With the exception of flowgates created to address temporary operating conditions, any limiting Element/Contingency combination at least within its Reliability Coordinator's Area that has been subjected to an Interconnection-wide congestion management procedure within the last 12 months, unless the limiting Element/Contingency combination is accounted for using another ATC methodology.

R2.1.4. Any limiting Element/Contingency combination within the Transmission model that has been requested to be included by any other Transmission Service Provider using the Flowgate Methodology or Area Interchange Methodology, where:

R2.1.4.1. The coordination of the limiting Element/Contingency combination is not already addressed through a different methodology, and

- Any generator within the Transmission Service Provider's area has at least a 5% Power Transfer Distribution Factor (PTDF) or Outage Transfer Distribution Factor (OTDF) impact on the Flowgate when delivered to the aggregate load of its own area, or

- A transfer from any Balancing Area within the Transmission Service Provider's area to a Balancing Area adjacent has at least a 5% PTDF or OTDF impact on the Flowgate.
- The Transmission Operator may utilize distribution factors less than 5% if desired.

R2.1.4.2. The limiting Element/Contingency combination is included in the requesting Transmission Service Provider's methodology.

- R2.2.** At a minimum, establish a list of Flowgates by creating, modifying, or deleting Flowgate definitions at least once per calendar year.
- R2.3.** At a minimum, establish a list of Flowgates by creating, modifying, or deleting Flowgates that have been requested as part of R2.1.4 within thirty calendar days from the request.
- R2.4.** Establish the TFC of each of the defined Flowgates as equal to:
 - For thermal limits, the System Operating Limit (SOL) of the Flowgate.
 - For voltage or stability limits, the flow that will respect the SOL of the Flowgate.
- R2.5.** At a minimum, establish the TFC once per calendar year.
 - R2.5.1.** If notified of a change in the Rating by the Transmission Owner that would affect the TFC of a flowgate used in the AFC process, the TFC should be updated within seven calendar days of the notification.
- R2.6.** Provide the Transmission Service Provider with the TFCs within seven calendar days of their establishment.
- R3.** The Transmission Operator shall make available to the Transmission Service Provider a Transmission model to determine Available Flowgate Capability (AFC) that meets the following criteria: [*Violation Risk Factor: Lower*] [*Time Horizon: Operations Planning*]
 - R3.1.** Contains generation Facility Ratings, such as generation maximum and minimum output levels, specified by the Generator Owners of the Facilities within the model.
 - R3.2.** Updated at least once per day for AFC calculations for intra-day, next day, and days two through 30.
 - R3.3.** Updated at least once per month for AFC calculations for months two through 13.
 - R3.4.** Contains modeling data and system topology for the Facilities within its Reliability Coordinator's Area. Equivalent representation of radial lines and Facilities 161kV or below is allowed.
 - R3.5.** Contains modeling data and system topology (or equivalent representation) for immediately adjacent and beyond Reliability Coordination Areas.
- R4.** When calculating AFCs, the Transmission Service Provider shall represent the impact of Transmission Service as follows: [*Violation Risk Factor: Lower*] [*Time Horizon: Operations Planning*]
 - If the source, as specified in the ATCID, has been identified in the reservation and it is discretely modeled in the Transmission Service Provider's Transmission model, use the discretely modeled point as the source.

- If the source, as specified in the ATCID, has been identified in the reservation and the point can be mapped to an “equivalence” or “aggregate” representation in the Transmission Service Provider’s Transmission model, use the modeled equivalence or aggregate as the source.
 - If the source, as specified in the ATCID, has been identified in the reservation and the point cannot be mapped to a discretely modeled point or an “equivalence” representation in the Transmission Service Provider’s Transmission model, use the immediately adjacent Balancing Authority associated with the Transmission Service Provider from which the power is to be received as the source.
 - If the source, as specified in the ATCID, has not been identified in the reservation use the immediately adjacent Balancing Authority associated with the Transmission Service Provider from which the power is to be received as the source.
 - If the sink, as specified in the ATCID, has been identified in the reservation and it is discretely modeled in the Transmission Service Provider’s Transmission model, use the discretely modeled point as the sink.
 - If the sink, as specified in the ATCID, has been identified in the reservation and the point can be mapped to an “equivalence” or “aggregate” representation in the Transmission Service Provider’s Transmission model, use the modeled equivalence or aggregate as the sink.
 - If the sink, as specified in the ATCID, has been identified in the reservation and the point cannot be mapped to a discretely modeled point or an “equivalence” representation in the Transmission Service Provider’s Transmission model, use the immediately adjacent Balancing Authority associated with the Transmission Service Provider receiving the power as the sink.
 - If the sink, as specified in the ATCID, has not been identified in the reservation use the immediately adjacent Balancing Authority associated with the Transmission Service Provider receiving the power as the sink.
- R5.** When calculating AFCs, the Transmission Service Provider shall: [*Violation Risk Factor: Lower*] [*Time Horizon: Operations Planning*]
- R5.1.** Use the models provided by the Transmission Operator.
 - R5.2.** Include in the transmission model expected generation and Transmission outages, additions, and retirements within the scope of the model as specified in the ATCID and in effect during the applicable period of the AFC calculation for the Transmission Service Provider’s area, all adjacent Transmission Service Providers, and any Transmission Service Providers with which coordination agreements have been executed.
 - R5.3.** For external Flowgates, identified in R2.1.4, use the AFC provided by the Transmission Service Provider that calculates AFC for that Flowgate.
- R6.** When calculating the impact of ETC for firm commitments (ETC_{FI}) for all time periods for a Flowgate, the Transmission Service Provider shall sum the following: [*Violation Risk Factor: Lower*] [*Time Horizon: Operations Planning*]
- R6.1.** The impact of firm Network Integration Transmission Service, including the impacts of generation to load, in the model referenced in R5.2 for the Transmission Service Provider’s area, based on:

- R6.1.1.** Load forecast for the time period being calculated, including Native Load and Network Service load
- R6.1.2.** Unit commitment and Dispatch Order, to include all designated network resources and other resources that are committed or have the legal obligation to run as specified in the Transmission Service Provider's ATCID.
- R6.2.** The impact of any firm Network Integration Transmission Service, including the impacts of generation to load in the model referenced in R5.2 and has a distribution factor equal to or greater than the percentage¹ used to curtail in the Interconnection-wide congestion management procedure used by the Transmission Service Provider, for all adjacent Transmission Service Providers and any other Transmission Service Providers with which coordination agreements have been executed based on:
 - R6.2.1.** Load forecast for the time period being calculated, including Native Load and Network Service load
 - R6.2.2.** Unit commitment and Dispatch Order, to include all designated network resources and other resources that are committed or have the legal obligation to run as specified in the Transmission Service Provider's ATCID.
- R6.3.** The impact of all confirmed firm Point-to-Point Transmission Service expected to be scheduled, including roll-over rights for Firm Transmission Service contracts, for the Transmission Service Provider's area.
- R6.4.** The impact of any confirmed firm Point-to-Point Transmission Service expected to be scheduled, filtered to reduce or eliminate duplicate impacts from transactions using Transmission service from multiple Transmission Service Providers, including roll-over rights for Firm Transmission Service contracts having a distribution factor equal to or greater than the percentage² used to curtail in the Interconnection-wide congestion management procedure used by the Transmission Service Provider, for all adjacent Transmission Service Providers and any other Transmission Service Providers with which coordination agreements have been executed.
- R6.5.** The impact of any Grandfathered firm obligations expected to be scheduled or expected to flow for the Transmission Service Provider's area.
- R6.6.** The impact of any Grandfathered firm obligations expected to be scheduled or expected to flow that have a distribution factor equal to or greater than the percentage³ used to curtail in the Interconnection-wide congestion management procedure used by the Transmission Service Provider, for all adjacent Transmission Service Providers and any other Transmission Service Providers with which coordination agreements have been executed.
- R6.7.** The impact of other firm services determined by the Transmission Service Provider.

¹ A percentage less than that used in the Interconnection-wide congestion management procedure may be utilized.

² A percentage less than that used in the Interconnection-wide congestion management procedure may be utilized.

³ A percentage less than that used in the Interconnection-wide congestion management procedure may be utilized.

- R7.** When calculating the impact of ETC for non-firm commitments (ETC_{NFi}) for all time periods for a Flowgate the Transmission Service Provider shall sum: [*Violation Risk Factor: Lower*] [*Time Horizon: Operations Planning*]
- R7.1.** The impact of all confirmed non-firm Point-to-Point Transmission Service expected to be scheduled for the Transmission Service Provider's area.
- R7.2.** The impact of any confirmed non-firm Point-to-Point Transmission Service expected to be scheduled, filtered to reduce or eliminate duplicate impacts from transactions using Transmission service from multiple Transmission Service Providers, that have a distribution factor equal to or greater than the percentage⁴ used to curtail in the Interconnection-wide congestion management procedure used by the Transmission Service Provider, for all adjacent Transmission Service Providers and any other Transmission Service Providers with which coordination agreements have been executed.
- R7.3.** The impact of any Grandfathered non-firm obligations expected to be scheduled or expected to flow for the Transmission Service Provider's area.
- R7.4.** The impact of any Grandfathered non-firm obligations expected to be scheduled or expected to flow that have a distribution factor equal to or greater than the percentage⁵ used to curtail in the Interconnection-wide congestion management procedure used by the Transmission Service Provider, for all adjacent Transmission Service Providers and any other Transmission Service Providers with which coordination agreements have been executed.
- R7.5.** The impact of non-firm Network Integration Transmission Service serving Load within the Transmission Service Provider's area (i.e., secondary service), to include load growth, and losses not otherwise included in Transmission Reliability Margin or Capacity Benefit Margin.
- R7.6.** The impact of any non-firm Network Integration Transmission Service (secondary service) with a distribution factor equal to or greater than the percentage⁶ used to curtail in the Interconnection-wide congestion management procedure used by the Transmission Service Provider, filtered to reduce or eliminate duplicate impacts from transactions using Transmission service from multiple Transmission Service Providers, for all adjacent Transmission Service Providers and any other Transmission Service Providers with which coordination agreements have been executed.
- R7.7.** The impact of other non-firm services determined by the Transmission Service Provider.
- R8.** When calculating firm AFC for a Flowgate for a specified period, the Transmission Service Provider shall use the following algorithm (subject to allocation processes described in the ATCID): [*Violation Risk Factor: Lower*] [*Time Horizon: Operations Planning*]

$$AFC_F = TFC - ETC_{Fi} - CBM_i - TRM_i + Postbacks_{Si} + counterflows_{Fi}$$

⁴ A percentage less than that used in the Interconnection-wide congestion management procedure may be utilized.

⁵ A percentage less than that used in the Interconnection-wide congestion management procedure may be utilized.

⁶ A percentage less than that used in the Interconnection-wide congestion management procedure may be utilized.

Where:

AFC_F is the firm Available Flowgate Capability for the Flowgate for that period.

TFC is the Total Flowgate Capability of the Flowgate.

ETC_{Fi} is the sum of the impacts of existing firm Transmission commitments for the Flowgate during that period.

CBM_i is the impact of the Capacity Benefit Margin on the Flowgate during that period.

TRM_i is the impact of the Transmission Reliability Margin on the Flowgate during that period.

Postbacks_{Fi} are changes to firm AFC due to a change in the use of Transmission Service for that period, as defined in Business Practices.

counterflows_{Fi} are adjustments to firm AFC as determined by the Transmission Service Provider and specified in their ATCID.

- R9.** When calculating non-firm AFC for a Flowgate for a specified period, the Transmission Service Provider shall use the following algorithm (subject to allocation processes described in the ATCID): [*Violation Risk Factor: Lower*] [*Time Horizon: Operations Planning*]

$$AFC_{NF} = TFC - ETC_{Fi} - ETC_{NFi} - CBM_{Si} - TRM_{Ui} + Postbacks_{NFi} + counterflows$$

Where:

AFC_{NF} is the non-firm Available Flowgate Capability for the Flowgate for that period.

TFC is the Total Flowgate Capability of the Flowgate.

ETC_{Fi} is the sum of the impacts of existing firm Transmission commitments for the Flowgate during that period.

ETC_{NFi} is the sum of the impacts of existing non-firm Transmission commitments for the Flowgate during that period.

CBM_{Si} is the impact of any schedules during that period using Capacity Benefit Margin.

TRM_{Ui} is the impact on the Flowgate of the Transmission Reliability Margin that has not been released (unreleased) for sale as non-firm capacity by the Transmission Service Provider during that period.

Postbacks_{NF} are changes to non-firm Available Flowgate Capability due to a change in the use of Transmission Service for that period, as defined in Business Practices.

counterflows_{NF} are adjustments to non-firm AFC as determined by the Transmission Service Provider and specified in their ATCID.

- R10.** Each Transmission Service Provider shall recalculate AFC, utilizing the updated models described in R3.2, R3.3, and R5, at a minimum on the following frequency, unless none of the calculated values identified in the AFC equation have changed: [*Violation Risk Factor: Lower*] [*Time Horizon: Operations Planning*]

R10.1. For hourly AFC, once per hour. Transmission Service Providers are allowed up to 175 hours per calendar year during which calculations are not required to be performed, despite a change in a calculated value identified in the AFC equation.

R10.2. For daily AFC, once per day.

R10.3. For monthly AFC, once per week.

- R11.** When converting Flowgate AFCs to ATCs for ATC Paths, the Transmission Service Provider shall convert those values based on the following algorithm: [*Violation Risk Factor: Lower*] [*Time Horizon: Operations Planning*]

$$ATC = \min(P)$$

$$P = \{PATC_1, PATC_2, \dots, PATC_n\}$$

$$PATC_n = \frac{AFC_n}{DF_{np}}$$

Where:

ATC is the Available Transfer Capability.

P is the set of partial Available Transfer Capabilities for all “impacted” Flowgates honored by the Transmission Service Provider; a Flowgate is considered “impacted” by a path if the Distribution Factor for that path is greater than the percentage⁷ used to curtail in the Interconnection-wide congestion management procedure used by the Transmission Service Provider on an OTDF Flowgate or PTDF Flowgate.

PATC_n is the partial Available Transfer Capability for a path relative to a Flowgate *n*.

AFC_n is the Available Flowgate Capability of a Flowgate *n*.

DF_{np} is the distribution factor for Flowgate *n* relative to path *p*.

C. Measures

- M1.** Each Transmission Service Provider shall provide its ATCID and other evidence (such as written documentation) to show that its ATCID contains the criteria used by the Transmission Operator to identify sets of Transmission Facilities as Flowgates and information on how sources and sinks are accounted for in AFC calculations. (R1)
- M2.** The Transmission Operator shall provide evidence (such as studies and working papers) that all Flowgates that meet the criteria described in R2.1 are considered in its AFC calculations. (R2.1)
- M3.** The Transmission Operator shall provide evidence (such as logs) that it updated its list of Flowgates at least once per calendar year. (R2.2)
- M4.** The Transmission Operator shall provide evidence (such as logs and dated requests) that it updated the list of Flowgates within thirty calendar days from a request. (R2.3)
- M5.** The Transmission Operator shall provide evidence (such as data or models) that it determined the TFC for each Flowgate as defined in R2.4. (R2.4)
- M6.** The Transmission Operator shall provide evidence (such as logs) that it established the TFCs for each Flowgate in accordance with the timing defined in R2.5. (R2.5)
- M7.** The Transmission Operator shall provide evidence (such as logs and electronic communication) that it provided the Transmission Service Provider with updated TFCs within seven calendar days of their determination. (R2.6)

⁷ A percentage less than that used in the Interconnection-wide congestion management procedure may be utilized.

- M8.** The Transmission Operator shall provide evidence (such as written documentation, logs, models, and data) that the Transmission model used to determine AFCs contains the information specified in R3. (R3)
- M9.** The Transmission Service Provider shall provide evidence (such as written documentation and data) that the modeling of point-to-point reservations was based on the rules described in R4. (R4)
- M10.** The Transmission Service Provider shall provide evidence including the models received from Transmission Operators and other evidence (such as documentation and data) to show that it used the Transmission Operator's models in calculating AFC. (R5.1)
- M11.** The Transmission Service Provider shall provide evidence (such as written documentation, electronic communications, and data) that all expected generation and Transmission outages, additions, and retirements were included in the AFC calculation as specified in the ATCID. (R5.2)
- M12.** The Transmission Service Provider shall provide evidence (such as logs, electronic communications, and data) that AFCs provided by third parties on external Flowgates were used instead of those calculated by the Transmission Operator. (R5.3)
- M13.** The Transmission Service Provider shall demonstrate compliance with R6 by recalculating firm ETC for any specific time period as described in (MOD-001 R2), using the requirements defined in R6 and with data used to calculate the specified value for the designated time period. The data used must meet the requirements specified in MOD-030-1 and the ATCID. To account for differences that may occur when recalculating the value (due to mixing automated and manual processes), any recalculated value that is within +/- 15% or 15 MW, whichever is greater, of the originally calculated value, is evidence that the Transmission Service Provider used the requirements defined in R6 to calculate its firm ETC. (R6)
- M14.** The Transmission Service Provider shall demonstrate compliance with R7 by recalculating non-firm ETC for any specific time period as described in (MOD-001 R2), using the requirements defined in R7 and with data used to calculate the specified value for the designated time period. The data used must meet the requirements specified in the standard and the ATCID. To account for differences that may occur when recalculating the value (due to mixing automated and manual processes), any recalculated value that is within +/- 15% or 15 MW, whichever is greater, of the originally calculated value, is evidence that the Transmission Service Provider used the requirements in R7 to calculate its non-firm ETC. (R7)
- M15.** Each Transmission Service Provider shall produce the supporting documentation for the processes used to implement the algorithm that calculates firm AFCs, as required in R8. Such documentation must show that only the variables allowed in R8 were used to calculate firm AFCs, and that the processes use the current values for the variables as determined in the requirements or definitions. Note that any variable may legitimately be zero if the value is not applicable or calculated to be zero (such as counterflows, TRM, CBM, etc...). The supporting documentation may be provided in the same form and format as stored by the Transmission Service Provider. (R8)
- M16.** Each Transmission Service Provider shall produce the supporting documentation for the processes used to implement the algorithm that calculates non-firm AFCs, as required in R9. Such documentation must show that only the variables allowed in R9 were used to calculate non-firm AFCs, and that the processes use the current values for the variables as determined in the requirements or definitions. Note that any variable may legitimately be zero if the

value is not applicable or calculated to be zero (such as counterflows, TRM, CBM, etc...). The supporting documentation may be provided in the same form and format as stored by the Transmission Service Provider. (R9)

M17. The Transmission Service Provider shall provide evidence (such as documentation, dated logs, and data) that it calculated AFC on the frequency defined in R10. (R10)

M18. The Transmission Service Provider shall provide evidence (such as documentation and data) when converting Flowgate AFCs to ATCs for ATC Paths, it follows the procedure described in R11. (R11)

D. Compliance

1. Compliance Monitoring Process

1.1. Compliance Enforcement Authority

Regional Entity.

1.2. Compliance Monitoring Period and Reset Time Frame

Not applicable.

1.3. Data Retention

The Transmission Operator and Transmission Service Provider shall keep data or evidence to show compliance as identified below unless directed by its Compliance Enforcement Authority to retain specific evidence for a longer period of time as part of an investigation:

- The Transmission Service Provider shall retain its current, in force ATCID and any prior versions of the ATCID that were in force since the last compliance audit to show compliance with R1.
- The Transmission Operator shall have its latest model used to determine flowgates and TFC and evidence of the previous version to show compliance with R2 and R3.
- The Transmission Operator shall retain evidence to show compliance with R2.1, R2.3 for the most recent 12 months.
- The Transmission Operator shall retain evidence to show compliance with R2.2, R2.4 and R2.5 for the most recent three calendar years plus current year.
- The Transmission Service Provider shall retain evidence to show compliance with R4 for 12 months or until the model used to calculate AFC is updated, whichever is longer.
- The Transmission Service Provider shall retain evidence to show compliance with R5, R8, R9, R10, and R11 for the most recent calendar year plus current year.
- The Transmission Service Provider shall retain evidence to show compliance in calculating hourly values required in R6 and R7 for the most recent 14 days; evidence to show compliance in calculating daily values required in R6 and R7 for the most recent 30 days; and evidence to show compliance in calculating monthly values required in R6 and R7 for the most recent sixty days.
- If a Transmission Service Provider or Transmission Operator is found non-compliant, it shall keep information related to the non-compliance until found compliant.

The Compliance Enforcement Authority shall keep the last audit records and all requested and submitted subsequent audit records.

1.4. Compliance Monitoring and Enforcement Processes:

The following processes may be used:

- Compliance Audits
- Self-Certifications
- Spot Checking
- Compliance Violation Investigations
- Self-Reporting
- Complaints

1.5. Additional Compliance Information

None.

2. Violation Severity Levels

R #	Lower VSL	Moderate VSL	High VSL	Severe VSL
R1.	The Transmission Service Provider does not include in its ATCID one or two of the sub-requirements listed under R1.2, or the sub-requirement is incomplete.	The Transmission Service Provider does not include in its ATCID three of the sub-requirements listed under R1.2, or the sub-requirement is incomplete.	The Transmission Service Provider does not include in its ATCID the information described in R1.1. OR The Transmission Service Provider does not include in its ATCID the information described in R1.2 (1.2.1, 1.2.2., 1.2.3, and 1.2.4 are missing).	The Transmission Service Provider does not include in its ATCID the information described in R1.1 and R1.2 (1.2.1, 1.2.2., 1.2.3, and 1.2.4 are missing).
R2.	<p>One or more of the following:</p> <ul style="list-style-type: none"> The Transmission Operator established its list of Flowgates less frequently than once per calendar year, but not more than three months late as described in R2.2. The Transmission Operator established its list of Flowgates more than thirty days, but not more than sixty days, following a request to create, modify or delete a flowgate as described in R2.3. The Transmission Operator has not updated its Flowgate TFC when notified by the Transmission Owner in more 	<p>One or more of the following:</p> <ul style="list-style-type: none"> The Transmission Operator did not include a Flowgate in their AFC calculations that met the criteria described in R2.1. The Transmission Operator established its list of Flowgates more than three months late, but not more than six months late as described in R2.2. The Transmission Operator established its list of Flowgates more than sixty days, but not more than ninety days, following a request to create, modify or delete a flowgate as 	<p>One or more of the following:</p> <ul style="list-style-type: none"> The Transmission Operator did not include two to five Flowgates in their AFC calculations that met the criteria described in R2.1. The Transmission Operator established its list of Flowgates more than six months late, but not more than nine months late as described in R2.2. The Transmission Operator established its list of Flowgates more than ninety days, but not more than 120 days, following a request to create, modify or delete a flowgate as described in 	<p>One or more of the following:</p> <ul style="list-style-type: none"> The Transmission Operator did not include six or more Flowgates in their AFC calculations that met the criteria described in R2.1. The Transmission Operator established its list of Flowgates more than nine months late as described in R2.2. The Transmission Operator did not establish its list of internal Flowgates as described in R2.2. The Transmission Operator established its list of Flowgates more than 120 days following a request to create, modify or delete a flowgate as described in R2.3.

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R #	Lower VSL	Moderate VSL	High VSL	Severe VSL
	<p>than 7 days, but it has not been more than 14 days since the notification (R2.5.1)</p> <ul style="list-style-type: none"> The Transmission Operator has not provided its Transmission Service Provider with its Flowgate TFCs within seven days (one week) of their determination, but is has not been more than 14 days (two weeks) since their determination. 	<p>described in R2.3.</p> <ul style="list-style-type: none"> The Transmission Operator has not updated its Flowgate TFCs at least once within a calendar year, and it has been not more than 15 months since the last update. The Transmission Operator has not updated its Flowgate TFC when notified by the Transmission Owner in more than 14 days, but it has not been more than 21 days since the notification (R2.5.1) The Transmission Operator has not provided its Transmission Service Provider with its Flowgate TFCs in more than 14 days (two weeks) of their determination, but is has not been more than 21 days (three weeks) since their determination. 	<p>R2.3.</p> <p>The Transmission Operator has not updated its Flowgate TFCs at least once within a calendar year, and it has been more than 15 months but not more than 18 months since the last update.</p> <ul style="list-style-type: none"> The Transmission Operator has not updated its Flowgate TFCs when notified by the Transmission Owner in more than 21 days, but it has not been more than 28 days since the notification (R2.5.1) The Transmission Operator has not provided its Transmission Service Provider with its Flowgate TFCs in more than 21 days (three weeks) of their determination, but is has not been more than 28 days (four weeks) since their determination. 	<ul style="list-style-type: none"> The Transmission Operator did not establish its list of external Flowgates following a request to create, modify or delete an external flowgate as described in R2.3. The Transmission Operator did not determine the TFC for a flowgate as described in R2.4. The Transmission Operator has not updated its Flowgate TFCs at least once within a calendar year, and it has been more than 18 months since the last update. (R2.5) The Transmission Operator has not updated its Flowgate TFCs when notified by the Transmission Owner in more than 28 calendar days (R2.5.1) The Transmission Operator has not provided its Transmission Service Provider with its Flowgate TFCs in more than 28 days (4 weeks) of their determination.

R #	Lower VSL	Moderate VSL	High VSL	Severe VSL
R3.	<p>One or more of the following:</p> <ul style="list-style-type: none"> • The Transmission Operator used one to ten Facility Ratings that were different from those specified by a Transmission or Generator Owner in their Transmission model. • The Transmission Operator did not update the model per R3.2 for one or more calendar days but not more than 2 calendar days • The Transmission Operator did not update the model for per R3.3 for one or more months but not more than six weeks 	<p>One or more of the following:</p> <ul style="list-style-type: none"> • The Transmission Operator used eleven to twenty Facility Ratings that were different from those specified by a Transmission or Generator Owner in their Transmission model. • The Transmission Operator did not update the model per R3.2 for more than 2 calendar days but not more than 3 calendar days • The Transmission Operator did not update the model for per R3.3 for more than six weeks but not more than eight weeks 	<p>One or more of the following:</p> <ul style="list-style-type: none"> • The Transmission Operator used twenty-one to thirty Facility Ratings that were different from those specified by a Transmission or Generator Owner in their Transmission model. • The Transmission Operator did not update the model per R3.2 for more than 3 calendar days but not more than 4 calendar days • The Transmission Operator did not update the model for per R3.3 for more than eight weeks but not more than ten weeks 	<p>One or more of the following:</p> <ul style="list-style-type: none"> • The Transmission Operator did not update the model per R3.2 for more than 4 calendar days • The Transmission Operator did not update the model for per R3.3 for more than ten weeks • The Transmission Operator used more than thirty Facility Ratings that were different from those specified by a Transmission or Generator Owner in their Transmission model. • The Transmission operator did not include in the Transmission model detailed modeling data and topology for its own Reliability Coordinator area. • The Transmission operator did not include in the Transmission modeling data and topology for immediately adjacent and beyond Reliability Coordinator area.

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R #	Lower VSL	Moderate VSL	High VSL	Severe VSL
R4.	The Transmission Service Provider did not represent the impact of Transmission Service as described in R4 for more than zero, but not more than 5% of all reservations; or more than zero, but not more than 1 reservation, whichever is greater..	The Transmission Service Provider did not represent the impact of Transmission Service as described in R4 for more than 5%, but not more than 10% of all reservations; or more than 1, but not more than 2 reservations, whichever is greater..	The Transmission Service Provider did not represent the impact of Transmission Service as described in R4 for more than 10%, but not more than 15% of all reservations; or more than 2, but not more than 3 reservations, whichever is greater..	The Transmission Service Provider did not represent the impact of Transmission Service as described in R4 for more than 15% of all reservations; or more than 3 reservations, whichever is greater..
R5.	The Transmission Service Provider did not include in the AFC process one to ten expected generation or Transmission outages, additions or retirements within the scope of the model as specified in the ATCID.	The Transmission Service Provider did not include in the AFC process eleven to twenty-five expected generation and Transmission outages, additions or retirements within the scope of the model as specified in the ATCID.	The Transmission Service Provider did not include in the AFC process twenty-six to fifty expected generation and Transmission outages, additions or retirements within the scope of the model as specified in the ATCID.	<p>One or more of the following:</p> <ul style="list-style-type: none"> • The Transmission Service Provider did not use the model provided by the Transmission Operator. • The Transmission Service Provider did not include in the AFC process more than fifty expected generation and Transmission outages, additions or retirements within the scope of the model as specified in the ATCID. • The Transmission Service provider did not use AFC provided by a third party.

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R #	Lower VSL	Moderate VSL	High VSL	Severe VSL
R6.	For a specified period, the Transmission Service Provider calculated a firm ETC with an absolute value different than that calculated in M13 for the same period, and the absolute value difference was more than 15% of the value calculated in the measure or 15MW, whichever is greater, but not more than 25% of the value calculated in the measure or 25MW, whichever is greater..	For a specified period, the Transmission Service Provider calculated a firm ETC with an absolute value different than that calculated in M13 for the same period, and the absolute value difference was more than 25% of the value calculated in the measure or 25MW, whichever is greater, but not more than 35% of the value calculated in the measure or 35MW, whichever is greater.	For a specified period, the Transmission Service Provider calculated a firm ETC with an absolute value different than that calculated in M13 for the same period, and the absolute value difference was more than 35% of the value calculated in the measure or 35MW, whichever is greater, but not more than 45% of the value calculated in the measure or 45MW, whichever is greater.	For a specified period, the Transmission Service Provider calculated a firm ETC with an absolute value different than that calculated in M13 for the same period, and the absolute value difference was more than 45% of the value calculated in the measure or 45MW, whichever is greater.
R7.	For a specified period, the Transmission Service Provider calculated a non-firm ETC with an absolute value different than that calculated in M14 for the same period, and the absolute value difference was more than 15% of the value calculated in the measure or 15MW, whichever is greater, but not more than 25% of the value calculated in the measure or 25MW, whichever is greater.	For a specified period, the Transmission Service Provider calculated a non-firm ETC with an absolute value different than that calculated in M14 for the same period, and the absolute value difference was more than 25% of the value calculated in the measure or 25MW, whichever is greater, but not more than 35% of the value calculated in the measure or 35MW, whichever is greater.	For a specified period, the Transmission Service Provider calculated a non-firm ETC with an absolute value different than that calculated in M14 for the same period, and the absolute value difference was more than 35% of the value calculated in the measure or 35MW, whichever is greater, but not more than 45% of the value calculated in the measure or 45MW, whichever is greater.	For a specified period, the Transmission Service Provider calculated a non-firm ETC with an absolute value different than that calculated in M14 for the same period, and the absolute value difference was more than 45% of the value calculated in the measure or 45MW, whichever is greater.
R8.	The Transmission Service Provider did not use all the elements defined in R8 when determining firm AFC, or used additional elements, for more than zero Flowgates, but not more than 5% of all Flowgates or 1 Flowgate (whichever is greater).	The Transmission Service Provider did not use all the elements defined in R8 when determining firm AFC, or used additional elements, for more than 5% of all Flowgates or 1 Flowgates (whichever is greater), but not more than 10% of all Flowgates or 2 Flowgates (whichever is	The Transmission Service Provider did not use all the elements defined in R8 when determining firm AFC, or used additional elements, for more than 10% of all Flowgates or 2 Flowgates (whichever is greater), but not more than 15% of all Flowgates or 3 Flowgates (whichever is	The Transmission Service Provider did not use all the elements defined in R8 when determining firm AFC, or used additional elements, for more than 15% of all Flowgates or more than 3 Flowgates (whichever is greater).

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R #	Lower VSL	Moderate VSL	High VSL	Severe VSL
		greater).	greater).	
R9.	The Transmission Service Provider did not use all the elements defined in R8 when determining non-firm AFC, or used additional elements, for more than zero Flowgates, but not more than 5% of all Flowgates or 1 Flowgate (whichever is greater).	The Transmission Service Provider did not use all the elements defined in R9 when determining non-firm AFC, or used additional elements, for more than 5% of all Flowgates or 1 Flowgate (whichever is greater), but not more than 10% of all Flowgates or 2 Flowgates (whichever is greater).	The Transmission Service Provider did not use all the elements defined in R9 when determining non-firm AFC, or used additional elements, for more than 10% of all Flowgates or 2 Flowgates (whichever is greater), but not more than 15% of all Flowgates or 3 Flowgates (whichever is greater).	The Transmission Service Provider did not use all the elements defined in R9 when determining non-firm AFC, or used additional elements, for more than 15% of all Flowgates or more than 3 Flowgates (whichever is greater).
R10	<p>One or more of the following:</p> <ul style="list-style-type: none"> ▪ For Hourly, the values described in the AFC equation changed and the Transmission Service provider did not calculate for one or more hours but not more than 15 hours, and was in excess of the 175-hour per year requirement. ▪ For Daily, the values described in the AFC equation changed and the Transmission Service provider did not calculate for one or more calendar days but not more than 3 calendar days. ▪ For Monthly, the values 	<p>One or more of the following:</p> <ul style="list-style-type: none"> ▪ For Hourly, the values described in the AFC equation changed and the Transmission Service provider did not calculate for more than 15 hours but not more than 20 hours, and was in excess of the 175-hour per year requirement. ▪ For Daily, the values described in the AFC equation changed and the Transmission Service provider did not calculate for more than 3 calendar days but not more than 4 calendar days. ▪ For Monthly, the values 	<p>One or more of the following:</p> <ul style="list-style-type: none"> ▪ For Hourly, the values described in the AFC equation changed and the Transmission Service provider did not calculate for more than 20 hours but not more than 25 hours, and was in excess of the 175-hour per year requirement. ▪ For Daily, the values described in the AFC equation changed and the Transmission Service provider did not calculate for more than 4 calendar days but not more than 5 calendar days. ▪ For Monthly, the values 	<p>One or more of the following:</p> <ul style="list-style-type: none"> ▪ For Hourly, the values described in the AFC equation changed and the Transmission Service provider did not calculate for more than 25 hours, and was in excess of the 175-hour per year requirement. ▪ For Daily, the values described in the AFC equation changed and the Transmission Service provider did not calculate for more than 5 calendar days. ▪ For Monthly, the values described in the AFC equation changed and the

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R #	Lower VSL	Moderate VSL	High VSL	Severe VSL
	described in the AFC equation changed and the Transmission Service provider did not calculate for seven or more calendar days, but less than 14 calendar days.	described in the AFC equation changed and the Transmission Service provider did not calculate for 14 or more calendar days, but less than 21 calendar days.	described in the AFC equation changed and the Transmission Service provider did not calculate for 21 or more calendar days, but less than 28 calendar days.	Transmission Service provider did not calculate for 28 or more calendar days.
R11.	N/A	N/A	N/A	The Transmission Service Provider did not follow the procedure for converting Flowgate AFCs to ATCs described in R11.

E. Regional Differences

None identified.

F. Associated Documents

Version History

Version	Date	Action	Change Tracking
2		Modified R2.1.1.3, R2.1.2.3, R2.1.3, R2.2, R2.3 and R11 Made conforming changes to M18 and VSLs for R2 and R11	Revised

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 posting the concurrent posting of the SAR and proposed standard on August 8, 2008.
2. SDT posted SAR and first draft of MOD-030-2 for a 45-day comment period from August 11, 2008 through September 24, 2008.

Description of Current Draft:

This is the first draft of the proposed standard posted for stakeholder comments. This draft includes consideration of stakeholder comments from the initial ballot of MOD-030-1 and applicable FERC directives from FERC Order 693, Order 890, and Order 890-A.

Future Development Plan:

Anticipated Actions	Anticipated Date
1. Respond to Comments.	To be determined
2. Posting for 30-day Pre-Ballot Review.	To be determined
3. Initial Ballot.	To be determined
4. Respond to comments.	To be determined
5. Recirculation ballot.	To be determined
6. Board adoption.	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.

None.

A. Introduction

1. **Title:** **Flowgate Methodology**
2. **Number:** **MOD-030-2**
3. **Purpose:** To increase consistency and reliability in the development and documentation of transfer capability calculations for short-term use performed by entities using the Flowgate Methodology to support analysis and system operations.
4. **Applicability:**
 - 4.1.1 Each Transmission Operator that uses the Flowgate Methodology to support the calculation of Available Flowgate Capabilities (AFCs) on Flowgates.
 - 4.1.2 Each Transmission Service Provider that uses the Flowgate Methodology to calculate AFCs on Flowgates.
5. **Proposed Effective Date:** The date upon which MOD-030-01 is currently scheduled to become effective.

B. Requirements

- R1.** The Transmission Service Provider shall include in its “Available Transfer Capability Implementation Document” (ATCID): [*Violation Risk Factor: Lower*] [*Time Horizon: Operations Planning*]
 - R1.1.** The criteria used by the Transmission Operator to identify sets of Transmission Facilities as Flowgates that are to be considered in Available Flowgate Capability (AFC) calculations.
 - R1.2.** The following information on how source and sink for transmission service is accounted for in AFC calculations including:
 - R1.2.1.** Define if the source used for AFC calculations is obtained from the source field or the Point of Receipt (POR) field of the transmission reservation.
 - R1.2.2.** Define if the sink used for AFC calculations is obtained from the sink field or the Point of Delivery (POD) field of the transmission reservation.
 - R1.2.3.** The source/sink or POR/POD identification and mapping to the model.
 - R1.2.4.** If the Transmission Service Provider’s AFC calculation process involves a grouping of generators, the ATCID must identify how these generators participate in the group.
- R2.** The Transmission Operator shall perform the following: [*Violation Risk Factor: Lower*] [*Time Horizon: Operations Planning*]
 - R2.1.** Include Flowgates used in the AFC process based, at a minimum, on the following criteria:
 - R2.1.1.** Results of a first Contingency transfer analysis for ATC Paths internal to a Transmission Operator’s system up to the path capability such that at a minimum the first three limiting Elements and their worst associated

Contingency combinations with an OTDF of at least 5% and within the Transmission Operator's system are included as Flowgates.

R2.1.1.1. Use first Contingency criteria consistent with those first Contingency criteria used in planning of operations for the applicable time periods, including use of Special Protection Systems.

R2.1.1.2. Only the most limiting element in a series configuration needs to be included as a Flowgate.

R2.1.1.3. If any limiting elements or Contingencies are already protected by another Flowgate, then no new Flowgates need to be established for such limiting elements or Contingencies.

R2.1.2. Results of a first Contingency transfer analysis from all adjacent Balancing Authority source and sink (as defined in the ATCID) combinations up to the path capability such that at a minimum the first three limiting Elements and their worst associated Contingency combinations with an Outage Transfer Distribution Factor (OTDF) of at least 5% and within the Transmission Operator's system are included as Flowgates unless the interface between such adjacent Balancing Authorities is accounted for using another ATC methodology.

R2.1.2.1. Use first Contingency criteria consistent with those first Contingency criteria used in planning of operations for the applicable time periods, including use of Special Protection Systems.

R2.1.2.2. Only the most limiting element in a series configuration needs to be included as a Flowgate.

R2.1.2.3. If any limiting elements or Contingencies are already protected by another Flowgate, then no new Flowgates need to be established for such limiting elements or Contingencies.

R2.1.3. With the exception of flowgates created to address temporary operating conditions, Any limiting Element/Contingency combination at least within its Reliability Coordinator's Area ~~the Transmission model identified in R3.4 and R3.5~~ that has been subjected to an Interconnection-wide congestion management procedure within the last 12 months, unless the limiting Element/Contingency combination is accounted for using another ATC methodology[±].

R2.1.4. Any limiting Element/Contingency combination within the Transmission model that has been requested to be included by any other Transmission Service Provider using the Flowgate Methodology or Area Interchange Methodology, where:

R2.1.4.1. The coordination of the limiting Element/Contingency combination is not already addressed through a different methodology, and

- Any generator within the Transmission Service Provider's area has at least a 5% Power Transfer Distribution Factor (PTDF) or Outage Transfer Distribution Factor (OTDF) impact on the Flowgate when delivered to the aggregate load of its own area, or
- A transfer from any Balancing Area within the Transmission Service Provider's area to a Balancing Area adjacent has at least a 5% PTDF or OTDF impact on the Flowgate.
- The Transmission Operator may utilize distribution factors less than 5% if desired.

R2.1.4.2. The limiting Element/Contingency combination is included in the requesting Transmission Service Provider's methodology.

- R2.2. At a minimum, establish ~~the-a~~ list of Flowgates ~~to-by~~ creating, modifying, or deleting ~~internal~~ Flowgates definitions ~~-~~ at least once per calendar year.
- R2.3. At a minimum, establish ~~the-a~~ list of Flowgates ~~to-by~~ creating, modifying, or deleting ~~external~~ Flowgates that have been requested as part of R2.1.4 within thirty calendar days from the request.
- R2.4. Establish the TFC of each of the defined Flowgates as equal to:
 - For thermal limits, the System Operating Limit (SOL) of the Flowgate.
 - For voltage or stability limits, the flow that will respect the SOL of the Flowgate.
- R2.5. At a minimum, establish the TFC once per calendar year.
 - R2.5.1. If notified of a change in the Rating by the Transmission Owner that would affect the TFC of a flowgate used in the AFC process, the TFC should be updated within seven calendar days of the notification.
- R2.6. Provide the Transmission Service Provider with the TFCs within seven calendar days of their establishment.
- R3. The Transmission Operator shall make available to the Transmission Service Provider a Transmission model to determine Available Flowgate Capability (AFC) that meets the following criteria: [*Violation Risk Factor: Lower*] [*Time Horizon: Operations Planning*]
 - R3.1. Contains generation Facility Ratings, such as generation maximum and minimum output levels, specified by the Generator Owners of the Facilities within the model.
 - R3.2. Updated at least once per day for AFC calculations for intra-day, next day, and days two through 30.
 - R3.3. Updated at least once per month for AFC calculations for months two through 13.
 - R3.4. Contains modeling data and system topology for the Facilities within its Reliability Coordinator's Area. Equivalent representation of radial lines and Facilities 161kV or below is allowed.
 - R3.5. Contains modeling data and system topology (or equivalent representation) for immediately adjacent and beyond Reliability Coordination Areas.

- R4.** When calculating AFCs, the Transmission Service Provider shall represent the impact of Transmission Service as follows: [*Violation Risk Factor: Lower*] [*Time Horizon: Operations Planning*]
- If the source, as specified in the ATCID, has been identified in the reservation and it is discretely modeled in the Transmission Service Provider’s Transmission model, use the discretely modeled point as the source.
 - If the source, as specified in the ATCID, has been identified in the reservation and the point can be mapped to an “equivalence” or “aggregate” representation in the Transmission Service Provider’s Transmission model, use the modeled equivalence or aggregate as the source.
 - If the source, as specified in the ATCID, has been identified in the reservation and the point cannot be mapped to a discretely modeled point or an “equivalence” representation in the Transmission Service Provider’s Transmission model, use the immediately adjacent Balancing Authority associated with the Transmission Service Provider from which the power is to be received as the source.
 - If the source, as specified in the ATCID, has not been identified in the reservation use the immediately adjacent Balancing Authority associated with the Transmission Service Provider from which the power is to be received as the source.
 - If the sink, as specified in the ATCID, has been identified in the reservation and it is discretely modeled in the Transmission Service Provider’s Transmission model, use the discretely modeled point as the sink.
 - If the sink, as specified in the ATCID, has been identified in the reservation and the point can be mapped to an “equivalence” or “aggregate” representation in the Transmission Service Provider’s Transmission model, use the modeled equivalence or aggregate as the sink.
 - If the sink, as specified in the ATCID, has been identified in the reservation and the point cannot be mapped to a discretely modeled point or an “equivalence” representation in the Transmission Service Provider’s Transmission model, use the immediately adjacent Balancing Authority associated with the Transmission Service Provider receiving the power as the sink.
 - If the sink, as specified in the ATCID, has not been identified in the reservation use the immediately adjacent Balancing Authority associated with the Transmission Service Provider receiving the power as the sink.
- R5.** When calculating AFCs, the Transmission Service Provider shall: [*Violation Risk Factor: Lower*] [*Time Horizon: Operations Planning*]
- R5.1.** Use the models provided by the Transmission Operator.
- R5.2.** Include in the transmission model expected generation and Transmission outages, additions, and retirements within the scope of the model as specified in the ATCID and in effect during the applicable period of the AFC calculation for the Transmission Service Provider’s area, all adjacent Transmission Service Providers, and any Transmission Service Providers with which coordination agreements have been executed.
- R5.3.** For external Flowgates, identified in R2.1.4, use the AFC provided by the Transmission Service Provider that calculates AFC for that Flowgate.

- R6.** When calculating the impact of ETC for firm commitments (ETC_{Fi}) for all time periods for a Flowgate, the Transmission Service Provider shall sum the following: [*Violation Risk Factor: Lower*] [*Time Horizon: Operations Planning*]
- R6.1.** The impact of firm Network Integration Transmission Service, including the impacts of generation to load, in the model referenced in R5.2 for the Transmission Service Provider's area, based on:
- R6.1.1.** Load forecast for the time period being calculated, including Native Load and Network Service load
- R6.1.2.** Unit commitment and Dispatch Order, to include all designated network resources and other resources that are committed or have the legal obligation to run as specified in the Transmission Service Provider's ATCID.
- R6.2.** The impact of any firm Network Integration Transmission Service, including the impacts of generation to load in the model referenced in R5.2 and has a distribution factor equal to or greater than the percentage² used to curtail in the Interconnection-wide congestion management procedure used by the Transmission Service Provider, for all adjacent Transmission Service Providers and any other Transmission Service Providers with which coordination agreements have been executed based on:
- R6.2.1.** Load forecast for the time period being calculated, including Native Load and Network Service load
- R6.2.2.** Unit commitment and Dispatch Order, to include all designated network resources and other resources that are committed or have the legal obligation to run as specified in the Transmission Service Provider's ATCID.
- R6.3.** The impact of all confirmed firm Point-to-Point Transmission Service expected to be scheduled, including roll-over rights for Firm Transmission Service contracts, for the Transmission Service Provider's area.
- R6.4.** The impact of any confirmed firm Point-to-Point Transmission Service expected to be scheduled, filtered to reduce or eliminate duplicate impacts from transactions using Transmission service from multiple Transmission Service Providers, including roll-over rights for Firm Transmission Service contracts having a distribution factor equal to or greater than the percentage³ used to curtail in the Interconnection-wide congestion management procedure used by the Transmission Service Provider, for all adjacent Transmission Service Providers and any other Transmission Service Providers with which coordination agreements have been executed.
- R6.5.** The impact of any Grandfathered firm obligations expected to be scheduled or expected to flow for the Transmission Service Provider's area.
- R6.6.** The impact of any Grandfathered firm obligations expected to be scheduled or expected to flow that have a distribution factor equal to or greater than the

² A percentage less than that used in the Interconnection-wide congestion management procedure may be utilized.

³ A percentage less than that used in the Interconnection-wide congestion management procedure may be utilized.

percentage⁴ used to curtail in the Interconnection-wide congestion management procedure used by the Transmission Service Provider, for all adjacent Transmission Service Providers and any other Transmission Service Providers with which coordination agreements have been executed.

- R6.7.** The impact of other firm services determined by the Transmission Service Provider.
- R7.** When calculating the impact of ETC for non-firm commitments (ETC_{NFi}) for all time periods for a Flowgate the Transmission Service Provider shall sum: [*Violation Risk Factor: Lower*] [*Time Horizon: Operations Planning*]
- R7.1.** The impact of all confirmed non-firm Point-to-Point Transmission Service expected to be scheduled for the Transmission Service Provider's area.
- R7.2.** The impact of any confirmed non-firm Point-to-Point Transmission Service expected to be scheduled, filtered to reduce or eliminate duplicate impacts from transactions using Transmission service from multiple Transmission Service Providers, that have a distribution factor equal to or greater than the percentage⁵ used to curtail in the Interconnection-wide congestion management procedure used by the Transmission Service Provider, for all adjacent Transmission Service Providers and any other Transmission Service Providers with which coordination agreements have been executed.
- R7.3.** The impact of any Grandfathered non-firm obligations expected to be scheduled or expected to flow for the Transmission Service Provider's area.
- R7.4.** The impact of any Grandfathered non-firm obligations expected to be scheduled or expected to flow that have a distribution factor equal to or greater than the percentage⁶ used to curtail in the Interconnection-wide congestion management procedure used by the Transmission Service Provider, for all adjacent Transmission Service Providers and any other Transmission Service Providers with which coordination agreements have been executed.
- R7.5.** The impact of non-firm Network Integration Transmission Service serving Load within the Transmission Service Provider's area (i.e., secondary service), to include load growth, and losses not otherwise included in Transmission Reliability Margin or Capacity Benefit Margin.
- R7.6.** The impact of any non-firm Network Integration Transmission Service (secondary service) with a distribution factor equal to or greater than the percentage⁷ used to curtail in the Interconnection-wide congestion management procedure used by the Transmission Service Provider, filtered to reduce or eliminate duplicate impacts from transactions using Transmission service from multiple Transmission Service Providers, for all adjacent Transmission Service Providers and any other Transmission Service Providers with which coordination agreements have been executed.

⁴ A percentage less than that used in the Interconnection-wide congestion management procedure may be utilized.

⁵ A percentage less than that used in the Interconnection-wide congestion management procedure may be utilized.

⁶ A percentage less than that used in the Interconnection-wide congestion management procedure may be utilized.

⁷ A percentage less than that used in the Interconnection-wide congestion management procedure may be utilized.

R7.7. The impact of other non-firm services determined by the Transmission Service Provider.

R8. When calculating firm AFC for a Flowgate for a specified period, the Transmission Service Provider shall use the following algorithm (subject to allocation processes described in the ATCID): [*Violation Risk Factor: Lower*] [*Time Horizon: Operations Planning*]

$$AFC_F = TFC - ETC_{Fi} - CBM_i - TRM_i + Postbacks_{SFi} + counterflows_{Fi}$$

Where:

AFC_F is the firm Available Flowgate Capability for the Flowgate for that period.

TFC is the Total Flowgate Capability of the Flowgate.

ETC_{Fi} is the sum of the impacts of existing firm Transmission commitments for the Flowgate during that period.

CBM_i is the impact of the Capacity Benefit Margin on the Flowgate during that period.

TRM_i is the impact of the Transmission Reliability Margin on the Flowgate during that period.

Postbacks_{Fi} are changes to firm AFC due to a change in the use of Transmission Service for that period, as defined in Business Practices.

counterflows_{Fi} are adjustments to firm AFC as determined by the Transmission Service Provider and specified in their ATCID.

R9. When calculating non-firm AFC for a Flowgate for a specified period, the Transmission Service Provider shall use the following algorithm (subject to allocation processes described in the ATCID): [*Violation Risk Factor: Lower*] [*Time Horizon: Operations Planning*]

$$AFC_{NF} = TFC - ETC_{Fi} - ETC_{NFi} - CBM_{Si} - TRM_{Ui} + Postbacks_{SNFi} + counterflows$$

Where:

AFC_{NF} is the non-firm Available Flowgate Capability for the Flowgate for that period.

TFC is the Total Flowgate Capability of the Flowgate.

ETC_{Fi} is the sum of the impacts of existing firm Transmission commitments for the Flowgate during that period.

ETC_{NFi} is the sum of the impacts of existing non-firm Transmission commitments for the Flowgate during that period.

CBM_{Si} is the impact of any schedules during that period using Capacity Benefit Margin.

TRM_{Ui} is the impact on the Flowgate of the Transmission Reliability Margin that has not been released (unreleased) for sale as non-firm capacity by the Transmission Service Provider during that period.

Postbacks_{NF} are changes to non-firm Available Flowgate Capability due to a change in the use of Transmission Service for that period, as defined in Business Practices.

counterflows_{NF} are adjustments to non-firm AFC as determined by the Transmission Service Provider and specified in their ATCID.

R10. Each Transmission Service Provider shall recalculate AFC, utilizing the updated models described in R3.2, R3.3, and R5, at a minimum on the following frequency, unless none of

the calculated values identified in the AFC equation have changed: [*Violation Risk Factor: Lower*] [*Time Horizon: Operations Planning*]

- R10.1.** For hourly AFC, once per hour. Transmission Service Providers are allowed up to 175 hours per calendar year during which calculations are not required to be performed, despite a change in a calculated value identified in the AFC equation.
- R10.2.** For daily AFC, once per day.
- R10.3.** For monthly AFC, once per week.
- R11.** When converting Flowgate AFCs to ATCs (~~and TFCs to TTCs~~) for ATC Paths, the Transmission Service Provider shall convert those values based on the following algorithm: [*Violation Risk Factor: Lower*] [*Time Horizon: Operations Planning*]

$$\underline{A}TC = \min(P)$$

$$P = \{P\underline{A}TC_1, P\underline{A}TC_2, \dots, P\underline{A}TC_n\}$$

$$P\underline{A}TC_n = \frac{AFC_n}{DF_{np}}$$

Where:

ATC is the Available Transfer Capability (~~either 'Available' or 'Total'~~).

P is the set of partial Available Transfer Capabilities (~~either available or total~~) for all “impacted” Flowgates honored by the Transmission Service Provider; a Flowgate is considered “impacted” by a path if the Distribution Factor for that path is greater than the percentage⁸ used to curtail in the Interconnection-wide congestion management procedure used by the Transmission Service Provider on an OTDF Flowgate or PTDF Flowgate.

PATC_{*n*} is the partial Available Transfer Capability (~~either 'Available' or 'Total'~~) for a path relative to a Flowgate *n*.

AFC_{*n*} is the Available Flowgate Capability (~~'Available' or 'Total'~~) of a Flowgate *n*.

DF_{*np*} is the distribution factor for Flowgate *n* relative to path *p*.

C. Measures

- M1.** Each Transmission Service Provider shall provide its ATCID and other evidence (such as written documentation) to show that its ATCID contains the criteria used by the Transmission Operator to identify sets of Transmission Facilities as Flowgates and information on how sources and sinks are accounted for in AFC calculations. (R1)
- M2.** The Transmission Operator shall provide evidence (such as studies and working papers) that all Flowgates that meet the criteria described in R2.1 are considered in its AFC calculations. (R2.1)
- M3.** The Transmission Operator shall provide evidence (such as logs) that it updated its list of Flowgates at least once per calendar year. (R2.2)

⁸ A percentage less than that used in the Interconnection-wide congestion management procedure may be utilized.

- M4.** The Transmission Operator shall provide evidence (such as logs and dated requests) that it updated the list of Flowgates within thirty calendar days from a request. (R2.3)
- M5.** The Transmission Operator shall provide evidence (such as data or models) that it determined the TFC for each Flowgate as defined in R2.4. (R2.4)
- M6.** The Transmission Operator shall provide evidence (such as logs) that it established the TFCs for each Flowgate in accordance with the timing defined in R2.5. (R2.5)
- M7.** The Transmission Operator shall provide evidence (such as logs and electronic communication) that it provided the Transmission Service Provider with updated TFCs within seven calendar days of their determination. (R2.6)
- M8.** The Transmission Operator shall provide evidence (such as written documentation, logs, models, and data) that the Transmission model used to determine AFCs contains the information specified in R3. (R3)
- M9.** The Transmission Service Provider shall provide evidence (such as written documentation and data) that the modeling of point-to-point reservations was based on the rules described in R4. (R4)
- M10.** The Transmission Service Provider shall provide evidence including the models received from Transmission Operators and other evidence (such as documentation and data) to show that it used the Transmission Operator's models in calculating AFC. (R5.1)
- M11.** The Transmission Service Provider shall provide evidence (such as written documentation, electronic communications, and data) that all expected generation and Transmission outages, additions, and retirements were included in the AFC calculation as specified in the ATCID. (R5.2)
- M12.** The Transmission Service Provider shall provide evidence (such as logs, electronic communications, and data) that AFCs provided by third parties on external Flowgates were used instead of those calculated by the Transmission Operator. (R5.3)
- M13.** The Transmission Service Provider shall demonstrate compliance with R6 by recalculating firm ETC for any specific time period as described in (MOD-001 R2), using the requirements defined in R6 and with data used to calculate the specified value for the designated time period. The data used must meet the requirements specified in MOD-030-1 and the ATCID. To account for differences that may occur when recalculating the value (due to mixing automated and manual processes), any recalculated value that is within +/- 15% or 15 MW, whichever is greater, of the originally calculated value, is evidence that the Transmission Service Provider used the requirements defined in R6 to calculate its firm ETC. (R6)
- M14.** The Transmission Service Provider shall demonstrate compliance with R7 by recalculating non-firm ETC for any specific time period as described in (MOD-001 R2), using the requirements defined in R7 and with data used to calculate the specified value for the designated time period. The data used must meet the requirements specified in the standard and the ATCID. To account for differences that may occur when recalculating the value (due to mixing automated and manual processes), any recalculated value that is within +/- 15% or 15 MW, whichever is greater, of the originally calculated value, is evidence that the Transmission Service Provider used the requirements in R7 to calculate its non-firm ETC. (R7)
- M15.** Each Transmission Service Provider shall produce the supporting documentation for the processes used to implement the algorithm that calculates firm AFCs, as required in R8. Such documentation must show that only the variables allowed in R8 were used to calculate

firm AFCs, and that the processes use the current values for the variables as determined in the requirements or definitions. Note that any variable may legitimately be zero if the value is not applicable or calculated to be zero (such as counterflows, TRM, CBM, etc...). The supporting documentation may be provided in the same form and format as stored by the Transmission Service Provider. (R8)

M16. Each Transmission Service Provider shall produce the supporting documentation for the processes used to implement the algorithm that calculates non-firm AFCs, as required in R9. Such documentation must show that only the variables allowed in R9 were used to calculate non-firm AFCs, and that the processes use the current values for the variables as determined in the requirements or definitions. Note that any variable may legitimately be zero if the value is not applicable or calculated to be zero (such as counterflows, TRM, CBM, etc...). The supporting documentation may be provided in the same form and format as stored by the Transmission Service Provider. (R9)

M17. The Transmission Service Provider shall provide evidence (such as documentation, dated logs, and data) that it calculated AFC on the frequency defined in R10. (R10)

M18. The Transmission Service Provider shall provide evidence (such as documentation and data) when converting Flowgate AFCs to ATCs ~~(and TFCs to TTCs)~~ for ATC Paths, it follows the procedure described in R11. (R11)

D. Compliance

1. Compliance Monitoring Process

1.1. Compliance Enforcement Authority

Regional Entity.

1.2. Compliance Monitoring Period and Reset Time Frame

Not applicable.

1.3. Data Retention

The Transmission Operator and Transmission Service Provider shall keep data or evidence to show compliance as identified below unless directed by its Compliance Enforcement Authority to retain specific evidence for a longer period of time as part of an investigation:

- The Transmission Service Provider shall retain its current, in force ATCID and any prior versions of the ATCID that were in force since the last compliance audit to show compliance with R1.
- The Transmission Operator shall have its latest model used to determine flowgates and TFC and evidence of the previous version to show compliance with R2 and R3.
- The Transmission Operator shall retain evidence to show compliance with R2.1, R2.3 for the most recent 12 months.
- The Transmission Operator shall retain evidence to show compliance with R2.2, R2.4 and R2.5 for the most recent three calendar years plus current year.
- The Transmission Service Provider shall retain evidence to show compliance with R4 for 12 months or until the model used to calculate AFC is updated, whichever is longer.
- The Transmission Service Provider shall retain evidence to show compliance with R5, R8, R9, R10, and R11 for the most recent calendar year plus current year.

- The Transmission Service Provider shall retain evidence to show compliance in calculating hourly values required in R6 and R7 for the most recent 14 days; evidence to show compliance in calculating daily values required in R6 and R7 for the most recent 30 days; and evidence to show compliance in calculating monthly values required in R6 and R7 for the most recent sixty days.
- If a Transmission Service Provider or Transmission Operator is found non-compliant, it shall keep information related to the non-compliance until found compliant.

The Compliance Enforcement Authority shall keep the last audit records and all requested and submitted subsequent audit records.

1.4. Compliance Monitoring and Enforcement Processes:

The following processes may be used:

- Compliance Audits
- Self-Certifications
- Spot Checking
- Compliance Violation Investigations
- Self-Reporting
- Complaints

1.5. Additional Compliance Information

None.

2. Violation Severity Levels

R #	Lower VSL	Moderate VSL	High VSL	Severe VSL
R1.	The Transmission Service Provider does not include in its ATCID one or two of the sub-requirements listed under R1.2, or the sub-requirement is incomplete.	The Transmission Service Provider does not include in its ATCID three of the sub-requirements listed under R1.2, or the sub-requirement is incomplete.	The Transmission Service Provider does not include in its ATCID the information described in R1.1. OR The Transmission Service Provider does not include in its ATCID the information described in R1.2 (1.2.1, 1.2.2., 1.2.3, and 1.2.4 are missing).	The Transmission Service Provider does not include in its ATCID the information described in R1.1 and R1.2 (1.2.1, 1.2.2., 1.2.3, and 1.2.4 are missing).
R2.	<p>One or more of the following:</p> <ul style="list-style-type: none"> The Transmission Operator established its list of internal Flowgates less frequently than once per calendar year, but not more than three months late as described in R2.2. The Transmission Operator established its list of external Flowgates more than thirty days, but not more than sixty days, following a request to create, modify or delete a n external-flowgate as described in R2.3. The Transmission Operator has not updated its Flowgate TFC when notified by the Transmission Owner in more 	<p>One or more of the following:</p> <ul style="list-style-type: none"> The Transmission Operator did not include a Flowgate in their AFC calculations that met the criteria described in R2.1. The Transmission Operator established its list of internal Flowgates more than three months late, but not more than six months late as described in R2.2. The Transmission Operator established its list of external Flowgates more than sixty days, but not more than ninety days, following a request to create, modify or delete a n external-flowgate 	<p>One or more of the following:</p> <ul style="list-style-type: none"> The Transmission Operator did not include two to five Flowgates in their AFC calculations that met the criteria described in R2.1. The Transmission Operator established its list of internal Flowgates more than six months late, but not more than nine months late as described in R2.2. The Transmission Operator established its list of external Flowgates more than ninety days, but not more than 120 days, following a request to create, modify or delete a n external-flowgate as 	<p>One or more of the following:</p> <ul style="list-style-type: none"> The Transmission Operator did not include six or more Flowgates in their AFC calculations that met the criteria described in R2.1. The Transmission Operator established its list of internal Flowgates more than nine months late as described in R2.2. The Transmission Operator did not establish its list of internal Flowgates as described in R2.2. The Transmission Operator established its list of external Flowgates more than 120 days following a request to create, modify or delete a n external-flowgate as described in R2.3.

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R #	Lower VSL	Moderate VSL	High VSL	Severe VSL
	<p>than 7 days, but it has not been more than 14 days since the notification (R2.5.1)</p> <ul style="list-style-type: none"> The Transmission Operator has not provided its Transmission Service Provider with its Flowgate TFCs within seven days (one week) of their determination, but is has not been more than 14 days (two weeks) since their determination. 	<p>as described in R2.3.</p> <ul style="list-style-type: none"> The Transmission Operator has not updated its Flowgate TFCs at least once within a calendar year, and it has been not more than 15 months since the last update. The Transmission Operator has not updated its Flowgate TFC when notified by the Transmission Owner in more than 14 days, but it has not been more than 21 days since the notification (R2.5.1) The Transmission Operator has not provided its Transmission Service Provider with its Flowgate TFCs in more than 14 days (two weeks) of their determination, but is has not been more than 21 days (three weeks) since their determination. 	<p>described in R2.3.</p> <p>The Transmission Operator has not updated its Flowgate TFCs at least once within a calendar year, and it has been more than 15 months but not more than 18 months since the last update.</p> <ul style="list-style-type: none"> The Transmission Operator has not updated its Flowgate TFCs when notified by the Transmission Owner in more than 21 days, but it has not been more than 28 days since the notification (R2.5.1) The Transmission Operator has not provided its Transmission Service Provider with its Flowgate TFCs in more than 21 days (three weeks) of their determination, but is has not been more than 28 days (four weeks) since their determination. 	<ul style="list-style-type: none"> The Transmission Operator did not establish its list of external Flowgates following a request to create, modify or delete an external flowgate as described in R2.3. The Transmission Operator did not determine the TFC for a flowgate as described in R2.4. The Transmission Operator has not updated its Flowgate TFCs at least once within a calendar year, and it has been more than 18 months since the last update. (R2.5) The Transmission Operator has not updated its Flowgate TFCs when notified by the Transmission Owner in more than 28 calendar days (R2.5.1) The Transmission Operator has not provided its Transmission Service Provider with its Flowgate TFCs in more than 28 days (4 weeks) of their determination.

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R #	Lower VSL	Moderate VSL	High VSL	Severe VSL
R3.	<p>One or more of the following:</p> <ul style="list-style-type: none"> • The Transmission Operator used one to ten Facility Ratings that were different from those specified by a Transmission or Generator Owner in their Transmission model. • The Transmission Operator did not update the model per R3.2 for one or more calendar days but not more than 2 calendar days • The Transmission Operator did not update the model for per R3.3 for one or more months but not more than six weeks 	<p>One or more of the following:</p> <ul style="list-style-type: none"> • The Transmission Operator used eleven to twenty Facility Ratings that were different from those specified by a Transmission or Generator Owner in their Transmission model. • The Transmission Operator did not update the model per R3.2 for more than 2 calendar days but not more than 3 calendar days • The Transmission Operator did not update the model for per R3.3 for more than six weeks but not more than eight weeks 	<p>One or more of the following:</p> <ul style="list-style-type: none"> • The Transmission Operator used twenty-one to thirty Facility Ratings that were different from those specified by a Transmission or Generator Owner in their Transmission model. • The Transmission Operator did not update the model per R3.2 for more than 3 calendar days but not more than 4 calendar days • The Transmission Operator did not update the model for per R3.3 for more than eight weeks but not more than ten weeks 	<p>One or more of the following:</p> <ul style="list-style-type: none"> • The Transmission Operator did not update the model per R3.2 for more than 4 calendar days • The Transmission Operator did not update the model for per R3.3 for more than ten weeks • The Transmission Operator used more than thirty Facility Ratings that were different from those specified by a Transmission or Generator Owner in their Transmission model. • The Transmission operator did not include in the Transmission model detailed modeling data and topology for its own Reliability Coordinator area. • The Transmission operator did not include in the Transmission modeling data and topology for immediately adjacent and beyond Reliability Coordinator area.

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R #	Lower VSL	Moderate VSL	High VSL	Severe VSL
R4.	The Transmission Service Provider did not represent the impact of Transmission Service as described in R4 for more than zero, but not more than 5% of all reservations; or more than zero, but not more than 1 reservation, whichever is greater..	The Transmission Service Provider did not represent the impact of Transmission Service as described in R4 for more than 5%, but not more than 10% of all reservations; or more than 1, but not more than 2 reservations, whichever is greater..	The Transmission Service Provider did not represent the impact of Transmission Service as described in R4 for more than 10%, but not more than 15% of all reservations; or more than 2, but not more than 3 reservations, whichever is greater..	The Transmission Service Provider did not represent the impact of Transmission Service as described in R4 for more than 15% of all reservations; or more than 3 reservations, whichever is greater..
R5.	The Transmission Service Provider did not include in the AFC process one to ten expected generation or Transmission outages, additions or retirements within the scope of the model as specified in the ATCID.	The Transmission Service Provider did not include in the AFC process eleven to twenty-five expected generation and Transmission outages, additions or retirements within the scope of the model as specified in the ATCID.	The Transmission Service Provider did not include in the AFC process twenty-six to fifty expected generation and Transmission outages, additions or retirements within the scope of the model as specified in the ATCID.	<p>One or more of the following:</p> <ul style="list-style-type: none"> • The Transmission Service Provider did not use the model provided by the Transmission Operator. • The Transmission Service Provider did not include in the AFC process more than fifty expected generation and Transmission outages, additions or retirements within the scope of the model as specified in the ATCID. • The Transmission Service provider did not use AFC provided by a third party.

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R #	Lower VSL	Moderate VSL	High VSL	Severe VSL
R6.	For a specified period, the Transmission Service Provider calculated a firm ETC with an absolute value different than that calculated in M13 for the same period, and the absolute value difference was more than 15% of the value calculated in the measure or 15MW, whichever is greater, but not more than 25% of the value calculated in the measure or 25MW, whichever is greater..	For a specified period, the Transmission Service Provider calculated a firm ETC with an absolute value different than that calculated in M13 for the same period, and the absolute value difference was more than 25% of the value calculated in the measure or 25MW, whichever is greater, but not more than 35% of the value calculated in the measure or 35MW, whichever is greater.	For a specified period, the Transmission Service Provider calculated a firm ETC with an absolute value different than that calculated in M13 for the same period, and the absolute value difference was more than 35% of the value calculated in the measure or 35MW, whichever is greater, but not more than 45% of the value calculated in the measure or 45MW, whichever is greater.	For a specified period, the Transmission Service Provider calculated a firm ETC with an absolute value different than that calculated in M13 for the same period, and the absolute value difference was more than 45% of the value calculated in the measure or 45MW, whichever is greater.
R7.	For a specified period, the Transmission Service Provider calculated a non-firm ETC with an absolute value different than that calculated in M14 for the same period, and the absolute value difference was more than 15% of the value calculated in the measure or 15MW, whichever is greater, but not more than 25% of the value calculated in the measure or 25MW, whichever is greater.	For a specified period, the Transmission Service Provider calculated a non-firm ETC with an absolute value different than that calculated in M14 for the same period, and the absolute value difference was more than 25% of the value calculated in the measure or 25MW, whichever is greater, but not more than 35% of the value calculated in the measure or 35MW, whichever is greater.	For a specified period, the Transmission Service Provider calculated a non-firm ETC with an absolute value different than that calculated in M14 for the same period, and the absolute value difference was more than 35% of the value calculated in the measure or 35MW, whichever is greater, but not more than 45% of the value calculated in the measure or 45MW, whichever is greater.	For a specified period, the Transmission Service Provider calculated a non-firm ETC with an absolute value different than that calculated in M14 for the same period, and the absolute value difference was more than 45% of the value calculated in the measure or 45MW, whichever is greater.
R8.	The Transmission Service Provider did not use all the elements defined in R8 when determining firm AFC, or used additional elements, for more than zero Flowgates, but not more than 5% of all Flowgates or 1 Flowgate (whichever is greater).	The Transmission Service Provider did not use all the elements defined in R8 when determining firm AFC, or used additional elements, for more than 5% of all Flowgates or 1 Flowgates (whichever is greater), but not more than 10% of all Flowgates or 2 Flowgates (whichever is greater).	The Transmission Service Provider did not use all the elements defined in R8 when determining firm AFC, or used additional elements, for more than 10% of all Flowgates or 2 Flowgates (whichever is greater), but not more than 15% of all Flowgates or 3 Flowgates (whichever is greater).	The Transmission Service Provider did not use all the elements defined in R8 when determining firm AFC, or used additional elements, for more than 15% of all Flowgates or more than 3 Flowgates (whichever is greater).

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R #	Lower VSL	Moderate VSL	High VSL	Severe VSL
		greater).	greater).	
R9.	The Transmission Service Provider did not use all the elements defined in R8 when determining non-firm AFC, or used additional elements, for more than zero Flowgates, but not more than 5% of all Flowgates or 1 Flowgate (whichever is greater).	The Transmission Service Provider did not use all the elements defined in R9 when determining non-firm AFC, or used additional elements, for more than 5% of all Flowgates or 1 Flowgate (whichever is greater), but not more than 10% of all Flowgates or 2 Flowgates (whichever is greater).	The Transmission Service Provider did not use all the elements defined in R9 when determining non-firm AFC, or used additional elements, for more than 10% of all Flowgates or 2 Flowgates (whichever is greater), but not more than 15% of all Flowgates or 3 Flowgates (whichever is greater).	The Transmission Service Provider did not use all the elements defined in R9 when determining non-firm AFC, or used additional elements, for more than 15% of all Flowgates or more than 3 Flowgates (whichever is greater).
R10	<p>One or more of the following:</p> <ul style="list-style-type: none"> ▪ For Hourly, the values described in the AFC equation changed and the Transmission Service provider did not calculate for one or more hours but not more than 15 hours, and was in excess of the 175-hour per year requirement. ▪ For Daily, the values described in the AFC equation changed and the Transmission Service provider did not calculate for one or more calendar days but not more than 3 calendar days. ▪ For Monthly, the values 	<p>One or more of the following:</p> <ul style="list-style-type: none"> ▪ For Hourly, the values described in the AFC equation changed and the Transmission Service provider did not calculate for more than 15 hours but not more than 20 hours, and was in excess of the 175-hour per year requirement. ▪ For Daily, the values described in the AFC equation changed and the Transmission Service provider did not calculate for more than 3 calendar days but not more than 4 calendar days. ▪ For Monthly, the values 	<p>One or more of the following:</p> <ul style="list-style-type: none"> ▪ For Hourly, the values described in the AFC equation changed and the Transmission Service provider did not calculate for more than 20 hours but not more than 25 hours, and was in excess of the 175-hour per year requirement. ▪ For Daily, the values described in the AFC equation changed and the Transmission Service provider did not calculate for more than 4 calendar days but not more than 5 calendar days. ▪ For Monthly, the values 	<p>One or more of the following:</p> <ul style="list-style-type: none"> ▪ For Hourly, the values described in the AFC equation changed and the Transmission Service provider did not calculate for more than 25 hours, and was in excess of the 175-hour per year requirement. ▪ For Daily, the values described in the AFC equation changed and the Transmission Service provider did not calculate for more than 5 calendar days. ▪ For Monthly, the values described in the AFC equation changed and the

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R #	Lower VSL	Moderate VSL	High VSL	Severe VSL
	described in the AFC equation changed and the Transmission Service provider did not calculate for seven or more calendar days, but less than 14 calendar days.	described in the AFC equation changed and the Transmission Service provider did not calculate for 14 or more calendar days, but less than 21 calendar days.	described in the AFC equation changed and the Transmission Service provider did not calculate for 21 or more calendar days, but less than 28 calendar days.	Transmission Service provider did not calculate for 28 or more calendar days.
R11.	N/A	N/A	N/A	The Transmission Service Provider did not follow the procedure for converting Flowgate AFCs to ATCs (and/or TFCs to TTCs) described in R11.

E. Regional Differences

None identified.

F. Associated Documents

Version History

Version	Date	Action	Change Tracking
2		Modified R2.1.1.3, R2.1.2.3, R2.1.3, R2.2, R2.3 and R11 Made conforming changes to M18 and VSLs for R2 and R11	Revised

Standard Authorization Request Form

Title of Proposed Standard	Flowgate Methodology
Request Date	August 8, 2008

SAR Requester Information	SAR Type <i>(Check a box for each one that applies.)</i>
Name Duke Energy	<input type="checkbox"/> New Standard
Primary Contact Laura Lee	<input checked="" type="checkbox"/> Revision to existing Standard
Telephone 704-382-3625 Fax	<input type="checkbox"/> Withdrawal of existing Standard
E-mail llee@duke-energy.com	<input type="checkbox"/> Urgent Action

<p>Purpose</p> <p>To increase consistency and reliability in the development and documentation of transfer capability calculations for short-term use performed by entities using the Flowgate Methodology to support analysis and system operations.</p>
<p>Industry Need</p> <p>Entities have proposed methods through which flowgates can be analyzed in a reliable manner other than those included in MOD-030-01. This SAR proposes modifications to the standard such that those methods can be accommodated within the standard.</p>
<p>Brief Description</p> <p>Requirements 2 and 11 of MOD-030-01 will be modified.</p>
<p>Detailed Description</p> <p>Modify R2.1 to make it clear that if any limiting elements or Contingencies are already protected by another Flowgate, then no new Flowgates need to be established for such limiting elements or Contingencies. Modify 2.1 such that limits are placed around flowgates added because of the exercise of an Interconnection-wide Congestion Management procedure. Modify the R2.1 so that it is clear that temporary flowgates are not required to be incorporated into the list of flowgates for which AFC is determined.</p> <p>Modify R11 to remove references to TFC and TTC, since there are multiple ways to determine TTC from TFC and FERC has not mandated the creation of a single method.</p> <p>Make conforming changes to the Measures and Compliance elements of the standard to support the above requirements.</p> <p>Make any other changes as necessary to support the above requirements.</p>

Standards Authorization Request Form

Reliability Functions

The Standard will Apply to the Following Functions <i>(Check box for each one that applies.)</i>		
<input type="checkbox"/>	Regional Reliability Organization	Conducts the regional activities related to planning and operations, and coordinates activities of Responsible Entities to secure the reliability of the Bulk Electric System within the region and adjacent regions.
<input type="checkbox"/>	Reliability Coordinator	Responsible for the real-time operating reliability of its Reliability Coordinator Area in coordination with its neighboring Reliability Coordinator's wide area view.
<input type="checkbox"/>	Balancing Authority	Integrates resource plans ahead of time, and maintains load-interchange-resource balance within a Balancing Authority Area and supports Interconnection frequency in real time.
<input type="checkbox"/>	Interchange Authority	Ensures communication of interchange transactions for reliability evaluation purposes and coordinates implementation of valid and balanced interchange schedules between Balancing Authority Areas.
<input type="checkbox"/>	Planning Coordinator	Assesses the longer-term reliability of its Planning Coordinator Area.
<input type="checkbox"/>	Resource Planner	Develops a >one year plan for the resource adequacy of its specific loads within a Planning Coordinator area.
<input type="checkbox"/>	Transmission Planner	Develops a >one year plan for the reliability of the interconnected Bulk Electric System within its portion of the Planning Coordinator area.
<input checked="" type="checkbox"/>	Transmission Service Provider	Administers the transmission tariff and provides transmission services under applicable transmission service agreements (e.g., the pro forma tariff).
<input type="checkbox"/>	Transmission Owner	Owns and maintains transmission facilities.
<input checked="" type="checkbox"/>	Transmission Operator	Ensures the real-time operating reliability of the transmission assets within a Transmission Operator Area.
<input type="checkbox"/>	Distribution Provider	Delivers electrical energy to the End-use customer.
<input type="checkbox"/>	Generator Owner	Owns and maintains generation facilities.
<input type="checkbox"/>	Generator Operator	Operates generation unit(s) to provide real and reactive power.
<input type="checkbox"/>	Purchasing-Selling Entity	Purchases or sells energy, capacity, and necessary reliability-related services as required.
<input type="checkbox"/>	Market Operator	Interface point for reliability functions with commercial functions.
<input type="checkbox"/>	Load-Serving Entity	Secures energy and transmission service (and reliability-related services) to serve the End-use Customer.

Reliability and Market Interface Principles

Applicable Reliability Principles <i>(Check box for all that apply.)</i>	
<input checked="" type="checkbox"/>	1. Interconnected bulk power 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 power 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 power systems shall be made available to those entities responsible for planning and operating the systems reliably.
<input type="checkbox"/>	4. Plans for emergency operation and system restoration of interconnected bulk power systems shall be developed, coordinated, maintained and implemented.
<input type="checkbox"/>	5. Facilities for communication, monitoring and control shall be provided, used and maintained for the reliability of interconnected bulk power systems.
<input type="checkbox"/>	6. Personnel responsible for planning and operating interconnected bulk power 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 power systems shall be assessed, monitored and maintained on a wide area basis.
<input type="checkbox"/>	8. Bulk power systems shall be protected from malicious physical or cyber attacks.
Does the proposed Standard comply with all of the following Market Interface Principles? <i>(Select 'yes' or 'no' from the drop-down box.)</i>	
1. A reliability standard shall not give any market participant an unfair competitive advantage. Yes	
2. A reliability standard shall neither mandate nor prohibit any specific market structure. Yes	
3. A reliability standard shall not preclude market solutions to achieving compliance with that standard. Yes	
4. A reliability 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	

Standards Authorization Request Form

Related Standards

Standard No.	Explanation
MOD-001-01	Parent standard to this standard
MOD-030-01	Earlier version of the standard.

Related SARs

SAR ID	Explanation
	Parent SAR to this SAR
	Supplemental SAR to the above SAR

Regional Variances

Region	Explanation
ERCOT	
FRCC	
MRO	
NPCC	
SERC	
RFC	
SPP	
WECC	

Implementation Plan for Standard MOD-030-2; ATC/TTC/AFC and CBM/TRM Revisions (Project 2006-07)

Summary

As part of compliance with FERC Order 890, the NERC ATC, TTC, CBM, & TRM Standards Drafting Team has prepared the following standard:

- MOD-030-2, which describes the Flowgate methodology (previously referred to as the Flowgate Network Response ATC methodology) for determining AFC.

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

This standard completely replaces MOD-030-1.

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:

Proposed Standard	Transmission Operator	Transmission Planner	Transmission Service Provider	Balancing Authorities	Purchasing Selling Entities	Load-Serving Entities
MOD-030	■		■			

Proposed Effective Date

All requirements in the standard should become effective on the date upon which MOD-030-1 is currently scheduled to become effective.

**Comment Form — 1st Draft of Standard MOD-030-2
Project 2006-07**

Comments must be submitted by **September 24, 2008**. If you have questions please contact **Andy Rodriquez** at Andy.Rodriquez@nerc.net or by telephone at 609.947.3885.

Background Information

Project 2006-07 was initiated in 2006 to revise the then existing NERC reliability modeling standards to ensure the consistent and transparent calculation, verification, preservation, and use of Total Transfer Capability (TTC)/Available Transfer Capability (ATC)/Available Flowgate Capability (AFC). Project 2006-07 requires specific reliability practices be incorporated into the TTC/ATC/AFC calculation and coordination methodologies and adds requirements for documentation of the methodologies used to coordinate TTC/ATC/AFC. Such changes will enhance the reliable use of the bulk power transmission system without arbitrarily limiting commercial activity.

On February 17, 2007 FERC issued Order 890 which directed, among other things, a number of reforms in the determination of ATC by requiring consistency in how TTC/ATC/AFC is evaluated, as well as providing greater transparency about how a transmission provider calculates and allocates TTC/ATC/AFC. Then on March 16, 2007 FERC issued Order 693 which provided directives on modifying the NERC standards, including those related to modeling.

During the initial ballot for MOD-030-1, several balloters proposed the following modifications and they are reflected in the SAR and in the modifications to the standard:

- Modify R2.1 to make it clear that if any limiting elements or Contingencies are already protected by another Flowgate, then no new Flowgates need to be established for such limiting elements or Contingencies.
- Modify 2.1 such that limits are placed around flowgates added because of the exercise of an Interconnection-wide Congestion Management procedure.
- Modify the R2.1 so that it is clear that temporary flowgates are not required to be incorporated into the list of flowgates for which AFC is determined.
- Modify R11 to remove references to TFC and TTC, since there are multiple ways to determine TTC from TFC and FERC has not mandated the creation of a single method.
- Make conforming changes to the Measures and Compliance elements of the standard to support the above requirements.

In response to suggestions for these improvements, the drafting team has created the following proposed standard:

MOD-030-02 – Flowgate Methodology

Please review the SAR and the proposed standard and then answer the following questions.

**Comment Form — 1st Draft of Standard MOD-030-2
Project 2006-07**

You do not have to answer all questions.

Insert a "check" mark in the appropriate boxes by double-clicking the gray areas.

1. Do you agree with the SAR's purpose, scope and applicability?

Yes

No

Comments:

2. The drafting team has modified R2.1, R2.2, R2.3, and R11. Do you agree with the proposed changes?

Yes

No

No preference

If "No," please identify the modifications with which you are concerned and suggest changes to the language. Comments:

3. Are you aware of any conflicts between the proposed MOD-030-2 and any regulatory function, rule/order, tariff, rate schedule, legislative requirement or agreement?

Yes

No

No preference

If "Yes," please explain why in the comment area below and provide supporting information. Comments:

4. Please provide any other comments (that you have not already provided in response to the questions above) that you have on the proposed MOD-030-2.

Comments:



- Individual or group. (18 Responses)**
- Name (13 Responses)**
- Organization (13 Responses)**
- Group Name (5 Responses)**
- Lead Contact (5 Responses)**
- Contact Organization (5 Responses)**
- Question 1 (16 Responses)**
- Question 1 Comments (18 Responses)**
- Question 2 (16 Responses)**
- Question 2 Comments (18 Responses)**
- Question 3 (16 Responses)**
- Question 3 Comments (18 Responses)**
- Question 4 (0 Responses)**
- Question 4 Comments (18 Responses)**

Individual
John D. Martinsen
Snohomish County PUD
Yes
Yes
No
Group
NPCC
Guy Zito
NPCC
No comments.
No comments.
No comments.
No comments.
Individual
Ronald Szymczak
Exelon
Yes
Yes
No Preference
Requirement R1 should also require that the Available Transfer Capability Implementation Document specify the following: o PTFD and OTDF cutoff values used The term "planning of operations" is not a term use by all entities in the electric utility industry and has no agreed upon definition; consequently it should be used in a standard. ATC or AFC calculations cover the operating and planning time horizons and therefore, the calculations need to apply the appropriate contingency criteria for the time frame being studied. The following wording change is recommended: · Requirement 2.1.1.1. and 2.1.2.1. need to be revised as follows: "Use first

Contingency criteria consistent with those first Contingency criteria used in operations studies and planning studies of operations for the applicable time periods, including use of Special Protection Systems.
Individual
John Harmon
Midwest ISO
Yes and No
Yes
No
The Midwest ISO thanks the Standard Drafting Team for consideration of its comments from the MOD-030-1. We applaud the revisions to requirements R2.1.3, R2.2, R2.3, and R11. The Midwest ISO continues to believe that the MOD-030-1 is more stringent than MOD-028 or MOD-029. R6.2/R6.4/R6.6/R7.2/R7.4/R7.6 are clear examples where MOD-030 is more stringent and the highest degree of compliance is not required for all three methodologies. The Midwest ISO is not convinced that similar seams coordination requirements exist for the other two standards, especially for MOD-029. The Standard Drafting Team has maintained that this does not apply to MOD-029 since it is not a "simulation" type methodology. While this is true, the Midwest ISO believes that impacts from neighboring entity generators and loop flows cannot be ignored and should still be considered in ATC calculations. With a much higher risk of compliance violation, entities may be deterred from implementing the Flowgate methodology even if it would increase system reliability. Since the Standard Drafting Team disagrees with our proposal, we request to remove these requirements from MOD-030 to achieve more unbiased standards so that each methodology maintains an equal level of compliance.
Group
Bonneville Power Administration
Denise Koehn
Transmission Reliability Program
Yes
The modifications to R2.1 are necessary to facilitate the manner in which WECC entities define Flowgates.
Yes
The additions of R2.1.1.3 and R2.1.2.3 are appreciated by BPA, as this permits the continued use of the process WECC entities use to define Flowgates, however, we believe that the below re-wording of these two sub-requirements is more precise and removes the vague phrase "protected by". "If any limiting element is kept within its limit for its associated worst Contingency by operating within the limits of another Flowgate, then no new Flowgate needs to be established for such limiting elements or Contingencies."
No
BPA thanks the NERC ATC Standards Drafting Team for drafting this SAR and MOD-030-2, and moving so quickly to respond to the concerns of the Pacific NW regarding MOD-030-1.
Group
Standards Interface Subcommittee/Compliance Elements Development Resource Pool
John Blazekovich
Commonwealth Edison Co.
Standard – R1 MOD-030-02 Requirement (including sub-requirements) R1. The Transmission Service Provider shall include in its "Available Transfer Capability Implementation Document" (ATCID): [Violation Risk Factor: Lower] [Time Horizon: Operations Planning] R1.1. The criteria used by the Transmission Operator to identify sets of Transmission Facilities as Flowgates that are to be considered in Available Flowgate Capability (AFC) calculations. R1.2. The following information on how source and sink for transmission service is accounted for in AFC calculations including: R1.2.1. Define if the source used for AFC calculations is obtained from the source field or the Point of Receipt (POR) field of the transmission reservation. R1.2.2. Define if the sink used for AFC calculations is obtained from the sink field or the Point of Delivery (POD) field of the transmission reservation. R1.2.3. The source/sink or POR/POD identification and mapping to the model. R1.2.4. If the Transmission Service Provider's AFC calculation process involves a grouping of generators, the ATCID must identify how these generators participate in the group. Proposed

Measure M1. Each Transmission Service Provider shall provide its ATCID and other evidence (such as written documentation) to show that its ATCID contains the criteria used by the Transmission Operator to identify sets of Transmission Facilities as Flowgates and information on how sources and sinks are accounted for in AFC calculations. (R1) Attributes of the requirement Binary X Timing Omission X Communication Quality Other SDT Proposed Lower VSL The Transmission Service Provider does not include in its ATCID one or two of the sub-requirements listed under R1.2, or the sub-requirement is incomplete. CEDRP Proposed VSL OK – No Comments SDT Proposed Moderate VSL The Transmission Service Provider does not include in its ATCID three of the sub-requirements listed under R1.2, or the sub-requirement is incomplete. CEDRP Proposed VSL OK – No Comments SDT Proposed High VSL The Transmission Service Provider does not include in its ATCID the information described in R1.1. OR The Transmission Service Provider does not include in its ATCID the information described in R1.2 (1.2.1, 1.2.2., 1.2.3, and 1.2.4 are missing). CEDRP Proposed VSL OK – No Comments SDT Proposed Severe VSL The Transmission Service Provider does not include in its ATCID the information described in R1.1 and R1.2 (1.2.1, 1.2.2., 1.2.3, and 1.2.4 are missing). CEDRP Proposed VSL OK – No Comments FERC Guidance for VSLs 1. Will the VSL assignment signal entities that less compliance than has been historically achieved is condoned? No. 2. Is the VSL assignment a binary requirement? Yes. 3. Is it truly a “binary” requirement? No. 4. If yes, is the VSL assignment consistent with other binary requirement assignments? No. 5. Is the VSL language clear & measurable (ambiguity removed)? If no, does the requirement or measure need to be revised? Yes. 6. Does the VSL redefine or undermine the stated requirement? No. 7. Is the VSL based on a single violation of the requirement (not multiple violations)? Yes. Standard – R2 MOD-030-02 Requirement (including sub-requirements) R2. The Transmission Operator shall perform the following: [Violation Risk Factor: Lower] [Time Horizon: Operations Planning] R2.1. Include Flowgates used in the AFC process based, at a minimum, on the following criteria: R2.1.1. Results of a first Contingency transfer analysis for ATC Paths internal to a Transmission Operator’s system up to the path capability such that at a minimum the first three limiting Elements and their worst associated Contingency combinations with an OTDF of at least 5% and within the Transmission Operator’s system are included as Flowgates. R2.1.1.1. Use first Contingency criteria consistent with those first Contingency criteria used in planning of operations for the applicable time periods, including use of Special Protection Systems. R2.1.1.2. Only the most limiting element in a series configuration needs to be included as a Flowgate. R2.1.1.3. If any limiting elements or Contingencies are already protected by another Flowgate, then no new Flowgates need to be established for such limiting elements or Contingencies. R2.1.2. Results of a first Contingency transfer analysis from all adjacent Balancing Authority source and sink (as defined in the ATCID) combinations up to the path capability such that at a minimum the first three limiting Elements and their worst associated Contingency combinations with an Outage Transfer Distribution Factor (OTDF) of at least 5% and within the Transmission Operator’s system are included as Flowgates unless the interface between such adjacent Balancing Authorities is accounted for using another ATC methodology. R2.1.2.1. Use first Contingency criteria consistent with those first Contingency criteria used in planning of operations for the applicable time periods, including use of Special Protection Systems. R2.1.2.2. Only the most limiting element in a series configuration needs to be included as a Flowgate. R2.1.2.3. If any limiting elements or Contingencies are already protected by another Flowgate, then no new Flowgates need to be established for such limiting elements or Contingencies. R2.1.3. With the exception of flowgates created to address temporary operating conditions, any limiting Element/Contingency combination at least within its Reliability Coordinator’s Area that has been subjected to an Interconnection-wide congestion management procedure within the last 12 months, unless the limiting Element/Contingency combination is accounted for using another ATC methodology. R2.1.4. Any limiting Element/Contingency combination within the Transmission model that has been requested to be included by any other Transmission Service Provider using the Flowgate Methodology or Area Interchange Methodology, where: R2.1.4.1. The coordination of the limiting Element/Contingency combination is not already addressed through a different methodology, and - Any generator within the Transmission Service Provider’s area has at least a 5% Power Transfer Distribution Factor (PTDF) or Outage Transfer Distribution Factor (OTDF) impact on the Flowgate when delivered to the aggregate load of its own area, or - A transfer from any Balancing Area within the Transmission Service Provider’s area to a Balancing Area adjacent has at least a 5% PTDF or OTDF impact on the Flowgate. - The Transmission Operator may utilize distribution factors less than 5% if desired. R2.1.4.2. The limiting Element/Contingency combination is included in the requesting Transmission Service Provider’s methodology. R2.2. At a minimum, establish a list of Flowgates by creating, modifying, or deleting Flowgate definitions at least once per calendar year. R2.3. At a minimum, establish a list of Flowgates by creating, modifying, or deleting Flowgates that have been requested as part of R2.1.4 within thirty calendar days from the request. R2.4. Establish the TFC of each of the defined Flowgates as equal to: - For thermal limits, the System Operating Limit (SOL) of the Flowgate. - For voltage or stability limits, the flow that will respect the SOL of the Flowgate. R2.5. At a minimum, establish the TFC once per calendar year. R2.5.1. If notified of a change in the Rating by the Transmission Owner that would affect the TFC of a flowgate used in the AFC process, the TFC should be updated within seven calendar days of the notification. R2.6.

Provide the Transmission Service Provider with the TFCs within seven calendar days of their establishment. Proposed Measure M2. The Transmission Operator shall provide evidence (such as studies and working papers) that all Flowgates that meet the criteria described in R2.1 are considered in its AFC calculations. (R2.1) M3. The Transmission Operator shall provide evidence (such as logs) that it updated its list of Flowgates at least once per calendar year. (R2.2) M4. The Transmission Operator shall provide evidence (such as logs and dated requests) that it updated the list of Flowgates within thirty calendar days from a request. (R2.3) M5. The Transmission Operator shall provide evidence (such as data or models) that it determined the TFC for each Flowgate as defined in R2.4. (R2.4) M6. The Transmission Operator shall provide evidence (such as logs) that it established the TFCs for each Flowgate in accordance with the timing defined in R2.5. (R2.5) M7. The Transmission Operator shall provide evidence (such as logs and electronic communication) that it provided the Transmission Service Provider with updated TFCs within seven calendar days of their determination. (R2.6) Attributes of the requirement Binary Timing X Omission X Communication X Quality X Other SDT Proposed Lower VSL One or more of the following:

- The Transmission Operator established its list of Flowgates less frequently than once per calendar year, but not more than three months late as described in R2.2.
- The Transmission Operator established its list of Flowgates more than thirty days, but not more than sixty days, following a request to create, modify or delete a flowgate as described in R2.3.
- The Transmission Operator has not updated its Flowgate TFC when notified by the Transmission Owner in more than 7 days, but it has not been more than 14 days since the notification (R2.5.1)
- The Transmission Operator has not provided its Transmission Service Provider with its Flowgate TFCs within seven days (one week) of their determination, but is has not been more than 14 days (two weeks) since their determination. CEDRP Proposed VSL OK – No Comments SDT Proposed Moderate VSL One or more of the following:
- The Transmission Operator did not include a Flowgate in their AFC calculations that met the criteria described in R2.1.
- The Transmission Operator established its list of Flowgates more than three months late, but not more than six months late as described in R2.2.
- The Transmission Operator established its list of Flowgates more than sixty days, but not more than ninety days, following a request to create, modify or delete a flowgate as described in R2.3.
- The Transmission Operator has not updated its Flowgate TFCs at least once within a calendar year, and it has been not more than 15 months since the last update.
- The Transmission Operator has not updated its Flowgate TFC when notified by the Transmission Owner in more than 14 days, but it has not been more than 21 days since the notification (R2.5.1)
- The Transmission Operator has not provided its Transmission Service Provider with its Flowgate TFCs in more than 14 days (two weeks) of their determination, but is has not been more than 21 days (three weeks) since their determination CEDRP Proposed VSL One or more of the following:
- The Transmission Operator did not include 1 or less than 25% of the total number of Flowgates in their AFC calculations that met the criteria described in R2.1.
- The Transmission Operator established its list of Flowgates more than three months late, but not more than six months late as described in R2.2.
- The Transmission Operator established its list of Flowgates more than sixty days, but not more than ninety days, following a request to create, modify or delete a flowgate as described in R2.3.
- The Transmission Operator has not updated its Flowgate TFCs at least once within a calendar year, and it has been not more than 15 months since the last update.
- The Transmission Operator has not updated its Flowgate TFC when notified by the Transmission Owner in more than 14 days, but it has not been more than 21 days since the notification (R2.5.1)
- The Transmission Operator has not provided its Transmission Service Provider with its Flowgate TFCs in more than 14 days (two weeks) of their determination, but is has not been more than 21 days (three weeks) since their determination SDT Proposed High VSL One or more of the following:
- The Transmission Operator did not include two to five Flowgates in their AFC calculations that met the criteria described in R2.1.
- The Transmission Operator established its list of Flowgates more than six months late, but not more than nine months late as described in R2.2.
- The Transmission Operator established its list of Flowgates more than ninety days, but not more than 120 days, following a request to create, modify or delete a flowgate as described in R2.3.
- The Transmission Operator has not updated its Flowgate TFCs at least once within a calendar year, and it has been more than 15 months but not more than 18 months since the last update.
- The Transmission Operator has not updated its Flowgate TFCs when notified by the Transmission Owner in more than 21 days, but it has not been more than 28 days since the notification (R2.5.1)
- The Transmission Operator has not provided its Transmission Service Provider with its Flowgate TFCs in more than 21 days (three weeks) of their determination, but is has not been more than 28 days (four weeks) since their determination. CEDRP Proposed VSL One or more of the following:
- The Transmission Operator did not include two or between 25 to 50% of the total number of Flowgates in their AFC calculations that met the criteria described in R2.1.
- The Transmission Operator established its list of Flowgates more than six months late, but not more than nine months late as described in R2.2.
- The Transmission Operator established its list of Flowgates more than ninety days, but not more than 120 days, following a request to create, modify or delete a flowgate as described in R2.3.
- The Transmission Operator has not updated its Flowgate TFCs at least once within a calendar year, and it has been more than 15 months but not more than 18 months since the last update.
- The Transmission Operator has not updated its Flowgate TFCs when notified by the Transmission Owner in more than 21 days, but it has not

been more than 28 days since the notification (R2.5.1) • The Transmission Operator has not provided its Transmission Service Provider with its Flowgate TFCs in more than 21 days (three weeks) of their determination, but is has not been more than 28 days (four weeks) since their determination. SDT Proposed Severe VSL One or more of the following: • The Transmission Operator did not include six or more Flowgates in their AFC calculations that met the criteria described in R2.1. • The Transmission Operator established its list of Flowgates more than nine months late as described in R2.2. • The Transmission Operator did not establish its list of internal Flowgates as described in R2.2. • The Transmission Operator established its list of Flowgates more than 120 days following a request to create, modify or delete a flowgate as described in R2.3. • The Transmission Operator did not establish its list of external Flowgates following a request to create, modify or delete an external flowgate as described in R2.3. • The Transmission Operator did not determine the TFC for a flowgate as described in R2.4. • The Transmission Operator has not updated its Flowgate TFCs at least once within a calendar year, and it has been more than 18 months since the last update. (R2.5) • The Transmission Operator has not updated its Flowgate TFCs when notified by the Transmission Owner in more than 28 calendar days (R2.5.1) • The Transmission Operator has not provided its Transmission Service Provider with its Flowgate TFCs in more than 28 days (4 weeks) of their determination. CEDRP Proposed VSL One or more of the following: • The Transmission Operator did not include more than 50% of the total number of Flowgates in their AFC calculations that met the criteria described in R2.1. • The Transmission Operator established its list of Flowgates more than nine months late as described in R2.2. • The Transmission Operator did not establish its list of internal Flowgates as described in R2.2. • The Transmission Operator established its list of Flowgates more than 120 days following a request to create, modify or delete a flowgate as described in R2.3. • The Transmission Operator did not establish its list of external Flowgates following a request to create, modify or delete an external flowgate as described in R2.3. • The Transmission Operator did not determine the TFC for a flowgate as described in R2.4. • The Transmission Operator has not updated its Flowgate TFCs at least once within a calendar year, and it has been more than 18 months since the last update. (R2.5) • The Transmission Operator has not updated its Flowgate TFCs when notified by the Transmission Owner in more than 28 calendar days (R2.5.1) • The Transmission Operator has not provided its Transmission Service Provider with its Flowgate TFCs in more than 28 days (4 weeks) of their determination. FERC Guidance for VSLs 1. Will the VSL assignment signal entities that less compliance than has been historically achieved is condoned? No. 2. Is the VSL assignment a binary requirement? No. 3. Is it truly a "binary" requirement? N/A 4. If yes, is the VSL assignment consistent with other binary requirement assignments? N/A 5. Is the VSL language clear & measurable (ambiguity removed)? If no, does the requirement or measure need to be revised? TOs may have less than 6 flowgates. It should be based on %. 6. Does the VSL redefine or undermine the stated requirement? See note 5. 7. Is the VSL based on a single violation of the requirement (not multiple violations)? No. Standard – R3 MOD-030-02 Requirement (including sub-requirements) R3. The Transmission Operator shall make available to the Transmission Service Provider a Transmission model to determine Available Flowgate Capability (AFC) that meets the following criteria: [Violation Risk Factor: Lower] [Time Horizon: Operations Planning] R3.1. Contains generation Facility Ratings, such as generation maximum and minimum output levels, specified by the Generator Owners of the Facilities within the model. R3.2. Updated at least once per day for AFC calculations for intra-day, next day, and days two through 30. R3.3. Updated at least once per month for AFC calculations for months two through 13. R3.4. Contains modeling data and system topology for the Facilities within its Reliability Coordinator's Area. Equivalent representation of radial lines and Facilities 161kV or below is allowed. R3.5. Contains modeling data and system topology (or equivalent representation) for immediately adjacent and beyond Reliability Coordination Areas. Proposed Measure M8. The Transmission Operator shall provide evidence (such as written documentation, logs, models, and data) that the Transmission model used to determine AFCs contains the information specified in R3. (R3) Attributes of the requirement Binary Timing X Omission X Communication Quality X Other SDT Proposed Lower VSL One or more of the following: • The Transmission Operator used one to ten Facility Ratings that were different from those specified by a Transmission or Generator Owner in their Transmission model. • The Transmission Operator did not update the model per R3.2 for one or more • calendar days but not more than 2 calendar days • The Transmission Operator did not update the model for per R3.3 for one or more months but not more than six weeks CEDRP Proposed VSL One or more of the following: • The Transmission Operator used greater than zero, but less than 10% of Facility Ratings that were different or based on old information from those specified by a Transmission or Generator Owner in their Transmission model. • The Transmission Operator did not update the model per R3.2 for one or more • calendar days but not more than 2 calendar days • The Transmission Operator did not update the model for per R3.3 for one or more months but not more than six weeks SDT Proposed Moderate VSL One or more of the following: • The Transmission Operator used eleven to twenty Facility Ratings that were different from those specified by a Transmission or Generator Owner in their Transmission model. • The Transmission Operator did not update the model per R3.2 for more than 2 calendar days but not more than 3 calendar days • The Transmission Operator did not update the model for per R3.3 for more than six weeks but not more than eight weeks CEDRP Proposed VSL One

or more of the following:

- The Transmission Operator used 25%, but not more than 50% of Facility Ratings that were different or based on old information from those specified by a Transmission or Generator Owner in their Transmission model.
- The Transmission Operator did not update the model per R3.2 for more than 2 calendar days but not more than 3 calendar days
- The Transmission Operator did not update the model for per R3.3 for more than six weeks but not more than eight weeks

SDT Proposed High VSL One or more of the following:

- The Transmission Operator used twenty-one to thirty Facility Ratings that were different from those specified by a Transmission or Generator Owner in their Transmission model.
- The Transmission Operator did not update the model per R3.2 for more than 3 calendar days but not more than 4 calendar days
- The Transmission Operator did not update the model for per R3.3 for more than eight weeks but not more than ten weeks

CEDRP Proposed VSL One or more of the following:

- The Transmission Operator used 50%, but not more than 75% of Facility Ratings that were different or based on old information from those specified by a Transmission or Generator Owner in their Transmission model.
- The Transmission Operator did not update the model per R3.2 for more than 3 calendar days but not more than 4 calendar days
- The Transmission Operator did not update the model for per R3.3 for more than eight weeks but not more than ten weeks

SDT Proposed Severe VSL One or more of the following:

- The Transmission Operator did not update the model per R3.2 for more than 4 calendar days
- The Transmission Operator did not update the model for per R3.3 for more than ten weeks
- The Transmission Operator used more than thirty Facility Ratings that were different from those specified by a Transmission or Generator Owner in their Transmission model.
- The Transmission operator did not include in the Transmission model detailed modeling data and topology for its own Reliability Coordinator area.
- The Transmission operator did not include in the Transmission modeling data and topology for immediately adjacent and beyond Reliability Coordinator area.

CEDRP Proposed VSL One or more of the following:

- The Transmission Operator did not update the model per R3.2 for more than 4 calendar days
- The Transmission Operator did not update the model for per R3.3 for more than ten weeks
- The Transmission Operator used more than 75% of Facility Ratings that were different or based on old information from those specified by a Transmission or Generator Owner in their Transmission model.
- The Transmission operator did not include in the Transmission model detailed modeling data and topology for its own Reliability Coordinator area.
- The Transmission operator did not include in the Transmission modeling data and topology for immediately adjacent and beyond Reliability Coordinator area.

FERC Guidance for VSLs 1. Will the VSL assignment signal entities that less compliance than has been historically achieved is condoned? No. 2. Is the VSL assignment a binary requirement? No. 3. Is it truly a "binary" requirement? N/A 4. If yes, is the VSL assignment consistent with other binary requirement assignments? N/A 5. Is the VSL language clear & measurable (ambiguity removed)? If no, does the requirement or measure need to be revised? Number of Facility Ratings should be based on %. 6. Does the VSL redefine or undermine the stated requirement? SDT Proposed VSLs assume that the entity may have more than 30 facility ratings 7. Is the VSL based on a single violation of the requirement (not multiple violations)? No. Standard – R4 MOD-030-02 Requirement (including sub-requirements) R4. When calculating AFCs, the Transmission Service Provider shall represent the impact of Transmission Service as follows: [Violation Risk Factor: Lower] [Time Horizon: Operations Planning] - If the source, as specified in the ATCID, has been identified in the reservation and it is discretely modeled in the Transmission Service Provider's Transmission model, use the discretely modeled point as the source. - If the source, as specified in the ATCID, has been identified in the reservation and the point can be mapped to an "equivalence" or "aggregate" representation in the Transmission Service Provider's Transmission model, use the modeled equivalence or aggregate as the source. - If the source, as specified in the ATCID, has been identified in the reservation and the point cannot be mapped to a discretely modeled point or an "equivalence" representation in the Transmission Service Provider's Transmission model, use the immediately adjacent Balancing Authority associated with the Transmission Service Provider from which the power is to be received as the source. - If the source, as specified in the ATCID, has not been identified in the reservation use the immediately adjacent Balancing Authority associated with the Transmission Service Provider from which the power is to be received as the source. - If the sink, as specified in the ATCID, has been identified in the reservation and it is discretely modeled in the Transmission Service Provider's Transmission model, use the discretely modeled point as the sink. - If the sink, as specified in the ATCID, has been identified in the reservation and the point can be mapped to an "equivalence" or "aggregate" representation in the Transmission Service Provider's Transmission model, use the modeled equivalence or aggregate as the sink. - If the sink, as specified in the ATCID, has been identified in the reservation and the point cannot be mapped to a discretely modeled point or an "equivalence" representation in the Transmission Service Provider's Transmission model, use the immediately adjacent Balancing Authority associated with the Transmission Service Provider receiving the power as the sink. - If the sink, as specified in the ATCID, has not been identified in the reservation use the immediately adjacent Balancing Authority associated with the Transmission Service Provider receiving the power as the sink. Proposed Measure M9. The Transmission Service Provider shall provide evidence (such as written documentation and data) that the modeling of point-to-point reservations was based on the rules described in R4. (R4) Attributes of the requirement Binary Timing Omission X Communication Quality X Other SDT

Proposed Lower VSL The Transmission Service Provider did not represent the impact of Transmission Service as described in R4 for more than zero, but not more than 5% of all reservations; or more than zero, but not more than 1 reservation, whichever is greater.. CEDRP Proposed VSL OK – No Comments SDT Proposed Moderate VSL The Transmission Service Provider did not represent the impact of Transmission Service as described in R4 for more than 5%, but not more than 10% of all reservations; or more than 1, but not more than 2 reservations, whichever is greater.. CEDRP Proposed VSL OK – No Comments SDT Proposed High VSL The Transmission Service Provider did not represent the impact of Transmission Service as described in R4 for more than 10%, but not more than 15% of all reservations; or more than 2, but not more than 3 reservations, whichever is greater.. CEDRP Proposed VSL OK – No Comments SDT Proposed Severe VSL The Transmission Service Provider did not represent the impact of Transmission Service as described in R4 for more than 15% of all reservations; or more than 3 reservations, whichever is greater.. CEDRP Proposed VSL OK – No Comments FERC Guidance for VSLs 1. Will the VSL assignment signal entities that less compliance than has been historically achieved is condoned? No. 2. Is the VSL assignment a binary requirement? No. 3. Is it truly a “binary” requirement? N/A 4. If yes, is the VSL assignment consistent with other binary requirement assignments? N/A 5. Is the VSL language clear & measurable (ambiguity removed)? If no, does the requirement or measure need to be revised? Yes. 6. Does the VSL redefine or undermine the stated requirement? No. 7. Is the VSL based on a single violation of the requirement (not multiple violations)? No. Standard – R5 MOD-030-02 Requirement (including sub-requirements) R5. When calculating AFCs, the Transmission Service Provider shall: [Violation Risk Factor: Lower] [Time Horizon: Operations Planning] R5.1. Use the models provided by the Transmission Operator. R5.2. Include in the transmission model expected generation and Transmission outages, additions, and retirements within the scope of the model as specified in the ATCID and in effect during the applicable period of the AFC calculation for the Transmission Service Provider’s area, all adjacent Transmission Service Providers, and any Transmission Service Providers with which coordination agreements have been executed. R5.3. For external Flowgates, identified in R2.1.4, use the AFC provided by the Transmission Service Provider that calculates AFC for that Flowgate. Proposed Measure M10. The Transmission Service Provider shall provide evidence including the models received from Transmission Operators and other evidence (such as documentation and data) to show that it used the Transmission Operator’s models in calculating AFC. (R5.1) M11. The Transmission Service Provider shall provide evidence (such as written documentation, electronic communications, and data) that all expected generation and Transmission outages, additions, and retirements were included in the AFC calculation as specified in the ATCID. (R5.2) M12. The Transmission Service Provider shall provide evidence (such as logs, electronic communications, and data) that AFCs provided by third parties on external Flowgates were used instead of those calculated by the Transmission Operator. (R5.3) Attributes of the requirement Binary Timing Omission X Communication Quality X Other SDT Proposed Lower VSL The Transmission Service Provider did not include in the AFC process one to ten expected generation or Transmission outages, additions or retirements within the scope of the model as specified in the ATCID. CEDRP Proposed VSL The Transmission Service Provider did not include in the AFC process 5% to 10% of expected generation or Transmission outages, additions or retirements within the scope of the model as specified in the ATCID. SDT Proposed Moderate VSL The Transmission Service Provider did not include in the AFC process eleven to twentyfive expected generation and Transmission outages, additions or retirements within the scope of the model as specified in the ATCID. CEDRP Proposed VSL The Transmission Service Provider did not include in the AFC process 10% to 25% of expected generation and Transmission outages, additions or retirements within the scope of the model as specified in the ATCID. SDT Proposed High VSL The Transmission Service Provider did not include in the AFC process twenty-six to fifty expected generation and Transmission outages, additions or retirements within the scope of the model as specified in the ATCID. CEDRP Proposed VSL The Transmission Service Provider did not include in the AFC process 25% to 50% of expected generation and Transmission outages, additions or retirements within the scope of the model as specified in the ATCID. SDT Proposed Severe VSL One or more of the following: • The Transmission Service Provider did not use the model provided by the Transmission Operator. • The Transmission Service Provider did not include in the AFC process more than fifty expected generation and Transmission outages, additions or retirements within the scope of the model as specified in the ATCID. • The Transmission Service provider did not use AFC provided by a third party. CEDRP Proposed VSL One or more of the following: • The Transmission Service Provider did not use the model provided by the Transmission Operator. • The Transmission Service Provider did not include in the AFC process more than 50% of expected generation and Transmission outages, additions or retirements within the scope of the model as specified in the ATCID. • The Transmission Service provider did not use AFC provided by a third party. FERC Guidance for VSLs 1. Will the VSL assignment signal entities that less compliance than has been historically achieved is condoned? No. 2. Is the VSL assignment a binary requirement? No. 3. Is it truly a “binary” requirement? N/A 4. If yes, is the VSL assignment consistent with other binary requirement assignments? N/A 5. Is the VSL language clear & measurable (ambiguity removed)? If no, does the requirement or measure need to be revised? VSLs should be based on % 6. Does the VSL redefine or undermine the stated requirement? No. 7. Is the VSL based on a single

violation of the requirement (not multiple violations)? No. Standard – R6 MOD-030-02 Requirement (including sub-requirements) R6. When calculating the impact of ETC for firm commitments (ETCFi) for all time periods for a Flowgate, the Transmission Service Provider shall sum the following: [Violation Risk Factor: Lower] [Time Horizon: Operations Planning] R6.1. The impact of firm Network Integration Transmission Service, including the impacts of generation to load, in the model referenced in R5.2 for the Transmission Service Provider's area, based on: R6.1.1. Load forecast for the time period being calculated, including Native Load and Network Service load R6.1.2. Unit commitment and Dispatch Order, to include all designated network resources and other resources that are committed or have the legal obligation to run as specified in the Transmission Service Provider's ATCID. R6.2. The impact of any firm Network Integration Transmission Service, including the impacts of generation to load in the model referenced in R5.2 and has a distribution factor equal to or greater than the percentage1 used to curtail in the Interconnectionwide congestion management procedure used by the Transmission Service Provider, for all adjacent Transmission Service Providers and any other Transmission Service Providers with which coordination agreements have been executed based on: R6.2.1. Load forecast for the time period being calculated, including Native Load and Network Service load R6.2.2. Unit commitment and Dispatch Order, to include all designated network resources and other resources that are committed or have the legal obligation to run as specified in the Transmission Service Provider's ATCID. R6.3. The impact of all confirmed firm Point-to-Point Transmission Service expected to be scheduled, including roll-over rights for Firm Transmission Service contracts, for the Transmission Service Provider's area. R6.4. The impact of any confirmed firm Point-to-Point Transmission Service expected to be scheduled, filtered to reduce or eliminate duplicate impacts from transactions using Transmission service from multiple Transmission Service Providers, including roll-over rights for Firm Transmission Service contracts having a distribution factor equal to or greater than the percentage2 used to curtail in the Interconnection-wide congestion management procedure used by the Transmission Service Provider, for all adjacent Transmission Service Providers and any other Transmission Service Providers with which coordination agreements have been executed. R6.5. The impact of any Grandfathered firm obligations expected to be scheduled or expected to flow for the Transmission Service Provider's area. R6.6. The impact of any Grandfathered firm obligations expected to be scheduled or expected to flow that have a distribution factor equal to or greater than the percentage3 used to curtail in the Interconnection-wide congestion management procedure used by the Transmission Service Provider, for all adjacent Transmission Service Providers and any other Transmission Service Providers with which coordination agreements have been executed. R6.7. The impact of other firm services determined by the Transmission Service Provider. Proposed Measure M13. The Transmission Service Provider shall demonstrate compliance with R6 by recalculating firm ETC for any specific time period as described in (MOD-001 R2), using the requirements defined in R6 and with data used to calculate the specified value for the designated time period. The data used must meet the requirements specified in MOD-030-1 and the ATCID. To account for differences that may occur when recalculating the value (due to mixing automated and manual processes), any recalculated value that is within +/- 15% or 15 MW, whichever is greater, of the originally calculated value, is evidence that the Transmission Service Provider used the requirements defined in R6 to calculate its firm ETC. (R6) Attributes of the requirement Binary X Timing Omission Communication Quality X Other SDT Proposed Lower VSL For a specified period, the Transmission Service Provider calculated a firm ETC with an absolute value different than that calculated in M13 for the same period, and the absolute value difference was more than 15% of the value calculated in the measure or 15MW, whichever is greater, but not more than 25% of the value calculated in the measure or 25MW, whichever is greater.. CEDRP Proposed VSL OK – No Comments SDT Proposed Moderate VSL For a specified period, the Transmission Service Provider calculated a firm ETC with an absolute value different than that calculated in M13 for the same period, and the absolute value difference was more than 25% of the value calculated in the measure or 25MW, whichever is greater, but not more than 35% of the value calculated in the measure or 35MW, whichever is greater. CEDRP Proposed VSL OK – No Comments SDT Proposed High VSL For a specified period, the Transmission Service Provider calculated a firm ETC with an absolute value different than that calculated in M13 for the same period, and the absolute value difference was more than 35% of the value calculated in the measure or 35MW, whichever is greater, but not more than 45% of the value calculated in the measure or 45MW, whichever is greater. CEDRP Proposed VSL OK – No Comments SDT Proposed Severe VSL For a specified period, the Transmission Service Provider calculated a firm ETC with an absolute value different than that calculated in M13 for the same period, and the absolute value difference was more than 45% of the value calculated in the measure or 45MW, whichever is greater. CEDRP Proposed VSL OK – No Comments FERC Guidance for VSLs 1. Will the VSL assignment signal entities that less compliance than has been historically achieved is condoned? No. 2. Is the VSL assignment a binary requirement? Yes 3. Is it truly a "binary" requirement? No. 4. If yes, is the VSL assignment consistent with other binary requirement assignments? Yes. 5. Is the VSL language clear & measurable (ambiguity removed)? If no, does the requirement or measure need to be revised? Yes. 6. Does the VSL redefine or undermine the stated requirement? No. 7. Is the VSL based on a single violation of the requirement (not multiple violations)? No. Standard – R7 MOD-030-02 Requirement

(including sub-requirements) R7. When calculating the impact of ETC for non-firm commitments (ETCNFi) for all time periods for a Flowgate the Transmission Service Provider shall sum: [Violation Risk Factor: Lower] [Time Horizon: Operations Planning] R7.1. The impact of all confirmed non-firm Point-to-Point Transmission Service expected to be scheduled for the Transmission Service Provider's area. R7.2. The impact of any confirmed non-firm Point-to-Point Transmission Service expected to be scheduled, filtered to reduce or eliminate duplicate impacts from transactions using Transmission service from multiple Transmission Service Providers, that have a distribution factor equal to or greater than the percentage⁴ used to curtail in the Interconnection-wide congestion management procedure used by the Transmission Service Provider, for all adjacent Transmission Service Providers and any other Transmission Service Providers with which coordination agreements have been executed. R7.3. The impact of any Grandfathered non-firm obligations expected to be scheduled or expected to flow for the Transmission Service Provider's area. R7.4. The impact of any Grandfathered non-firm obligations expected to be scheduled or expected to flow that have a distribution factor equal to or greater than the percentage⁵ used to curtail in the Interconnection-wide congestion management procedure used by the Transmission Service Provider, for all adjacent Transmission Service Providers and any other Transmission Service Providers with which coordination agreements have been executed. R7.5. The impact of non-firm Network Integration Transmission Service serving Load within the Transmission Service Provider's area (i.e., secondary service), to include load growth, and losses not otherwise included in Transmission Reliability Margin or Capacity Benefit Margin. R7.6. The impact of any non-firm Network Integration Transmission Service (secondary service) with a distribution factor equal to or greater than the percentage⁶ used to curtail in the Interconnection-wide congestion management procedure used by the Transmission Service Provider, filtered to reduce or eliminate duplicate impacts from transactions using Transmission service from multiple Transmission Service Providers, for all adjacent Transmission Service Providers and any other Transmission Service Providers with which coordination agreements have been executed. R7.7. The impact of other non-firm services determined by the Transmission Service Provider. Proposed Measure M14. The Transmission Service Provider shall demonstrate compliance with R7 by recalculating non-firm ETC for any specific time period as described in (MOD-001 R2), using the requirements defined in R7 and with data used to calculate the specified value for the designated time period. The data used must meet the requirements specified in the standard and the ATCID. To account for differences that may occur when recalculating the value (due to mixing automated and manual processes), any recalculated value that is within +/- 15% or 15 MW, whichever is greater, of the originally calculated value, is evidence that the Transmission Service Provider used the requirements in R7 to calculate its non-firm ETC. (R7) Attributes of the requirement Binary X Timing Omission Communication Quality X Other SDT Proposed Lower VSL For a specified period, the Transmission Service Provider calculated a non-firm ETC with an absolute value different than that calculated in M14 for the same period, and the absolute value difference was more than 15% of the value calculated in the measure or 15MW, whichever is greater, but not more than 25% of the value calculated in the measure or 25MW, whichever is greater. CEDRP Proposed VSL OK – No Comments SDT Proposed Moderate VSL For a specified period, the Transmission Service Provider calculated a non-firm ETC with an absolute value different than that calculated in M14 for the same period, and the absolute value difference was more than 25% of the value calculated in the measure or 25MW, whichever is greater, but not more than 35% of the value calculated in the measure or 35MW, whichever is greater. CEDRP Proposed VSL OK – No Comments SDT Proposed High VSL For a specified period, the Transmission Service Provider calculated a non-firm ETC with an absolute value different than that calculated in M14 for the same period, and the absolute value difference was more than 35% of the value calculated in the measure or 35MW, whichever is greater, but not more than 45% of the value calculated in the measure or 45MW, whichever is greater. CEDRP Proposed VSL OK – No Comments SDT Proposed Severe VSL For a specified period, the Transmission Service Provider calculated a non-firm ETC with an absolute value different than that calculated in M14 for the same period, and the absolute value difference was more than 45% of the value calculated in the measure or 45MW, whichever is greater. CEDRP Proposed VSL OK – No Comments FERC Guidance for VSLs 1. Will the VSL assignment signal entities that less compliance than has been historically achieved is condoned? No. 2. Is the VSL assignment a binary requirement? Yes. 3. Is it truly a "binary" requirement? No. 4. If yes, is the VSL assignment consistent with other binary requirement assignments? Yes. 5. Is the VSL language clear & measurable (ambiguity removed)? If no, does the requirement or measure need to be revised? Yes. 6. Does the VSL redefine or undermine the stated requirement? No. 7. Is the VSL based on a single violation of the requirement (not multiple violations)? No. Standard – R8 MOD-030-02 Requirement (including sub-requirements) R8. When calculating firm AFC for a Flowgate for a specified period, the Transmission Service Provider shall use the following algorithm (subject to allocation processes described in the ATCID): [Violation Risk Factor: Lower] [Time Horizon: Operations Planning] $AFCF = TFC - ETCFi - CBMi - TRMi + PostbacksFi + counterflowsFi$ Where: AFCF is the firm Available Flowgate Capability for the Flowgate for that period. TFC is the Total Flowgate Capability of the Flowgate. ETCFi is the sum of the impacts of existing firm Transmission commitments for the Flowgate during that period. CBMi is the impact of the Capacity Benefit

Margin on the Flowgate during that period. TRMi is the impact of the Transmission Reliability Margin on the Flowgate during that period. PostbacksFi are changes to firm AFC due to a change in the use of Transmission Service for that period, as defined in Business Practices. counterflowsFi are adjustments to firm AFC as determined by the Transmission Service Provider and specified in their ATCID. Proposed Measure M15. Each Transmission Service Provider shall produce the supporting documentation for the processes used to implement the algorithm that calculates firm AFCs, as required in R8. Such documentation must show that only the variables allowed in R8 were used to calculate firm AFCs, and that the processes use the current values for the variables as determined in the requirements or definitions. Note that any variable may legitimately be zero if the value is not applicable or calculated to be zero (such as counterflows, TRM, CBM, etc...). The supporting documentation may be provided in the same form and format as stored by the Transmission Service Provider. (R8) Attributes of the requirement Binary Timing Omission X Communication Quality X Other Comments: The number of flowgates should not be specified in the VSLs as this can vary between entities. "Percentages should be used only on occasions that the author doesn't know the number or can vary based on the entity involved" (as stated on page 31). SDT Proposed Lower VSL The Transmission Service Provider did not use all the elements defined in R8 when determining firm AFC, or used additional elements, for more than zero Flowgates, but not more than 5% of all Flowgates or 1 Flowgate (whichever is greater). CEDRP Proposed VSL The Transmission Service Provider did not use all the elements defined in R8 when determining firm AFC, or used additional elements, for more than zero Flowgates, but not more than 5% of all Flowgates. SDT Proposed Moderate VSL The Transmission Service Provider did not use all the elements defined in R8 when determining firm AFC, or used additional elements, for more than 5% of all Flowgates or 1 Flowgates (whichever is greater), but not more than 10% of all Flowgates or 2 Flowgates (whichever is greater) CEDRP Proposed VSL The Transmission Service Provider did not use all the elements defined in R8 when determining firm AFC, or used additional elements, for more than 5% of all Flowgates, but not more than 10% of all Flowgates. SDT Proposed High VSL The Transmission Service Provider did not use all the elements defined in R8 when determining firm AFC, or used additional elements, for more than 10% of all Flowgates or 2 Flowgates (whichever is greater), but not more than 15% of all Flowgates or 3 Flowgates (whichever is greater) CEDRP Proposed VSL The Transmission Service Provider did not use all the elements defined in R8 when determining firm AFC, or used additional elements, for more than 10% of all Flowgates, but not more than 15% of all Flowgates. SDT Proposed Severe VSL The Transmission Service Provider did not use all the elements defined in R8 when determining firm AFC, or used additional elements, for more than 15% of all Flowgates or more than 3 Flowgates (whichever is greater). CEDRP Proposed VSL The Transmission Service Provider did not use all the elements defined in R8 when determining firm AFC, or used additional elements, for more than 15% of all Flowgates. FERC Guidance for VSLs 1. Will the VSL assignment signal entities that less compliance than has been historically achieved is condoned? No. 2. Is the VSL assignment a binary requirement? No. 3. Is it truly a "binary" requirement? No. 4. If yes, is the VSL assignment consistent with other binary requirement assignments? N/A 5. Is the VSL language clear & measurable (ambiguity removed)? If no, does the requirement or measure need to be revised? Yes, it is clear and measureable. However, the measurement (M15), should be re-worded to clarify that all the variables allowed in R8 were used to calculate firm AFCs (regardless of whether they have a value of zero), and not just a sub-set of them. Of course, it should also be clear that no different or additional variables were used. 6. Does the VSL redefine or undermine the stated requirement? No. 7. Is the VSL based on a single violation of the requirement (not multiple violations)? No. Standard – R9 MOD-030-02 Requirement (including sub-requirements) R9. When calculating non-firm AFC for a Flowgate for a specified period, the Transmission Service Provider shall use the following algorithm (subject to allocation processes described in the ATCID): [Violation Risk Factor: Lower] [Time Horizon: Operations Planning] $AFC_{NF} = TFC - ETCF_i - ETCNF_i - CBMS_i - TRM_{U_i} + Postbacks_{NF_i} + counterflows$ Where: AFCNF is the non-firm Available Flowgate Capability for the Flowgate for that period. TFC is the Total Flowgate Capability of the Flowgate. ETCFi is the sum of the impacts of existing firm Transmission commitments for the Flowgate during that period. ETCNFi is the sum of the impacts of existing non-firm Transmission commitments for the Flowgate during that period. CBMSi is the impact of any schedules during that period using Capacity Benefit Margin. TRMUi is the impact on the Flowgate of the Transmission Reliability Margin that has not been released (unreleased) for sale as non-firm capacity by the Transmission Service Provider during that period. PostbacksNF are changes to non-firm Available Flowgate Capability due to a change in the use of Transmission Service for that period, as defined in Business Practices. counterflowsNF are adjustments to non-firm AFC as determined by the Transmission Service Provider and specified in their ATCID. Proposed Measure M16. Each Transmission Service Provider shall produce the supporting documentation for the processes used to implement the algorithm that calculates non-firm AFCs, as required in R9. Such documentation must show that only the variables allowed in R9 were used to calculate non-firm AFCs, and that the processes use the current values for the variables as determined in the requirements or definitions. Note that any variable may legitimately be zero if the value is not applicable or calculated to be zero (such as counterflows, TRM, CBM, etc...). The supporting documentation may be provided in the same form and format as stored by the Transmission

Service Provider. (R9) Attributes of the requirement Binary Timing Omission X Communication Quality X Other Comments: The number of flowgates should not be specified in the VSLs as this can vary between entities. "Percentages should be used only on occasions that the author doesn't know the number or can vary based on the entity involved" (as stated on page 31). Also, corrected an editorial error: changed R8 to R9 in the VSLs SDT Proposed Lower VSL The Transmission Service Provider did not use all the elements defined in R8 when determining non-firm AFC, or used additional elements, for more than zero Flowgates, but not more than 5% of all Flowgates or 1 Flowgate (whichever is greater). CEDRP Proposed VSL The Transmission Service Provider did not use all the elements defined in R9 when determining non-firm AFC, or used additional elements, for more than zero Flowgates, but not more than 5% of all Flowgates. SDT Proposed Moderate VSL The Transmission Service Provider did not use all the elements defined in R9 when determining non-firm AFC, or used additional elements, for more than 5% of all Flowgates or 1 Flowgate (whichever is greater), but not more than 10% of all Flowgates or 2 Flowgates (whichever is greater). CEDRP Proposed VSL The Transmission Service Provider did not use all the elements defined in R9 when determining non-firm AFC, or used additional elements, for more than 5% of all Flowgates, but not more than 10% of all Flowgates. SDT Proposed High VSL The Transmission Service Provider did not use all the elements defined in R9 when determining non-firm AFC, or used additional elements, for more than 10% of all Flowgates or 2 Flowgates (whichever is greater), but not more than 15% of all Flowgates or 3 Flowgates (whichever is greater). CEDRP Proposed VSL The Transmission Service Provider did not use all the elements defined in R9 when determining non-firm AFC, or used additional elements, for more than 10% of all Flowgates, but not more than 15% of all Flowgates. SDT Proposed Severe VSL The Transmission Service Provider did not use all the elements defined in R9 when determining non-firm AFC, or used additional elements, for more than 15% of all Flowgates or more than 3 Flowgates (whichever is greater). CEDRP Proposed VSL The Transmission Service Provider did not use all the elements defined in R9 when determining non-firm AFC, or used additional elements, for more than 15% of all Flowgates. FERC Guidance for VSLs 1. Will the VSL assignment signal entities that less compliance than has been historically achieved is condoned? No. 2. Is the VSL assignment a binary requirement? No. 3. Is it truly a "binary" requirement? No. 4. If yes, is the VSL assignment consistent with other binary requirement assignments? N/A 5. Is the VSL language clear & measurable (ambiguity removed)? If no, does the requirement or measure need to be revised? Yes, it is clear and measurable. However, the measurement (M16), should be re-worded to clarify that all the variables allowed in R9 were used to calculate non-firm AFCs (regardless of whether they have a value of zero), and not just a sub-set of them. Ofcourse, it should also be clear that no different or additional variables were used. 6. Does the VSL redefine or undermine the stated requirement? No. 7. Is the VSL based on a single violation of the requirement (not multiple violations)? No. Standard – R10 MOD-030-02 Requirement (including sub-requirements) R10. Each Transmission Service Provider shall recalculate AFC, utilizing the updated models described in R3.2, R3.3, and R5, at a minimum on the following frequency, unless none of the calculated values identified in the AFC equation have changed: [Violation Risk Factor: Lower] [Time Horizon: Operations Planning] R10.1. For hourly AFC, once per hour. Transmission Service Providers are allowed up to 175 hours per calendar year during which calculations are not required to be performed, despite a change in a calculated value identified in the AFC equation. R10.2. For daily AFC, once per day. R10.3. For monthly AFC, once per week. Proposed Measure M17. The Transmission Service Provider shall provide evidence (such as documentation, dated logs, and data) that it calculated AFC on the frequency defined in R10. (R10) Attributes of the requirement Binary X Timing X Omission Communication Quality Other SDT Proposed Lower VSL One or more of the following: • For Hourly, the values described in the AFC equation changed and the Transmission Service provider did not calculate for one or more hours but not more than 15 hours, and was in excess of the 175-hour per year requirement. • For Daily, the values described in the AFC equation changed and the Transmission Service provider did not calculate for one or more calendar days but not more than 3 calendar days. • For Monthly, the values described in the AFC equation changed and the Transmission Service provider did not calculate for seven or more calendar days, but less than 14 calendar days CEDRP Proposed VSL OK – No comment SDT Proposed Moderate VSL One or more of the following: • For Hourly, the values described in the AFC equation changed and the Transmission Service provider did not calculate for more than 15 hours but not more than 20 hours, and was in excess of the 175-hour per year requirement. • For Daily, the values described in the AFC equation changed and the Transmission Service provider did not calculate for more than 3 calendar days but not more than 4 calendar days. • For Monthly, the values described in the AFC equation changed and the Transmission Service provider did not calculate for 14 or more calendar days, but less than 21 calendar days. CEDRP Proposed VSL OK – No comment SDT Proposed High VSL One or more of the following: • For Hourly, the values described in the AFC equation changed and the Transmission Service provider did not calculate for more than 20 hours but not more than 25 hours, and was in excess of the 175-hour per year requirement. • For Daily, the values described in the AFC equation changed and the Transmission Service provider did not calculate for more than 4 calendar days but not more than 5 calendar days. • For Monthly, the values described in the AFC equation changed and the Transmission Service provider did not calculate for 21 or more calendar days, but less than

28 calendar days. CEDRP Proposed VSL OK – No comment SDT Proposed Severe VSL One or more of the following: • For Hourly, the values described in the AFC equation changed and the Transmission Service provider did not calculate for more than 25 hours, and was in excess of the 175-hour per year requirement. • For Daily, the values described in the AFC equation changed and the Transmission Service provider did not calculate for more than 5 calendar days. • For Monthly, the values described in the AFC equation changed and the Transmission Service provider did not calculate for 28 or more calendar days. CEDRP Proposed VSL OK – No comment FERC Guidance for VSLs 1. Will the VSL assignment signal entities that less compliance than has been historically achieved is condoned? No. 2. Is the VSL assignment a binary requirement? Yes 3. Is it truly a “binary” requirement? No. 4. If yes, is the VSL assignment consistent with other binary requirement assignments? Yes. 5. Is the VSL language clear & measurable (ambiguity removed)? If no, does the requirement or measure need to be revised? Yes. 6. Does the VSL redefine or undermine the stated requirement? No. 7. Is the VSL based on a single violation of the requirement (not multiple violations)? No. Standard – R11 MOD-030-02 Requirement (including sub-requirements) R11. When converting Flowgate AFCs to ATCs for ATC Paths, the Transmission Service Provider shall convert those values based on the following algorithm: [Violation Risk Factor: Lower] [Time Horizon: Operations Planning] $ATC = \min(P) P = \{PATC1, PATC2, \dots, PATCn\}$ $PATCn = \text{Where: } ATC \text{ is the Available Transfer Capability. } P \text{ is the set of partial Available Transfer Capabilities for all "impacted" Flowgates honored by the Transmission Service Provider; a Flowgate is considered "impacted" by a path if the Distribution Factor for that path is greater than the percentage used to curtail in the Interconnection-wide congestion management procedure used by the Transmission Service Provider on an OTDF Flowgate or PTDF Flowgate. } PATCn \text{ is the partial Available Transfer Capability for a path relative to a Flowgate } n. AFCn \text{ is the Available Flowgate Capability of a Flowgate } n. DFnp \text{ is the distribution factor for Flowgate } n \text{ relative to path } p.$ Proposed Measure M18. The Transmission Service Provider shall provide evidence (such as documentation and data) when converting Flowgate AFCs to ATCs for ATC Paths, it follows the procedure described in R11. (R11) Attributes of the requirement Binary X Timing Omission Communication Quality X Other SDT Proposed Lower VSL N/A CEDRP Proposed VSL OK – No comment SDT Proposed Moderate VSL N/A CEDRP Proposed VSL OK – No comment SDT Proposed High VSL N/A CEDRP Proposed VSL OK – No comment SDT Proposed Severe VSL The Transmission Service Provider did not follow the procedure for converting Flowgate AFCs to ATCs described in R11. CEDRP Proposed VSL OK – No comment FERC Guidance for VSLs 1. Will the VSL assignment signal entities that less compliance than has been historically achieved is condoned? No. 2. Is the VSL assignment a binary requirement? Yes. 3. Is it truly a “binary” requirement? Yes, 4. If yes, is the VSL assignment consistent with other binary requirement assignments? Yes, 5. Is the VSL language clear & measurable (ambiguity removed)? If no, does the requirement or measure need to be revised? Yes. 6. Does the VSL redefine or undermine the stated requirement? No. 7. Is the VSL based on a single violation of the requirement (not multiple violations)? Yes.

Individual
Edward Davis
Entergy Services
Yes and No
See the additional item in #4 below that we would like addressed in this SAR.
Yes
No
In the earlier commenting stages on MOD-030-1, Entergy made the following comment and received clarification from the SDT. While this satisfied Entergy's concern regarding the SDT intent, it did not alleviate our concerns with future interpretations of the standard. Entergy: R3.5 - the phrase "and beyond" seems very open-ended. For the very near timeframes where state estimator models are used, this is the biggest concern. We cannot model neighboring systems in great detail because they do not allow that use of their CEII since we post these cases on our OASIS site. RESPONSE: R3.5 does not require modeling details in areas beyond your own - it allows equivalent representation which does not need to include CEII. Therefore, Entergy requests that the new SAR for MOD-030-2 be expanded to modify R3.5: "Contains modeling data and system topology for immediately adjacent Reliability Coordination Areas and beyond as necessary. Equivalent representation is allowed."
Group
FirstEnergy
Sam Ciccone
FirstEnergy Corp.
No
1. Every standard's purpose should be to increase, improve, or enhance the reliability of the BES. This purpose statement should be revised to state, "To increase reliability of the Bulk

Electric System through consistency in the development, documentation, and implementation of transfer capability calculations for short-term use performed by entities using the Flowgate Methodology." 2. A variance should be added to the standard with regard to MOD-030 requirements that describe tasks which have been transferred by the MISO member transmission companies to the MISO organization. This transfer of responsibility is described in the MISO Transmission Owners Agreement and Attachment C of the MISO Open Access Transmission and Energy Market Tariff. The standard should include this variance to alleviate the compliance burden of creating delegation or JRO agreements on Transmission Operators (TOP) regarding the aforementioned tasks. It is FE's opinion that an Entity Variance as described in the NERC Reliability Standards Development Procedure is the appropriate mitigation measure. As described in the procedure, an Entity Variance is "Any variance from a NERC reliability standard that is proposed to apply to one entity or a subset of entities within a limited portion of a regional entity, such as a variance that would apply to a regional transmission organization or particular market or to a subset of bulk power system owners, operators, or users, shall be approved through the regular standards development process defined in the NERC Reliability Standards Development Procedure and shall be made part of the applicable NERC reliability standard." In accordance with the NERC Standard Development Procedure, the SAR process is the appropriate channel to include a variance. The procedure states: "Variances should be identified and considered when a SAR is posted for comment. Variances should also be considered in the drafting of a standard, with the intent to make any necessary variances a part of the initial development of a standard. The public posting allows for all impacted parties to identify the requirements of a NERC reliability standard that might require a variance." FE believes it is important to complete and include the MISO variance in conjunction with the drafting of the MOD-030-2 standard. FE requests the variance to cover TOP tasks as described in the following requirement: R2: Flowgate determination and calculation of TFC on flowgates.

Yes

Yes

See our comments in Question 1. There are conflicts between this standard and the MISO regional "regulatory functions".

The term "Grandfathered" is not a defined term in the NERC glossary and should not be capitalized in R6.5, R6.6, R7.3 and R7.4.

Individual

Kurt Conger

Energy Expert Services, Inc.

Yes

The proposed changes adequately reflect the concerns raised by parties regarding identification of flowgates.

Yes

No

Individual

Greg Lange

Public Utility District No. 2 of Grant County

Yes

The modifications to R2.1 are necessary to facilitate the manner in which WECC entities that use the Flowgate methodology to define Flowgates

Yes

The additions of R2.1.1.3 and R2.1.2.3 are appreciated as this permits the continued use of the process WECC entities that use the Flowgate methodology to define Flowgates, however, we believe that the below re-wording of these two sub-requirements is more precise and removes the vague phrase "protected by". If any limiting element is kept within its limit for its associated worst contingency by operating within the limits of another Flowgate, then no new Flowgate needs to be established for such limiting elements or contingencies.

No

Individual

Kirit Shah

Ameren

Yes

Yes
No
AFC issues affect long term planning as well as planning in the Operating Time Horizon (go beyond 1 year). This is especially true when rollover rights are involved for requests that are 5 or more years in duration. The equivalent representation of facilities 161 kV and below is allowed, but this may lead to critical facilities being overlooked. This should be allowed only if these facilities are not limiting to transmission service and do not create constraints in real-time operation. The use of proxy flowgates should be discouraged. The term "and beyond" in R3.5 is not defined. This can be a concern when using state estimator models for near term analysis.
Individual
Rao Somayajula
ReliabilityFirst Corporation
Yes
Yes
No
Individual
Dan Rochester
Independent Electricity System Operator - Ontario
Yes
Yes
No
Individual
Larry Rodriguez
Entegra Power Group, LLC
No
I would include the language "equitable" to all entities involved. When Transmission Service Providers continue to have full control of the models built, the burden of "verification" is put on other entities to investigate consistency and transparency.
No Preference
No Preference
These are more general, yet equally important comments considered applicable to not only MOD-030-2, but for the other MOD revisions as well: Stakeholders Participation: Stakeholders' participation in the development and continued improvement of ATC standards and associated implementation is a key element to achieve success. NERC itself recognized the benefit and significance of the stakeholder process in the development of reliability standards. Order 693 at Cite 183. Thus, establishing forums and processes for stakeholders' on-going participation at NERC and regional levels is a MUST. These stakeholder processes are required to vet issues and gain support for the initial approval of the ATC standard and on-going changes to it. NERC should clearly set out and document the processes by which comments and suggestion of stakeholders will be gathered, evaluated, and incorporated in the Standard. NERC Response15: NERC utilizes an ANSI-accredited process to ensure stakeholder participation, and encourages participation in any of its standards development efforts. Distribution Cut-off Factor: NERC should address the difference between distribution factor cut-off values for ATC calculations and the TLR process to ensure that this difference does not create undue discrimination. Additionally, a minimum value of 3% for distribution factor cut-off could be included in the ATC standard provided TSPs are given flexibility to use a higher cut-off value which could be set on a per flowgate basis. Further, consistent with the transparency requirement of Order 890, TSPs should be required to provide justification for the distribution factor cut-off value(s) used in their ATC calculations. Base Case Overloads (BCO): BCOs can occur in any of the ATC calculation time

frames and may be spread over an entire region or be localized. In some TSP areas, BCOs have become a chronic situation and are mainly due to modeling flaws in the calculation of ETC. This causes serious problems for customers trying to get access to the transmission system. One of the main causes of chronic BCOs is the dispatch model which does not take into account transmission limitations and thus, yields unrealistic results. Furthermore, TSPs are not required to show that the dispatch model in their ATC calculations is feasible and resembles actual system operation. Thus, it is our opinion that the ATC standard has not fully met the ETC calculation requirement established in Order 890 at Cite 243 & 244. We believe that, in the calculation of ETC, all resources should be dispatched in a feasible and realistic manner such that transmission limitations are respected to the extent possible. The ATC standard should include clear & detailed guidelines for dispatching generating resources so that accurate and realistic models are used in ATC calculations which in turn should yield realistic ETC values.

Dispatch Model and Must Run Units: The Standard has little detail and, practically, no guidelines on the dispatch model used in ATC/AFC calculations, except for the following statement included throughout the Standard: "Unit commitment and dispatch order, to include all designated network resources and other resources that are committed or have the legal obligation to run as they are expected to run". This is a high level statement that needs to be developed into clear and measurable requirements to ensure consistency and fairness in ATC calculations. The dispatch model is the most important single factor in the determination of ATC values and, in particular, the modeling of Must Run Units, which is a critical issue. Consistent with the transparency requirement of Order 890, the generation dispatch model used in ATC calculations must be transparent and this issue must be addressed by the Standard. To reduce both the potential for undue discrimination and the number of "phantom congestion" incidents, and to improve accuracy of ATC calculations, NERC must develop detailed requirements for the dispatch model used in ATC calculations and establish measurements to evaluate compliance with the requirements. These requirements should be focused on the development and use of dispatch models that are realistic and consistent with well-established operational practices. To ensure that the model resembles actual system operation, the dispatch model should be benchmarked against real-time dispatch and consistency checks should be performed across the various ATC time frames.

Consistency Between ATC calculations and Operational & Long-Term Expansion Studies: FERC Order 890/Cite 292 & 237 are very clear about requiring TSPs to use data and modeling assumptions for ATC calculations that are consistent with those used in operations planning and long-term system expansion studies. FERC clearly states its expectation in the following extract of Order 890/Cite 292: "We find that requiring consistency in the data and modeling assumptions used for ATC calculations will remedy the potential for undue discrimination by eliminating discretion and ensuring comparability in the manner in which a transmission provider operates and plans its system to serve native load and the manner in which it calculates ATC for service to third parties". Furthermore, FERC establishes the following requirement in Citation 237 of Order 890: "We direct public utilities, working through NERC, to address, through the reliability standards process, any differences in developing TTC/TFC for transmission provided under the pro forma OATT and for transfer capability for native load and reliability assessment studies". It is known that some Transmission Providers use a number of procedures such as: switching operating guides, generation re-dispatch, dropping load, etc. to mitigate transmission limit violations when performing reliability assessments of their systems in the planning horizon. Based on the application of mitigation procedures, these TSPs conclude that their transmission systems are reliable and thus, no transmission upgrades/reinforcements are needed. However, these mitigation procedures are not made available to third parties requesting transmission service and, as a result of this, transmission service requests are refused or the requestor is assigned financial responsibility for upgrading constrained facilities which could be mitigated by the application of the TSP operating procedures. Furthermore, these mitigation procedures typically are not included in the ATC models, which leads to artificial overloads, negative ATC/AFC, and the unduly discriminatory denial of transmission service. We believe that the MODs should fully incorporate the FERC directive in Order 890/Cite 292 & 237 and explicitly require TSPs to incorporate ALL data, modeling assumptions, and mitigation procedures used in operations planning and long-term expansion studies in their ATC/AFC models and calculations.

Benchmarking of ATC Models: Order 890 at Cite 290 & 291 requires NERC to modify ATC-related standards to incorporate requirements for the periodic review, update, and benchmark of models used for ATC calculations. FERC states the following in Cite 290: "this [requirement] means that the models should be updated and benchmarked to actual events. We find that this requirement is essential in order to have an accurate simulation of the performance of the grid and from which to comparably calculate ATC, therefore increasing transparency and decreasing the potential for undue discrimination by transmission providers".

Adjacent Systems Representation: In order to produce accurate ATCs, it is not enough to merely check that adjacent systems are included in the model. Instead, it is critical to validate the performance of these models on an on-going basis and ensure that adjacent systems are being properly updated with discrete elements in TSP models with data such as: load, generation profile, net interchange, transactions, and outages, provided by adjacent system entities.

Individual

Jason Shaver

American Transmission Company
Yes
Yes
R2.1.3: group the exceptions at the end of the requirement for more clarity.
No
Group
MRO NERC Standards Review Subcommittee
Chuck Lawrence
ATC
No
The MRO suggests that the SAR Detailed Description should be expanded to review the criteria of flowgates to allow a waiver for small Transmission Service Providers or other appropriate remedies in non-RTO areas so that the number of flowgates is not excessive.
No
The MRO suggests that: Revise 2.1 to allow a waiver for small Transmission Service Providers or other appropriate remedies in non-RTO areas so that the number of flowgates is not excessive. Another appropriate remedy would be to exclude the need for a flowgate, where interconnection wide congestion management was a result of unusual operation conditions that are not reasonably expected to frequently occur again (such as, multiple prior outages of transmission facilities and/or critical generators). Revise R2.1.1 to: "... Available Transfer Capability (ATC) Paths ...", to give the meaning of the ATC acronym the first time that it occurs in the standard. Clarify that R2.1.1.3 and R2.1.2.3 may be applied separately in different operating conditions. Revise R2.1.3 to group all of the exceptions at the end of the requirement for more clarity.
No
The MRO suggests that: Remove the definition of ATC in R1.1 because it was already stated in the 4.1.1 of the Applicability section. In M13, change 'specified in MOD-030-1' to 'specified in this standard' because it should be MOD-030-2 for this version and it will be easy to overlook updating this item in future versions. In R6.2, the numeral of the first footnote superscript should be "1", not "2". If possible the footnote superscripts in R6.4, R6.6, R7.2, R7.4, and R7.6 should be "1" because they all refer to the same footnote text. The MRO suggests the drafting team prepare a white paper to explain application of this standard for various responsible entities. For example the MRO need to discuss the use of ATC paths in R2.1.1, R2.1.2, and R2.1.3. To understand the proper application of the requirement.
Individual
Kris Manchur
Manitoba Hydro
Yes
No
Manitoba Hydro agrees with the changes to R2.1, R2.2 and R2.3. Manitoba Hydro continues to question why is it only MOD 30 that requires a conversion formula? If standards are to be comparable, shouldn't all three standards (MOD 28, MOD 29 and MOD 30) have as a requirement to convert transmission capability from one method to the other? If changes are made to MOD 28 and MOD 29 for requiring conversion from method to the other, Manitoba Hydro may consider endorsing R11. Manitoba Hydro continues to be concerned that conversion from AFC to ATC cannot always be easily calculated in a formula when different assumptions are used for calculating transmission capability.
No
Individual
Jay Seitz
US Bureau of Reclamation
Yes
Yes
The modifications to R2.1 are necessary to facilitate the manner in which WECC entities that use

the Flowgate methodology to define Flowgates. The additions of R2.1.1.3 and R2.1.2.3 are appreciated as this permits the continued use of the process WECC entities that use the Flowgate methodology to define Flowgates, however, we believe that the below re-wording of these two sub-requirements is more precise and removes the vague phrase "protected by". If any limiting element is kept within its limit for its associated worst Contingency by operating within the limits of another Flowgate, then no new Flowgate needs to be established for such limiting elements or Contingencies.

No

Consideration of Comments on 1st Draft of SAR and MOD-030-2 — Flowgate Methodology (Project 2006-07)

The ATC Standards Drafting Team thanks all commenters who submitted comments on the 1st draft of the SAR and draft standard for MOD-030-2. This standard was posted for a 45-day public comment period from August 12, 2008 through September 24, 2008. The stakeholders were asked to provide feedback on the SAR and standard through a special electronic standard Comment Form. There were 19 sets of comments, including comments from 50 different people from approximately 40 companies representing 8 of the 10 Industry Segments as shown in the table on the following pages.

To make this report easier to read, the comments have been organized by question number. The comments can be viewed in their original format at the following site:

<http://www.nerc.com/filez/standards/MOD-V0-Revision.html>

Most commenters agreed with the SAR's purpose, scope, and applicability. Some entities requested expanding the scope to address issues related to model size or flowgate criteria, but the SDT believes these issues are already addressed within the proposed standard. One entity indicated a desire for a Variance; the SDT explained how such a Variance should be pursued and developed. No changes were made to the SAR in response to any comments.

- With regard to the standard itself, several entities suggested making changes to Requirements R2.1.1.3 and R2.1.2.3 to make them clearer. The SDT accepted the proposed changes, as they simply clarified the intent of the requirement.
- One entity questioned the conversion from AFC to ATC, and why a reverse conversion was not also supplied. The SDT explained the goal of standardizing the conversion without mandating it, and explained the technical difficulty in converting from ATC to AFC.
- Most entities did not identify any conflict between MOD-030-2 and other laws, rules, agreements, or standards. One entity suggested such a conflict exists because the Midwest ISO had functions that it performs as a regulatory body, but the SDT was unable to determine, from the comments submitted, to what regulations the commenter was referring.
- Several entities proposed changes that were not consistent with scope of the SAR. In general, the SDT responded that the additional scope should be addressed in a different SAR.
- One entity asserted that MOD-030-2 was "more stringent" than MOD-028-1 and especially MOD-029-1. The SDT explained that MOD-30-2 was developed with different priorities, and that as such, it had different implementation requirements.
- One entity requested clarification related to the scope of the transmission model used to determine AFC. The SDT responded that the requirement as written needed no clarification, and was equivalent to the commenter's proposed language.
- One entity suggested the removal of an explicit reference in M13. The SDT replaced it with an indirect reference per the commenter's suggestion.
- One entity suggested some corrections to the numbering of the footnotes in the standard. The footnotes were corrected.

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 Vice President and Director of Standards, Gerry Adamski, at 609-452-8060 or at gerry.adamski@nerc.net. In addition, there is a NERC Reliability Standards Appeals Process.¹

¹ The appeals process is in the Reliability Standards Development Procedures:
<http://www.nerc.com/standards/newstandardsprocess.html>.

Index to Questions, Comments, and Responses

1. Do you agree with the SAR's purpose, scope and applicability? 7

2. The drafting team has modified R2.1, R2.2, R2.3, and R11. Do you agree with the proposed changes? If "No," please identify the modifications with which you are concerned and suggest changes to the language..... 10

3. Are you aware of any conflicts between the proposed MOD-030-2 and any regulatory function, rule/order, tariff, rate schedule, legislative requirement or agreement? If "Yes," please explain why in the comment area below and provide supporting information..... 13

4. Please provide any other comments (that you have not already provided in response to the questions above) that you have on the proposed MOD-030-2. 15

Consideration of Comments on 1st Draft of SAR and MOD-030-2 — Flowgate Methodology (Project 2006-07)

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.	John D. Martinsen	Snohomish County PUD				X									
2.	Guy Zito	NPCC												X	
Additional Member	Additional Organization	Region	Segment Selection												
1.	David Kiguel	Hydro One Networks, Inc.	NPCC	1											
2.	Ralph Rufrano	New York Power Authority	NPCC	5											
3.	Michael Ranalli	Nationa Grid	NPCC	3											
4.	Roger Champagne	Hydro-Quebec TransEnergie	NPCC	2											
5.	Rick White	Northeast Utilities	NPCC	1											
6.	Greg Campoli	New York Independent System Operator	NPCC	2											
7.	Kathleen Goodman	ISO - New England	NPCC	2											
8.	Ed Thompson	Consolidated Edison Co. of New York, Inc.	NPCC	1											
9.	John Babik	Dominion Resources, Inc.	NPCC	5											
10.	Lee Pedowicz	NPCC	NPCC	10											
11.	Gerry Dunbar	NPCC	NPCC	10											
12.	Don Nelson	Massachusetts Dept. of Public Utilities	NPCC	9											
13.	Brian Evans-Mongeon	Utility Services, LLC	NPCC	6											
14.	Michael Gildea	Contellation Energy	NPCC	6											

Consideration of Comments on 1st Draft of SAR and MOD-030-2 — Flowgate Methodology (Project 2006-07)

Commenter		Organization	Industry Segment											
			1	2	3	4	5	6	7	8	9	10		
3.	Ronald Szymczak	Exelon	x		x									
4.	John Harmon	Midwest ISO		x										
5.	Denise Koehn	Bonneville Power Administration	x		x			x	x					
Additional Member Additional Organization Region Segment Selection 1. Abbey Nulph Tx Policy Development & Analysis WECC 1 2. Don Watkins Tx System Operations WECC 1 3. Mike Viles Tx Technical Operations WECC 1 4. Pat Rochelle Transmission Planning WECC 1 5. Susan Millar Tx Sales Administration WECC 1														
6.	John Blazekovich (Commonwealth Edison)	Standards Interface Subcommittee/Compliance Elements Development Resource Pool												
7.	Edward Davis	Entergy Services	x											
8.	Sam Ciccone	FirstEnergy Corp.	x	x		x	x	x						
Additional Member Additional Organization Region Segment Selection 1. Doug Hohlbaugh FE RFC 1, 3, 4, 5, 6 2. Dave Folk FE RFC 1, 3, 4, 5, 6														
9.	Kurt Conger	Energy Expert Services, Inc.												
10.	Greg Lange	Public Utility District No. 2 of Grant County			x									
11.	Kirit Shah	Ameren	x		x			x	x					
12.	Rao Somayajula	ReliabilityFirst Corporation												x
13.	Dan Rochester	Independent Electricity System Operator - Ontario		x										
14.	Larry Rodriguez	Entegra Power Group, LLC						x	x					
15.	Jason Shaver (ATC)	American Transmission Company	x											
16.	Chuck Lawrence (ATC)	MRO NERC Standards Review Subcommittee	x											
Additional Member Additional Organization Region Segment Selection 1. Neal Balu WPS MRO 3, 4, 5, 6														

Consideration of Comments on 1st Draft of SAR and MOD-030-2 — Flowgate Methodology (Project 2006-07)

Commenter		Organization		Industry Segment																
				1	2	3	4	5	6	7	8	9	10							
2.	Terry Bilke	MISO	MRO	2																
3.	Carol Gerou	MP	MRO	1, 3, 5, 6																
4.	Jim Haigh	WAPA	MRO	1, 6																
5.	Ken Goldsmith	ALTW	MRO	4																
6.	Tom Mielnik	MEC	MRO	1, 3, 5, 6																
7.	Pam Sordet	XCEL	MRO	1, 3, 5, 6																
8.	Dave Rudolph	BEPC	MRO	1, 3, 5, 6																
9.	Eric Ruskamp	LES	MRO	1, 3, 5, 6																
10.	Joseph Knight	GRE	MRO	1, 3, 5, 6																
11.	Joe DePoorter	MGE	MRO	3, 4, 5, 6																
12.	Larry Brusseau	MRO	MRO	10																
13.	Michael Brytowski	MRO	MRO	10																
17.	Kris Manchur		Manitoba Hydro		x			x		x	x									
18.	Jay Seitz		US Bureau of Reclamation							x										
19.	Shannon Black (SMUD)		WECC Entities																x	

Consideration of Comments on 1st Draft of SAR and MOD-030-2 — Flowgate Methodology (Project 2006-07)

1. Do you agree with the SAR's purpose, scope and applicability?

Summary Consideration: Most commenters agreed with the SAR's purpose, scope, and applicability. Some entities requested expanding the scope to address issues related to model size or flowgate criteria, but the SDT believes these issues are already addressed within the proposed standard. One entity indicated a desire for a Variance; the SDT explained how such a Variance should be pursued and developed. No changes were made to the SAR in response to any comments.

Organization	Question 1:	Question 1 Comments
Entegra Power Group, LLC	No	I would include the language "equitable" to all entities involved. When Transmission Service Providers continue to have full control of the models built, the burden of "verification" is put on other entities to investigate consistency and transparency.
Response: NERC Reliability Standards are expected to address reliability issues without impacting commercial or equity concerns. Equity issues should be addressed within Tariffs, through NAESB, or through FERC.		
MRO NERC Standards Review Subcommittee	No	The MRO suggests that the SAR Detailed Description should be expanded to review the criteria of flowgates to allow a waiver for small Transmission Service Providers or other appropriate remedies in non-RTO areas so that the number of flowgates is not excessive.
Response: The SDT believes that the changes to 2.1.1.3 and 2.1.2.3 specified in the SAR will address the needs of small Transmission Service Providers.		
FirstEnergy Corp.	No	<p>1. Every standard's purpose should be to increase, improve, or enhance the reliability of the BES. This purpose statement should be revised to state, "To increase reliability of the Bulk Electric System through consistency in the development, documentation, and implementation of transfer capability calculations for short-term use performed by entities using the Flowgate Methodology."</p> <p>Response: The industry has already approved the current purpose statement through the NERC process as part of MOD-030-1. No other entities have suggested that it needs to be changed, and this change will not be included in the SAR.</p> <p>2. A variance should be added to the standard with regard to MOD-030 requirements that describe tasks which have been transferred by the MISO member transmission companies to the MISO organization. This transfer of responsibility is described in the MISO Transmission Owners Agreement and Attachment C of the MISO Open Access Transmission and Energy Market Tariff. The standard should include this variance to alleviate the compliance burden of creating delegation or JRO agreements on Transmission Operators (TOP) regarding the aforementioned tasks. It is FE's opinion that an Entity Variance as described in the NERC Reliability Standards Development Procedure is the appropriate mitigation measure. As described in the procedure, an Entity Variance is "Any variance from a NERC reliability</p>

Consideration of Comments on 1st Draft of SAR and MOD-030-2 — Flowgate Methodology (Project 2006-07)

Organization	Question 1:	Question 1 Comments
		<p>standard that is proposed to apply to one entity or a subset of entities within a limited portion of a regional entity, such as a variance that would apply to a regional transmission organization or particular market or to a subset of bulk power system owners, operators, or users, shall be approved through the regular standards development process defined in the NERC Reliability Standards Development Procedure and shall be made part of the applicable NERC reliability standard." In accordance with the NERC Standard Development Procedure, the SAR process is the appropriate channel to include a variance. The procedure states: "Variances should be identified and considered when a SAR is posted for comment. Variances should also be considered in the drafting of a standard, with the intent to make any necessary variances a part of the initial development of a standard. The public posting allows for all impacted parties to identify the requirements of a NERC reliability standard that might require a variance." FE believes it is important to complete and include the MISO variance in conjunction with the drafting of the MOD-030-2 standard. FE requests the variance to cover TOP tasks as described in the following requirement:R2: Flowgate determination and calculation of TFC on flowgates.</p> <p>Response: The SDT is willing to work with MISO members to develop a Variance; however, we cannot do so without a formal request (in the form of a SAR) for such a Variance. If First Energy is requesting such a Variance on behalf of the MISO and its members, please submit a separate SAR making this request.</p>
Response: Please see in-line responses.		
Midwest ISO	Yes and No	
Entergy Services	Yes and No	See the additional item in #4 below that we would like addressed in this SAR.
Response: Please see response in Item 4.		
Energy Expert Services, Inc.	Yes	The proposed changes adequately reflect the concerns raised by parties regarding identification of flowgates.
Response: The SDT agrees, and thanks you for your supportive comment.		
Public Utility District No. 2 of Grant County	Yes	The modifications to R2.1 are necessary to facilitate the manner in which WECC entities that use the Flowgate methodology to define flowgates
Response: The SDT agrees, and thanks you for your supportive comment.		
WECC Entities	Yes	The modifications to R2.1 are necessary to facilitate the manner in which WECC entities that use the Flowgate methodology to define Flowgates.
Response: The SDT agrees, and thanks you for your supportive comment.		
Bonneville Power Administration	Yes	The modifications to R2.1 are necessary to facilitate the manner in which WECC entities define Flowgates.
Response: The SDT agrees, and thanks you for your supportive comment.		
Snohomish County PUD	Yes	

Consideration of Comments on 1st Draft of SAR and MOD-030-2 — Flowgate Methodology (Project 2006-07)

Organization	Question 1:	Question 1 Comments
Exelon	Yes	
Ameren	Yes	
ReliabilityFirst Corporation	Yes	
Independent Electricity System Operator - Ontario	Yes	
American Transmission Company	Yes	
Manitoba Hydro	Yes	
US Bureau of Reclamation	Yes	
NPCC		No comments.

Consideration of Comments on 1st Draft of SAR and MOD-030-2 — Flowgate Methodology (Project 2006-07)

2. The drafting team has modified R2.1, R2.2, R2.3, and R11. Do you agree with the proposed changes? If “No,” please identify the modifications with which you are concerned and suggest changes to the language.

Summary Consideration: Several entities suggested making changes to 2.1.1.3 and 2.1.2.3 to make them clearer. The SDT accepted the proposed changes, as they simply clarified the intent of the requirement.

One entity questioned the conversion from AFC to ATC, and why a reverse conversion was not also supplied. The SDT explained the goal of standardizing the conversion without mandating it, and explained the technical difficulty in converting from ATC to AFC.

Organization	Question 2:	Question 2 Comments:
Manitoba Hydro	No	<p>Manitoba Hydro agrees with the changes to R2.1, R2.2 and R2.3. Manitoba Hydro continues to question why is it only MOD 30 that requires a conversion formula? If standards are to be comparable, shouldn't all three standards (MOD 28, MOD 29 and MOD 30) have as a requirement to convert transmission capability from one method to the other? If changes are made to MOD 28 and MOD 29 for requiring conversion from method to the other, Manitoba Hydro may consider endorsing R11. Manitoba Hydro continues to be concerned that conversion from AFC to ATC cannot always be easily calculated in a formula when different assumptions are used for calculating transmission capability.</p>
<p>Response: The MOD-030 conversion requirement was created such that if the conversion was required, there would be a standardized way to perform that conversion. Note that the standard does not require the conversion itself; only that if a conversion is performed (voluntarily or due to regulatory requirement), it be performed in the manner described.</p> <p>While converting from an ATC to AFC might be an appropriate goal, the SDT does not believe such a conversion is feasible. First, it would require the creation of flowgates by an entity that does not use the flowgate methodology. Secondly, when converting from AFC to ATC, the conversion involves aggregating several inputs into one result; when converting ATC to AFC, the opposite would be required, which would be exceedingly difficult to disaggregate.</p>		
MRO NERC Standards Review Subcommittee	No	<p>The MRO suggests that: Revise 2.1 to allow a waiver for small Transmission Service Providers or other appropriate remedies in non-RTO areas so that the number of flowgates is not excessive. Another appropriate remedy would be to exclude the need for a flowgate, where interconnection wide congestion management was a result of unusual operation conditions that are not reasonably expected to frequently occur again (such as, multiple prior outages of transmission facilities and/or critical generators).</p> <p>Response: The current criteria already allow for sufficient flexibility in determining flowgates for consideration, and further investigation of this topic is not warranted. The SDT believes this is addressed</p>

Consideration of Comments on 1st Draft of SAR and MOD-030-2 — Flowgate Methodology (Project 2006-07)

Organization	Question 2:	Question 2 Comments:
		<p>by the changes to R2.1.3.</p> <p>Revise R2.1.1 to: “Available Transfer Capability (ATC) Paths,” to give the meaning of the ATC acronym the first time that it occurs in the standard.</p> <p>Response: ATC path is a defined term, created with the approval of MOD-001.</p> <p>Clarify that R2.1.1.3 and R2.1.2.3 may be applied separately in different operating conditions.</p> <p>Response: R2.1.1.3 and R2.1.2.3 are included in two separate sub-requirements, indicating that different circumstances are allowed.</p> <p>Revise R2.1.3 to group all of the exceptions at the end of the requirement for more clarity.</p> <p>Response: The SDT thanks you for your comment, and has made the proposed change.</p>
<p>Response: Please see in-line responses.</p>		
Bonneville Power Administration	Yes	<p>The additions of R2.1.1.3 and R2.1.2.3 are appreciated by BPA, as this permits the continued use of the process WECC entities use to define flowgates, however, we believe that the below re-wording of these two sub-requirements is more precise and removes the vague phrase “protected by”. "If any limiting element is kept within its limit for its associated worst Contingency by operating within the limits of another Flowgate, then no new Flowgate needs to be established for such limiting elements or Contingencies."</p>
<p>Response: The SDT thanks you for your comment, and has incorporated the proposed change.</p>		
Public Utility District No. 2 of Grant County	Yes	<p>The additions of R2.1.1.3 and R2.1.2.3 are appreciated as this permits the continued use of the process WECC entities that use the Flowgate methodology to define flowgates, however, we believe that the below re-wording of these two sub-requirements is more precise and removes the vague phrase “protected by”. If any limiting element is kept within its limit for its associated worst contingency by operating within the limits of another Flowgate, then no new Flowgate needs to be established for such limiting elements or contingencies.</p>
<p>Response: The SDT thanks you for your comment, and has incorporated the proposed change.</p>		
American Transmission Company	Yes	<p>R2.1.3: group the exceptions at the end of the requirement for more clarity.</p>
<p>Response: The SDT thanks you for your comment, and has made the proposed change.</p>		
US Bureau of Reclamation	Yes	<p>The modifications to R2.1 are necessary to facilitate the manner in which WECC entities that use the Flowgate methodology to define Flowgates. The additions of R2.1.1.3 and R2.1.2.3 are appreciated as this permits the continued use of the process WECC entities that use the Flowgate methodology to define</p>

Consideration of Comments on 1st Draft of SAR and MOD-030-2 — Flowgate Methodology (Project 2006-07)

Organization	Question 2:	Question 2 Comments:
		Flowgates, however, we believe that the below re-wording of these two sub-requirements is more precise and removes the vague phrase "protected by". If any limiting element is kept within its limit for its associated worst Contingency by operating within the limits of another Flowgate, then no new Flowgate needs to be established for such limiting elements or Contingencies.
Response: The SDT thanks you for your comment, and has incorporated the proposed change.		
WECC Entities	Yes	The additions of R2.1.1.3 and R2.1.2.3 are appreciated as this permits the continued use of the process WECC entities that use the Flowgate methodology to define Flowgates, however, we believe that the below re-wording of these two sub-requirements is more precise and removes the vague phrase "protected by". If any limiting elements or is kept within its limit for its associated worst Contingency yes are already protected by <u>operating within the limits of</u> another Flowgate, then no new Flowgates needs <u>needs</u> to be established for such limiting elements or Contingencies.
Response: The SDT thanks you for your comment, and has incorporated the proposed change.		
Snohomish County PUD	Yes	
Exelon	Yes	
Midwest ISO	Yes	
Standards Interface Subcommittee/Compliance Element Development Resource Pool		
Entergy Services	Yes	
FirstEnergy Corp.	Yes	
Energy Expert Services, Inc.	Yes	
Ameren	Yes	
ReliabilityFirst Corporation	Yes	
Independent Electricity System Operator - Ontario	Yes	
Entegra Power Group, LLC	No Preference	
NPCC		No comments.

Consideration of Comments on 1st Draft of SAR and MOD-030-2 — Flowgate Methodology (Project 2006-07)

3. Are you aware of any conflicts between the proposed MOD-030-2 and any regulatory function, rule/order, tariff, rate schedule, legislative requirement or agreement? If "Yes," please explain why in the comment area below and provide supporting information.

Summary Consideration: Most entities did not identify any conflict between MOD-030-2 and other laws, rules, agreements, or standards. One entity suggested such a conflict exists because the Midwest ISO had functions that it performs as a regulatory body, but the SDT was unable to determine from the comments submitted to what regulations the commenter was referring.

Organization	Question 3:	Question 3 Comments:
FirstEnergy Corp.	Yes	See our comments in Question 1. There are conflicts between this standard and the MISO regional "regulatory functions".
Response: Please see previous response in Question 1.		
Snohomish County PUD	No	
Midwest ISO	No	
Bonneville Power Administration	No	
Standards Interface Subcommittee/Compliance Elements Development Resource Pool		
Entergy Services	No	
Energy Expert Services, Inc.	No	
Public Utility District No. 2 of Grant County	No	
Ameren	No	
ReliabilityFirst Corporation	No	
Independent Electricity System Operator - Ontario	No	
American Transmission Company	No	
MRO NERC Standards	No	

Consideration of Comments on 1st Draft of SAR and MOD-030-2 — Flowgate Methodology (Project 2006-07)

Organization	Question 3:	Question 3 Comments:
Review Subcommittee		
Manitoba Hydro	No	
US Bureau of Reclamation	No	
WECC Entities	No	
Entegra Power Group, LLC	No Preference	
Exelon	No Preference	
NPCC		No comments.

Consideration of Comments on 1st Draft of SAR and MOD-030-2 — Flowgate Methodology (Project 2006-07)

- 4. Please provide any other comments (that you have not already provided in response to the questions above) that you have on the proposed MOD-030-2.

Summary Consideration: Several entities proposed changes that were not consistent with scope of the SAR. In general, the SDT responded that the additional scope should be addressed in a different SAR.

One entity asserted that MOD-030-2 is “more stringent” than MOD-028-1 and especially MOD-029-1. The SDT explained that MOD-30-2 was developed with different priorities, and that as such, it had different implementation requirements.

One entity requested clarification related to the scope of the transmission model used to determine AFC. The SDT responded that the requirement as written needed no clarification, and was equivalent to the commenter’s proposed language.

One entity suggested the removal of an explicit reference in M13. The SDT replaced it with an indirect reference per the commenter’s suggestion.

One entity suggested some corrections to the numbering of the footnotes in the standard. The footnotes were corrected.

One entity suggested the creation of a “white paper” to discuss how the standard applies to various entities. The SDT believes that following the requirements is sufficient, and that a white paper would imply obligations that may not be mandated in the standard.

Organization	Question 4:	Question 4 Comments:
Exelon		<p>Requirement R1 should also require that the Available Transfer Capability Implementation Document specify the following: o PTDF and OTDF cutoff values used</p> <p>Response: The SDT does not believe this falls within the current scope of the SAR.</p> <p>The term “planning of operations” is not a term use by all entities in the electric utility industry and has no agreed upon definition; consequently it should be used in a standard. ATC or AFC calculations cover the operating and planning time horizons and therefore, the calculations need to apply the appropriate contingency criteria for the time frame being studied. The following wording change is recommended: Requirement 2.1.1.1. and 2.1.2.1. need to be revised as follows: “Use first Contingency criteria consistent with those first Contingency criteria used in operations studies and planning studies of operations for the applicable time periods, including use of Special Protection Systems.”</p>

Consideration of Comments on 1st Draft of SAR and MOD-030-2 — Flowgate Methodology (Project 2006-07)

Organization	Question 4:	Question 4 Comments:
		<p>Response: The SDT used the term “Planning of Operations” as it was specified in Order 890, and believes the use of this term ensures consistency with that Order.</p>
<p>Response: Please see in-line responses.</p>		
Midwest ISO		<p>The Midwest ISO thanks the Standard Drafting Team for consideration of its comments from the MOD-030-1. We applaud the revisions to requirements R2.1.3, R2.2, R2.3, and R11. The Midwest ISO continues to believe that the MOD-030-1 is more stringent than MOD-028 or MOD-029. R6.2/R6.4/R6.6/R7.2/R7.4/R7.6 are clear examples where MOD-030 is more stringent and the highest degree of compliance is not required for all three methodologies. The Midwest ISO is not convinced that similar seams coordination requirements exist for the other two standards, especially for MOD-029. The Standard Drafting Team has maintained that this does not apply to MOD-029 since it is not a “simulation” type methodology. While this is true, the Midwest ISO believes that impacts from neighboring entity generators and loop flows cannot be ignored and should still be considered in ATC calculations. With a much higher risk of compliance violation, entities may be deterred from implementing the Flowgate methodology even if it would increase system reliability. Since the Standard Drafting Team disagrees with our proposal, we request to remove these requirements from MOD-030 to achieve more unbiased standards so that each methodology maintains an equal level of compliance.</p>
<p>Response: The SDT believes that the Rated System Path methodology was developed to address specific operating characteristics of the Western Interconnect, and as such, intentionally placed less focus on areas that WSCC/WECC deemed less important. The Flowgate Methodology was developed with loop flows as a key issue to address. This does not mean one methodology is superior to another, but that they have different priorities and as such, are different in implementation.</p>		
Bonneville Power Administration		<p>BPA thanks the NERC ATC Standards Drafting Team for drafting this SAR and MOD-030-2, and moving so quickly to respond to the concerns of the Pacific NW regarding MOD-030-1.</p>
<p>Response: Thank you for your supportive comment.</p>		
Standards Interface Subcommittee/Compliance Elements Development Resource Pool		<p>R1. The CEDRP believes that R1’s associated VSLs are appropriate.</p> <p>R2. The CEDRP believes that the VSLs for R2 should be modified. TOs may have less than 6 flowgates, so the VSL should be based on a percentage. Suggest the following modifications:</p> <p style="padding-left: 40px;">MODERATE: The Transmission Operator did not include 1 or less than 25% of the total number of Flowgates in their AFC calculations that met the criteria described in R2.1.</p> <p style="padding-left: 40px;">HIGH: The Transmission Operator did not include two or less than 50% of the total number of Flowgates in their AFC calculations that met the criteria described in R2.1.</p> <p style="padding-left: 40px;">SEVERE: The Transmission Operator did not include more than 50% of the total number of</p>

Organization	Question 4:	Question 4 Comments:
		<p>Flowgates in their AFC calculations that met the criteria described in R2.1.</p> <p>Response: The SAR does not include modifications to the VSLs, and as such, the VSLs are not intended to be revisited.</p> <p>R3. The CEDRP believes that the VSLs for R3 should be modified. The number of Facility Ratings should be based on a percentage. The SDT Proposed VSLs assume that the entity may have more than 30 facility ratings. Suggest the following modifications:</p> <p>LOWER: The Transmission Operator used greater than zero, but less than 10% of Facility Ratings that were different or based on old information from those specified by a Transmission or Generator Owner in their Transmission model.</p> <p>MODERATE: The Transmission Operator used 25%, but not more than 50% of Facility Ratings that were different or based on old information from those specified by a Transmission or Generator Owner in their Transmission model.</p> <p>HIGH: The Transmission Operator used 50%, but not more than 75% of Facility Ratings that were different or based on old information from those specified by a Transmission or Generator Owner in their Transmission model.</p> <p>SEVERE: The Transmission Operator used more than 75% of Facility Ratings that were different or based on old information from those specified by a Transmission or Generator Owner in their Transmission model.</p> <p>Response: The SAR does not include modifications to the VSLs, and as such, the VSLs are not intended to be revisited.</p> <p>R4. The CEDRP believes that R4’s associated VSLs are appropriate.</p> <p>R5. The CEDRP believes that the VSLs for R5 should be modified. VSLs should be based on a percentage. Suggest the following modifications:</p> <p>LOWER: The Transmission Service Provider did not include in the AFC process 5% to 10% of expected generation or Transmission outages, additions or retirements within the scope of the</p>

Consideration of Comments on 1st Draft of SAR and MOD-030-2 — Flowgate Methodology (Project 2006-07)

Organization	Question 4:	Question 4 Comments:
		<p>model as specified in the ATCID.</p> <p>MODERATE: The Transmission Service Provider did not include in the AFC process 10% to 25% of expected generation and Transmission outages, additions or retirements within the scope of the model as specified in the ATCID.</p> <p>HIGH: The Transmission Service Provider did not include in the AFC process 25% to 50% of expected generation and Transmission outages, additions or retirements within the scope of the model as specified in the ATCID.</p> <p>SEVERE: The Transmission Service Provider did not include in the AFC process more than 50% of expected generation and Transmission outages, additions or retirements within the scope of the model as specified in the ATCID.</p> <p>Response: The SAR does not include modifications to the VSLs, and as such, the VSLs are not intended to be revisited.</p> <p>R6. The CEDRP believes that R6’s associated VSLs are appropriate.</p> <p>R7. The CEDRP believes that R7’s associated VSLs are appropriate.</p> <p>R8. The CEDRP believes that R8 VSL language is clear and measureable. However, the measurement (M15), should be re-worded to clarify that <u>all the variables</u> allowed in R8 were used to calculate firm AFCs (regardless of whether they have a value of zero), and not just a sub-set of them. Of course, it should also be clear that no different or additional variables were used. Additionally, the CEDRP suggests the following changes to the VSLs:</p> <p>LOWER: The Transmission Service Provider did not use all the elements defined in R8 when determining firm AFC, or used additional elements, for more than zero Flowgates, but not more than 5% of all Flowgates or 1 Flowgate (whichever is greater).</p> <p>MODERATE: The Transmission Service Provider did not use all the elements defined in R8 when determining firm AFC, or used additional elements, for more than 5% of all Flowgates or 1 Flowgates (whichever is greater), but not more than 10% of all Flowgates or 2 Flowgates</p>

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Organization	Question 4:	Question 4 Comments:
		<p>(whichever is greater).</p> <p>HIGH: The Transmission Service Provider did not use all the elements defined in R8 when determining firm AFC, or used additional elements, for more than 10% of all Flowgates or 2 Flowgates (whichever is greater), but not more than 15% of all Flowgates or 3 Flowgates (whichever is greater).</p> <p>SEVERE: The Transmission Service Provider did not use all the elements defined in R8 when determining firm AFC, or used additional elements, for more than 15% of all Flowgates or more than 3 Flowgates (whichever is greater).</p> <p>Response: The SAR does not include modifications to the VSLs, and as such, the VSLs are not intended to be revisited.</p> <p>R9. The CEDRP believes that R9 VSL language is clear and measureable. However, the measurement (M16), should be re-worded to clarify that all the variables allowed in R9 were used to calculate firm AFCs (regardless of whether they have a value of zero), and not just a sub-set of them. Of course, it should also be clear that no different or additional variables were used. Additionally, the CEDRP suggests the following changes to the VSLs:</p> <p>LOWER: The Transmission Service Provider did not use all the elements defined in R9 when determining non-firm AFC, or used additional elements, for more than zero Flowgates, but not more than 5% of all Flowgates or 1 Flowgate (whichever is greater).</p> <p>MODERATE: The Transmission Service Provider did not use all the elements defined in R9 when determining non-firm AFC, or used additional elements, for more than 5% of all Flowgates or 4 Flowgates (whichever is greater), but not more than 10% of all Flowgates or 2 Flowgates (whichever is greater).</p> <p>HIGH: The Transmission Service Provider did not use all the elements defined in R9 when determining non-firm AFC, or used additional elements, for more than 10% of all Flowgates or 2 Flowgates (whichever is greater), but not more than 15% of all Flowgates or 3 Flowgates (whichever is greater).</p> <p>SEVERE: The Transmission Service Provider did not use all the elements defined in R9 when</p>

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Organization	Question 4:	Question 4 Comments:
		<p>determining non-firm AFC, or used additional elements, for more than 15% of all Flowgates or more than 3 Flowgates (whichever is greater).</p> <p>Response: The SAR does not include modifications to the VSLs, and as such, the VSLs are not intended to be revisited.</p> <p>R10. The CEDRP believes that R10's associated VSLs are appropriate.</p> <p>R11. The CEDRP believes that R11's associated VSLs are appropriate.</p>
<p>Response: Please see in-line responses.</p>		
<p>Entergy Services</p>		<p>In the earlier commenting stages on MOD-030-1, Entergy made the following comment and received clarification from the SDT. While this satisfied Entergy's concern regarding the SDT intent, it did not alleviate our concerns with future interpretations of the standard.</p> <p>Entergy: R3.5 - the phrase "and beyond" seems very open-ended. For the very near timeframes where state estimator models are used, this is the biggest concern. We cannot model neighboring systems in great detail because they do not allow that use of their CEII since we post these cases on our OASIS site.</p> <p>RESPONSE: R3.5 does not require modeling details in areas beyond your own - it allows equivalent representation which does not need to include CEII.</p> <p>Therefore, Entergy requests that the new SAR for MOD-030-2 be expanded to modify R3.5: "Contains modeling data and system topology for immediately adjacent Reliability Coordination Areas and beyond as necessary. Equivalent representation is allowed."</p>
<p>Response: The requirement current mandates that the model "Contains modeling data and system topology (or equivalent representation) for immediately adjacent and beyond Reliability Coordination Areas." The SDT believes this language addresses your needs and is equivalent to the proposed language.</p>		
<p>FirstEnergy Corp.</p>		<p>The term "Grandfathered" is not a defined term in the NERC glossary and should not be capitalized in R6.5, R6.6, R7.3 and R7.4.</p>
<p>Response: The use of this term in this format has already been approved in the previous versions of MOD-028, MOD-029, and MOD-030. This modification is not included within the scope of the SAR. First Energy may wish to pursue a separate SAR to address this issue.</p>		
<p>Ameren</p>		<p>AFC issues affect long term planning as well as planning in the Operating Time Horizon (go beyond 1 year). This is especially true when rollover rights are involved for requests that are 5 or more years in</p>

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Organization	Question 4:	Question 4 Comments:
		<p>duration. Response: This modification is not included within the scope of the SAR, and the SDT has not received input from FERC or a majority of the industry that ATC should extend beyond one year.</p> <p>The equivalent representation of facilities 161 kV and below is allowed, but this may lead to critical facilities being overlooked. This should be allowed only if these facilities are not limiting to transmission service and do not create constraints in real-time operation. Response: This modification is not included within the scope of the SAR. Ameren may wish to pursue a separate SAR to address this issue.</p> <p>The use of proxy flowgates should be discouraged. Response: The standards set minimum requirements for reliability, and the SDT does not believe that proxy flowgates compromise reliability.</p> <p>The term “and beyond” in R3.5 is not defined. This can be a concern when using state estimator models for near term analysis. Response: The requirement is intended to allow for the equivalence of any equipment or networks outside the local RC area. Due to the fact that no other commenters have expressed with this term, the SDT believes that this language is commonly understood. This modification is not included within the scope of the SAR. Ameren may wish to pursue a separate SAR to address this issue.</p>
<p>Response: Please see in-line responses.</p>		
Entegra Power Group, LLC		<p>These are more general, yet equally important comments considered applicable to not only MOD-030-2, but for the other MOD revisions as well:</p> <p>Stakeholders Participation: Stakeholders’ participation in the development and continued improvement of ATC standards and associated implementation is a key element to achieve success. NERC itself recognized the benefit and significance of the stakeholder process in the development of reliability standards. Order 693 at Cite 183. Thus, establishing forums and processes for stakeholders’ on-going participation at NERC and regional levels is a MUST. These stakeholder processes are required to vet issues and gain support for the initial approval of the ATC standard and on-going changes to it. NERC should clearly set out and document the processes by which comments and suggestion of stakeholders will be gathered, evaluated, and incorporated in the Standard.</p> <p>Response: NERC utilizes a documented ANSI-accredited process to ensure stakeholder participation, and encourages participation in any of its standards development efforts. See the Reliability Standards Development Procedure for a complete description of all the steps in NERC’s reliability standards</p>

Consideration of Comments on 1st Draft of SAR and MOD-030-2 — Flowgate Methodology (Project 2006-07)

Organization	Question 4:	Question 4 Comments:
		<p data-bbox="680 277 1570 305">development process. http://www.nerc.com/files/RSDP_V6_1_12Mar07.pdf</p> <p data-bbox="680 337 1925 521">Distribution Cut-off Factor: NERC should address the difference between distribution factor cut-off values for ATC calculations and the TLR process to ensure that this difference does not create undue discrimination. Additionally, a minimum value of 3% for distribution factor cut-off could be included in the ATC standard provided TSPs are given flexibility to use a higher cut-off value which could be set on a per flowgate basis. Further, consistent with the transparency requirement of Order 890, TSPs should be required to provide justification for the distribution factor cut-off value(s) used in their ATC calculations.</p> <p data-bbox="680 553 1925 613">Response: This modification is not included within the scope of the SAR. Entegra may wish to pursue a separate SAR to address this issue.</p> <p data-bbox="680 646 1925 1008">Base Case Overloads (BCO): BCOs can occur in any of the ATC calculation time frames and may be spread over an entire region or be localized. In some TSP areas, BCOs have become a chronic situation and are mainly due to modeling flaws in the calculation of ETC. This causes serious problems for customers trying to get access to the transmission system. One of the main causes of chronic BCOs is the dispatch model which does not take into account transmission limitations and thus, yields unrealistic results. Furthermore, TSPs are not required to show that the dispatch model in their ATC calculations is feasible and resembles actual system operation. Thus, it is our opinion that the ATC standard has not fully met the ETC calculation requirement established in Order 890 at Cite 243 & 244. We believe that, in the calculation of ETC, all resources should be dispatched in a feasible and realistic manner such that transmission limitations are respected to the extent possible. The ATC standard should include clear & detailed guidelines for dispatching generating resources so that accurate and realistic models are used in ATC calculations which in turn should yield realistic ETC values.</p> <p data-bbox="680 1040 1925 1133">Response: This modification is not included within the scope of the SAR. Note that the current requirements related to dispatch order are consistent with those specified in the other ATC-related MOD standards. Entegra may wish to pursue a separate SAR to address this issue.</p> <p data-bbox="680 1166 1925 1365">Dispatch Model and Must Run Units: The Standard has little detail and, practically, no guidelines on the dispatch model used in ATC/AFC calculations, except for the following statement included throughout the Standard: "Unit commitment and dispatch order, to include all designated network resources and other resources that are committed or have the legal obligation to run as they are expected to run." This is a high level statement that needs to be developed into clear and measurable requirements to ensure consistency and fairness in ATC calculations. The dispatch model is the most important single factor in the determination of ATC values and, in particular, the modeling of Must Run Units, which is a critical</p>

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		<p>issue. Consistent with the transparency requirement of Order 890, the generation dispatch model used in ATC calculations must be transparent and this issue must be addressed by the Standard. To reduce both the potential for undue discrimination and the number of “phantom congestion” incidents, and to improve accuracy of ATC calculations, NERC must develop detailed requirements for the dispatch model used in ATC calculations and establish measurements to evaluate compliance with the requirements. These requirements should be focused on the development and use of dispatch models that are realistic and consistent with well-established operational practices. To ensure that the model resembles actual system operation, the dispatch model should be benchmarked against real-time dispatch and consistency checks should be performed across the various ATC time frames.</p> <p>Response: This modification is not included within the scope of the SAR. Note that the current requirements related to dispatch order are consistent with those specified in the other ATC-related MOD standards. Entegra may wish to pursue a separate SAR to address this issue.</p> <p>Consistency Between ATC calculations and Operational & Long-Term Expansion Studies: FERC Order 890/Cite 292 & 237 are very clear about requiring TSPs to use data and modeling assumptions for ATC calculations that are consistent with those used in operations planning and long-term system expansion studies. FERC clearly states its expectation in the following extract of Order 890/Cite 292: “We find that requiring consistency in the data and modeling assumptions used for ATC calculations will remedy the potential for undue discrimination by eliminating discretion and ensuring comparability in the manner in which a transmission provider operates and plans its system to serve native load and the manner in which it calculates ATC for service to third parties.” Furthermore, FERC establishes the following requirement in Citation 237 of Order 890: “We direct public utilities, working through NERC, to address, through the reliability standards process, any differences in developing TTC/TFC for transmission provided under the pro forma OATT and for transfer capability for native load and reliability assessment studies.” It is known that some Transmission Providers use a number of procedures such as: switching operating guides, generation re-dispatch, dropping load, etc. to mitigate transmission limit violations when performing reliability assessments of their systems in the planning horizon. Based on the application of mitigation procedures, these TSPs conclude that their transmission systems are reliable and thus, no transmission upgrades/reinforcements are needed. However, these mitigation procedures are not made available to third parties requesting transmission service and, as a result of this, transmission service requests are refused or the requestor is assigned financial responsibility for upgrading constrained facilities which could be mitigated by the application of the TSP operating procedures. Furthermore, these mitigation procedures typically are not included in the ATC models, which leads to artificial overloads, negative ATC/AFC, and the unduly discriminatory denial of transmission service. We believe that the MODs should fully incorporate the FERC directive in Order 890/Cite 292 & 237 and explicitly require TSPs to</p>

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Organization	Question 4:	Question 4 Comments:
		<p>incorporate ALL data, modeling assumptions, and mitigation procedures used in operations planning and long-term expansion studies in their ATC/AFC models and calculations.</p> <p>Response: This modification is not included within the scope of the SAR. Entegra may wish to pursue a separate SAR to address this issue.</p> <p>Benchmarking of ATC Models: Order 890 at Cite 290 & 291 requires NERC to modify ATC-related standards to incorporate requirements for the periodic review, update, and benchmark of models used for ATC calculations. FERC states the following in Cite 290: “this [requirement] means that the models should be updated and benchmarked to actual events. We find that this requirement is essential in order to have an accurate simulation of the performance of the grid and from which to comparably calculate ATC, therefore increasing transparency and decreasing the potential for undue discrimination by transmission providers.”</p> <p>Response: This modification is not included within the scope of the SAR. Entegra may wish to pursue a separate SAR to address this issue.</p> <p>Adjacent Systems Representation: In order to produce accurate ATCs, it is not enough to merely check that adjacent systems are included in the model. Instead, it is critical to validate the performance of these models on an on-going basis and ensure that adjacent systems are being properly updated with discrete elements in TSP models with data such as: load, generation profile, net interchange, transactions, and outages, provided by adjacent system entities.</p> <p>Response: This modification is not included within the scope of the SAR. Entegra may wish to pursue a separate SAR to address this issue.</p>
<p>Response: Many of the suggestions above apply to the general concepts of ATC embodied in the already approved standards. To the extent Entegra wishes these topics be revisited, a new SAR would be appropriate that includes all ATC-related standards.</p>		
MRO NERC Standards Review Subcommittee		<p>The MRO suggests that:</p> <p>Remove the definition of ATC in R1.1 because it was already stated in the 4.1.1 of the Applicability section.</p> <p>Response: The acronym is expanded because this is the first time it is used in section “B.”</p> <p>In M13, change “specified in MOD-030-1” to “specified in this standard” because it should be MOD-030-2 for this version and it will be easy to overlook updating this item in future versions.</p>

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Organization	Question 4:	Question 4 Comments:
		<p>Response: The SDT has modified the measure to incorporate this change.</p> <p>In R6.2, the numeral of the first footnote superscript should be “1”, not “2”.</p> <p>Response: The SDT has modified the footnote to correct this error.</p> <p>If possible the footnote superscripts in R6.4, R6.6, R7.2, R7.4, and R7.6 should be “1” because they all refer to the same footnote text.</p> <p>Response: While this could be accomplished manually, the intent of using the multiple automated footnotes is to allow for changes in pagination. It ensures that the footnote remains on the page referenced, even if formatting or other changes indirectly result in the location of the text on the page.</p> <p>The MRO suggests the drafting team prepare a white paper to explain application of this standard for various responsible entities. For example the MRO need to discuss the use of ATC paths in R2.1.1, R2.1.2, and R2.1.3. To understand the proper application of the requirement.</p> <p>Response: The SDT believes that following the requirements is sufficient, and that a white paper would imply obligations that may not be mandated in the standard.</p>
Response: Please see in-line responses.		
NPCC		No comments.

Standards Announcement Ballot Pool and Pre-ballot Window

October 28–November 26, 2008

Now available at: <https://standards.nerc.net/BallotPool.aspx>

Standard MOD-030-2 — Flowgate Methodology (Project 2006-07)

A 30-day ballot pool and pre-ballot window is now open **until 8:00 a.m. EST on November 26, 2008** for standard MOD-030-2 — Flowgate Methodology. The standard is part of Project 2006-07 — ATC/TTC/AFC and CBM/TRM Revisions. The status, purpose, and supporting documents for this project are posted at the following site:

<http://www.nerc.com/filez/standards/MOD-V0-Revision.html>

This standard incorporates balloter suggestions for additional improvements to MOD-030-1. (The suggested improvements are aimed at allowing additional methods of achieving the same reliability objective — the suggested improvements are not aimed at correcting any errors in MOD-030-1.) Under the existing standards development process, if the drafting team had made these changes to MOD-030-1, the standard would have needed to be posted for an additional comment period, followed by balloting. This delay would have prevented MOD-030-1 from being ready to file with FERC before its due date.

To remedy this problem, the drafting team submitted a Standards Authorization Request (SAR) to initiate modifications to MOD-030-1, and received Standards Committee authorization to post the SAR and a proposed version of MOD-030-2 reflecting consideration of comments submitted with the initial ballot of MOD-030-1. As envisioned, MOD-030-2 will move through the standards development process and will be filed with governmental authorities before MOD-030-1 becomes effective.

The SAR and proposed MOD-030-2 underwent stakeholder review and comment August 12–September 24, 2008. This version of the standard reflects minor clarifications based on stakeholder input. The SAR was not modified. A file containing the drafting team's response to comments has been posted with this pre-ballot review.

During the pre-ballot window, members of the ballot pool may communicate with one another by using their “ballot pool list server.” (Once balloting begins, ballot pool members are prohibited from using the ballot pool list servers.) The list server for this ballot pool is: bp-MOD-030-2_in@nerc.com.

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.

*For more information or assistance, please contact Shaun Streeter,
Standards Program Administrator, at shaun.streeter@nerc.net or at 609.452.8060.*

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 posting the concurrent posting of the SAR and proposed standard on August 8, 2008.
2. SDT posted SAR and first draft of MOD-030-02 for a 45-day comment period from August 11, 2008 through September 24, 2008.

Description of Current Draft:

This is the second draft of the proposed standard posted for stakeholder pre-ballot review. This draft includes consideration of stakeholder comments from the initial ballot of MOD-030-1 and applicable FERC directives from FERC Order 693, Order 890, and Order 890-A.

Future Development Plan:

Anticipated Actions	Anticipated Date
1. Initial Ballot.	December 10, 2008
2. Respond to comments.	February 1, 2009
3. Recirculation ballot.	February 1, 2009
4. Board adoption.	March 15, 2009

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.

None.

A. Introduction

1. **Title:** Flowgate Methodology
2. **Number:** MOD-030-02
3. **Purpose:** To increase consistency and reliability in the development and documentation of transfer capability calculations for short-term use performed by entities using the Flowgate Methodology to support analysis and system operations.
4. **Applicability:**
 - 4.1.1 Each Transmission Operator that uses the Flowgate Methodology to support the calculation of Available Flowgate Capabilities (AFCs) on Flowgates.
 - 4.1.2 Each Transmission Service Provider that uses the Flowgate Methodology to calculate AFCs on Flowgates.
5. **Proposed Effective Date:** The date upon which MOD-030-01 is currently scheduled to become effective.

B. Requirements

- R1. The Transmission Service Provider shall include in its “Available Transfer Capability Implementation Document” (ATCID): [*Violation Risk Factor: Lower*] [*Time Horizon: Operations Planning*]
 - R1.1. The criteria used by the Transmission Operator to identify sets of Transmission Facilities as Flowgates that are to be considered in Available Flowgate Capability (AFC) calculations.
 - R1.2. The following information on how source and sink for transmission service is accounted for in AFC calculations including:
 - R1.2.1. Define if the source used for AFC calculations is obtained from the source field or the Point of Receipt (POR) field of the transmission reservation.
 - R1.2.2. Define if the sink used for AFC calculations is obtained from the sink field or the Point of Delivery (POD) field of the transmission reservation.
 - R1.2.3. The source/sink or POR/POD identification and mapping to the model.
 - R1.2.4. If the Transmission Service Provider’s AFC calculation process involves a grouping of generators, the ATCID must identify how these generators participate in the group.
- R2. The Transmission Operator shall perform the following: [*Violation Risk Factor: Lower*] [*Time Horizon: Operations Planning*]
 - R2.1. Include Flowgates used in the AFC process based, at a minimum, on the following criteria:
 - R2.1.1. Results of a first Contingency transfer analysis for ATC Paths internal to a Transmission Operator’s system up to the path capability such that at a minimum the first three limiting Elements and their worst associated Contingency combinations with an OTDF of at least 5% and within the Transmission Operator’s system are included as Flowgates.

- R2.1.1.1. Use first Contingency criteria consistent with those first Contingency criteria used in planning of operations for the applicable time periods, including use of Special Protection Systems.
 - R2.1.1.2. Only the most limiting element in a series configuration needs to be included as a Flowgate.
 - R2.1.1.3. If any limiting element is kept within its limit for its associated worst Contingency by operating within the limits of another Flowgate, then no new Flowgate needs to be established for such limiting elements or Contingencies.
- R2.1.2.** Results of a first Contingency transfer analysis from all adjacent Balancing Authority source and sink (as defined in the ATCID) combinations up to the path capability such that at a minimum the first three limiting Elements and their worst associated Contingency combinations with an Outage Transfer Distribution Factor (OTDF) of at least 5% and within the Transmission Operator's system are included as Flowgates unless the interface between such adjacent Balancing Authorities is accounted for using another ATC methodology.
- R2.1.2.1. Use first Contingency criteria consistent with those first Contingency criteria used in planning of operations for the applicable time periods, including use of Special Protection Systems.
 - R2.1.2.2. Only the most limiting element in a series configuration needs to be included as a Flowgate.
 - R2.1.2.3. If any limiting element is kept within its limit for its associated worst Contingency by operating within the limits of another Flowgate, then no new Flowgate needs to be established for such limiting elements or Contingencies.
- R2.1.3.** Any limiting Element/Contingency combination at least within its Reliability Coordinator's Area that has been subjected to an Interconnection-wide congestion management procedure within the last 12 months, unless the limiting Element/Contingency combination is accounted for using another ATC methodology or was created to address temporary operating conditions.
- R2.1.4.** Any limiting Element/Contingency combination within the Transmission model that has been requested to be included by any other Transmission Service Provider using the Flowgate Methodology or Area Interchange Methodology, where:
- R2.1.4.1. The coordination of the limiting Element/Contingency combination is not already addressed through a different methodology, and
 - Any generator within the Transmission Service Provider's area has at least a 5% Power Transfer Distribution Factor (PTDF) or Outage Transfer Distribution Factor (OTDF)

impact on the Flowgate when delivered to the aggregate load of its own area, or

- A transfer from any Balancing Area within the Transmission Service Provider's area to a Balancing Area adjacent has at least a 5% PTDF or OTDF impact on the Flowgate.
- The Transmission Operator may utilize distribution factors less than 5% if desired.

R2.1.4.2. The limiting Element/Contingency combination is included in the requesting Transmission Service Provider's methodology.

- R2.2.** At a minimum, establish a list of Flowgates by creating, modifying, or deleting Flowgate definitions at least once per calendar year.
- R2.3.** At a minimum, establish a list of Flowgates by creating, modifying, or deleting Flowgates that have been requested as part of R2.1.4 within thirty calendar days from the request.
- R2.4.** Establish the TFC of each of the defined Flowgates as equal to:
- For thermal limits, the System Operating Limit (SOL) of the Flowgate.
 - For voltage or stability limits, the flow that will respect the SOL of the Flowgate.
- R2.5.** At a minimum, establish the TFC once per calendar year.
- R2.5.1.** If notified of a change in the Rating by the Transmission Owner that would affect the TFC of a flowgate used in the AFC process, the TFC should be updated within seven calendar days of the notification.
- R2.6.** Provide the Transmission Service Provider with the TFCs within seven calendar days of their establishment.
- R3.** The Transmission Operator shall make available to the Transmission Service Provider a Transmission model to determine Available Flowgate Capability (AFC) that meets the following criteria: [*Violation Risk Factor: Lower*] [*Time Horizon: Operations Planning*]
- R3.1.** Contains generation Facility Ratings, such as generation maximum and minimum output levels, specified by the Generator Owners of the Facilities within the model.
- R3.2.** Updated at least once per day for AFC calculations for intra-day, next day, and days two through 30.
- R3.3.** Updated at least once per month for AFC calculations for months two through 13.
- R3.4.** Contains modeling data and system topology for the Facilities within its Reliability Coordinator's Area. Equivalent representation of radial lines and Facilities 161kV or below is allowed.
- R3.5.** Contains modeling data and system topology (or equivalent representation) for immediately adjacent and beyond Reliability Coordination Areas.
- R4.** When calculating AFCs, the Transmission Service Provider shall represent the impact of Transmission Service as follows: [*Violation Risk Factor: Lower*] [*Time Horizon: Operations Planning*]

Standard MOD-030-02 — Flowgate Methodology

- If the source, as specified in the ATCID, has been identified in the reservation and it is discretely modeled in the Transmission Service Provider's Transmission model, use the discretely modeled point as the source.
 - If the source, as specified in the ATCID, has been identified in the reservation and the point can be mapped to an "equivalence" or "aggregate" representation in the Transmission Service Provider's Transmission model, use the modeled equivalence or aggregate as the source.
 - If the source, as specified in the ATCID, has been identified in the reservation and the point cannot be mapped to a discretely modeled point or an "equivalence" representation in the Transmission Service Provider's Transmission model, use the immediately adjacent Balancing Authority associated with the Transmission Service Provider from which the power is to be received as the source.
 - If the source, as specified in the ATCID, has not been identified in the reservation use the immediately adjacent Balancing Authority associated with the Transmission Service Provider from which the power is to be received as the source.
 - If the sink, as specified in the ATCID, has been identified in the reservation and it is discretely modeled in the Transmission Service Provider's Transmission model, use the discretely modeled point as the sink.
 - If the sink, as specified in the ATCID, has been identified in the reservation and the point can be mapped to an "equivalence" or "aggregate" representation in the Transmission Service Provider's Transmission model, use the modeled equivalence or aggregate as the sink.
 - If the sink, as specified in the ATCID, has been identified in the reservation and the point cannot be mapped to a discretely modeled point or an "equivalence" representation in the Transmission Service Provider's Transmission model, use the immediately adjacent Balancing Authority associated with the Transmission Service Provider receiving the power as the sink.
 - If the sink, as specified in the ATCID, has not been identified in the reservation use the immediately adjacent Balancing Authority associated with the Transmission Service Provider receiving the power as the sink.
- R5.** When calculating AFCs, the Transmission Service Provider shall: [*Violation Risk Factor: Lower*] [*Time Horizon: Operations Planning*]
- R5.1.** Use the models provided by the Transmission Operator.
 - R5.2.** Include in the transmission model expected generation and Transmission outages, additions, and retirements within the scope of the model as specified in the ATCID and in effect during the applicable period of the AFC calculation for the Transmission Service Provider's area, all adjacent Transmission Service Providers, and any Transmission Service Providers with which coordination agreements have been executed.
 - R5.3.** For external Flowgates, identified in R2.1.4, use the AFC provided by the Transmission Service Provider that calculates AFC for that Flowgate.

- R6.** When calculating the impact of ETC for firm commitments (ETC_{F_i}) for all time periods for a Flowgate, the Transmission Service Provider shall sum the following: [*Violation Risk Factor: Lower*] [*Time Horizon: Operations Planning*]
- R6.1.** The impact of firm Network Integration Transmission Service, including the impacts of generation to load, in the model referenced in R5.2 for the Transmission Service Provider's area, based on:
- R6.1.1.** Load forecast for the time period being calculated, including Native Load and Network Service load
- R6.1.2.** Unit commitment and Dispatch Order, to include all designated network resources and other resources that are committed or have the legal obligation to run as specified in the Transmission Service Provider's ATCID.
- R6.2.** The impact of any firm Network Integration Transmission Service, including the impacts of generation to load in the model referenced in R5.2 and has a distribution factor equal to or greater than the percentage¹ used to curtail in the Interconnection-wide congestion management procedure used by the Transmission Service Provider, for all adjacent Transmission Service Providers and any other Transmission Service Providers with which coordination agreements have been executed based on:
- R6.2.1.** Load forecast for the time period being calculated, including Native Load and Network Service load
- R6.2.2.** Unit commitment and Dispatch Order, to include all designated network resources and other resources that are committed or have the legal obligation to run as specified in the Transmission Service Provider's ATCID.
- R6.3.** The impact of all confirmed firm Point-to-Point Transmission Service expected to be scheduled, including roll-over rights for Firm Transmission Service contracts, for the Transmission Service Provider's area.
- R6.4.** The impact of any confirmed firm Point-to-Point Transmission Service expected to be scheduled, filtered to reduce or eliminate duplicate impacts from transactions using Transmission service from multiple Transmission Service Providers, including roll-over rights for Firm Transmission Service contracts having a distribution factor equal to or greater than the percentage² used to curtail in the Interconnection-wide congestion management procedure used by the Transmission Service Provider, for all adjacent Transmission Service Providers and any other Transmission Service Providers with which coordination agreements have been executed.
- R6.5.** The impact of any Grandfathered firm obligations expected to be scheduled or expected to flow for the Transmission Service Provider's area.
- R6.6.** The impact of any Grandfathered firm obligations expected to be scheduled or expected to flow that have a distribution factor equal to or greater than the

¹ A percentage less than that used in the Interconnection-wide congestion management procedure may be utilized.

² A percentage less than that used in the Interconnection-wide congestion management procedure may be utilized.

percentage³ used to curtail in the Interconnection-wide congestion management procedure used by the Transmission Service Provider, for all adjacent Transmission Service Providers and any other Transmission Service Providers with which coordination agreements have been executed.

- R6.7.** The impact of other firm services determined by the Transmission Service Provider.
- R7.** When calculating the impact of ETC for non-firm commitments (ETC_{NFi}) for all time periods for a Flowgate the Transmission Service Provider shall sum: [*Violation Risk Factor: Lower*] [*Time Horizon: Operations Planning*]
- R7.1.** The impact of all confirmed non-firm Point-to-Point Transmission Service expected to be scheduled for the Transmission Service Provider's area.
- R7.2.** The impact of any confirmed non-firm Point-to-Point Transmission Service expected to be scheduled, filtered to reduce or eliminate duplicate impacts from transactions using Transmission service from multiple Transmission Service Providers, that have a distribution factor equal to or greater than the percentage⁴ used to curtail in the Interconnection-wide congestion management procedure used by the Transmission Service Provider, for all adjacent Transmission Service Providers and any other Transmission Service Providers with which coordination agreements have been executed.
- R7.3.** The impact of any Grandfathered non-firm obligations expected to be scheduled or expected to flow for the Transmission Service Provider's area.
- R7.4.** The impact of any Grandfathered non-firm obligations expected to be scheduled or expected to flow that have a distribution factor equal to or greater than the percentage⁵ used to curtail in the Interconnection-wide congestion management procedure used by the Transmission Service Provider, for all adjacent Transmission Service Providers and any other Transmission Service Providers with which coordination agreements have been executed.
- R7.5.** The impact of non-firm Network Integration Transmission Service serving Load within the Transmission Service Provider's area (i.e., secondary service), to include load growth, and losses not otherwise included in Transmission Reliability Margin or Capacity Benefit Margin.
- R7.6.** The impact of any non-firm Network Integration Transmission Service (secondary service) with a distribution factor equal to or greater than the percentage⁶ used to curtail in the Interconnection-wide congestion management procedure used by the Transmission Service Provider, filtered to reduce or eliminate duplicate impacts from transactions using Transmission service from multiple Transmission Service Providers, for all adjacent Transmission Service Providers and any other

³ A percentage less than that used in the Interconnection-wide congestion management procedure may be utilized.

⁴ A percentage less than that used in the Interconnection-wide congestion management procedure may be utilized.

⁵ A percentage less than that used in the Interconnection-wide congestion management procedure may be utilized.

⁶ A percentage less than that used in the Interconnection-wide congestion management procedure may be utilized.

Transmission Service Providers with which coordination agreements have been executed.

- R7.7.** The impact of other non-firm services determined by the Transmission Service Provider.
- R8.** When calculating firm AFC for a Flowgate for a specified period, the Transmission Service Provider shall use the following algorithm (subject to allocation processes described in the ATCID): [*Violation Risk Factor: Lower*] [*Time Horizon: Operations Planning*]

$$AFC_F = TFC - ETC_{Fi} - CBM_i - TRM_i + Postbacks_{Fi} + counterflows_{Fi}$$

Where:

AFC_F is the firm Available Flowgate Capability for the Flowgate for that period.

TFC is the Total Flowgate Capability of the Flowgate.

ETC_{Fi} is the sum of the impacts of existing firm Transmission commitments for the Flowgate during that period.

CBM_i is the impact of the Capacity Benefit Margin on the Flowgate during that period.

TRM_i is the impact of the Transmission Reliability Margin on the Flowgate during that period.

Postbacks_{Fi} are changes to firm AFC due to a change in the use of Transmission Service for that period, as defined in Business Practices.

counterflows_{Fi} are adjustments to firm AFC as determined by the Transmission Service Provider and specified in their ATCID.

- R9.** When calculating non-firm AFC for a Flowgate for a specified period, the Transmission Service Provider shall use the following algorithm (subject to allocation processes described in the ATCID): [*Violation Risk Factor: Lower*] [*Time Horizon: Operations Planning*]

$$AFC_{NF} = TFC - ETC_{Fi} - ETC_{NFi} - CBM_{Si} - TRM_{Ui} + Postbacks_{NFi} + counterflows$$

Where:

AFC_{NF} is the non-firm Available Flowgate Capability for the Flowgate for that period.

TFC is the Total Flowgate Capability of the Flowgate.

ETC_{Fi} is the sum of the impacts of existing firm Transmission commitments for the Flowgate during that period.

ETC_{NFi} is the sum of the impacts of existing non-firm Transmission commitments for the Flowgate during that period.

CBM_{Si} is the impact of any schedules during that period using Capacity Benefit Margin.

TRM_{Ui} is the impact on the Flowgate of the Transmission Reliability Margin that has not been released (unreleased) for sale as non-firm capacity by the Transmission Service Provider during that period.

Postbacks_{NF} are changes to non-firm Available Flowgate Capability due to a change in the use of Transmission Service for that period, as defined in Business Practices.

counterflows_{NF} are adjustments to non-firm AFC as determined by the Transmission Service Provider and specified in their ATCID.

- R10.** Each Transmission Service Provider shall recalculate AFC, utilizing the updated models described in R3.2, R3.3, and R5, at a minimum on the following frequency, unless none of the calculated values identified in the AFC equation have changed: [*Violation Risk Factor: Lower*] [*Time Horizon: Operations Planning*]
- R10.1.** For hourly AFC, once per hour. Transmission Service Providers are allowed up to 175 hours per calendar year during which calculations are not required to be performed, despite a change in a calculated value identified in the AFC equation.
- R10.2.** For daily AFC, once per day.
- R10.3.** For monthly AFC, once per week.
- R11.** When converting Flowgate AFCs to ATCs for ATC Paths, the Transmission Service Provider shall convert those values based on the following algorithm: [*Violation Risk Factor: Lower*] [*Time Horizon: Operations Planning*]

$$ATC = \min(P)$$

$$P = \{PATC_1, PATC_2, \dots, PATC_n\}$$

$$PATC_n = \frac{AFC_n}{DF_{np}}$$

Where:

ATC is the Available Transfer Capability.

P is the set of partial Available Transfer Capabilities for all “impacted” Flowgates honored by the Transmission Service Provider; a Flowgate is considered “impacted” by a path if the Distribution Factor for that path is greater than the percentage⁷ used to curtail in the Interconnection-wide congestion management procedure used by the Transmission Service Provider on an OTDF Flowgate or PTDF Flowgate.

PATC_n is the partial Available Transfer Capability for a path relative to a Flowgate *n*.

AFC_n is the Available Flowgate Capability of a Flowgate *n*.

DF_{np} is the distribution factor for Flowgate *n* relative to path *p*.

C. Measures

- M1.** Each Transmission Service Provider shall provide its ATCID and other evidence (such as written documentation) to show that its ATCID contains the criteria used by the Transmission Operator to identify sets of Transmission Facilities as Flowgates and information on how sources and sinks are accounted for in AFC calculations. (R1)
- M2.** The Transmission Operator shall provide evidence (such as studies and working papers) that all Flowgates that meet the criteria described in R2.1 are considered in its AFC calculations. (R2.1)
- M3.** The Transmission Operator shall provide evidence (such as logs) that it updated its list of Flowgates at least once per calendar year. (R2.2)

⁷ A percentage less than that used in the Interconnection-wide congestion management procedure may be utilized.

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- M4.** The Transmission Operator shall provide evidence (such as logs and dated requests) that it updated the list of Flowgates within thirty calendar days from a request. (R2.3)
- M5.** The Transmission Operator shall provide evidence (such as data or models) that it determined the TFC for each Flowgate as defined in R2.4. (R2.4)
- M6.** The Transmission Operator shall provide evidence (such as logs) that it established the TFCs for each Flowgate in accordance with the timing defined in R2.5. (R2.5)
- M7.** The Transmission Operator shall provide evidence (such as logs and electronic communication) that it provided the Transmission Service Provider with updated TFCs within seven calendar days of their determination. (R2.6)
- M8.** The Transmission Operator shall provide evidence (such as written documentation, logs, models, and data) that the Transmission model used to determine AFCs contains the information specified in R3. (R3)
- M9.** The Transmission Service Provider shall provide evidence (such as written documentation and data) that the modeling of point-to-point reservations was based on the rules described in R4. (R4)
- M10.** The Transmission Service Provider shall provide evidence including the models received from Transmission Operators and other evidence (such as documentation and data) to show that it used the Transmission Operator's models in calculating AFC. (R5.1)
- M11.** The Transmission Service Provider shall provide evidence (such as written documentation, electronic communications, and data) that all expected generation and Transmission outages, additions, and retirements were included in the AFC calculation as specified in the ATCID. (R5.2)
- M12.** The Transmission Service Provider shall provide evidence (such as logs, electronic communications, and data) that AFCs provided by third parties on external Flowgates were used instead of those calculated by the Transmission Operator. (R5.3)
- M13.** The Transmission Service Provider shall demonstrate compliance with R6 by recalculating firm ETC for any specific time period as described in (MOD-001 R2), using the requirements defined in R6 and with data used to calculate the specified value for the designated time period. The data used must meet the requirements specified in this standard and the ATCID. To account for differences that may occur when recalculating the value (due to mixing automated and manual processes), any recalculated value that is within +/- 15% or 15 MW, whichever is greater, of the originally calculated value, is evidence that the Transmission Service Provider used the requirements defined in R6 to calculate its firm ETC. (R6)
- M14.** The Transmission Service Provider shall demonstrate compliance with R7 by recalculating non-firm ETC for any specific time period as described in (MOD-001 R2), using the requirements defined in R7 and with data used to calculate the specified value for the designated time period. The data used must meet the requirements specified in the standard and the ATCID. To account for differences that may occur when recalculating the value (due to mixing automated and manual processes), any recalculated value that is within +/- 15% or 15 MW, whichever is greater, of the originally calculated value, is evidence that the Transmission Service Provider used the requirements in R7 to calculate its non-firm ETC. (R7)

- M15.** Each Transmission Service Provider shall produce the supporting documentation for the processes used to implement the algorithm that calculates firm AFCs, as required in R8. Such documentation must show that only the variables allowed in R8 were used to calculate firm AFCs, and that the processes use the current values for the variables as determined in the requirements or definitions. Note that any variable may legitimately be zero if the value is not applicable or calculated to be zero (such as counterflows, TRM, CBM, etc...). The supporting documentation may be provided in the same form and format as stored by the Transmission Service Provider. (R8)
- M16.** Each Transmission Service Provider shall produce the supporting documentation for the processes used to implement the algorithm that calculates non-firm AFCs, as required in R9. Such documentation must show that only the variables allowed in R9 were used to calculate non-firm AFCs, and that the processes use the current values for the variables as determined in the requirements or definitions. Note that any variable may legitimately be zero if the value is not applicable or calculated to be zero (such as counterflows, TRM, CBM, etc...). The supporting documentation may be provided in the same form and format as stored by the Transmission Service Provider. (R9)
- M17.** The Transmission Service Provider shall provide evidence (such as documentation, dated logs, and data) that it calculated AFC on the frequency defined in R10. (R10)
- M18.** The Transmission Service Provider shall provide evidence (such as documentation and data) when converting Flowgate AFCs to ATCs for ATC Paths, it follows the procedure described in R11. (R11)

D. Compliance

1. Compliance Monitoring Process

1.1. Compliance Enforcement Authority

Regional Entity.

1.2. Compliance Monitoring Period and Reset Time Frame

Not applicable.

1.3. Data Retention

The Transmission Operator and Transmission Service Provider shall keep data or evidence to show compliance as identified below unless directed by its Compliance Enforcement Authority to retain specific evidence for a longer period of time as part of an investigation:

- The Transmission Service Provider shall retain its current, in force ATCID and any prior versions of the ATCID that were in force since the last compliance audit to show compliance with R1.
- The Transmission Operator shall have its latest model used to determine flowgates and TFC and evidence of the previous version to show compliance with R2 and R3.
- The Transmission Operator shall retain evidence to show compliance with R2.1, R2.3 for the most recent 12 months.
- The Transmission Operator shall retain evidence to show compliance with R2.2, R2.4 and R2.5 for the most recent three calendar years plus current year.

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- The Transmission Service Provider shall retain evidence to show compliance with R4 for 12 months or until the model used to calculate AFC is updated, whichever is longer.
- The Transmission Service Provider shall retain evidence to show compliance with R5, R8, R9, R10, and R11 for the most recent calendar year plus current year.
- The Transmission Service Provider shall retain evidence to show compliance in calculating hourly values required in R6 and R7 for the most recent 14 days; evidence to show compliance in calculating daily values required in R6 and R7 for the most recent 30 days; and evidence to show compliance in calculating monthly values required in R6 and R7 for the most recent sixty days.
- If a Transmission Service Provider or Transmission Operator is found non-compliant, it shall keep information related to the non-compliance until found compliant.

The Compliance Enforcement Authority shall keep the last audit records and all requested and submitted subsequent audit records.

1.4. Compliance Monitoring and Enforcement Processes:

The following processes may be used:

- Compliance Audits
- Self-Certifications
- Spot Checking
- Compliance Violation Investigations
- Self-Reporting
- Complaints

1.5. Additional Compliance Information

None.

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2. Violation Severity Levels

R #	Lower VSL	Moderate VSL	High VSL	Severe VSL
R1.	The Transmission Service Provider does not include in its ATCID one or two of the sub-requirements listed under R1.2, or the sub-requirement is incomplete.	The Transmission Service Provider does not include in its ATCID three of the sub-requirements listed under R1.2, or the sub-requirement is incomplete.	The Transmission Service Provider does not include in its ATCID the information described in R1.1. OR The Transmission Service Provider does not include in its ATCID the information described in R1.2 (1.2.1, 1.2.2., 1.2.3, and 1.2.4 are missing).	The Transmission Service Provider does not include in its ATCID the information described in R1.1 and R1.2 (1.2.1, 1.2.2., 1.2.3, and 1.2.4 are missing).
R2.	One or more of the following: <ul style="list-style-type: none"> The Transmission Operator established its list of Flowgates less frequently than once per calendar year, but not more than three months late as described in R2.2. The Transmission Operator established its list of Flowgates more than thirty days, but not more than sixty days, following a request to create, modify or delete a flowgate as described in R2.3. The Transmission Operator has not updated its Flowgate 	One or more of the following: <ul style="list-style-type: none"> The Transmission Operator did not include a Flowgate in their AFC calculations that met the criteria described in R2.1. The Transmission Operator established its list of Flowgates more than three months late, but not more than six months late as described in R2.2. The Transmission Operator established its list of Flowgates more than sixty days, but not more than ninety days, following a request to create, modify or 	One or more of the following: <ul style="list-style-type: none"> The Transmission Operator did not include two to five Flowgates in their AFC calculations that met the criteria described in R2.1. The Transmission Operator established its list of Flowgates more than six months late, but not more than nine months late as described in R2.2. The Transmission Operator established its list of Flowgates more than ninety days, but not more than 120 days, following a request to create, modify or delete a 	One or more of the following: <ul style="list-style-type: none"> The Transmission Operator did not include six or more Flowgates in their AFC calculations that met the criteria described in R2.1. The Transmission Operator established its list of Flowgates more than nine months late as described in R2.2. The Transmission Operator did not establish its list of internal Flowgates as described in R2.2. The Transmission Operator established its list of Flowgates more than 120 days following a request to create, modify or delete a

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R #	Lower VSL	Moderate VSL	High VSL	Severe VSL
	<p>TFC when notified by the Transmission Owner in more than 7 days, but it has not been more than 14 days since the notification (R2.5.1)</p> <ul style="list-style-type: none"> The Transmission Operator has not provided its Transmission Service Provider with its Flowgate TFCs within seven days (one week) of their determination, but is has not been more than 14 days (two weeks) since their determination. 	<p>delete a flowgate as described in R2.3.</p> <ul style="list-style-type: none"> The Transmission Operator has not updated its Flowgate TFCs at least once within a calendar year, and it has been not more than 15 months since the last update. The Transmission Operator has not updated its Flowgate TFC when notified by the Transmission Owner in more than 14 days, but it has not been more than 21 days since the notification (R2.5.1) The Transmission Operator has not provided its Transmission Service Provider with its Flowgate TFCs in more than 14 days (two weeks) of their determination, but is has not been more than 21 days (three weeks) since their determination. 	<p>flowgate as described in R2.3.</p> <p>The Transmission Operator has not updated its Flowgate TFCs at least once within a calendar year, and it has been more than 15 months but not more than 18 months since the last update.</p> <ul style="list-style-type: none"> The Transmission Operator has not updated its Flowgate TFCs when notified by the Transmission Owner in more than 21 days, but it has not been more than 28 days since the notification (R2.5.1) The Transmission Operator has not provided its Transmission Service Provider with its Flowgate TFCs in more than 21 days (three weeks) of their determination, but is has not been more than 28 days (four weeks) since their determination. 	<p>flowgate as described in R2.3.</p> <ul style="list-style-type: none"> The Transmission Operator did not establish its list of external Flowgates following a request to create, modify or delete an external flowgate as described in R2.3. The Transmission Operator did not determine the TFC for a flowgate as described in R2.4. The Transmission Operator has not updated its Flowgate TFCs at least once within a calendar year, and it has been more than 18 months since the last update. (R2.5) The Transmission Operator has not updated its Flowgate TFCs when notified by the Transmission Owner in more than 28 calendar days (R2.5.1) The Transmission Operator has not provided its Transmission Service Provider with its Flowgate TFCs in more than 28 days (4 weeks) of their

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R #	Lower VSL	Moderate VSL	High VSL	Severe VSL
				determination.
R3.	<p>One or more of the following:</p> <ul style="list-style-type: none"> • The Transmission Operator used one to ten Facility Ratings that were different from those specified by a Transmission or Generator Owner in their Transmission model. • The Transmission Operator did not update the model per R3.2 for one or more calendar days but not more than 2 calendar days • The Transmission Operator did not update the model for per R3.3 for one or more months but not more than six weeks 	<p>One or more of the following:</p> <ul style="list-style-type: none"> • The Transmission Operator used eleven to twenty Facility Ratings that were different from those specified by a Transmission or Generator Owner in their Transmission model. • The Transmission Operator did not update the model per R3.2 for more than 2 calendar days but not more than 3 calendar days • The Transmission Operator did not update the model for per R3.3 for more than six weeks but not more than eight weeks 	<p>One or more of the following:</p> <ul style="list-style-type: none"> • The Transmission Operator used twenty-one to thirty Facility Ratings that were different from those specified by a Transmission or Generator Owner in their Transmission model. • The Transmission Operator did not update the model per R3.2 for more than 3 calendar days but not more than 4 calendar days • The Transmission Operator did not update the model for per R3.3 for more than eight weeks but not more than ten weeks 	<p>One or more of the following:</p> <ul style="list-style-type: none"> • The Transmission Operator did not update the model per R3.2 for more than 4 calendar days • The Transmission Operator did not update the model for per R3.3 for more than ten weeks • The Transmission Operator used more than thirty Facility Ratings that were different from those specified by a Transmission or Generator Owner in their Transmission model. • The Transmission operator did not include in the Transmission model detailed modeling data and topology for its own Reliability

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R #	Lower VSL	Moderate VSL	High VSL	Severe VSL
				<p>Coordinator area.</p> <ul style="list-style-type: none"> The Transmission operator did not include in the Transmission modeling data and topology for immediately adjacent and beyond Reliability Coordinator area.
R4.	<p>The Transmission Service Provider did not represent the impact of Transmission Service as described in R4 for more than zero, but not more than 5% of all reservations; or more than zero, but not more than 1 reservation, whichever is greater..</p>	<p>The Transmission Service Provider did not represent the impact of Transmission Service as described in R4 for more than 5%, but not more than 10% of all reservations; or more than 1, but not more than 2 reservations, whichever is greater..</p>	<p>The Transmission Service Provider did not represent the impact of Transmission Service as described in R4 for more than 10%, but not more than 15% of all reservations; or more than 2, but not more than 3 reservations, whichever is greater..</p>	<p>The Transmission Service Provider did not represent the impact of Transmission Service as described in R4 for more than 15% of all reservations; or more than 3 reservations, whichever is greater..</p>
R5.	<p>The Transmission Service Provider did not include in the AFC process one to ten expected generation or Transmission outages, additions or retirements within the scope of the model as specified in the ATCID.</p>	<p>The Transmission Service Provider did not include in the AFC process eleven to twenty-five expected generation and Transmission outages, additions or retirements within the scope of the model as specified in the ATCID.</p>	<p>The Transmission Service Provider did not include in the AFC process twenty-six to fifty expected generation and Transmission outages, additions or retirements within the scope of the model as specified in the ATCID.</p>	<p>One or more of the following:</p> <ul style="list-style-type: none"> The Transmission Service Provider did not use the model provided by the Transmission Operator. The Transmission Service Provider did not include in the AFC process more than fifty expected generation and Transmission outages, additions or retirements within the scope of the model as specified in the

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R #	Lower VSL	Moderate VSL	High VSL	Severe VSL
				<p>ATCID.</p> <ul style="list-style-type: none"> The Transmission Service provider did not use AFC provided by a third party.
R6.	<p>For a specified period, the Transmission Service Provider calculated a firm ETC with an absolute value different than that calculated in M13 for the same period, and the absolute value difference was more than 15% of the value calculated in the measure or 15MW, whichever is greater, but not more than 25% of the value calculated in the measure or 25MW, whichever is greater..</p>	<p>For a specified period, the Transmission Service Provider calculated a firm ETC with an absolute value different than that calculated in M13 for the same period, and the absolute value difference was more than 25% of the value calculated in the measure or 25MW, whichever is greater, but not more than 35% of the value calculated in the measure or 35MW, whichever is greater.</p>	<p>For a specified period, the Transmission Service Provider calculated a firm ETC with an absolute value different than that calculated in M13 for the same period, and the absolute value difference was more than 35% of the value calculated in the measure or 35MW, whichever is greater, but not more than 45% of the value calculated in the measure or 45MW, whichever is greater.</p>	<p>For a specified period, the Transmission Service Provider calculated a firm ETC with an absolute value different than that calculated in M13 for the same period, and the absolute value difference was more than 45% of the value calculated in the measure or 45MW, whichever is greater.</p>
R7.	<p>For a specified period, the Transmission Service Provider calculated a non-firm ETC with an absolute value different than that calculated in M14 for the same period, and the absolute value difference was more than 15% of the value calculated in the measure or 15MW, whichever is greater, but not more than 25% of the value calculated in the measure or 25MW, whichever is greater.</p>	<p>For a specified period, the Transmission Service Provider calculated a non-firm ETC with an absolute value different than that calculated in M14 for the same period, and the absolute value difference was more than 25% of the value calculated in the measure or 25MW, whichever is greater, but not more than 35% of the value calculated in the measure or 35MW, whichever is greater.</p>	<p>For a specified period, the Transmission Service Provider calculated a non-firm ETC with an absolute value different than that calculated in M14 for the same period, and the absolute value difference was more than 35% of the value calculated in the measure or 35MW, whichever is greater, but not more than 45% of the value calculated in the measure or 45MW, whichever is greater.</p>	<p>For a specified period, the Transmission Service Provider calculated a non-firm ETC with an absolute value different than that calculated in M14 for the same period, and the absolute value difference was more than 45% of the value calculated in the measure or 45MW, whichever is greater.</p>

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R #	Lower VSL	Moderate VSL	High VSL	Severe VSL
R8.	The Transmission Service Provider did not use all the elements defined in R8 when determining firm AFC, or used additional elements, for more than zero Flowgates, but not more than 5% of all Flowgates or 1 Flowgate (whichever is greater).	The Transmission Service Provider did not use all the elements defined in R8 when determining firm AFC, or used additional elements, for more than 5% of all Flowgates or 1 Flowgates (whichever is greater), but not more than 10% of all Flowgates or 2 Flowgates (whichever is greater).	The Transmission Service Provider did not use all the elements defined in R8 when determining firm AFC, or used additional elements, for more than 10% of all Flowgates or 2 Flowgates (whichever is greater), but not more than 15% of all Flowgates or 3 Flowgates (whichever is greater).	The Transmission Service Provider did not use all the elements defined in R8 when determining firm AFC, or used additional elements, for more than 15% of all Flowgates or more than 3 Flowgates (whichever is greater).
R9.	The Transmission Service Provider did not use all the elements defined in R8 when determining non-firm AFC, or used additional elements, for more than zero Flowgates, but not more than 5% of all Flowgates or 1 Flowgate (whichever is greater).	The Transmission Service Provider did not use all the elements defined in R9 when determining non-firm AFC, or used additional elements, for more than 5% of all Flowgates or 1 Flowgate (whichever is greater), but not more than 10% of all Flowgates or 2 Flowgates (whichever is greater).	The Transmission Service Provider did not use all the elements defined in R9 when determining non-firm AFC, or used additional elements, for more than 10% of all Flowgates or 2 Flowgates (whichever is greater), but not more than 15% of all Flowgates or 3 Flowgates (whichever is greater).	The Transmission Service Provider did not use all the elements defined in R9 when determining non-firm AFC, or used additional elements, for more than 15% of all Flowgates or more than 3 Flowgates (whichever is greater).
R10	One or more of the following: <ul style="list-style-type: none"> ▪ For Hourly, the values described in the AFC equation changed and the Transmission Service provider did not calculate for one or more hours but not more than 15 hours, and was in excess of the 175-hour per year 	One or more of the following: <ul style="list-style-type: none"> ▪ For Hourly, the values described in the AFC equation changed and the Transmission Service provider did not calculate for more than 15 hours but not more than 20 hours, and was in excess of the 175-hour per year 	One or more of the following: <ul style="list-style-type: none"> ▪ For Hourly, the values described in the AFC equation changed and the Transmission Service provider did not calculate for more than 20 hours but not more than 25 hours, and was in excess of the 175-hour per year 	One or more of the following: <ul style="list-style-type: none"> ▪ For Hourly, the values described in the AFC equation changed and the Transmission Service provider did not calculate for more than 25 hours, and was in excess of the 175-hour per year requirement.

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R #	Lower VSL	Moderate VSL	High VSL	Severe VSL
	<p>requirement.</p> <ul style="list-style-type: none"> ▪ For Daily, the values described in the AFC equation changed and the Transmission Service provider did not calculate for one or more calendar days but not more than 3 calendar days. ▪ For Monthly, the values described in the AFC equation changed and the Transmission Service provider did not calculate for seven or more calendar days, but less than 14 calendar days. 	<p>requirement.</p> <ul style="list-style-type: none"> ▪ For Daily, the values described in the AFC equation changed and the Transmission Service provider did not calculate for more than 3 calendar days but not more than 4 calendar days. ▪ For Monthly, the values described in the AFC equation changed and the Transmission Service provider did not calculate for 14 or more calendar days, but less than 21 calendar days. 	<p>requirement.</p> <ul style="list-style-type: none"> ▪ For Daily, the values described in the AFC equation changed and the Transmission Service provider did not calculate for more than 4 calendar days but not more than 5 calendar days. ▪ For Monthly, the values described in the AFC equation changed and the Transmission Service provider did not calculate for 21 or more calendar days, but less than 28 calendar days. 	<ul style="list-style-type: none"> ▪ For Daily, the values described in the AFC equation changed and the Transmission Service provider did not calculate for more than 5 calendar days. ▪ For Monthly, the values described in the AFC equation changed and the Transmission Service provider did not calculate for 28 or more calendar days.
R11.	N/A	N/A	N/A	The Transmission Service Provider did not follow the procedure for converting Flowgate AFCs to ATCs described in R11.

A. Regional Differences

None identified.

B. Associated Documents

Version History

Version	Date	Action	Change Tracking
2		Modified R2.1.1.3, R2.1.2.3, R2.1.3, R2.2, R2.3 and R11 Made conforming changes to M18 and VSLs for R2 and R11	Revised

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 posting the concurrent posting of the SAR and proposed standard on August 8, 2008.
2. SDT posted SAR and first draft of MOD-030-02 for a 45-day comment period from August 11, 2008 through September 24, 2008.

Description of Current Draft:

This is the second draft of the proposed standard posted for stakeholder pre-ballot review. This draft includes consideration of stakeholder comments from the initial ballot of MOD-030-1 and applicable FERC directives from FERC Order 693, Order 890, and Order 890-A.

Future Development Plan:

Anticipated Actions	Anticipated Date
1. Initial Ballot.	December 10, 2008
2. Respond to comments.	February 1, 2009
3. Recirculation ballot.	February 1, 2009
4. Board adoption.	March 15, 2009

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.

None.

A. Introduction

- 1. Title:** Flowgate Methodology
- 2. Number:** MOD-030-02
- 3. Purpose:** To increase consistency and reliability in the development and documentation of transfer capability calculations for short-term use performed by entities using the Flowgate Methodology to support analysis and system operations.
- 4. Applicability:**
 - 4.1.1** Each Transmission Operator that uses the Flowgate Methodology to support the calculation of Available Flowgate Capabilities (AFCs) on Flowgates.
 - 4.1.2** Each Transmission Service Provider that uses the Flowgate Methodology to calculate AFCs on Flowgates.
- 5. Proposed Effective Date:** The date upon which MOD-030-01 is currently scheduled to become effective.

B. Requirements

- R1.** The Transmission Service Provider shall include in its “Available Transfer Capability Implementation Document” (ATCID): [*Violation Risk Factor: Lower*] [*Time Horizon: Operations Planning*]
 - R1.1.** The criteria used by the Transmission Operator to identify sets of Transmission Facilities as Flowgates that are to be considered in Available Flowgate Capability (AFC) calculations.
 - R1.2.** The following information on how source and sink for transmission service is accounted for in AFC calculations including:
 - R1.2.1.** Define if the source used for AFC calculations is obtained from the source field or the Point of Receipt (POR) field of the transmission reservation.
 - R1.2.2.** Define if the sink used for AFC calculations is obtained from the sink field or the Point of Delivery (POD) field of the transmission reservation.
 - R1.2.3.** The source/sink or POR/POD identification and mapping to the model.
 - R1.2.4.** If the Transmission Service Provider’s AFC calculation process involves a grouping of generators, the ATCID must identify how these generators participate in the group.
- R2.** The Transmission Operator shall perform the following: [*Violation Risk Factor: Lower*] [*Time Horizon: Operations Planning*]
 - R2.1.** Include Flowgates used in the AFC process based, at a minimum, on the following criteria:
 - R2.1.1.** Results of a first Contingency transfer analysis for ATC Paths internal to a Transmission Operator’s system up to the path capability such that at a minimum the first three limiting Elements and their worst associated Contingency combinations with an OTDF of at least 5% and within the Transmission Operator’s system are included as Flowgates.

- R2.1.1.1. Use first Contingency criteria consistent with those first Contingency criteria used in planning of operations for the applicable time periods, including use of Special Protection Systems.
 - R2.1.1.2. Only the most limiting element in a series configuration needs to be included as a Flowgate.
 - R2.1.1.3. If any limiting ~~elements or Contingencies are already protected~~ element is kept within its limit for its associated worst Contingency by operating within the limits of another Flowgate, then no new ~~Flowgates need~~ Flowgate needs to be established for such limiting elements or Contingencies.
- R2.1.2.** Results of a first Contingency transfer analysis from all adjacent Balancing Authority source and sink (as defined in the ATCID) combinations up to the path capability such that at a minimum the first three limiting Elements and their worst associated Contingency combinations with an Outage Transfer Distribution Factor (OTDF) of at least 5% and within the Transmission Operator's system are included as Flowgates unless the interface between such adjacent Balancing Authorities is accounted for using another ATC methodology.
- R2.1.2.1. Use first Contingency criteria consistent with those first Contingency criteria used in planning of operations for the applicable time periods, including use of Special Protection Systems.
 - R2.1.2.2. Only the most limiting element in a series configuration needs to be included as a Flowgate.
 - R2.1.2.3. If any limiting ~~elements or Contingencies are already protected~~ element is kept within its limit for its associated worst Contingency by operating within the limits of another Flowgate, then no new ~~Flowgates need~~ Flowgate needs to be established for such limiting elements or Contingencies.
- R2.1.3.** ~~With the exception of flowgates created to address temporary operating conditions, any~~ Any limiting Element/Contingency combination at least within its Reliability Coordinator's Area that has been subjected to an Interconnection-wide congestion management procedure within the last 12 months, unless the limiting Element/Contingency combination is accounted for using another ATC methodology ~~or was created to address temporary operating conditions.~~
- R2.1.4.** Any limiting Element/Contingency combination within the Transmission model that has been requested to be included by any other Transmission Service Provider using the Flowgate Methodology or Area Interchange Methodology, where:
- R2.1.4.1. The coordination of the limiting Element/Contingency combination is not already addressed through a different methodology, and

- Any generator within the Transmission Service Provider's area has at least a 5% Power Transfer Distribution Factor (PTDF) or Outage Transfer Distribution Factor (OTDF) impact on the Flowgate when delivered to the aggregate load of its own area, or
- A transfer from any Balancing Area within the Transmission Service Provider's area to a Balancing Area adjacent has at least a 5% PTDF or OTDF impact on the Flowgate.
- The Transmission Operator may utilize distribution factors less than 5% if desired.

R2.1.4.2. The limiting Element/Contingency combination is included in the requesting Transmission Service Provider's methodology.

- R2.2.** At a minimum, establish a list of Flowgates by creating, modifying, or deleting Flowgate definitions at least once per calendar year.
- R2.3.** At a minimum, establish a list of Flowgates by creating, modifying, or deleting Flowgates that have been requested as part of R2.1.4 within thirty calendar days from the request.
- R2.4.** Establish the TFC of each of the defined Flowgates as equal to:
 - For thermal limits, the System Operating Limit (SOL) of the Flowgate.
 - For voltage or stability limits, the flow that will respect the SOL of the Flowgate.
- R2.5.** At a minimum, establish the TFC once per calendar year.
 - R2.5.1.** If notified of a change in the Rating by the Transmission Owner that would affect the TFC of a flowgate used in the AFC process, the TFC should be updated within seven calendar days of the notification.
- R2.6.** Provide the Transmission Service Provider with the TFCs within seven calendar days of their establishment.
- R3.** The Transmission Operator shall make available to the Transmission Service Provider a Transmission model to determine Available Flowgate Capability (AFC) that meets the following criteria: [*Violation Risk Factor: Lower*] [*Time Horizon: Operations Planning*]
 - R3.1.** Contains generation Facility Ratings, such as generation maximum and minimum output levels, specified by the Generator Owners of the Facilities within the model.
 - R3.2.** Updated at least once per day for AFC calculations for intra-day, next day, and days two through 30.
 - R3.3.** Updated at least once per month for AFC calculations for months two through 13.
 - R3.4.** Contains modeling data and system topology for the Facilities within its Reliability Coordinator's Area. Equivalent representation of radial lines and Facilities 161kV or below is allowed.
 - R3.5.** Contains modeling data and system topology (or equivalent representation) for immediately adjacent and beyond Reliability Coordination Areas.

- R4.** When calculating AFCs, the Transmission Service Provider shall represent the impact of Transmission Service as follows: [*Violation Risk Factor: Lower*] [*Time Horizon: Operations Planning*]
- If the source, as specified in the ATCID, has been identified in the reservation and it is discretely modeled in the Transmission Service Provider’s Transmission model, use the discretely modeled point as the source.
 - If the source, as specified in the ATCID, has been identified in the reservation and the point can be mapped to an “equivalence” or “aggregate” representation in the Transmission Service Provider’s Transmission model, use the modeled equivalence or aggregate as the source.
 - If the source, as specified in the ATCID, has been identified in the reservation and the point cannot be mapped to a discretely modeled point or an “equivalence” representation in the Transmission Service Provider’s Transmission model, use the immediately adjacent Balancing Authority associated with the Transmission Service Provider from which the power is to be received as the source.
 - If the source, as specified in the ATCID, has not been identified in the reservation use the immediately adjacent Balancing Authority associated with the Transmission Service Provider from which the power is to be received as the source.
 - If the sink, as specified in the ATCID, has been identified in the reservation and it is discretely modeled in the Transmission Service Provider’s Transmission model, use the discretely modeled point as the sink.
 - If the sink, as specified in the ATCID, has been identified in the reservation and the point can be mapped to an “equivalence” or “aggregate” representation in the Transmission Service Provider’s Transmission model, use the modeled equivalence or aggregate as the sink.
 - If the sink, as specified in the ATCID, has been identified in the reservation and the point cannot be mapped to a discretely modeled point or an “equivalence” representation in the Transmission Service Provider’s Transmission model, use the immediately adjacent Balancing Authority associated with the Transmission Service Provider receiving the power as the sink.
 - If the sink, as specified in the ATCID, has not been identified in the reservation use the immediately adjacent Balancing Authority associated with the Transmission Service Provider receiving the power as the sink.
- R5.** When calculating AFCs, the Transmission Service Provider shall: [*Violation Risk Factor: Lower*] [*Time Horizon: Operations Planning*]
- R5.1.** Use the models provided by the Transmission Operator.
- R5.2.** Include in the transmission model expected generation and Transmission outages, additions, and retirements within the scope of the model as specified in the ATCID and in effect during the applicable period of the AFC calculation for the Transmission Service Provider’s area, all adjacent Transmission Service Providers, and any Transmission Service Providers with which coordination agreements have been executed.

- R5.3.** For external Flowgates, identified in R2.1.4, use the AFC provided by the Transmission Service Provider that calculates AFC for that Flowgate.
- R6.** When calculating the impact of ETC for firm commitments (ETC_{Fi}) for all time periods for a Flowgate, the Transmission Service Provider shall sum the following: [*Violation Risk Factor: Lower*] [*Time Horizon: Operations Planning*]
- R6.1.** The impact of firm Network Integration Transmission Service, including the impacts of generation to load, in the model referenced in R5.2 for the Transmission Service Provider's area, based on:
- R6.1.1.** Load forecast for the time period being calculated, including Native Load and Network Service load
- R6.1.2.** Unit commitment and Dispatch Order, to include all designated network resources and other resources that are committed or have the legal obligation to run as specified in the Transmission Service Provider's ATCID.
- R6.2.** The impact of any firm Network Integration Transmission Service, including the impacts of generation to load in the model referenced in R5.2 and has a distribution factor equal to or greater than the percentage¹ used to curtail in the Interconnection-wide congestion management procedure used by the Transmission Service Provider, for all adjacent Transmission Service Providers and any other Transmission Service Providers with which coordination agreements have been executed based on:
- R6.2.1.** Load forecast for the time period being calculated, including Native Load and Network Service load
- R6.2.2.** Unit commitment and Dispatch Order, to include all designated network resources and other resources that are committed or have the legal obligation to run as specified in the Transmission Service Provider's ATCID.
- R6.3.** The impact of all confirmed firm Point-to-Point Transmission Service expected to be scheduled, including roll-over rights for Firm Transmission Service contracts, for the Transmission Service Provider's area.
- R6.4.** The impact of any confirmed firm Point-to-Point Transmission Service expected to be scheduled, filtered to reduce or eliminate duplicate impacts from transactions using Transmission service from multiple Transmission Service Providers, including roll-over rights for Firm Transmission Service contracts having a distribution factor equal to or greater than the percentage² used to curtail in the Interconnection-wide congestion management procedure used by the Transmission Service Provider, for all adjacent Transmission Service Providers and any other Transmission Service Providers with which coordination agreements have been executed.
- R6.5.** The impact of any Grandfathered firm obligations expected to be scheduled or expected to flow for the Transmission Service Provider's area.

¹ A percentage less than that used in the Interconnection-wide congestion management procedure may be utilized.

² A percentage less than that used in the Interconnection-wide congestion management procedure may be utilized.

- R6.6.** The impact of any Grandfathered firm obligations expected to be scheduled or expected to flow that have a distribution factor equal to or greater than the percentage³ used to curtail in the Interconnection-wide congestion management procedure used by the Transmission Service Provider, for all adjacent Transmission Service Providers and any other Transmission Service Providers with which coordination agreements have been executed.
- R6.7.** The impact of other firm services determined by the Transmission Service Provider.
- R7.** When calculating the impact of ETC for non-firm commitments (ETC_{NFi}) for all time periods for a Flowgate the Transmission Service Provider shall sum: [*Violation Risk Factor: Lower*] [*Time Horizon: Operations Planning*]
- R7.1.** The impact of all confirmed non-firm Point-to-Point Transmission Service expected to be scheduled for the Transmission Service Provider's area.
- R7.2.** The impact of any confirmed non-firm Point-to-Point Transmission Service expected to be scheduled, filtered to reduce or eliminate duplicate impacts from transactions using Transmission service from multiple Transmission Service Providers, that have a distribution factor equal to or greater than the percentage⁴ used to curtail in the Interconnection-wide congestion management procedure used by the Transmission Service Provider, for all adjacent Transmission Service Providers and any other Transmission Service Providers with which coordination agreements have been executed.
- R7.3.** The impact of any Grandfathered non-firm obligations expected to be scheduled or expected to flow for the Transmission Service Provider's area.
- R7.4.** The impact of any Grandfathered non-firm obligations expected to be scheduled or expected to flow that have a distribution factor equal to or greater than the percentage⁵ used to curtail in the Interconnection-wide congestion management procedure used by the Transmission Service Provider, for all adjacent Transmission Service Providers and any other Transmission Service Providers with which coordination agreements have been executed.
- R7.5.** The impact of non-firm Network Integration Transmission Service serving Load within the Transmission Service Provider's area (i.e., secondary service), to include load growth, and losses not otherwise included in Transmission Reliability Margin or Capacity Benefit Margin.
- R7.6.** The impact of any non-firm Network Integration Transmission Service (secondary service) with a distribution factor equal to or greater than the percentage⁶ used to curtail in the Interconnection-wide congestion management procedure used by the Transmission Service Provider, filtered to reduce or eliminate duplicate impacts from transactions using Transmission service from multiple Transmission Service

³ A percentage less than that used in the Interconnection-wide congestion management procedure may be utilized.

⁴ A percentage less than that used in the Interconnection-wide congestion management procedure may be utilized.

⁵ A percentage less than that used in the Interconnection-wide congestion management procedure may be utilized.

⁶ A percentage less than that used in the Interconnection-wide congestion management procedure may be utilized.

Providers, for all adjacent Transmission Service Providers and any other Transmission Service Providers with which coordination agreements have been executed.

- R7.7.** The impact of other non-firm services determined by the Transmission Service Provider.
- R8.** When calculating firm AFC for a Flowgate for a specified period, the Transmission Service Provider shall use the following algorithm (subject to allocation processes described in the ATCID): [*Violation Risk Factor: Lower*] [*Time Horizon: Operations Planning*]

$$AFC_F = TFC - ETC_{Fi} - CBM_i - TRM_i + Postbacks_{Fi} + counterflows_{Fi}$$

Where:

AFC_F is the firm Available Flowgate Capability for the Flowgate for that period.

TFC is the Total Flowgate Capability of the Flowgate.

ETC_{Fi} is the sum of the impacts of existing firm Transmission commitments for the Flowgate during that period.

CBM_i is the impact of the Capacity Benefit Margin on the Flowgate during that period.

TRM_i is the impact of the Transmission Reliability Margin on the Flowgate during that period.

Postbacks_{Fi} are changes to firm AFC due to a change in the use of Transmission Service for that period, as defined in Business Practices.

counterflows_{Fi} are adjustments to firm AFC as determined by the Transmission Service Provider and specified in their ATCID.

- R9.** When calculating non-firm AFC for a Flowgate for a specified period, the Transmission Service Provider shall use the following algorithm (subject to allocation processes described in the ATCID): [*Violation Risk Factor: Lower*] [*Time Horizon: Operations Planning*]

$$AFC_{NF} = TFC - ETC_{Fi} - ETC_{NFi} - CBM_{Si} - TRM_{Ui} + Postbacks_{NFi} + counterflows$$

Where:

AFC_{NF} is the non-firm Available Flowgate Capability for the Flowgate for that period.

TFC is the Total Flowgate Capability of the Flowgate.

ETC_{Fi} is the sum of the impacts of existing firm Transmission commitments for the Flowgate during that period.

ETC_{NFi} is the sum of the impacts of existing non-firm Transmission commitments for the Flowgate during that period.

CBM_{Si} is the impact of any schedules during that period using Capacity Benefit Margin.

TRM_{Ui} is the impact on the Flowgate of the Transmission Reliability Margin that has not been released (unreleased) for sale as non-firm capacity by the Transmission Service Provider during that period.

Postbacks_{NF} are changes to non-firm Available Flowgate Capability due to a change in the use of Transmission Service for that period, as defined in Business Practices.

counterflows_{NF} are adjustments to non-firm AFC as determined by the Transmission Service Provider and specified in their ATCID.

- R10.** Each Transmission Service Provider shall recalculate AFC, utilizing the updated models described in R3.2, R3.3, and R5, at a minimum on the following frequency, unless none of the calculated values identified in the AFC equation have changed: [*Violation Risk Factor: Lower*] [*Time Horizon: Operations Planning*]
- R10.1.** For hourly AFC, once per hour. Transmission Service Providers are allowed up to 175 hours per calendar year during which calculations are not required to be performed, despite a change in a calculated value identified in the AFC equation.
- R10.2.** For daily AFC, once per day.
- R10.3.** For monthly AFC, once per week.
- R11.** When converting Flowgate AFCs to ATCs for ATC Paths, the Transmission Service Provider shall convert those values based on the following algorithm: [*Violation Risk Factor: Lower*] [*Time Horizon: Operations Planning*]

$$\begin{aligned} \text{ATC} &= \min(\text{P}) \\ \text{P} &= \{\text{PATC}_1, \text{PATC}_2, \dots, \text{PATC}_n\} \\ \text{PATC}_n &= \frac{\text{AFC}_n}{\text{DF}_{np}} \end{aligned}$$

Where:

ATC is the Available Transfer Capability.

P is the set of partial Available Transfer Capabilities for all “impacted” Flowgates honored by the Transmission Service Provider; a Flowgate is considered “impacted” by a path if the Distribution Factor for that path is greater than the percentage⁷ used to curtail in the Interconnection-wide congestion management procedure used by the Transmission Service Provider on an OTDF Flowgate or PTDF Flowgate.

PATC_n is the partial Available Transfer Capability for a path relative to a Flowgate *n*.

AFC_n is the Available Flowgate Capability of a Flowgate *n*.

DF_{np} is the distribution factor for Flowgate *n* relative to path *p*.

C. Measures

- M1.** Each Transmission Service Provider shall provide its ATCID and other evidence (such as written documentation) to show that its ATCID contains the criteria used by the Transmission Operator to identify sets of Transmission Facilities as Flowgates and information on how sources and sinks are accounted for in AFC calculations. (R1)
- M2.** The Transmission Operator shall provide evidence (such as studies and working papers) that all Flowgates that meet the criteria described in R2.1 are considered in its AFC calculations. (R2.1)

⁷ A percentage less than that used in the Interconnection-wide congestion management procedure may be utilized.

- M3.** The Transmission Operator shall provide evidence (such as logs) that it updated its list of Flowgates at least once per calendar year. (R2.2)
- M4.** The Transmission Operator shall provide evidence (such as logs and dated requests) that it updated the list of Flowgates within thirty calendar days from a request. (R2.3)
- M5.** The Transmission Operator shall provide evidence (such as data or models) that it determined the TFC for each Flowgate as defined in R2.4. (R2.4)
- M6.** The Transmission Operator shall provide evidence (such as logs) that it established the TFCs for each Flowgate in accordance with the timing defined in R2.5. (R2.5)
- M7.** The Transmission Operator shall provide evidence (such as logs and electronic communication) that it provided the Transmission Service Provider with updated TFCs within seven calendar days of their determination. (R2.6)
- M8.** The Transmission Operator shall provide evidence (such as written documentation, logs, models, and data) that the Transmission model used to determine AFCs contains the information specified in R3. (R3)
- M9.** The Transmission Service Provider shall provide evidence (such as written documentation and data) that the modeling of point-to-point reservations was based on the rules described in R4. (R4)
- M10.** The Transmission Service Provider shall provide evidence including the models received from Transmission Operators and other evidence (such as documentation and data) to show that it used the Transmission Operator's models in calculating AFC. (R5.1)
- M11.** The Transmission Service Provider shall provide evidence (such as written documentation, electronic communications, and data) that all expected generation and Transmission outages, additions, and retirements were included in the AFC calculation as specified in the ATCID. (R5.2)
- M12.** The Transmission Service Provider shall provide evidence (such as logs, electronic communications, and data) that AFCs provided by third parties on external Flowgates were used instead of those calculated by the Transmission Operator. (R5.3)
- M13.** The Transmission Service Provider shall demonstrate compliance with R6 by recalculating firm ETC for any specific time period as described in (MOD-001 R2), using the requirements defined in R6 and with data used to calculate the specified value for the designated time period. The data used must meet the requirements specified in ~~MOD-030-1~~ **this standard** and the ATCID. To account for differences that may occur when recalculating the value (due to mixing automated and manual processes), any recalculated value that is within +/- 15% or 15 MW, whichever is greater, of the originally calculated value, is evidence that the Transmission Service Provider used the requirements defined in R6 to calculate its firm ETC. (R6)
- M14.** The Transmission Service Provider shall demonstrate compliance with R7 by recalculating non-firm ETC for any specific time period as described in (MOD-001 R2), using the requirements defined in R7 and with data used to calculate the specified value for the designated time period. The data used must meet the requirements specified in the standard and the ATCID. To account for differences that may occur when recalculating the value (due to mixing automated and manual processes), any recalculated value that is within +/- 15% or 15 MW, whichever is greater, of the originally calculated value, is evidence that the

Transmission Service Provider used the requirements in R7 to calculate its non-firm ETC.
(R7)

M15. Each Transmission Service Provider shall produce the supporting documentation for the processes used to implement the algorithm that calculates firm AFCs, as required in R8. Such documentation must show that only the variables allowed in R8 were used to calculate firm AFCs, and that the processes use the current values for the variables as determined in the requirements or definitions. Note that any variable may legitimately be zero if the value is not applicable or calculated to be zero (such as counterflows, TRM, CBM, etc...). The supporting documentation may be provided in the same form and format as stored by the Transmission Service Provider. (R8)

M16. Each Transmission Service Provider shall produce the supporting documentation for the processes used to implement the algorithm that calculates non-firm AFCs, as required in R9. Such documentation must show that only the variables allowed in R9 were used to calculate non-firm AFCs, and that the processes use the current values for the variables as determined in the requirements or definitions. Note that any variable may legitimately be zero if the value is not applicable or calculated to be zero (such as counterflows, TRM, CBM, etc...). The supporting documentation may be provided in the same form and format as stored by the Transmission Service Provider. (R9)

M17. The Transmission Service Provider shall provide evidence (such as documentation, dated logs, and data) that it calculated AFC on the frequency defined in R10. (R10)

M18. The Transmission Service Provider shall provide evidence (such as documentation and data) when converting Flowgate AFCs to ATCs for ATC Paths, it follows the procedure described in R11. (R11)

D. Compliance

1. Compliance Monitoring Process

1.1. Compliance Enforcement Authority

Regional Entity.

1.2. Compliance Monitoring Period and Reset Time Frame

Not applicable.

1.3. Data Retention

The Transmission Operator and Transmission Service Provider shall keep data or evidence to show compliance as identified below unless directed by its Compliance Enforcement Authority to retain specific evidence for a longer period of time as part of an investigation:

- The Transmission Service Provider shall retain its current, in force ATCID and any prior versions of the ATCID that were in force since the last compliance audit to show compliance with R1.
- The Transmission Operator shall have its latest model used to determine flowgates and TFC and evidence of the previous version to show compliance with R2 and R3.
- The Transmission Operator shall retain evidence to show compliance with R2.1, R2.3 for the most recent 12 months.

- The Transmission Operator shall retain evidence to show compliance with R2.2, R2.4 and R2.5 for the most recent three calendar years plus current year.
- The Transmission Service Provider shall retain evidence to show compliance with R4 for 12 months or until the model used to calculate AFC is updated, whichever is longer.
- The Transmission Service Provider shall retain evidence to show compliance with R5, R8, R9, R10, and R11 for the most recent calendar year plus current year.
- The Transmission Service Provider shall retain evidence to show compliance in calculating hourly values required in R6 and R7 for the most recent 14 days; evidence to show compliance in calculating daily values required in R6 and R7 for the most recent 30 days; and evidence to show compliance in calculating monthly values required in R6 and R7 for the most recent sixty days.
- If a Transmission Service Provider or Transmission Operator is found non-compliant, it shall keep information related to the non-compliance until found compliant.

The Compliance Enforcement Authority shall keep the last audit records and all requested and submitted subsequent audit records.

1.4. Compliance Monitoring and Enforcement Processes:

The following processes may be used:

- Compliance Audits
- Self-Certifications
- Spot Checking
- Compliance Violation Investigations
- Self-Reporting
- Complaints

1.5. Additional Compliance Information

None.

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2. Violation Severity Levels

R #	Lower VSL	Moderate VSL	High VSL	Severe VSL
R1.	The Transmission Service Provider does not include in its ATCID one or two of the sub-requirements listed under R1.2, or the sub-requirement is incomplete.	The Transmission Service Provider does not include in its ATCID three of the sub-requirements listed under R1.2, or the sub-requirement is incomplete.	The Transmission Service Provider does not include in its ATCID the information described in R1.1. OR The Transmission Service Provider does not include in its ATCID the information described in R1.2 (1.2.1, 1.2.2., 1.2.3, and 1.2.4 are missing).	The Transmission Service Provider does not include in its ATCID the information described in R1.1 and R1.2 (1.2.1, 1.2.2., 1.2.3, and 1.2.4 are missing).
R2.	One or more of the following: <ul style="list-style-type: none"> The Transmission Operator established its list of Flowgates less frequently than once per calendar year, but not more than three months late as described in R2.2. The Transmission Operator established its list of Flowgates more than thirty days, but not more than sixty days, following a request to create, modify or delete a flowgate as described in R2.3. The Transmission Operator has not updated its Flowgate 	One or more of the following: <ul style="list-style-type: none"> The Transmission Operator did not include a Flowgate in their AFC calculations that met the criteria described in R2.1. The Transmission Operator established its list of Flowgates more than three months late, but not more than six months late as described in R2.2. The Transmission Operator established its list of Flowgates more than sixty days, but not more than ninety days, following a request to create, modify or 	One or more of the following: <ul style="list-style-type: none"> The Transmission Operator did not include two to five Flowgates in their AFC calculations that met the criteria described in R2.1. The Transmission Operator established its list of Flowgates more than six months late, but not more than nine months late as described in R2.2. The Transmission Operator established its list of Flowgates more than ninety days, but not more than 120 days, following a request to create, modify or delete a 	One or more of the following: <ul style="list-style-type: none"> The Transmission Operator did not include six or more Flowgates in their AFC calculations that met the criteria described in R2.1. The Transmission Operator established its list of Flowgates more than nine months late as described in R2.2. The Transmission Operator did not establish its list of internal Flowgates as described in R2.2. The Transmission Operator established its list of Flowgates more than 120 days following a request to create, modify or delete a

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R #	Lower VSL	Moderate VSL	High VSL	Severe VSL
	<p>TFC when notified by the Transmission Owner in more than 7 days, but it has not been more than 14 days since the notification (R2.5.1)</p> <ul style="list-style-type: none"> The Transmission Operator has not provided its Transmission Service Provider with its Flowgate TFCs within seven days (one week) of their determination, but is has not been more than 14 days (two weeks) since their determination. 	<p>delete a flowgate as described in R2.3.</p> <ul style="list-style-type: none"> The Transmission Operator has not updated its Flowgate TFCs at least once within a calendar year, and it has been not more than 15 months since the last update. The Transmission Operator has not updated its Flowgate TFC when notified by the Transmission Owner in more than 14 days, but it has not been more than 21 days since the notification (R2.5.1) The Transmission Operator has not provided its Transmission Service Provider with its Flowgate TFCs in more than 14 days (two weeks) of their determination, but is has not been more than 21 days (three weeks) since their determination. 	<p>flowgate as described in R2.3.</p> <p>The Transmission Operator has not updated its Flowgate TFCs at least once within a calendar year, and it has been more than 15 months but not more than 18 months since the last update.</p> <ul style="list-style-type: none"> The Transmission Operator has not updated its Flowgate TFCs when notified by the Transmission Owner in more than 21 days, but it has not been more than 28 days since the notification (R2.5.1) The Transmission Operator has not provided its Transmission Service Provider with its Flowgate TFCs in more than 21 days (three weeks) of their determination, but is has not been more than 28 days (four weeks) since their determination. 	<p>flowgate as described in R2.3.</p> <ul style="list-style-type: none"> The Transmission Operator did not establish its list of external Flowgates following a request to create, modify or delete an external flowgate as described in R2.3. The Transmission Operator did not determine the TFC for a flowgate as described in R2.4. The Transmission Operator has not updated its Flowgate TFCs at least once within a calendar year, and it has been more than 18 months since the last update. (R2.5) The Transmission Operator has not updated its Flowgate TFCs when notified by the Transmission Owner in more than 28 calendar days (R2.5.1) The Transmission Operator has not provided its Transmission Service Provider with its Flowgate TFCs in more than 28 days (4 weeks) of their

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R #	Lower VSL	Moderate VSL	High VSL	Severe VSL
				determination.
R3.	<p>One or more of the following:</p> <ul style="list-style-type: none"> The Transmission Operator used one to ten Facility Ratings that were different from those specified by a Transmission or Generator Owner in their Transmission model. The Transmission Operator did not update the model per R3.2 for one or more calendar days but not more than 2 calendar days The Transmission Operator did not update the model for per R3.3 for one or more months but not more than six weeks 	<p>One or more of the following:</p> <ul style="list-style-type: none"> The Transmission Operator used eleven to twenty Facility Ratings that were different from those specified by a Transmission or Generator Owner in their Transmission model. The Transmission Operator did not update the model per R3.2 for more than 2 calendar days but not more than 3 calendar days The Transmission Operator did not update the model for per R3.3 for more than six weeks but not more than eight weeks 	<p>One or more of the following:</p> <ul style="list-style-type: none"> The Transmission Operator used twenty-one to thirty Facility Ratings that were different from those specified by a Transmission or Generator Owner in their Transmission model. The Transmission Operator did not update the model per R3.2 for more than 3 calendar days but not more than 4 calendar days The Transmission Operator did not update the model for per R3.3 for more than eight weeks but not more than ten weeks 	<p>One or more of the following:</p> <ul style="list-style-type: none"> The Transmission Operator did not update the model per R3.2 for more than 4 calendar days The Transmission Operator did not update the model for per R3.3 for more than ten weeks The Transmission Operator used more than thirty Facility Ratings that were different from those specified by a Transmission or Generator Owner in their Transmission model. The Transmission operator did not include in the Transmission model detailed modeling data and topology for its own Reliability

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R #	Lower VSL	Moderate VSL	High VSL	Severe VSL
				<p>Coordinator area.</p> <ul style="list-style-type: none"> The Transmission operator did not include in the Transmission modeling data and topology for immediately adjacent and beyond Reliability Coordinator area.
R4.	<p>The Transmission Service Provider did not represent the impact of Transmission Service as described in R4 for more than zero, but not more than 5% of all reservations; or more than zero, but not more than 1 reservation, whichever is greater..</p>	<p>The Transmission Service Provider did not represent the impact of Transmission Service as described in R4 for more than 5%, but not more than 10% of all reservations; or more than 1, but not more than 2 reservations, whichever is greater..</p>	<p>The Transmission Service Provider did not represent the impact of Transmission Service as described in R4 for more than 10%, but not more than 15% of all reservations; or more than 2, but not more than 3 reservations, whichever is greater..</p>	<p>The Transmission Service Provider did not represent the impact of Transmission Service as described in R4 for more than 15% of all reservations; or more than 3 reservations, whichever is greater..</p>
R5.	<p>The Transmission Service Provider did not include in the AFC process one to ten expected generation or Transmission outages, additions or retirements within the scope of the model as specified in the ATCID.</p>	<p>The Transmission Service Provider did not include in the AFC process eleven to twenty-five expected generation and Transmission outages, additions or retirements within the scope of the model as specified in the ATCID.</p>	<p>The Transmission Service Provider did not include in the AFC process twenty-six to fifty expected generation and Transmission outages, additions or retirements within the scope of the model as specified in the ATCID.</p>	<p>One or more of the following:</p> <ul style="list-style-type: none"> The Transmission Service Provider did not use the model provided by the Transmission Operator. The Transmission Service Provider did not include in the AFC process more than fifty expected generation and Transmission outages, additions or retirements within the scope of the model as specified in the

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R #	Lower VSL	Moderate VSL	High VSL	Severe VSL
				<p>ATCID.</p> <ul style="list-style-type: none"> The Transmission Service provider did not use AFC provided by a third party.
R6.	For a specified period, the Transmission Service Provider calculated a firm ETC with an absolute value different than that calculated in M13 for the same period, and the absolute value difference was more than 15% of the value calculated in the measure or 15MW, whichever is greater, but not more than 25% of the value calculated in the measure or 25MW, whichever is greater..	For a specified period, the Transmission Service Provider calculated a firm ETC with an absolute value different than that calculated in M13 for the same period, and the absolute value difference was more than 25% of the value calculated in the measure or 25MW, whichever is greater, but not more than 35% of the value calculated in the measure or 35MW, whichever is greater.	For a specified period, the Transmission Service Provider calculated a firm ETC with an absolute value different than that calculated in M13 for the same period, and the absolute value difference was more than 35% of the value calculated in the measure or 35MW, whichever is greater, but not more than 45% of the value calculated in the measure or 45MW, whichever is greater.	For a specified period, the Transmission Service Provider calculated a firm ETC with an absolute value different than that calculated in M13 for the same period, and the absolute value difference was more than 45% of the value calculated in the measure or 45MW, whichever is greater.
R7.	For a specified period, the Transmission Service Provider calculated a non-firm ETC with an absolute value different than that calculated in M14 for the same period, and the absolute value difference was more than 15% of the value calculated in the measure or 15MW, whichever is greater, but not more than 25% of the value calculated in the measure or 25MW, whichever is greater.	For a specified period, the Transmission Service Provider calculated a non-firm ETC with an absolute value different than that calculated in M14 for the same period, and the absolute value difference was more than 25% of the value calculated in the measure or 25MW, whichever is greater, but not more than 35% of the value calculated in the measure or 35MW, whichever is greater.	For a specified period, the Transmission Service Provider calculated a non-firm ETC with an absolute value different than that calculated in M14 for the same period, and the absolute value difference was more than 35% of the value calculated in the measure or 35MW, whichever is greater, but not more than 45% of the value calculated in the measure or 45MW, whichever is greater.	For a specified period, the Transmission Service Provider calculated a non-firm ETC with an absolute value different than that calculated in M14 for the same period, and the absolute value difference was more than 45% of the value calculated in the measure or 45MW, whichever is greater.

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R #	Lower VSL	Moderate VSL	High VSL	Severe VSL
R8.	The Transmission Service Provider did not use all the elements defined in R8 when determining firm AFC, or used additional elements, for more than zero Flowgates, but not more than 5% of all Flowgates or 1 Flowgate (whichever is greater).	The Transmission Service Provider did not use all the elements defined in R8 when determining firm AFC, or used additional elements, for more than 5% of all Flowgates or 1 Flowgates (whichever is greater), but not more than 10% of all Flowgates or 2 Flowgates (whichever is greater).	The Transmission Service Provider did not use all the elements defined in R8 when determining firm AFC, or used additional elements, for more than 10% of all Flowgates or 2 Flowgates (whichever is greater), but not more than 15% of all Flowgates or 3 Flowgates (whichever is greater).	The Transmission Service Provider did not use all the elements defined in R8 when determining firm AFC, or used additional elements, for more than 15% of all Flowgates or more than 3 Flowgates (whichever is greater).
R9.	The Transmission Service Provider did not use all the elements defined in R8 when determining non-firm AFC, or used additional elements, for more than zero Flowgates, but not more than 5% of all Flowgates or 1 Flowgate (whichever is greater).	The Transmission Service Provider did not use all the elements defined in R9 when determining non-firm AFC, or used additional elements, for more than 5% of all Flowgates or 1 Flowgate (whichever is greater), but not more than 10% of all Flowgates or 2 Flowgates (whichever is greater).	The Transmission Service Provider did not use all the elements defined in R9 when determining non-firm AFC, or used additional elements, for more than 10% of all Flowgates or 2 Flowgates (whichever is greater), but not more than 15% of all Flowgates or 3 Flowgates (whichever is greater).	The Transmission Service Provider did not use all the elements defined in R9 when determining non-firm AFC, or used additional elements, for more than 15% of all Flowgates or more than 3 Flowgates (whichever is greater).
R10	One or more of the following: <ul style="list-style-type: none"> ▪ For Hourly, the values described in the AFC equation changed and the Transmission Service provider did not calculate for one or more hours but not more than 15 hours, and was in excess of the 175-hour per year 	One or more of the following: <ul style="list-style-type: none"> ▪ For Hourly, the values described in the AFC equation changed and the Transmission Service provider did not calculate for more than 15 hours but not more than 20 hours, and was in excess of the 175-hour per year 	One or more of the following: <ul style="list-style-type: none"> ▪ For Hourly, the values described in the AFC equation changed and the Transmission Service provider did not calculate for more than 20 hours but not more than 25 hours, and was in excess of the 175-hour per year 	One or more of the following: <ul style="list-style-type: none"> ▪ For Hourly, the values described in the AFC equation changed and the Transmission Service provider did not calculate for more than 25 hours, and was in excess of the 175-hour per year requirement.

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R #	Lower VSL	Moderate VSL	High VSL	Severe VSL
	<p>requirement.</p> <ul style="list-style-type: none"> ▪ For Daily, the values described in the AFC equation changed and the Transmission Service provider did not calculate for one or more calendar days but not more than 3 calendar days. ▪ For Monthly, the values described in the AFC equation changed and the Transmission Service provider did not calculate for seven or more calendar days, but less than 14 calendar days. 	<p>requirement.</p> <ul style="list-style-type: none"> ▪ For Daily, the values described in the AFC equation changed and the Transmission Service provider did not calculate for more than 3 calendar days but not more than 4 calendar days. ▪ For Monthly, the values described in the AFC equation changed and the Transmission Service provider did not calculate for 14 or more calendar days, but less than 21 calendar days. 	<p>requirement.</p> <ul style="list-style-type: none"> ▪ For Daily, the values described in the AFC equation changed and the Transmission Service provider did not calculate for more than 4 calendar days but not more than 5 calendar days. ▪ For Monthly, the values described in the AFC equation changed and the Transmission Service provider did not calculate for 21 or more calendar days, but less than 28 calendar days. 	<ul style="list-style-type: none"> ▪ For Daily, the values described in the AFC equation changed and the Transmission Service provider did not calculate for more than 5 calendar days. ▪ For Monthly, the values described in the AFC equation changed and the Transmission Service provider did not calculate for 28 or more calendar days.
R11.	N/A	N/A	N/A	The Transmission Service Provider did not follow the procedure for converting Flowgate AFCs to ATCs described in R11.

A. Regional Differences

None identified.

B. Associated Documents

Version History

Version	Date	Action	Change Tracking
2		Modified R2.1.1.3, R2.1.2.3, R2.1.3, R2.2, R2.3 and R11 Made conforming changes to M18 and VSLs for R2 and R11	Revised

Implementation Plan for Standard MOD-030-2; ATC/TTC/AFC and CBM/TRM Revisions (Project 2006-07)

Summary

As part of compliance with FERC Order 890, the NERC ATC, TTC, CBM, & TRM Standards Drafting Team has prepared the following standard:

- MOD-030-2, which describes the Flowgate methodology (previously referred to as the Flowgate Network Response ATC methodology) for determining AFC.

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

This standard completely replaces MOD-030-1.

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:

Proposed Standard	Transmission Operator	Transmission Planner	Transmission Service Provider	Balancing Authorities	Purchasing Selling Entities	Load-Serving Entities
MOD-030	■		■			

Proposed Effective Date

All requirements in the standard should become effective on the date upon which MOD-030-1 is currently scheduled to become effective.



NORTH AMERICAN ELECTRIC
RELIABILITY CORPORATION

Standards Announcement

Initial Ballot Window Open

December 1–10, 2008

Now available at: <https://standards.nerc.net/CurrentBallots.aspx>

Standard MOD-030-2 — Flowgate Methodology (Project 2006-07)

An initial ballot window for standard MOD-030-2 — Flowgate Methodology is now open **until 8 p.m. EST on December 10, 2008**. The standard is part of Project 2006-07 — ATC/TTC/AFC and CBM/TRM Revisions.

Background

This standard incorporates balloter suggestions for additional improvements to MOD-030-1. (The suggested improvements are aimed at allowing additional methods of achieving the same reliability objective — the suggested improvements are not aimed at correcting any errors in MOD-030-1.) Under the existing standards development process, if the drafting team had made these changes to MOD-030-1, the standard would have needed to be posted for an additional comment period, followed by balloting. This delay would have prevented MOD-030-1 from being ready to file with FERC before its due date.

To remedy this problem, the drafting team submitted a Standards Authorization Request (SAR) to initiate modifications to MOD-030-1, and received Standards Committee authorization to post the SAR and a proposed version of MOD-030-2 reflecting consideration of comments submitted with the initial ballot of MOD-030-1. As envisioned, MOD-030-2 will move through the standards development process and will be filed with governmental authorities before MOD-030-1 becomes effective.

The status, purpose, and supporting documents for this project are posted at the following site:

<http://www.nerc.com/filez/standards/MOD-V0-Revision.html>

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.

*For more information or assistance,
please contact Shaun Streeter at shaun.streeter@nerc.net or at 609.452.8060.*

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 posting the concurrent posting of the SAR and proposed standard on August 8, 2008.
2. SDT posted SAR and first draft of MOD-030-02 for a 45-day comment period from August 11, 2008 through September 24, 2008.

Description of Current Draft:

This is the second draft of the proposed standard posted for stakeholder pre-ballot review. This draft includes consideration of stakeholder comments from the initial ballot of MOD-030-1 and applicable FERC directives from FERC Order 693, Order 890, and Order 890-A.

Future Development Plan:

Anticipated Actions	Anticipated Date
1. Initial Ballot.	December 10, 2008
2. Respond to comments.	February 1, 2009
3. Recirculation ballot.	February 1, 2009
4. Board adoption.	March 15, 2009

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.

None.

A. Introduction

1. **Title:** **Flowgate Methodology**
2. **Number:** **MOD-030-02**
3. **Purpose:** To increase consistency and reliability in the development and documentation of transfer capability calculations for short-term use performed by entities using the Flowgate Methodology to support analysis and system operations.
4. **Applicability:**
 - 4.1.1 Each Transmission Operator that uses the Flowgate Methodology to support the calculation of Available Flowgate Capabilities (AFCs) on Flowgates.
 - 4.1.2 Each Transmission Service Provider that uses the Flowgate Methodology to calculate AFCs on Flowgates.
5. **Proposed Effective Date:** The date upon which MOD-030-01 is currently scheduled to become effective.

B. Requirements

- R1.** The Transmission Service Provider shall include in its “Available Transfer Capability Implementation Document” (ATCID): [*Violation Risk Factor: Lower*] [*Time Horizon: Operations Planning*]
 - R1.1.** The criteria used by the Transmission Operator to identify sets of Transmission Facilities as Flowgates that are to be considered in Available Flowgate Capability (AFC) calculations.
 - R1.2.** The following information on how source and sink for transmission service is accounted for in AFC calculations including:
 - R1.2.1.** Define if the source used for AFC calculations is obtained from the source field or the Point of Receipt (POR) field of the transmission reservation.
 - R1.2.2.** Define if the sink used for AFC calculations is obtained from the sink field or the Point of Delivery (POD) field of the transmission reservation.
 - R1.2.3.** The source/sink or POR/POD identification and mapping to the model.
 - R1.2.4.** If the Transmission Service Provider’s AFC calculation process involves a grouping of generators, the ATCID must identify how these generators participate in the group.
- R2.** The Transmission Operator shall perform the following: [*Violation Risk Factor: Lower*] [*Time Horizon: Operations Planning*]
 - R2.1.** Include Flowgates used in the AFC process based, at a minimum, on the following criteria:
 - R2.1.1.** Results of a first Contingency transfer analysis for ATC Paths internal to a Transmission Operator’s system up to the path capability such that at a minimum the first three limiting Elements and their worst associated Contingency combinations with an OTDF of at least 5% and within the Transmission Operator’s system are included as Flowgates.

- R2.1.1.1. Use first Contingency criteria consistent with those first Contingency criteria used in planning of operations for the applicable time periods, including use of Special Protection Systems.
 - R2.1.1.2. Only the most limiting element in a series configuration needs to be included as a Flowgate.
 - R2.1.1.3. If any limiting element is kept within its limit for its associated worst Contingency by operating within the limits of another Flowgate, then no new Flowgate needs to be established for such limiting elements or Contingencies.
- R2.1.2.** Results of a first Contingency transfer analysis from all adjacent Balancing Authority source and sink (as defined in the ATCID) combinations up to the path capability such that at a minimum the first three limiting Elements and their worst associated Contingency combinations with an Outage Transfer Distribution Factor (OTDF) of at least 5% and within the Transmission Operator's system are included as Flowgates unless the interface between such adjacent Balancing Authorities is accounted for using another ATC methodology.
- R2.1.2.1. Use first Contingency criteria consistent with those first Contingency criteria used in planning of operations for the applicable time periods, including use of Special Protection Systems.
 - R2.1.2.2. Only the most limiting element in a series configuration needs to be included as a Flowgate.
 - R2.1.2.3. If any limiting element is kept within its limit for its associated worst Contingency by operating within the limits of another Flowgate, then no new Flowgate needs to be established for such limiting elements or Contingencies.
- R2.1.3.** Any limiting Element/Contingency combination at least within its Reliability Coordinator's Area that has been subjected to an Interconnection-wide congestion management procedure within the last 12 months, unless the limiting Element/Contingency combination is accounted for using another ATC methodology or was created to address temporary operating conditions.
- R2.1.4.** Any limiting Element/Contingency combination within the Transmission model that has been requested to be included by any other Transmission Service Provider using the Flowgate Methodology or Area Interchange Methodology, where:
- R2.1.4.1. The coordination of the limiting Element/Contingency combination is not already addressed through a different methodology, and
 - Any generator within the Transmission Service Provider's area has at least a 5% Power Transfer Distribution Factor (PTDF) or Outage Transfer Distribution Factor (OTDF)

impact on the Flowgate when delivered to the aggregate load of its own area, or

- A transfer from any Balancing Area within the Transmission Service Provider's area to a Balancing Area adjacent has at least a 5% PTDF or OTDF impact on the Flowgate.
- The Transmission Operator may utilize distribution factors less than 5% if desired.

R2.1.4.2. The limiting Element/Contingency combination is included in the requesting Transmission Service Provider's methodology.

- R2.2.** At a minimum, establish a list of Flowgates by creating, modifying, or deleting Flowgate definitions at least once per calendar year.
- R2.3.** At a minimum, establish a list of Flowgates by creating, modifying, or deleting Flowgates that have been requested as part of R2.1.4 within thirty calendar days from the request.
- R2.4.** Establish the TFC of each of the defined Flowgates as equal to:
- For thermal limits, the System Operating Limit (SOL) of the Flowgate.
 - For voltage or stability limits, the flow that will respect the SOL of the Flowgate.
- R2.5.** At a minimum, establish the TFC once per calendar year.
- R2.5.1.** If notified of a change in the Rating by the Transmission Owner that would affect the TFC of a flowgate used in the AFC process, the TFC should be updated within seven calendar days of the notification.
- R2.6.** Provide the Transmission Service Provider with the TFCs within seven calendar days of their establishment.
- R3.** The Transmission Operator shall make available to the Transmission Service Provider a Transmission model to determine Available Flowgate Capability (AFC) that meets the following criteria: [*Violation Risk Factor: Lower*] [*Time Horizon: Operations Planning*]
- R3.1.** Contains generation Facility Ratings, such as generation maximum and minimum output levels, specified by the Generator Owners of the Facilities within the model.
- R3.2.** Updated at least once per day for AFC calculations for intra-day, next day, and days two through 30.
- R3.3.** Updated at least once per month for AFC calculations for months two through 13.
- R3.4.** Contains modeling data and system topology for the Facilities within its Reliability Coordinator's Area. Equivalent representation of radial lines and Facilities 161kV or below is allowed.
- R3.5.** Contains modeling data and system topology (or equivalent representation) for immediately adjacent and beyond Reliability Coordination Areas.
- R4.** When calculating AFCs, the Transmission Service Provider shall represent the impact of Transmission Service as follows: [*Violation Risk Factor: Lower*] [*Time Horizon: Operations Planning*]

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- If the source, as specified in the ATCID, has been identified in the reservation and it is discretely modeled in the Transmission Service Provider's Transmission model, use the discretely modeled point as the source.
 - If the source, as specified in the ATCID, has been identified in the reservation and the point can be mapped to an "equivalence" or "aggregate" representation in the Transmission Service Provider's Transmission model, use the modeled equivalence or aggregate as the source.
 - If the source, as specified in the ATCID, has been identified in the reservation and the point cannot be mapped to a discretely modeled point or an "equivalence" representation in the Transmission Service Provider's Transmission model, use the immediately adjacent Balancing Authority associated with the Transmission Service Provider from which the power is to be received as the source.
 - If the source, as specified in the ATCID, has not been identified in the reservation use the immediately adjacent Balancing Authority associated with the Transmission Service Provider from which the power is to be received as the source.
 - If the sink, as specified in the ATCID, has been identified in the reservation and it is discretely modeled in the Transmission Service Provider's Transmission model, use the discretely modeled point as the sink.
 - If the sink, as specified in the ATCID, has been identified in the reservation and the point can be mapped to an "equivalence" or "aggregate" representation in the Transmission Service Provider's Transmission model, use the modeled equivalence or aggregate as the sink.
 - If the sink, as specified in the ATCID, has been identified in the reservation and the point cannot be mapped to a discretely modeled point or an "equivalence" representation in the Transmission Service Provider's Transmission model, use the immediately adjacent Balancing Authority associated with the Transmission Service Provider receiving the power as the sink.
 - If the sink, as specified in the ATCID, has not been identified in the reservation use the immediately adjacent Balancing Authority associated with the Transmission Service Provider receiving the power as the sink.
- R5.** When calculating AFCs, the Transmission Service Provider shall: [*Violation Risk Factor: Lower*] [*Time Horizon: Operations Planning*]
- R5.1.** Use the models provided by the Transmission Operator.
 - R5.2.** Include in the transmission model expected generation and Transmission outages, additions, and retirements within the scope of the model as specified in the ATCID and in effect during the applicable period of the AFC calculation for the Transmission Service Provider's area, all adjacent Transmission Service Providers, and any Transmission Service Providers with which coordination agreements have been executed.
 - R5.3.** For external Flowgates, identified in R2.1.4, use the AFC provided by the Transmission Service Provider that calculates AFC for that Flowgate.

- R6.** When calculating the impact of ETC for firm commitments (ETC_{F_i}) for all time periods for a Flowgate, the Transmission Service Provider shall sum the following: [*Violation Risk Factor: Lower*] [*Time Horizon: Operations Planning*]
- R6.1.** The impact of firm Network Integration Transmission Service, including the impacts of generation to load, in the model referenced in R5.2 for the Transmission Service Provider's area, based on:
- R6.1.1.** Load forecast for the time period being calculated, including Native Load and Network Service load
- R6.1.2.** Unit commitment and Dispatch Order, to include all designated network resources and other resources that are committed or have the legal obligation to run as specified in the Transmission Service Provider's ATCID.
- R6.2.** The impact of any firm Network Integration Transmission Service, including the impacts of generation to load in the model referenced in R5.2 and has a distribution factor equal to or greater than the percentage¹ used to curtail in the Interconnection-wide congestion management procedure used by the Transmission Service Provider, for all adjacent Transmission Service Providers and any other Transmission Service Providers with which coordination agreements have been executed based on:
- R6.2.1.** Load forecast for the time period being calculated, including Native Load and Network Service load
- R6.2.2.** Unit commitment and Dispatch Order, to include all designated network resources and other resources that are committed or have the legal obligation to run as specified in the Transmission Service Provider's ATCID.
- R6.3.** The impact of all confirmed firm Point-to-Point Transmission Service expected to be scheduled, including roll-over rights for Firm Transmission Service contracts, for the Transmission Service Provider's area.
- R6.4.** The impact of any confirmed firm Point-to-Point Transmission Service expected to be scheduled, filtered to reduce or eliminate duplicate impacts from transactions using Transmission service from multiple Transmission Service Providers, including roll-over rights for Firm Transmission Service contracts having a distribution factor equal to or greater than the percentage² used to curtail in the Interconnection-wide congestion management procedure used by the Transmission Service Provider, for all adjacent Transmission Service Providers and any other Transmission Service Providers with which coordination agreements have been executed.
- R6.5.** The impact of any Grandfathered firm obligations expected to be scheduled or expected to flow for the Transmission Service Provider's area.
- R6.6.** The impact of any Grandfathered firm obligations expected to be scheduled or expected to flow that have a distribution factor equal to or greater than the

¹ A percentage less than that used in the Interconnection-wide congestion management procedure may be utilized.

² A percentage less than that used in the Interconnection-wide congestion management procedure may be utilized.

percentage³ used to curtail in the Interconnection-wide congestion management procedure used by the Transmission Service Provider, for all adjacent Transmission Service Providers and any other Transmission Service Providers with which coordination agreements have been executed.

- R6.7.** The impact of other firm services determined by the Transmission Service Provider.
- R7.** When calculating the impact of ETC for non-firm commitments (ETC_{NFi}) for all time periods for a Flowgate the Transmission Service Provider shall sum: [*Violation Risk Factor: Lower*] [*Time Horizon: Operations Planning*]
- R7.1.** The impact of all confirmed non-firm Point-to-Point Transmission Service expected to be scheduled for the Transmission Service Provider's area.
- R7.2.** The impact of any confirmed non-firm Point-to-Point Transmission Service expected to be scheduled, filtered to reduce or eliminate duplicate impacts from transactions using Transmission service from multiple Transmission Service Providers, that have a distribution factor equal to or greater than the percentage⁴ used to curtail in the Interconnection-wide congestion management procedure used by the Transmission Service Provider, for all adjacent Transmission Service Providers and any other Transmission Service Providers with which coordination agreements have been executed.
- R7.3.** The impact of any Grandfathered non-firm obligations expected to be scheduled or expected to flow for the Transmission Service Provider's area.
- R7.4.** The impact of any Grandfathered non-firm obligations expected to be scheduled or expected to flow that have a distribution factor equal to or greater than the percentage⁵ used to curtail in the Interconnection-wide congestion management procedure used by the Transmission Service Provider, for all adjacent Transmission Service Providers and any other Transmission Service Providers with which coordination agreements have been executed.
- R7.5.** The impact of non-firm Network Integration Transmission Service serving Load within the Transmission Service Provider's area (i.e., secondary service), to include load growth, and losses not otherwise included in Transmission Reliability Margin or Capacity Benefit Margin.
- R7.6.** The impact of any non-firm Network Integration Transmission Service (secondary service) with a distribution factor equal to or greater than the percentage⁶ used to curtail in the Interconnection-wide congestion management procedure used by the Transmission Service Provider, filtered to reduce or eliminate duplicate impacts from transactions using Transmission service from multiple Transmission Service Providers, for all adjacent Transmission Service Providers and any other

³ A percentage less than that used in the Interconnection-wide congestion management procedure may be utilized.

⁴ A percentage less than that used in the Interconnection-wide congestion management procedure may be utilized.

⁵ A percentage less than that used in the Interconnection-wide congestion management procedure may be utilized.

⁶ A percentage less than that used in the Interconnection-wide congestion management procedure may be utilized.

Transmission Service Providers with which coordination agreements have been executed.

- R7.7.** The impact of other non-firm services determined by the Transmission Service Provider.
- R8.** When calculating firm AFC for a Flowgate for a specified period, the Transmission Service Provider shall use the following algorithm (subject to allocation processes described in the ATCID): [*Violation Risk Factor: Lower*] [*Time Horizon: Operations Planning*]

$$AFC_F = TFC - ETC_{Fi} - CBM_i - TRM_i + Postbacks_{Fi} + counterflows_{Fi}$$

Where:

AFC_F is the firm Available Flowgate Capability for the Flowgate for that period.

TFC is the Total Flowgate Capability of the Flowgate.

ETC_{Fi} is the sum of the impacts of existing firm Transmission commitments for the Flowgate during that period.

CBM_i is the impact of the Capacity Benefit Margin on the Flowgate during that period.

TRM_i is the impact of the Transmission Reliability Margin on the Flowgate during that period.

Postbacks_{Fi} are changes to firm AFC due to a change in the use of Transmission Service for that period, as defined in Business Practices.

counterflows_{Fi} are adjustments to firm AFC as determined by the Transmission Service Provider and specified in their ATCID.

- R9.** When calculating non-firm AFC for a Flowgate for a specified period, the Transmission Service Provider shall use the following algorithm (subject to allocation processes described in the ATCID): [*Violation Risk Factor: Lower*] [*Time Horizon: Operations Planning*]

$$AFC_{NF} = TFC - ETC_{Fi} - ETC_{NFi} - CBM_{Si} - TRM_{Ui} + Postbacks_{NFi} + counterflows$$

Where:

AFC_{NF} is the non-firm Available Flowgate Capability for the Flowgate for that period.

TFC is the Total Flowgate Capability of the Flowgate.

ETC_{Fi} is the sum of the impacts of existing firm Transmission commitments for the Flowgate during that period.

ETC_{NFi} is the sum of the impacts of existing non-firm Transmission commitments for the Flowgate during that period.

CBM_{Si} is the impact of any schedules during that period using Capacity Benefit Margin.

TRM_{Ui} is the impact on the Flowgate of the Transmission Reliability Margin that has not been released (unreleased) for sale as non-firm capacity by the Transmission Service Provider during that period.

Postbacks_{NF} are changes to non-firm Available Flowgate Capability due to a change in the use of Transmission Service for that period, as defined in Business Practices.

counterflows_{NF} are adjustments to non-firm AFC as determined by the Transmission Service Provider and specified in their ATCID.

- R10.** Each Transmission Service Provider shall recalculate AFC, utilizing the updated models described in R3.2, R3.3, and R5, at a minimum on the following frequency, unless none of the calculated values identified in the AFC equation have changed: [*Violation Risk Factor: Lower*] [*Time Horizon: Operations Planning*]
- R10.1.** For hourly AFC, once per hour. Transmission Service Providers are allowed up to 175 hours per calendar year during which calculations are not required to be performed, despite a change in a calculated value identified in the AFC equation.
- R10.2.** For daily AFC, once per day.
- R10.3.** For monthly AFC, once per week.
- R11.** When converting Flowgate AFCs to ATCs for ATC Paths, the Transmission Service Provider shall convert those values based on the following algorithm: [*Violation Risk Factor: Lower*] [*Time Horizon: Operations Planning*]

$$ATC = \min(P)$$

$$P = \{PATC_1, PATC_2, \dots, PATC_n\}$$

$$PATC_n = \frac{AFC_n}{DF_{np}}$$

Where:

ATC is the Available Transfer Capability.

P is the set of partial Available Transfer Capabilities for all “impacted” Flowgates honored by the Transmission Service Provider; a Flowgate is considered “impacted” by a path if the Distribution Factor for that path is greater than the percentage⁷ used to curtail in the Interconnection-wide congestion management procedure used by the Transmission Service Provider on an OTDF Flowgate or PTDF Flowgate.

PATC_n is the partial Available Transfer Capability for a path relative to a Flowgate *n*.

AFC_n is the Available Flowgate Capability of a Flowgate *n*.

DF_{np} is the distribution factor for Flowgate *n* relative to path *p*.

C. Measures

- M1.** Each Transmission Service Provider shall provide its ATCID and other evidence (such as written documentation) to show that its ATCID contains the criteria used by the Transmission Operator to identify sets of Transmission Facilities as Flowgates and information on how sources and sinks are accounted for in AFC calculations. (R1)
- M2.** The Transmission Operator shall provide evidence (such as studies and working papers) that all Flowgates that meet the criteria described in R2.1 are considered in its AFC calculations. (R2.1)
- M3.** The Transmission Operator shall provide evidence (such as logs) that it updated its list of Flowgates at least once per calendar year. (R2.2)

⁷ A percentage less than that used in the Interconnection-wide congestion management procedure may be utilized.

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- M4.** The Transmission Operator shall provide evidence (such as logs and dated requests) that it updated the list of Flowgates within thirty calendar days from a request. (R2.3)
- M5.** The Transmission Operator shall provide evidence (such as data or models) that it determined the TFC for each Flowgate as defined in R2.4. (R2.4)
- M6.** The Transmission Operator shall provide evidence (such as logs) that it established the TFCs for each Flowgate in accordance with the timing defined in R2.5. (R2.5)
- M7.** The Transmission Operator shall provide evidence (such as logs and electronic communication) that it provided the Transmission Service Provider with updated TFCs within seven calendar days of their determination. (R2.6)
- M8.** The Transmission Operator shall provide evidence (such as written documentation, logs, models, and data) that the Transmission model used to determine AFCs contains the information specified in R3. (R3)
- M9.** The Transmission Service Provider shall provide evidence (such as written documentation and data) that the modeling of point-to-point reservations was based on the rules described in R4. (R4)
- M10.** The Transmission Service Provider shall provide evidence including the models received from Transmission Operators and other evidence (such as documentation and data) to show that it used the Transmission Operator's models in calculating AFC. (R5.1)
- M11.** The Transmission Service Provider shall provide evidence (such as written documentation, electronic communications, and data) that all expected generation and Transmission outages, additions, and retirements were included in the AFC calculation as specified in the ATCID. (R5.2)
- M12.** The Transmission Service Provider shall provide evidence (such as logs, electronic communications, and data) that AFCs provided by third parties on external Flowgates were used instead of those calculated by the Transmission Operator. (R5.3)
- M13.** The Transmission Service Provider shall demonstrate compliance with R6 by recalculating firm ETC for any specific time period as described in (MOD-001 R2), using the requirements defined in R6 and with data used to calculate the specified value for the designated time period. The data used must meet the requirements specified in this standard and the ATCID. To account for differences that may occur when recalculating the value (due to mixing automated and manual processes), any recalculated value that is within +/- 15% or 15 MW, whichever is greater, of the originally calculated value, is evidence that the Transmission Service Provider used the requirements defined in R6 to calculate its firm ETC. (R6)
- M14.** The Transmission Service Provider shall demonstrate compliance with R7 by recalculating non-firm ETC for any specific time period as described in (MOD-001 R2), using the requirements defined in R7 and with data used to calculate the specified value for the designated time period. The data used must meet the requirements specified in the standard and the ATCID. To account for differences that may occur when recalculating the value (due to mixing automated and manual processes), any recalculated value that is within +/- 15% or 15 MW, whichever is greater, of the originally calculated value, is evidence that the Transmission Service Provider used the requirements in R7 to calculate its non-firm ETC. (R7)

- M15.** Each Transmission Service Provider shall produce the supporting documentation for the processes used to implement the algorithm that calculates firm AFCs, as required in R8. Such documentation must show that only the variables allowed in R8 were used to calculate firm AFCs, and that the processes use the current values for the variables as determined in the requirements or definitions. Note that any variable may legitimately be zero if the value is not applicable or calculated to be zero (such as counterflows, TRM, CBM, etc...). The supporting documentation may be provided in the same form and format as stored by the Transmission Service Provider. (R8)
- M16.** Each Transmission Service Provider shall produce the supporting documentation for the processes used to implement the algorithm that calculates non-firm AFCs, as required in R9. Such documentation must show that only the variables allowed in R9 were used to calculate non-firm AFCs, and that the processes use the current values for the variables as determined in the requirements or definitions. Note that any variable may legitimately be zero if the value is not applicable or calculated to be zero (such as counterflows, TRM, CBM, etc...). The supporting documentation may be provided in the same form and format as stored by the Transmission Service Provider. (R9)
- M17.** The Transmission Service Provider shall provide evidence (such as documentation, dated logs, and data) that it calculated AFC on the frequency defined in R10. (R10)
- M18.** The Transmission Service Provider shall provide evidence (such as documentation and data) when converting Flowgate AFCs to ATCs for ATC Paths, it follows the procedure described in R11. (R11)

D. Compliance

1. Compliance Monitoring Process

1.1. Compliance Enforcement Authority

Regional Entity.

1.2. Compliance Monitoring Period and Reset Time Frame

Not applicable.

1.3. Data Retention

The Transmission Operator and Transmission Service Provider shall keep data or evidence to show compliance as identified below unless directed by its Compliance Enforcement Authority to retain specific evidence for a longer period of time as part of an investigation:

- The Transmission Service Provider shall retain its current, in force ATCID and any prior versions of the ATCID that were in force since the last compliance audit to show compliance with R1.
- The Transmission Operator shall have its latest model used to determine flowgates and TFC and evidence of the previous version to show compliance with R2 and R3.
- The Transmission Operator shall retain evidence to show compliance with R2.1, R2.3 for the most recent 12 months.
- The Transmission Operator shall retain evidence to show compliance with R2.2, R2.4 and R2.5 for the most recent three calendar years plus current year.

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- The Transmission Service Provider shall retain evidence to show compliance with R4 for 12 months or until the model used to calculate AFC is updated, whichever is longer.
- The Transmission Service Provider shall retain evidence to show compliance with R5, R8, R9, R10, and R11 for the most recent calendar year plus current year.
- The Transmission Service Provider shall retain evidence to show compliance in calculating hourly values required in R6 and R7 for the most recent 14 days; evidence to show compliance in calculating daily values required in R6 and R7 for the most recent 30 days; and evidence to show compliance in calculating monthly values required in R6 and R7 for the most recent sixty days.
- If a Transmission Service Provider or Transmission Operator is found non-compliant, it shall keep information related to the non-compliance until found compliant.

The Compliance Enforcement Authority shall keep the last audit records and all requested and submitted subsequent audit records.

1.4. Compliance Monitoring and Enforcement Processes:

The following processes may be used:

- Compliance Audits
- Self-Certifications
- Spot Checking
- Compliance Violation Investigations
- Self-Reporting
- Complaints

1.5. Additional Compliance Information

None.

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2. Violation Severity Levels

R #	Lower VSL	Moderate VSL	High VSL	Severe VSL
R1.	The Transmission Service Provider does not include in its ATCID one or two of the sub-requirements listed under R1.2, or the sub-requirement is incomplete.	The Transmission Service Provider does not include in its ATCID three of the sub-requirements listed under R1.2, or the sub-requirement is incomplete.	The Transmission Service Provider does not include in its ATCID the information described in R1.1. OR The Transmission Service Provider does not include in its ATCID the information described in R1.2 (1.2.1, 1.2.2., 1.2.3, and 1.2.4 are missing).	The Transmission Service Provider does not include in its ATCID the information described in R1.1 and R1.2 (1.2.1, 1.2.2., 1.2.3, and 1.2.4 are missing).
R2.	One or more of the following: <ul style="list-style-type: none"> The Transmission Operator established its list of Flowgates less frequently than once per calendar year, but not more than three months late as described in R2.2. The Transmission Operator established its list of Flowgates more than thirty days, but not more than sixty days, following a request to create, modify or delete a flowgate as described in R2.3. The Transmission Operator has not updated its Flowgate 	One or more of the following: <ul style="list-style-type: none"> The Transmission Operator did not include a Flowgate in their AFC calculations that met the criteria described in R2.1. The Transmission Operator established its list of Flowgates more than three months late, but not more than six months late as described in R2.2. The Transmission Operator established its list of Flowgates more than sixty days, but not more than ninety days, following a request to create, modify or 	One or more of the following: <ul style="list-style-type: none"> The Transmission Operator did not include two to five Flowgates in their AFC calculations that met the criteria described in R2.1. The Transmission Operator established its list of Flowgates more than six months late, but not more than nine months late as described in R2.2. The Transmission Operator established its list of Flowgates more than ninety days, but not more than 120 days, following a request to create, modify or delete a 	One or more of the following: <ul style="list-style-type: none"> The Transmission Operator did not include six or more Flowgates in their AFC calculations that met the criteria described in R2.1. The Transmission Operator established its list of Flowgates more than nine months late as described in R2.2. The Transmission Operator did not establish its list of internal Flowgates as described in R2.2. The Transmission Operator established its list of Flowgates more than 120 days following a request to create, modify or delete a

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R #	Lower VSL	Moderate VSL	High VSL	Severe VSL
	<p>TFC when notified by the Transmission Owner in more than 7 days, but it has not been more than 14 days since the notification (R2.5.1)</p> <ul style="list-style-type: none"> The Transmission Operator has not provided its Transmission Service Provider with its Flowgate TFCs within seven days (one week) of their determination, but is has not been more than 14 days (two weeks) since their determination. 	<p>delete a flowgate as described in R2.3.</p> <ul style="list-style-type: none"> The Transmission Operator has not updated its Flowgate TFCs at least once within a calendar year, and it has been not more than 15 months since the last update. The Transmission Operator has not updated its Flowgate TFC when notified by the Transmission Owner in more than 14 days, but it has not been more than 21 days since the notification (R2.5.1) The Transmission Operator has not provided its Transmission Service Provider with its Flowgate TFCs in more than 14 days (two weeks) of their determination, but is has not been more than 21 days (three weeks) since their determination. 	<p>flowgate as described in R2.3.</p> <p>The Transmission Operator has not updated its Flowgate TFCs at least once within a calendar year, and it has been more than 15 months but not more than 18 months since the last update.</p> <ul style="list-style-type: none"> The Transmission Operator has not updated its Flowgate TFCs when notified by the Transmission Owner in more than 21 days, but it has not been more than 28 days since the notification (R2.5.1) The Transmission Operator has not provided its Transmission Service Provider with its Flowgate TFCs in more than 21 days (three weeks) of their determination, but is has not been more than 28 days (four weeks) since their determination. 	<p>flowgate as described in R2.3.</p> <ul style="list-style-type: none"> The Transmission Operator did not establish its list of external Flowgates following a request to create, modify or delete an external flowgate as described in R2.3. The Transmission Operator did not determine the TFC for a flowgate as described in R2.4. The Transmission Operator has not updated its Flowgate TFCs at least once within a calendar year, and it has been more than 18 months since the last update. (R2.5) The Transmission Operator has not updated its Flowgate TFCs when notified by the Transmission Owner in more than 28 calendar days (R2.5.1) The Transmission Operator has not provided its Transmission Service Provider with its Flowgate TFCs in more than 28 days (4 weeks) of their

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R #	Lower VSL	Moderate VSL	High VSL	Severe VSL
				determination.
R3.	<p>One or more of the following:</p> <ul style="list-style-type: none"> • The Transmission Operator used one to ten Facility Ratings that were different from those specified by a Transmission or Generator Owner in their Transmission model. • The Transmission Operator did not update the model per R3.2 for one or more calendar days but not more than 2 calendar days • The Transmission Operator did not update the model for per R3.3 for one or more months but not more than six weeks 	<p>One or more of the following:</p> <ul style="list-style-type: none"> • The Transmission Operator used eleven to twenty Facility Ratings that were different from those specified by a Transmission or Generator Owner in their Transmission model. • The Transmission Operator did not update the model per R3.2 for more than 2 calendar days but not more than 3 calendar days • The Transmission Operator did not update the model for per R3.3 for more than six weeks but not more than eight weeks 	<p>One or more of the following:</p> <ul style="list-style-type: none"> • The Transmission Operator used twenty-one to thirty Facility Ratings that were different from those specified by a Transmission or Generator Owner in their Transmission model. • The Transmission Operator did not update the model per R3.2 for more than 3 calendar days but not more than 4 calendar days • The Transmission Operator did not update the model for per R3.3 for more than eight weeks but not more than ten weeks 	<p>One or more of the following:</p> <ul style="list-style-type: none"> • The Transmission Operator did not update the model per R3.2 for more than 4 calendar days • The Transmission Operator did not update the model for per R3.3 for more than ten weeks • The Transmission Operator used more than thirty Facility Ratings that were different from those specified by a Transmission or Generator Owner in their Transmission model. • The Transmission operator did not include in the Transmission model detailed modeling data and topology for its own Reliability

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R #	Lower VSL	Moderate VSL	High VSL	Severe VSL
				<p>Coordinator area.</p> <ul style="list-style-type: none"> The Transmission operator did not include in the Transmission modeling data and topology for immediately adjacent and beyond Reliability Coordinator area.
R4.	<p>The Transmission Service Provider did not represent the impact of Transmission Service as described in R4 for more than zero, but not more than 5% of all reservations; or more than zero, but not more than 1 reservation, whichever is greater..</p>	<p>The Transmission Service Provider did not represent the impact of Transmission Service as described in R4 for more than 5%, but not more than 10% of all reservations; or more than 1, but not more than 2 reservations, whichever is greater..</p>	<p>The Transmission Service Provider did not represent the impact of Transmission Service as described in R4 for more than 10%, but not more than 15% of all reservations; or more than 2, but not more than 3 reservations, whichever is greater..</p>	<p>The Transmission Service Provider did not represent the impact of Transmission Service as described in R4 for more than 15% of all reservations; or more than 3 reservations, whichever is greater..</p>
R5.	<p>The Transmission Service Provider did not include in the AFC process one to ten expected generation or Transmission outages, additions or retirements within the scope of the model as specified in the ATCID.</p>	<p>The Transmission Service Provider did not include in the AFC process eleven to twenty-five expected generation and Transmission outages, additions or retirements within the scope of the model as specified in the ATCID.</p>	<p>The Transmission Service Provider did not include in the AFC process twenty-six to fifty expected generation and Transmission outages, additions or retirements within the scope of the model as specified in the ATCID.</p>	<p>One or more of the following:</p> <ul style="list-style-type: none"> The Transmission Service Provider did not use the model provided by the Transmission Operator. The Transmission Service Provider did not include in the AFC process more than fifty expected generation and Transmission outages, additions or retirements within the scope of the model as specified in the

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R #	Lower VSL	Moderate VSL	High VSL	Severe VSL
				<p>ATCID.</p> <ul style="list-style-type: none"> The Transmission Service provider did not use AFC provided by a third party.
R6.	<p>For a specified period, the Transmission Service Provider calculated a firm ETC with an absolute value different than that calculated in M13 for the same period, and the absolute value difference was more than 15% of the value calculated in the measure or 15MW, whichever is greater, but not more than 25% of the value calculated in the measure or 25MW, whichever is greater..</p>	<p>For a specified period, the Transmission Service Provider calculated a firm ETC with an absolute value different than that calculated in M13 for the same period, and the absolute value difference was more than 25% of the value calculated in the measure or 25MW, whichever is greater, but not more than 35% of the value calculated in the measure or 35MW, whichever is greater.</p>	<p>For a specified period, the Transmission Service Provider calculated a firm ETC with an absolute value different than that calculated in M13 for the same period, and the absolute value difference was more than 35% of the value calculated in the measure or 35MW, whichever is greater, but not more than 45% of the value calculated in the measure or 45MW, whichever is greater.</p>	<p>For a specified period, the Transmission Service Provider calculated a firm ETC with an absolute value different than that calculated in M13 for the same period, and the absolute value difference was more than 45% of the value calculated in the measure or 45MW, whichever is greater.</p>
R7.	<p>For a specified period, the Transmission Service Provider calculated a non-firm ETC with an absolute value different than that calculated in M14 for the same period, and the absolute value difference was more than 15% of the value calculated in the measure or 15MW, whichever is greater, but not more than 25% of the value calculated in the measure or 25MW, whichever is greater.</p>	<p>For a specified period, the Transmission Service Provider calculated a non-firm ETC with an absolute value different than that calculated in M14 for the same period, and the absolute value difference was more than 25% of the value calculated in the measure or 25MW, whichever is greater, but not more than 35% of the value calculated in the measure or 35MW, whichever is greater.</p>	<p>For a specified period, the Transmission Service Provider calculated a non-firm ETC with an absolute value different than that calculated in M14 for the same period, and the absolute value difference was more than 35% of the value calculated in the measure or 35MW, whichever is greater, but not more than 45% of the value calculated in the measure or 45MW, whichever is greater.</p>	<p>For a specified period, the Transmission Service Provider calculated a non-firm ETC with an absolute value different than that calculated in M14 for the same period, and the absolute value difference was more than 45% of the value calculated in the measure or 45MW, whichever is greater.</p>

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R #	Lower VSL	Moderate VSL	High VSL	Severe VSL
R8.	The Transmission Service Provider did not use all the elements defined in R8 when determining firm AFC, or used additional elements, for more than zero Flowgates, but not more than 5% of all Flowgates or 1 Flowgate (whichever is greater).	The Transmission Service Provider did not use all the elements defined in R8 when determining firm AFC, or used additional elements, for more than 5% of all Flowgates or 1 Flowgates (whichever is greater), but not more than 10% of all Flowgates or 2 Flowgates (whichever is greater).	The Transmission Service Provider did not use all the elements defined in R8 when determining firm AFC, or used additional elements, for more than 10% of all Flowgates or 2 Flowgates (whichever is greater), but not more than 15% of all Flowgates or 3 Flowgates (whichever is greater).	The Transmission Service Provider did not use all the elements defined in R8 when determining firm AFC, or used additional elements, for more than 15% of all Flowgates or more than 3 Flowgates (whichever is greater).
R9.	The Transmission Service Provider did not use all the elements defined in R8 when determining non-firm AFC, or used additional elements, for more than zero Flowgates, but not more than 5% of all Flowgates or 1 Flowgate (whichever is greater).	The Transmission Service Provider did not use all the elements defined in R9 when determining non-firm AFC, or used additional elements, for more than 5% of all Flowgates or 1 Flowgate (whichever is greater), but not more than 10% of all Flowgates or 2 Flowgates (whichever is greater).	The Transmission Service Provider did not use all the elements defined in R9 when determining non-firm AFC, or used additional elements, for more than 10% of all Flowgates or 2 Flowgates (whichever is greater), but not more than 15% of all Flowgates or 3 Flowgates (whichever is greater).	The Transmission Service Provider did not use all the elements defined in R9 when determining non-firm AFC, or used additional elements, for more than 15% of all Flowgates or more than 3 Flowgates (whichever is greater).
R10	One or more of the following: <ul style="list-style-type: none"> For Hourly, the values described in the AFC equation changed and the Transmission Service provider did not calculate for one or more hours but not more than 15 hours, and was in excess of the 175-hour per year 	One or more of the following: <ul style="list-style-type: none"> For Hourly, the values described in the AFC equation changed and the Transmission Service provider did not calculate for more than 15 hours but not more than 20 hours, and was in excess of the 175-hour per year 	One or more of the following: <ul style="list-style-type: none"> For Hourly, the values described in the AFC equation changed and the Transmission Service provider did not calculate for more than 20 hours but not more than 25 hours, and was in excess of the 175-hour per year 	One or more of the following: <ul style="list-style-type: none"> For Hourly, the values described in the AFC equation changed and the Transmission Service provider did not calculate for more than 25 hours, and was in excess of the 175-hour per year requirement.

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R #	Lower VSL	Moderate VSL	High VSL	Severe VSL
	<p>requirement.</p> <ul style="list-style-type: none"> ▪ For Daily, the values described in the AFC equation changed and the Transmission Service provider did not calculate for one or more calendar days but not more than 3 calendar days. ▪ For Monthly, the values described in the AFC equation changed and the Transmission Service provider did not calculate for seven or more calendar days, but less than 14 calendar days. 	<p>requirement.</p> <ul style="list-style-type: none"> ▪ For Daily, the values described in the AFC equation changed and the Transmission Service provider did not calculate for more than 3 calendar days but not more than 4 calendar days. ▪ For Monthly, the values described in the AFC equation changed and the Transmission Service provider did not calculate for 14 or more calendar days, but less than 21 calendar days. 	<p>requirement.</p> <ul style="list-style-type: none"> ▪ For Daily, the values described in the AFC equation changed and the Transmission Service provider did not calculate for more than 4 calendar days but not more than 5 calendar days. ▪ For Monthly, the values described in the AFC equation changed and the Transmission Service provider did not calculate for 21 or more calendar days, but less than 28 calendar days. 	<ul style="list-style-type: none"> ▪ For Daily, the values described in the AFC equation changed and the Transmission Service provider did not calculate for more than 5 calendar days. ▪ For Monthly, the values described in the AFC equation changed and the Transmission Service provider did not calculate for 28 or more calendar days.
R11.	N/A	N/A	N/A	The Transmission Service Provider did not follow the procedure for converting Flowgate AFCs to ATCs described in R11.

A. Regional Differences

None identified.

B. Associated Documents

Version History

Version	Date	Action	Change Tracking
2		Modified R2.1.1.3, R2.1.2.3, R2.1.3, R2.2, R2.3 and R11 Made conforming changes to M18 and VSLs for R2 and R11	Revised

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 posting the concurrent posting of the SAR and proposed standard on August 8, 2008.
2. SDT posted SAR and first draft of MOD-030-02 for a 45-day comment period from August 11, 2008 through September 24, 2008.

Description of Current Draft:

This is the second draft of the proposed standard posted for stakeholder pre-ballot review. This draft includes consideration of stakeholder comments from the initial ballot of MOD-030-1 and applicable FERC directives from FERC Order 693, Order 890, and Order 890-A.

Future Development Plan:

Anticipated Actions	Anticipated Date
1. Initial Ballot.	December 10, 2008
2. Respond to comments.	February 1, 2009
3. Recirculation ballot.	February 1, 2009
4. Board adoption.	March 15, 2009

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.

None.

A. Introduction

- 1. Title:** Flowgate Methodology
- 2. Number:** MOD-030-02
- 3. Purpose:** To increase consistency and reliability in the development and documentation of transfer capability calculations for short-term use performed by entities using the Flowgate Methodology to support analysis and system operations.
- 4. Applicability:**
 - 4.1.1** Each Transmission Operator that uses the Flowgate Methodology to support the calculation of Available Flowgate Capabilities (AFCs) on Flowgates.
 - 4.1.2** Each Transmission Service Provider that uses the Flowgate Methodology to calculate AFCs on Flowgates.
- 5. Proposed Effective Date:** The date upon which MOD-030-01 is currently scheduled to become effective.

B. Requirements

- R1.** The Transmission Service Provider shall include in its “Available Transfer Capability Implementation Document” (ATCID): [*Violation Risk Factor: Lower*] [*Time Horizon: Operations Planning*]
 - R1.1.** The criteria used by the Transmission Operator to identify sets of Transmission Facilities as Flowgates that are to be considered in Available Flowgate Capability (AFC) calculations.
 - R1.2.** The following information on how source and sink for transmission service is accounted for in AFC calculations including:
 - R1.2.1.** Define if the source used for AFC calculations is obtained from the source field or the Point of Receipt (POR) field of the transmission reservation.
 - R1.2.2.** Define if the sink used for AFC calculations is obtained from the sink field or the Point of Delivery (POD) field of the transmission reservation.
 - R1.2.3.** The source/sink or POR/POD identification and mapping to the model.
 - R1.2.4.** If the Transmission Service Provider’s AFC calculation process involves a grouping of generators, the ATCID must identify how these generators participate in the group.
- R2.** The Transmission Operator shall perform the following: [*Violation Risk Factor: Lower*] [*Time Horizon: Operations Planning*]
 - R2.1.** Include Flowgates used in the AFC process based, at a minimum, on the following criteria:
 - R2.1.1.** Results of a first Contingency transfer analysis for ATC Paths internal to a Transmission Operator’s system up to the path capability such that at a minimum the first three limiting Elements and their worst associated Contingency combinations with an OTDF of at least 5% and within the Transmission Operator’s system are included as Flowgates.

- R2.1.1.1. Use first Contingency criteria consistent with those first Contingency criteria used in planning of operations for the applicable time periods, including use of Special Protection Systems.
 - R2.1.1.2. Only the most limiting element in a series configuration needs to be included as a Flowgate.
 - R2.1.1.3. If any limiting ~~elements or Contingencies are already protected~~ element is kept within its limit for its associated worst Contingency by operating within the limits of another Flowgate, then no new ~~Flowgates need~~ Flowgate needs to be established for such limiting elements or Contingencies.
- R2.1.2.** Results of a first Contingency transfer analysis from all adjacent Balancing Authority source and sink (as defined in the ATCID) combinations up to the path capability such that at a minimum the first three limiting Elements and their worst associated Contingency combinations with an Outage Transfer Distribution Factor (OTDF) of at least 5% and within the Transmission Operator's system are included as Flowgates unless the interface between such adjacent Balancing Authorities is accounted for using another ATC methodology.
- R2.1.2.1. Use first Contingency criteria consistent with those first Contingency criteria used in planning of operations for the applicable time periods, including use of Special Protection Systems.
 - R2.1.2.2. Only the most limiting element in a series configuration needs to be included as a Flowgate.
 - R2.1.2.3. If any limiting ~~elements or Contingencies are already protected~~ element is kept within its limit for its associated worst Contingency by operating within the limits of another Flowgate, then no new ~~Flowgates need~~ Flowgate needs to be established for such limiting elements or Contingencies.
- R2.1.3.** ~~With the exception of flowgates created to address temporary operating conditions, any~~ Any limiting Element/Contingency combination at least within its Reliability Coordinator's Area that has been subjected to an Interconnection-wide congestion management procedure within the last 12 months, unless the limiting Element/Contingency combination is accounted for using another ATC methodology ~~or was created to address temporary operating conditions.~~
- R2.1.4.** Any limiting Element/Contingency combination within the Transmission model that has been requested to be included by any other Transmission Service Provider using the Flowgate Methodology or Area Interchange Methodology, where:
- R2.1.4.1. The coordination of the limiting Element/Contingency combination is not already addressed through a different methodology, and

- Any generator within the Transmission Service Provider's area has at least a 5% Power Transfer Distribution Factor (PTDF) or Outage Transfer Distribution Factor (OTDF) impact on the Flowgate when delivered to the aggregate load of its own area, or
- A transfer from any Balancing Area within the Transmission Service Provider's area to a Balancing Area adjacent has at least a 5% PTDF or OTDF impact on the Flowgate.
- The Transmission Operator may utilize distribution factors less than 5% if desired.

R2.1.4.2. The limiting Element/Contingency combination is included in the requesting Transmission Service Provider's methodology.

- R2.2.** At a minimum, establish a list of Flowgates by creating, modifying, or deleting Flowgate definitions at least once per calendar year.
- R2.3.** At a minimum, establish a list of Flowgates by creating, modifying, or deleting Flowgates that have been requested as part of R2.1.4 within thirty calendar days from the request.
- R2.4.** Establish the TFC of each of the defined Flowgates as equal to:
- For thermal limits, the System Operating Limit (SOL) of the Flowgate.
 - For voltage or stability limits, the flow that will respect the SOL of the Flowgate.
- R2.5.** At a minimum, establish the TFC once per calendar year.
- R2.5.1.** If notified of a change in the Rating by the Transmission Owner that would affect the TFC of a flowgate used in the AFC process, the TFC should be updated within seven calendar days of the notification.
- R2.6.** Provide the Transmission Service Provider with the TFCs within seven calendar days of their establishment.
- R3.** The Transmission Operator shall make available to the Transmission Service Provider a Transmission model to determine Available Flowgate Capability (AFC) that meets the following criteria: [*Violation Risk Factor: Lower*] [*Time Horizon: Operations Planning*]
- R3.1.** Contains generation Facility Ratings, such as generation maximum and minimum output levels, specified by the Generator Owners of the Facilities within the model.
- R3.2.** Updated at least once per day for AFC calculations for intra-day, next day, and days two through 30.
- R3.3.** Updated at least once per month for AFC calculations for months two through 13.
- R3.4.** Contains modeling data and system topology for the Facilities within its Reliability Coordinator's Area. Equivalent representation of radial lines and Facilities 161kV or below is allowed.
- R3.5.** Contains modeling data and system topology (or equivalent representation) for immediately adjacent and beyond Reliability Coordination Areas.

- R4.** When calculating AFCs, the Transmission Service Provider shall represent the impact of Transmission Service as follows: [*Violation Risk Factor: Lower*] [*Time Horizon: Operations Planning*]
- If the source, as specified in the ATCID, has been identified in the reservation and it is discretely modeled in the Transmission Service Provider’s Transmission model, use the discretely modeled point as the source.
 - If the source, as specified in the ATCID, has been identified in the reservation and the point can be mapped to an “equivalence” or “aggregate” representation in the Transmission Service Provider’s Transmission model, use the modeled equivalence or aggregate as the source.
 - If the source, as specified in the ATCID, has been identified in the reservation and the point cannot be mapped to a discretely modeled point or an “equivalence” representation in the Transmission Service Provider’s Transmission model, use the immediately adjacent Balancing Authority associated with the Transmission Service Provider from which the power is to be received as the source.
 - If the source, as specified in the ATCID, has not been identified in the reservation use the immediately adjacent Balancing Authority associated with the Transmission Service Provider from which the power is to be received as the source.
 - If the sink, as specified in the ATCID, has been identified in the reservation and it is discretely modeled in the Transmission Service Provider’s Transmission model, use the discretely modeled point as the sink.
 - If the sink, as specified in the ATCID, has been identified in the reservation and the point can be mapped to an “equivalence” or “aggregate” representation in the Transmission Service Provider’s Transmission model, use the modeled equivalence or aggregate as the sink.
 - If the sink, as specified in the ATCID, has been identified in the reservation and the point cannot be mapped to a discretely modeled point or an “equivalence” representation in the Transmission Service Provider’s Transmission model, use the immediately adjacent Balancing Authority associated with the Transmission Service Provider receiving the power as the sink.
 - If the sink, as specified in the ATCID, has not been identified in the reservation use the immediately adjacent Balancing Authority associated with the Transmission Service Provider receiving the power as the sink.
- R5.** When calculating AFCs, the Transmission Service Provider shall: [*Violation Risk Factor: Lower*] [*Time Horizon: Operations Planning*]
- R5.1.** Use the models provided by the Transmission Operator.
- R5.2.** Include in the transmission model expected generation and Transmission outages, additions, and retirements within the scope of the model as specified in the ATCID and in effect during the applicable period of the AFC calculation for the Transmission Service Provider’s area, all adjacent Transmission Service Providers, and any Transmission Service Providers with which coordination agreements have been executed.

- R5.3.** For external Flowgates, identified in R2.1.4, use the AFC provided by the Transmission Service Provider that calculates AFC for that Flowgate.
- R6.** When calculating the impact of ETC for firm commitments (ETC_{Fi}) for all time periods for a Flowgate, the Transmission Service Provider shall sum the following: [*Violation Risk Factor: Lower*] [*Time Horizon: Operations Planning*]
- R6.1.** The impact of firm Network Integration Transmission Service, including the impacts of generation to load, in the model referenced in R5.2 for the Transmission Service Provider's area, based on:
- R6.1.1.** Load forecast for the time period being calculated, including Native Load and Network Service load
- R6.1.2.** Unit commitment and Dispatch Order, to include all designated network resources and other resources that are committed or have the legal obligation to run as specified in the Transmission Service Provider's ATCID.
- R6.2.** The impact of any firm Network Integration Transmission Service, including the impacts of generation to load in the model referenced in R5.2 and has a distribution factor equal to or greater than the percentage¹ used to curtail in the Interconnection-wide congestion management procedure used by the Transmission Service Provider, for all adjacent Transmission Service Providers and any other Transmission Service Providers with which coordination agreements have been executed based on:
- R6.2.1.** Load forecast for the time period being calculated, including Native Load and Network Service load
- R6.2.2.** Unit commitment and Dispatch Order, to include all designated network resources and other resources that are committed or have the legal obligation to run as specified in the Transmission Service Provider's ATCID.
- R6.3.** The impact of all confirmed firm Point-to-Point Transmission Service expected to be scheduled, including roll-over rights for Firm Transmission Service contracts, for the Transmission Service Provider's area.
- R6.4.** The impact of any confirmed firm Point-to-Point Transmission Service expected to be scheduled, filtered to reduce or eliminate duplicate impacts from transactions using Transmission service from multiple Transmission Service Providers, including roll-over rights for Firm Transmission Service contracts having a distribution factor equal to or greater than the percentage² used to curtail in the Interconnection-wide congestion management procedure used by the Transmission Service Provider, for all adjacent Transmission Service Providers and any other Transmission Service Providers with which coordination agreements have been executed.
- R6.5.** The impact of any Grandfathered firm obligations expected to be scheduled or expected to flow for the Transmission Service Provider's area.

¹ A percentage less than that used in the Interconnection-wide congestion management procedure may be utilized.

² A percentage less than that used in the Interconnection-wide congestion management procedure may be utilized.

- R6.6.** The impact of any Grandfathered firm obligations expected to be scheduled or expected to flow that have a distribution factor equal to or greater than the percentage³ used to curtail in the Interconnection-wide congestion management procedure used by the Transmission Service Provider, for all adjacent Transmission Service Providers and any other Transmission Service Providers with which coordination agreements have been executed.
- R6.7.** The impact of other firm services determined by the Transmission Service Provider.
- R7.** When calculating the impact of ETC for non-firm commitments (ETC_{NFi}) for all time periods for a Flowgate the Transmission Service Provider shall sum: [*Violation Risk Factor: Lower*] [*Time Horizon: Operations Planning*]
- R7.1.** The impact of all confirmed non-firm Point-to-Point Transmission Service expected to be scheduled for the Transmission Service Provider's area.
- R7.2.** The impact of any confirmed non-firm Point-to-Point Transmission Service expected to be scheduled, filtered to reduce or eliminate duplicate impacts from transactions using Transmission service from multiple Transmission Service Providers, that have a distribution factor equal to or greater than the percentage⁴ used to curtail in the Interconnection-wide congestion management procedure used by the Transmission Service Provider, for all adjacent Transmission Service Providers and any other Transmission Service Providers with which coordination agreements have been executed.
- R7.3.** The impact of any Grandfathered non-firm obligations expected to be scheduled or expected to flow for the Transmission Service Provider's area.
- R7.4.** The impact of any Grandfathered non-firm obligations expected to be scheduled or expected to flow that have a distribution factor equal to or greater than the percentage⁵ used to curtail in the Interconnection-wide congestion management procedure used by the Transmission Service Provider, for all adjacent Transmission Service Providers and any other Transmission Service Providers with which coordination agreements have been executed.
- R7.5.** The impact of non-firm Network Integration Transmission Service serving Load within the Transmission Service Provider's area (i.e., secondary service), to include load growth, and losses not otherwise included in Transmission Reliability Margin or Capacity Benefit Margin.
- R7.6.** The impact of any non-firm Network Integration Transmission Service (secondary service) with a distribution factor equal to or greater than the percentage⁶ used to curtail in the Interconnection-wide congestion management procedure used by the Transmission Service Provider, filtered to reduce or eliminate duplicate impacts from transactions using Transmission service from multiple Transmission Service

³ A percentage less than that used in the Interconnection-wide congestion management procedure may be utilized.

⁴ A percentage less than that used in the Interconnection-wide congestion management procedure may be utilized.

⁵ A percentage less than that used in the Interconnection-wide congestion management procedure may be utilized.

⁶ A percentage less than that used in the Interconnection-wide congestion management procedure may be utilized.

Providers, for all adjacent Transmission Service Providers and any other Transmission Service Providers with which coordination agreements have been executed.

- R7.7.** The impact of other non-firm services determined by the Transmission Service Provider.
- R8.** When calculating firm AFC for a Flowgate for a specified period, the Transmission Service Provider shall use the following algorithm (subject to allocation processes described in the ATCID): [*Violation Risk Factor: Lower*] [*Time Horizon: Operations Planning*]

$$AFC_F = TFC - ETC_{Fi} - CBM_i - TRM_i + Postbacks_{Fi} + counterflows_{Fi}$$

Where:

AFC_F is the firm Available Flowgate Capability for the Flowgate for that period.

TFC is the Total Flowgate Capability of the Flowgate.

ETC_{Fi} is the sum of the impacts of existing firm Transmission commitments for the Flowgate during that period.

CBM_i is the impact of the Capacity Benefit Margin on the Flowgate during that period.

TRM_i is the impact of the Transmission Reliability Margin on the Flowgate during that period.

Postbacks_{Fi} are changes to firm AFC due to a change in the use of Transmission Service for that period, as defined in Business Practices.

counterflows_{Fi} are adjustments to firm AFC as determined by the Transmission Service Provider and specified in their ATCID.

- R9.** When calculating non-firm AFC for a Flowgate for a specified period, the Transmission Service Provider shall use the following algorithm (subject to allocation processes described in the ATCID): [*Violation Risk Factor: Lower*] [*Time Horizon: Operations Planning*]

$$AFC_{NF} = TFC - ETC_{Fi} - ETC_{NFi} - CBM_{Si} - TRM_{Ui} + Postbacks_{NFi} + counterflows$$

Where:

AFC_{NF} is the non-firm Available Flowgate Capability for the Flowgate for that period.

TFC is the Total Flowgate Capability of the Flowgate.

ETC_{Fi} is the sum of the impacts of existing firm Transmission commitments for the Flowgate during that period.

ETC_{NFi} is the sum of the impacts of existing non-firm Transmission commitments for the Flowgate during that period.

CBM_{Si} is the impact of any schedules during that period using Capacity Benefit Margin.

TRM_{Ui} is the impact on the Flowgate of the Transmission Reliability Margin that has not been released (unreleased) for sale as non-firm capacity by the Transmission Service Provider during that period.

Postbacks_{NF} are changes to non-firm Available Flowgate Capability due to a change in the use of Transmission Service for that period, as defined in Business Practices.

counterflows_{NF} are adjustments to non-firm AFC as determined by the Transmission Service Provider and specified in their ATCID.

- R10.** Each Transmission Service Provider shall recalculate AFC, utilizing the updated models described in R3.2, R3.3, and R5, at a minimum on the following frequency, unless none of the calculated values identified in the AFC equation have changed: [*Violation Risk Factor: Lower*] [*Time Horizon: Operations Planning*]
- R10.1.** For hourly AFC, once per hour. Transmission Service Providers are allowed up to 175 hours per calendar year during which calculations are not required to be performed, despite a change in a calculated value identified in the AFC equation.
- R10.2.** For daily AFC, once per day.
- R10.3.** For monthly AFC, once per week.
- R11.** When converting Flowgate AFCs to ATCs for ATC Paths, the Transmission Service Provider shall convert those values based on the following algorithm: [*Violation Risk Factor: Lower*] [*Time Horizon: Operations Planning*]

$$\begin{aligned} \text{ATC} &= \min(\text{P}) \\ \text{P} &= \{\text{PATC}_1, \text{PATC}_2, \dots, \text{PATC}_n\} \\ \text{PATC}_n &= \frac{\text{AFC}_n}{\text{DF}_{np}} \end{aligned}$$

Where:

ATC is the Available Transfer Capability.

P is the set of partial Available Transfer Capabilities for all “impacted” Flowgates honored by the Transmission Service Provider; a Flowgate is considered “impacted” by a path if the Distribution Factor for that path is greater than the percentage⁷ used to curtail in the Interconnection-wide congestion management procedure used by the Transmission Service Provider on an OTDF Flowgate or PTDF Flowgate.

PATC_n is the partial Available Transfer Capability for a path relative to a Flowgate *n*.

AFC_n is the Available Flowgate Capability of a Flowgate *n*.

DF_{np} is the distribution factor for Flowgate *n* relative to path *p*.

C. Measures

- M1.** Each Transmission Service Provider shall provide its ATCID and other evidence (such as written documentation) to show that its ATCID contains the criteria used by the Transmission Operator to identify sets of Transmission Facilities as Flowgates and information on how sources and sinks are accounted for in AFC calculations. (R1)
- M2.** The Transmission Operator shall provide evidence (such as studies and working papers) that all Flowgates that meet the criteria described in R2.1 are considered in its AFC calculations. (R2.1)

⁷ A percentage less than that used in the Interconnection-wide congestion management procedure may be utilized.

- M3.** The Transmission Operator shall provide evidence (such as logs) that it updated its list of Flowgates at least once per calendar year. (R2.2)
- M4.** The Transmission Operator shall provide evidence (such as logs and dated requests) that it updated the list of Flowgates within thirty calendar days from a request. (R2.3)
- M5.** The Transmission Operator shall provide evidence (such as data or models) that it determined the TFC for each Flowgate as defined in R2.4. (R2.4)
- M6.** The Transmission Operator shall provide evidence (such as logs) that it established the TFCs for each Flowgate in accordance with the timing defined in R2.5. (R2.5)
- M7.** The Transmission Operator shall provide evidence (such as logs and electronic communication) that it provided the Transmission Service Provider with updated TFCs within seven calendar days of their determination. (R2.6)
- M8.** The Transmission Operator shall provide evidence (such as written documentation, logs, models, and data) that the Transmission model used to determine AFCs contains the information specified in R3. (R3)
- M9.** The Transmission Service Provider shall provide evidence (such as written documentation and data) that the modeling of point-to-point reservations was based on the rules described in R4. (R4)
- M10.** The Transmission Service Provider shall provide evidence including the models received from Transmission Operators and other evidence (such as documentation and data) to show that it used the Transmission Operator's models in calculating AFC. (R5.1)
- M11.** The Transmission Service Provider shall provide evidence (such as written documentation, electronic communications, and data) that all expected generation and Transmission outages, additions, and retirements were included in the AFC calculation as specified in the ATCID. (R5.2)
- M12.** The Transmission Service Provider shall provide evidence (such as logs, electronic communications, and data) that AFCs provided by third parties on external Flowgates were used instead of those calculated by the Transmission Operator. (R5.3)
- M13.** The Transmission Service Provider shall demonstrate compliance with R6 by recalculating firm ETC for any specific time period as described in (MOD-001 R2), using the requirements defined in R6 and with data used to calculate the specified value for the designated time period. The data used must meet the requirements specified in ~~MOD-030-1~~ **this standard** and the ATCID. To account for differences that may occur when recalculating the value (due to mixing automated and manual processes), any recalculated value that is within +/- 15% or 15 MW, whichever is greater, of the originally calculated value, is evidence that the Transmission Service Provider used the requirements defined in R6 to calculate its firm ETC. (R6)
- M14.** The Transmission Service Provider shall demonstrate compliance with R7 by recalculating non-firm ETC for any specific time period as described in (MOD-001 R2), using the requirements defined in R7 and with data used to calculate the specified value for the designated time period. The data used must meet the requirements specified in the standard and the ATCID. To account for differences that may occur when recalculating the value (due to mixing automated and manual processes), any recalculated value that is within +/- 15% or 15 MW, whichever is greater, of the originally calculated value, is evidence that the

Transmission Service Provider used the requirements in R7 to calculate its non-firm ETC.
(R7)

M15. Each Transmission Service Provider shall produce the supporting documentation for the processes used to implement the algorithm that calculates firm AFCs, as required in R8. Such documentation must show that only the variables allowed in R8 were used to calculate firm AFCs, and that the processes use the current values for the variables as determined in the requirements or definitions. Note that any variable may legitimately be zero if the value is not applicable or calculated to be zero (such as counterflows, TRM, CBM, etc...). The supporting documentation may be provided in the same form and format as stored by the Transmission Service Provider. (R8)

M16. Each Transmission Service Provider shall produce the supporting documentation for the processes used to implement the algorithm that calculates non-firm AFCs, as required in R9. Such documentation must show that only the variables allowed in R9 were used to calculate non-firm AFCs, and that the processes use the current values for the variables as determined in the requirements or definitions. Note that any variable may legitimately be zero if the value is not applicable or calculated to be zero (such as counterflows, TRM, CBM, etc...). The supporting documentation may be provided in the same form and format as stored by the Transmission Service Provider. (R9)

M17. The Transmission Service Provider shall provide evidence (such as documentation, dated logs, and data) that it calculated AFC on the frequency defined in R10. (R10)

M18. The Transmission Service Provider shall provide evidence (such as documentation and data) when converting Flowgate AFCs to ATCs for ATC Paths, it follows the procedure described in R11. (R11)

D. Compliance

1. Compliance Monitoring Process

1.1. Compliance Enforcement Authority

Regional Entity.

1.2. Compliance Monitoring Period and Reset Time Frame

Not applicable.

1.3. Data Retention

The Transmission Operator and Transmission Service Provider shall keep data or evidence to show compliance as identified below unless directed by its Compliance Enforcement Authority to retain specific evidence for a longer period of time as part of an investigation:

- The Transmission Service Provider shall retain its current, in force ATCID and any prior versions of the ATCID that were in force since the last compliance audit to show compliance with R1.
- The Transmission Operator shall have its latest model used to determine flowgates and TFC and evidence of the previous version to show compliance with R2 and R3.
- The Transmission Operator shall retain evidence to show compliance with R2.1, R2.3 for the most recent 12 months.

- The Transmission Operator shall retain evidence to show compliance with R2.2, R2.4 and R2.5 for the most recent three calendar years plus current year.
- The Transmission Service Provider shall retain evidence to show compliance with R4 for 12 months or until the model used to calculate AFC is updated, whichever is longer.
- The Transmission Service Provider shall retain evidence to show compliance with R5, R8, R9, R10, and R11 for the most recent calendar year plus current year.
- The Transmission Service Provider shall retain evidence to show compliance in calculating hourly values required in R6 and R7 for the most recent 14 days; evidence to show compliance in calculating daily values required in R6 and R7 for the most recent 30 days; and evidence to show compliance in calculating monthly values required in R6 and R7 for the most recent sixty days.
- If a Transmission Service Provider or Transmission Operator is found non-compliant, it shall keep information related to the non-compliance until found compliant.

The Compliance Enforcement Authority shall keep the last audit records and all requested and submitted subsequent audit records.

1.4. Compliance Monitoring and Enforcement Processes:

The following processes may be used:

- Compliance Audits
- Self-Certifications
- Spot Checking
- Compliance Violation Investigations
- Self-Reporting
- Complaints

1.5. Additional Compliance Information

None.

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2. Violation Severity Levels

R #	Lower VSL	Moderate VSL	High VSL	Severe VSL
R1.	The Transmission Service Provider does not include in its ATCID one or two of the sub-requirements listed under R1.2, or the sub-requirement is incomplete.	The Transmission Service Provider does not include in its ATCID three of the sub-requirements listed under R1.2, or the sub-requirement is incomplete.	The Transmission Service Provider does not include in its ATCID the information described in R1.1. OR The Transmission Service Provider does not include in its ATCID the information described in R1.2 (1.2.1, 1.2.2., 1.2.3, and 1.2.4 are missing).	The Transmission Service Provider does not include in its ATCID the information described in R1.1 and R1.2 (1.2.1, 1.2.2., 1.2.3, and 1.2.4 are missing).
R2.	One or more of the following: <ul style="list-style-type: none"> The Transmission Operator established its list of Flowgates less frequently than once per calendar year, but not more than three months late as described in R2.2. The Transmission Operator established its list of Flowgates more than thirty days, but not more than sixty days, following a request to create, modify or delete a flowgate as described in R2.3. The Transmission Operator has not updated its Flowgate 	One or more of the following: <ul style="list-style-type: none"> The Transmission Operator did not include a Flowgate in their AFC calculations that met the criteria described in R2.1. The Transmission Operator established its list of Flowgates more than three months late, but not more than six months late as described in R2.2. The Transmission Operator established its list of Flowgates more than sixty days, but not more than ninety days, following a request to create, modify or 	One or more of the following: <ul style="list-style-type: none"> The Transmission Operator did not include two to five Flowgates in their AFC calculations that met the criteria described in R2.1. The Transmission Operator established its list of Flowgates more than six months late, but not more than nine months late as described in R2.2. The Transmission Operator established its list of Flowgates more than ninety days, but not more than 120 days, following a request to create, modify or delete a 	One or more of the following: <ul style="list-style-type: none"> The Transmission Operator did not include six or more Flowgates in their AFC calculations that met the criteria described in R2.1. The Transmission Operator established its list of Flowgates more than nine months late as described in R2.2. The Transmission Operator did not establish its list of internal Flowgates as described in R2.2. The Transmission Operator established its list of Flowgates more than 120 days following a request to create, modify or delete a

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R #	Lower VSL	Moderate VSL	High VSL	Severe VSL
	<p>TFC when notified by the Transmission Owner in more than 7 days, but it has not been more than 14 days since the notification (R2.5.1)</p> <ul style="list-style-type: none"> The Transmission Operator has not provided its Transmission Service Provider with its Flowgate TFCs within seven days (one week) of their determination, but is has not been more than 14 days (two weeks) since their determination. 	<p>delete a flowgate as described in R2.3.</p> <ul style="list-style-type: none"> The Transmission Operator has not updated its Flowgate TFCs at least once within a calendar year, and it has been not more than 15 months since the last update. The Transmission Operator has not updated its Flowgate TFC when notified by the Transmission Owner in more than 14 days, but it has not been more than 21 days since the notification (R2.5.1) The Transmission Operator has not provided its Transmission Service Provider with its Flowgate TFCs in more than 14 days (two weeks) of their determination, but is has not been more than 21 days (three weeks) since their determination. 	<p>flowgate as described in R2.3.</p> <p>The Transmission Operator has not updated its Flowgate TFCs at least once within a calendar year, and it has been more than 15 months but not more than 18 months since the last update.</p> <ul style="list-style-type: none"> The Transmission Operator has not updated its Flowgate TFCs when notified by the Transmission Owner in more than 21 days, but it has not been more than 28 days since the notification (R2.5.1) The Transmission Operator has not provided its Transmission Service Provider with its Flowgate TFCs in more than 21 days (three weeks) of their determination, but is has not been more than 28 days (four weeks) since their determination. 	<p>flowgate as described in R2.3.</p> <ul style="list-style-type: none"> The Transmission Operator did not establish its list of external Flowgates following a request to create, modify or delete an external flowgate as described in R2.3. The Transmission Operator did not determine the TFC for a flowgate as described in R2.4. The Transmission Operator has not updated its Flowgate TFCs at least once within a calendar year, and it has been more than 18 months since the last update. (R2.5) The Transmission Operator has not updated its Flowgate TFCs when notified by the Transmission Owner in more than 28 calendar days (R2.5.1) The Transmission Operator has not provided its Transmission Service Provider with its Flowgate TFCs in more than 28 days (4 weeks) of their

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R #	Lower VSL	Moderate VSL	High VSL	Severe VSL
				determination.
R3.	<p>One or more of the following:</p> <ul style="list-style-type: none"> The Transmission Operator used one to ten Facility Ratings that were different from those specified by a Transmission or Generator Owner in their Transmission model. The Transmission Operator did not update the model per R3.2 for one or more calendar days but not more than 2 calendar days The Transmission Operator did not update the model for per R3.3 for one or more months but not more than six weeks 	<p>One or more of the following:</p> <ul style="list-style-type: none"> The Transmission Operator used eleven to twenty Facility Ratings that were different from those specified by a Transmission or Generator Owner in their Transmission model. The Transmission Operator did not update the model per R3.2 for more than 2 calendar days but not more than 3 calendar days The Transmission Operator did not update the model for per R3.3 for more than six weeks but not more than eight weeks 	<p>One or more of the following:</p> <ul style="list-style-type: none"> The Transmission Operator used twenty-one to thirty Facility Ratings that were different from those specified by a Transmission or Generator Owner in their Transmission model. The Transmission Operator did not update the model per R3.2 for more than 3 calendar days but not more than 4 calendar days The Transmission Operator did not update the model for per R3.3 for more than eight weeks but not more than ten weeks 	<p>One or more of the following:</p> <ul style="list-style-type: none"> The Transmission Operator did not update the model per R3.2 for more than 4 calendar days The Transmission Operator did not update the model for per R3.3 for more than ten weeks The Transmission Operator used more than thirty Facility Ratings that were different from those specified by a Transmission or Generator Owner in their Transmission model. The Transmission operator did not include in the Transmission model detailed modeling data and topology for its own Reliability

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R #	Lower VSL	Moderate VSL	High VSL	Severe VSL
				<p>Coordinator area.</p> <ul style="list-style-type: none"> The Transmission operator did not include in the Transmission modeling data and topology for immediately adjacent and beyond Reliability Coordinator area.
R4.	<p>The Transmission Service Provider did not represent the impact of Transmission Service as described in R4 for more than zero, but not more than 5% of all reservations; or more than zero, but not more than 1 reservation, whichever is greater..</p>	<p>The Transmission Service Provider did not represent the impact of Transmission Service as described in R4 for more than 5%, but not more than 10% of all reservations; or more than 1, but not more than 2 reservations, whichever is greater..</p>	<p>The Transmission Service Provider did not represent the impact of Transmission Service as described in R4 for more than 10%, but not more than 15% of all reservations; or more than 2, but not more than 3 reservations, whichever is greater..</p>	<p>The Transmission Service Provider did not represent the impact of Transmission Service as described in R4 for more than 15% of all reservations; or more than 3 reservations, whichever is greater..</p>
R5.	<p>The Transmission Service Provider did not include in the AFC process one to ten expected generation or Transmission outages, additions or retirements within the scope of the model as specified in the ATCID.</p>	<p>The Transmission Service Provider did not include in the AFC process eleven to twenty-five expected generation and Transmission outages, additions or retirements within the scope of the model as specified in the ATCID.</p>	<p>The Transmission Service Provider did not include in the AFC process twenty-six to fifty expected generation and Transmission outages, additions or retirements within the scope of the model as specified in the ATCID.</p>	<p>One or more of the following:</p> <ul style="list-style-type: none"> The Transmission Service Provider did not use the model provided by the Transmission Operator. The Transmission Service Provider did not include in the AFC process more than fifty expected generation and Transmission outages, additions or retirements within the scope of the model as specified in the

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R #	Lower VSL	Moderate VSL	High VSL	Severe VSL
				<p>ATCID.</p> <ul style="list-style-type: none"> The Transmission Service provider did not use AFC provided by a third party.
R6.	<p>For a specified period, the Transmission Service Provider calculated a firm ETC with an absolute value different than that calculated in M13 for the same period, and the absolute value difference was more than 15% of the value calculated in the measure or 15MW, whichever is greater, but not more than 25% of the value calculated in the measure or 25MW, whichever is greater..</p>	<p>For a specified period, the Transmission Service Provider calculated a firm ETC with an absolute value different than that calculated in M13 for the same period, and the absolute value difference was more than 25% of the value calculated in the measure or 25MW, whichever is greater, but not more than 35% of the value calculated in the measure or 35MW, whichever is greater.</p>	<p>For a specified period, the Transmission Service Provider calculated a firm ETC with an absolute value different than that calculated in M13 for the same period, and the absolute value difference was more than 35% of the value calculated in the measure or 35MW, whichever is greater, but not more than 45% of the value calculated in the measure or 45MW, whichever is greater.</p>	<p>For a specified period, the Transmission Service Provider calculated a firm ETC with an absolute value different than that calculated in M13 for the same period, and the absolute value difference was more than 45% of the value calculated in the measure or 45MW, whichever is greater.</p>
R7.	<p>For a specified period, the Transmission Service Provider calculated a non-firm ETC with an absolute value different than that calculated in M14 for the same period, and the absolute value difference was more than 15% of the value calculated in the measure or 15MW, whichever is greater, but not more than 25% of the value calculated in the measure or 25MW, whichever is greater.</p>	<p>For a specified period, the Transmission Service Provider calculated a non-firm ETC with an absolute value different than that calculated in M14 for the same period, and the absolute value difference was more than 25% of the value calculated in the measure or 25MW, whichever is greater, but not more than 35% of the value calculated in the measure or 35MW, whichever is greater.</p>	<p>For a specified period, the Transmission Service Provider calculated a non-firm ETC with an absolute value different than that calculated in M14 for the same period, and the absolute value difference was more than 35% of the value calculated in the measure or 35MW, whichever is greater, but not more than 45% of the value calculated in the measure or 45MW, whichever is greater.</p>	<p>For a specified period, the Transmission Service Provider calculated a non-firm ETC with an absolute value different than that calculated in M14 for the same period, and the absolute value difference was more than 45% of the value calculated in the measure or 45MW, whichever is greater.</p>

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R #	Lower VSL	Moderate VSL	High VSL	Severe VSL
R8.	The Transmission Service Provider did not use all the elements defined in R8 when determining firm AFC, or used additional elements, for more than zero Flowgates, but not more than 5% of all Flowgates or 1 Flowgate (whichever is greater).	The Transmission Service Provider did not use all the elements defined in R8 when determining firm AFC, or used additional elements, for more than 5% of all Flowgates or 1 Flowgates (whichever is greater), but not more than 10% of all Flowgates or 2 Flowgates (whichever is greater).	The Transmission Service Provider did not use all the elements defined in R8 when determining firm AFC, or used additional elements, for more than 10% of all Flowgates or 2 Flowgates (whichever is greater), but not more than 15% of all Flowgates or 3 Flowgates (whichever is greater).	The Transmission Service Provider did not use all the elements defined in R8 when determining firm AFC, or used additional elements, for more than 15% of all Flowgates or more than 3 Flowgates (whichever is greater).
R9.	The Transmission Service Provider did not use all the elements defined in R8 when determining non-firm AFC, or used additional elements, for more than zero Flowgates, but not more than 5% of all Flowgates or 1 Flowgate (whichever is greater).	The Transmission Service Provider did not use all the elements defined in R9 when determining non-firm AFC, or used additional elements, for more than 5% of all Flowgates or 1 Flowgate (whichever is greater), but not more than 10% of all Flowgates or 2 Flowgates (whichever is greater).	The Transmission Service Provider did not use all the elements defined in R9 when determining non-firm AFC, or used additional elements, for more than 10% of all Flowgates or 2 Flowgates (whichever is greater), but not more than 15% of all Flowgates or 3 Flowgates (whichever is greater).	The Transmission Service Provider did not use all the elements defined in R9 when determining non-firm AFC, or used additional elements, for more than 15% of all Flowgates or more than 3 Flowgates (whichever is greater).
R10	<p>One or more of the following:</p> <ul style="list-style-type: none"> ▪ For Hourly, the values described in the AFC equation changed and the Transmission Service provider did not calculate for one or more hours but not more than 15 hours, and was in excess of the 175-hour per year 	<p>One or more of the following:</p> <ul style="list-style-type: none"> ▪ For Hourly, the values described in the AFC equation changed and the Transmission Service provider did not calculate for more than 15 hours but not more than 20 hours, and was in excess of the 175-hour per year 	<p>One or more of the following:</p> <ul style="list-style-type: none"> ▪ For Hourly, the values described in the AFC equation changed and the Transmission Service provider did not calculate for more than 20 hours but not more than 25 hours, and was in excess of the 175-hour per year 	<p>One or more of the following:</p> <ul style="list-style-type: none"> ▪ For Hourly, the values described in the AFC equation changed and the Transmission Service provider did not calculate for more than 25 hours, and was in excess of the 175-hour per year requirement.

Standard MOD-030-02 — Flowgate Methodology

R #	Lower VSL	Moderate VSL	High VSL	Severe VSL
	<p>requirement.</p> <ul style="list-style-type: none"> ▪ For Daily, the values described in the AFC equation changed and the Transmission Service provider did not calculate for one or more calendar days but not more than 3 calendar days. ▪ For Monthly, the values described in the AFC equation changed and the Transmission Service provider did not calculate for seven or more calendar days, but less than 14 calendar days. 	<p>requirement.</p> <ul style="list-style-type: none"> ▪ For Daily, the values described in the AFC equation changed and the Transmission Service provider did not calculate for more than 3 calendar days but not more than 4 calendar days. ▪ For Monthly, the values described in the AFC equation changed and the Transmission Service provider did not calculate for 14 or more calendar days, but less than 21 calendar days. 	<p>requirement.</p> <ul style="list-style-type: none"> ▪ For Daily, the values described in the AFC equation changed and the Transmission Service provider did not calculate for more than 4 calendar days but not more than 5 calendar days. ▪ For Monthly, the values described in the AFC equation changed and the Transmission Service provider did not calculate for 21 or more calendar days, but less than 28 calendar days. 	<ul style="list-style-type: none"> ▪ For Daily, the values described in the AFC equation changed and the Transmission Service provider did not calculate for more than 5 calendar days. ▪ For Monthly, the values described in the AFC equation changed and the Transmission Service provider did not calculate for 28 or more calendar days.
R11.	N/A	N/A	N/A	The Transmission Service Provider did not follow the procedure for converting Flowgate AFCs to ATCs described in R11.

A. Regional Differences

None identified.

B. Associated Documents

Version History

Version	Date	Action	Change Tracking
2		Modified R2.1.1.3, R2.1.2.3, R2.1.3, R2.2, R2.3 and R11 Made conforming changes to M18 and VSLs for R2 and R11	Revised

Standards Announcement

Initial Ballot Results

Now available at: <https://standards.nerc.net/Ballots.aspx>

Initial Ballot Results for MOD-030-2 — Flowgate Methodology (Project 2006-07)

Quorum: 83.77 %
Approval: 86.51 %

Approval requires both:

- A quorum, which is established by at least 75% of the members of the ballot pool for submitting either an affirmative vote, a negative vote, or an abstention; and
- A two-thirds majority of the weighted segment votes cast must be affirmative. The number of votes cast is the sum of affirmative and negative votes, excluding abstentions and nonresponses.

The [Ballot Results](#) Web page provides a link to the detailed results of this ballot.

Since at least one negative ballot was submitted with a comment, a recirculation ballot will be held. The recirculation ballot will be held after the drafting team responds to voter comments submitted during this ballot.

Background

This standard incorporates balloter suggestions for additional improvements to MOD-030-1. (The suggested improvements are aimed at allowing additional methods of achieving the same reliability objective — the suggested improvements are not aimed at correcting any errors in MOD-030-1.) Under the existing standards development process, if the drafting team had made these changes to MOD-030-1, the standard would have needed to be posted for an additional comment period, followed by balloting. This delay would have prevented MOD-030-1 from being ready to file with FERC before its due date.

To remedy this problem, the drafting team submitted a Standards Authorization Request (SAR) to initiate modifications to MOD-030-1, and received Standards Committee authorization to post the SAR and a proposed version of MOD-030-2 reflecting consideration of comments submitted with the initial ballot of MOD-030-1. As envisioned, MOD-030-2 will move through the standards development process and will be filed with governmental authorities before MOD-030-1 becomes effective.

Project page: <http://www.nerc.com/filez/standards/MOD-V0-Revision.html>

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.

*For more information or assistance,
please contact Shaun Streeter at shaun.streeter@nerc.net or at 609.452.8060.*



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- Ballot Pools
- Current Ballots
- Ballot Results
- Registered Ballot Body
- Proxy Voters

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Ballot Results	
Ballot Name:	Project 2006-07 (ATC) MOD-030-2_in
Ballot Period:	12/1/2008 - 12/10/2008
Ballot Type:	Initial
Total # Votes:	160
Total Ballot Pool:	191
Quorum:	83.77 % The Quorum has been reached
Weighted Segment Vote:	86.51 %
Ballot Results:	The standard will proceed to recirculation ballot.

Summary of Ballot Results									
Segment	Ballot Pool	Segment Weight	Affirmative		Negative		Abstain # Votes	No Vote	
			# Votes	Fraction	# Votes	Fraction			
1 - Segment 1.	50	1	28	0.824	6	0.176	9	7	
2 - Segment 2.	7	0.3	3	0.3	0	0	4	0	
3 - Segment 3.	45	1	26	0.867	4	0.133	5	10	
4 - Segment 4.	11	0.5	4	0.4	1	0.1	5	1	
5 - Segment 5.	36	1	20	0.87	3	0.13	6	7	
6 - Segment 6.	28	1	20	0.87	3	0.13	1	4	
7 - Segment 7.	0	0	0	0	0	0	0	0	
8 - Segment 8.	2	0.1	0	0	1	0.1	0	1	
9 - Segment 9.	4	0.4	4	0.4	0	0	0	0	
10 - Segment 10.	8	0.4	4	0.4	0	0	3	1	
Totals	191	5.7	109	4.931	18	0.769	33	31	

Individual Ballot Pool Results				
Segment	Organization	Member	Ballot	Comments
1	Allegheny Power	Rodney Phillips	Affirmative	
1	Ameren Services	Kirit S. Shah	Negative	View
1	American Electric Power	Paul B. Johnson	Affirmative	
1	American Transmission Company, LLC	Jason Shaver	Abstain	
1	Associated Electric Cooperative, Inc.	John Bussman	Affirmative	
1	Avista Corp.	Scott Kinney	Affirmative	
1	Bonneville Power Administration	Donald S. Watkins	Affirmative	
1	Brazos Electric Power Cooperative, Inc.	Tony Kroskey	Abstain	

1	Central Maine Power Company	Brian Conroy	Affirmative	
1	City of Vero Beach	Randall McCamish	Abstain	
1	Consolidated Edison Co. of New York	Christopher L de Graffenried	Affirmative	View
1	Dairyland Power Coop.	Robert W. Roddy	Abstain	
1	Duke Energy Carolina	Douglas E. Hils	Affirmative	
1	E.ON U.S. LLC	Larry Monday	Affirmative	
1	East Kentucky Power Coop.	George S. Carruba		
1	El Paso Electric Company	Dennis Malone		
1	Entergy Corporation	George R. Bartlett	Affirmative	
1	Farmington Electric Utility System	Alan Glazner	Affirmative	
1	FirstEnergy Energy Delivery	Robert Martinko	Negative	View
1	Florida Keys Electric Cooperative Assoc.	Dennis Minton		
1	Florida Power & Light Co.	C. Martin Mennes	Abstain	
1	Georgia Transmission Corporation	Harold Taylor, II	Affirmative	
1	Great River Energy	Gordon Pietsch	Negative	
1	Hoosier Energy Rural Electric Cooperative, Inc.	Damon Holladay	Affirmative	
1	Hydro One Networks, Inc.	Ajay Garg	Affirmative	
1	ITC Transmission	Elizabeth Howell	Negative	View
1	JEA	Ted E. Hobson	Affirmative	
1	Kansas City Power & Light Co.	Jim Useldinger	Negative	
1	Manitoba Hydro	Michelle Rheault	Affirmative	
1	National Grid	Michael J Ranalli	Affirmative	
1	New York State Electric & Gas Corp.	Henry G. Masti		
1	Northeast Utilities	David H. Boguslawski	Affirmative	
1	Oklahoma Gas and Electric Co.	Marvin E VanBebber	Affirmative	
1	Orange and Rockland Utilities, Inc.	Edward Bedder	Abstain	
1	Orlando Utilities Commission	Brad Chase	Abstain	View
1	Otter Tail Power Company	Lawrence R. Larson	Negative	
1	PacifiCorp	Robert Williams	Affirmative	
1	Potomac Electric Power Co.	Richard J. Kafka	Affirmative	
1	PP&L, Inc.	Ray Mammarella	Affirmative	
1	Progress Energy Carolinas	Sammy Roberts	Affirmative	
1	Public Service Electric and Gas Co.	Kenneth D. Brown	Affirmative	
1	Salt River Project	Robert Kondziolka	Affirmative	
1	Seattle City Light	Pawel Krupa	Affirmative	
1	Southern California Edison Co.	Dana Cabbell		
1	Southern Company Services, Inc.	Horace Stephen Williamson	Affirmative	
1	Southwest Transmission Cooperative, Inc.	James L. Jones	Abstain	
1	Tri-State G & T Association Inc.	Keith V. Carman		
1	Tucson Electric Power Co.	Ronald P. Belval	Abstain	View
1	Western Area Power Administration	Robert Temple	Affirmative	
1	Xcel Energy, Inc.	Gregory L. Pieper		
2	Alberta Electric System Operator	Anita Lee	Abstain	View
2	British Columbia Transmission Corporation	Phil Park	Abstain	
2	California ISO	David Hawkins	Affirmative	
2	Independent Electricity System Operator	Kim Warren	Affirmative	
2	Midwest ISO, Inc.	Terry Bilke	Abstain	
2	New York Independent System Operator	Gregory Campoli	Abstain	
2	PJM Interconnection, L.L.C.	Tom Bowe	Affirmative	
3	Alabama Power Company	Robin Hurst	Affirmative	
3	American Electric Power	Raj Rana	Affirmative	
3	Arizona Public Service Co.	Thomas R. Glock	Affirmative	
3	Avista Corp.	Robert Lafferty		
3	BC Hydro and Power Authority	Pat G. Harrington	Abstain	
3	Bonneville Power Administration	Rebecca Berdahl	Affirmative	
3	City of Tallahassee	Rusty S. Foster		
3	Consumers Energy	David A. Lapinski	Abstain	
3	Delmarva Power & Light Co.	Michael R. Mayer	Affirmative	
3	Dominion Resources, Inc.	Jalal (John) Babik	Affirmative	
3	Duke Energy Carolina	Henry Ernst-Jr	Affirmative	
3	Entergy Services, Inc.	Matt Wolf	Affirmative	
3	FirstEnergy Solutions	Joanne Kathleen Borrell	Negative	View
3	Florida Power & Light Co.	W. R. Schoneck	Abstain	
3	Florida Power Corporation	Lee Schuster	Affirmative	
3	Georgia Power Company	Leslie Sibert	Affirmative	
3	Grays Harbor PUD	Wesley W Gray	Affirmative	

3	Great River Energy	Sam Kokkinen	Negative	
3	Gulf Power Company	Gwen S Frazier	Affirmative	
3	Hydro One Networks, Inc.	Michael D. Penstone	Affirmative	
3	Idaho Power Company	Shaun Jensen	Affirmative	
3	JEA	Garry Baker	Affirmative	
3	Kansas City Power & Light Co.	Charles Locke	Negative	
3	Kissimmee Utility Authority	Gregory David Woessner		
3	Lincoln Electric System	Bruce Merrill	Negative	View
3	Louisville Gas and Electric Co.	Charles A. Freibert		
3	Manitoba Hydro	Ronald Dacombe	Affirmative	
3	MidAmerican Energy Co.	Thomas C. Mielnik	Abstain	
3	Mississippi Power	Don Horsley	Affirmative	
3	New York Power Authority	Michael Lupo		
3	Northern Indiana Public Service Co.	William SeDoris		
3	Orlando Utilities Commission	Ballard Keith Muters	Abstain	View
3	PacifiCorp	John Apperson	Affirmative	
3	PECO Energy an Exelon Co.	John J. McCawley		
3	Platte River Power Authority	Terry L Baker	Affirmative	
3	Potomac Electric Power Co.	Robert Reuter	Affirmative	
3	Progress Energy Carolinas	Sam Waters	Affirmative	
3	Public Service Electric and Gas Co.	Jeffrey Mueller	Affirmative	
3	Public Utility District No. 2 of Grant County	Greg Lange		
3	Salt River Project	John T. Underhill	Affirmative	
3	San Diego Gas & Electric	Scott Peterson		
3	Seattle City Light	Dana Wheelock	Affirmative	
3	Wisconsin Electric Power Marketing	James R. Keller	Affirmative	
3	Wisconsin Public Service Corp.	James Maenner		
3	Xcel Energy, Inc.	Michael Ibold	Affirmative	
4	Alliant Energy Corp. Services, Inc.	Kenneth Goldsmith	Abstain	
4	American Municipal Power - Ohio	Chris Norton	Abstain	
4	Consumers Energy	David Frank Ronk	Abstain	
4	Florida Municipal Power Agency	Thomas Reedy	Abstain	
4	Integrus Energy Group, Inc.	Christopher Plante	Abstain	
4	Ohio Edison Company	Douglas Hohlbaugh	Negative	View
4	Public Power Council	Nancy Baker		
4	Public Utility District No. 1 of Snohomish County	John D. Martinsen	Affirmative	
4	Seattle City Light	Hao Li	Affirmative	
4	Seminole Electric Cooperative, Inc.	Steven R. Wallace	Affirmative	
4	Wisconsin Energy Corp.	Anthony Jankowski	Affirmative	
5	AEP Service Corp.	Brock Ondayko	Affirmative	
5	Avista Corp.	Edward F. Groce	Affirmative	
5	Bonneville Power Administration	Francis J. Halpin	Affirmative	
5	City of Tallahassee	Alan Gale	Affirmative	
5	Conectiv Energy Supply, Inc.	Richard K. Douglass	Affirmative	
5	Constellation Generation Group	Michael F. Gildea	Abstain	View
5	Consumers Energy	James B Lewis	Abstain	
5	Dairyland Power Coop.	Warren Schaefer		
5	Detroit Edison Company	Ronald W. Bauer	Affirmative	
5	Dominion Resources, Inc.	Mike Garton	Affirmative	
5	East Kentucky Power Coop.	Stephen Ricker		
5	Entergy Corporation	Stanley M Jaskot		
5	Exelon Nuclear	Michael Korchynsky	Affirmative	
5	FirstEnergy Solutions	Kenneth Dresner	Negative	View
5	Great River Energy	Cynthia E Sulzer	Negative	
5	JEA	Donald Gilbert	Affirmative	
5	Lincoln Electric System	Dennis Florom	Negative	View
5	Luminant Generation Company LLC	Larry Gurley		
5	Manitoba Hydro	Mark Aikens	Affirmative	
5	New York Power Authority	Gerald Mannarino		
5	Northern States Power Co.	Liam Noailles		
5	Oklahoma Gas and Electric Co.	Kim Morphis		
5	Orlando Utilities Commission	Richard Kinan	Abstain	View
5	PacifiCorp Energy	David Godfrey	Affirmative	
5	PPL Generation LLC	Mark A. Heimbach	Affirmative	
5	Progress Energy Carolinas	Wayne Lewis	Affirmative	
5	PSEG Power LLC	Thomas Piascik	Affirmative	

5	Salt River Project	Glen Reeves	Affirmative	
5	Seattle City Light	Michael J. Haynes	Affirmative	
5	Seminole Electric Cooperative, Inc.	Brenda K. Atkins	Affirmative	
5	Southeastern Power Administration	Douglas Spencer	Abstain	
5	Southern Company Services, Inc.	Roger D. Green	Affirmative	
5	Tenaska, Inc.	Scott M. Helyer	Abstain	
5	U.S. Army Corps of Engineers Northwestern Division	Karl Bryan	Affirmative	
5	U.S. Bureau of Reclamation	Martin Bauer	Abstain	
5	Wisconsin Electric Power Co.	Linda Horn	Affirmative	
6	AEP Marketing	Edward P. Cox	Affirmative	
6	Ameren Energy Marketing Co.	Jennifer Richardson		
6	Black Hills Power	Larry Williamson	Affirmative	
6	Bonneville Power Administration	Brenda S. Anderson	Affirmative	
6	Cleco Power LLC	Matthew D Cripps	Abstain	
6	Consolidated Edison Co. of New York	Nickesha P Carrol	Affirmative	
6	Dominion Resources, Inc.	Louis S Slade	Affirmative	
6	Entergy Services, Inc.	William Franklin	Affirmative	
6	Eugene Water & Electric Board	Daniel Mark Bedbury	Affirmative	
6	FirstEnergy Solutions	Mark S Travaglianti	Negative	View
6	Florida Municipal Power Agency	Robert C. Williams		
6	Great River Energy	Donna Stephenson	Negative	
6	Lincoln Electric System	Eric Ruskamp	Negative	View
6	Louisville Gas and Electric Co.	Daryn Barker	Affirmative	
6	Manitoba Hydro	Daniel Prowse	Affirmative	
6	MidAmerican Energy Co.	Dennis Kimm	Affirmative	View
6	New York Power Authority	Thomas Papadopoulos	Affirmative	
6	OATI	Robert D Schwermann	Affirmative	
6	PacifiCorp	Gregory D Maxfield	Affirmative	
6	PP&L, Inc.	Thomas Hyzinski	Affirmative	
6	Progress Energy	James Eckelkamp	Affirmative	
6	PSEG Energy Resources & Trade LLC	James D. Hebson	Affirmative	
6	Public Utility District No. 1 of Chelan County	Hugh A. Owen	Affirmative	
6	Salt River Project	Mike Hummel	Affirmative	
6	Seminole Electric Cooperative, Inc.	Trudy S. Novak	Affirmative	
6	Southern California Edison Co.	Marcus V Lotto	Affirmative	
6	Western Area Power Administration - UGP Marketing	John Stonebarger		
6	Xcel Energy, Inc.	David F. Lemmons		
8	JDRJC Associates	Jim D. Cyrulewski	Negative	
8	Volkman Consulting, Inc.	Terry Volkman		
9	California Energy Commission	William Mitchell Chamberlain	Affirmative	
9	Commonwealth of Massachusetts Department of Public Utilities	Donald E. Nelson	Affirmative	
9	National Association of Regulatory Utility Commissioners	Diane J. Barney	Affirmative	
9	Public Utilities Commission of Ohio	Klaus Lambeck	Affirmative	
10	Electric Reliability Council of Texas, Inc.	Kent Saathoff	Abstain	
10	Florida Reliability Coordinating Council	Linda Campbell	Abstain	View
10	Midwest Reliability Organization	Larry Brusseau	Abstain	
10	New York State Reliability Council	Alan Adamson	Affirmative	
10	Northeast Power Coordinating Council, Inc.	Guy Zito	Affirmative	
10	SERC Reliability Corporation	Carter B. Edge	Affirmative	
10	Southwest Power Pool	Charles H. Yeung		
10	Western Electricity Coordinating Council	Louise McCarren	Affirmative	

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Consideration of Comments on Initial ballot of MOD-030-2 — Flowgate Methodology (Project 2006-07 — ATC/TTC/AFC and CBM/TRM Revisions)

Summary Consideration: The drafting team did not make any changes to the standard based on comments received.

One balloter suggested that the “Time Horizon” for some of the requirements should include Long-Term Planning. The SDT responded that Short Term transfers are evaluated for a “yes” or “no” answer based on pre-calculated capacities. Long Term transfers are studied on demand and studied from the perspective of finding a way to serve the transfer. Because of these differences the SDT does not believe it is prudent to include criteria on long term transfers in this standard, since the standard addresses the fundamentally different short term transfers or more accurately the calculation of the capacities used to approve or refuse a transfer.

Some balloters expressed concern that the standard conflicts with the manner in which the Midwest ISO has implemented the flowgate methodology today. The SDT has informed those commenters that if they believe their current method is reliable and meets or exceeds the intent of the standard, they can submit a SAR requesting a Variance, ask for a Joint Registration Organization (JRO), or pursue other contractual or delegation options. If a SAR is submitted, then NERC can work with the balloters to develop an acceptable solution.

Some balloters expressed that the model requirements in R3 were excessive, and may be unnecessary if a flowgate has not been defined within the Transmission Operator’s area. The SDT explained that the requirement is necessary for the Transmission Operator to supply the models with the initial loads, topology and ratings. While it would also be valid to have one requirement for the Transmission Operator to supply changes, and a separate requirement for the Transmission Service Provide to implement them, the SDT chose a different approach and industry did not seem to object. Note that this language is the same as in the current MOD-030-1; it was not changed during this drafting effort. The SDT does not believe it is appropriate to assume that if there are no flowgates defined in the Transmission Operator’s area, then there is no need to ensure that the model is up to date and accurate. At a minimum, the impact of operations within the modeled area may have impacts on other areas in which flowgates are defined. As such, it is important that both models be accurate and up to date.

One balloter appeared to express concerns regarding the disclosure of information to market participants. The SDT believes that it has addressed the reliability aspects of access; to the extent other entities need access to the same data, NAESB will be addressing such requirements.

Entity	Segment	Vote	Comment
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Entity	Segment	Vote	Comment
Ameren Services	1	Negative	Standard only refers to "short-term" use. We believe that the AFC issues affect long-term Planning as well as Operations (short term) Planning. There needs to be consistency among the methodology used for shorter term and longer term sales. Therefore, the standard should include requirements related to longer-term also.
<p>Response: In general, analysis of Short Term requests are based on available capacity on paths or flowgates and take into account only existing facilities and currently planned facilities. A particular request is not studied but instead a capability of paths is determined and transfers allowed if the capability is there. The decision made with regard to Short Term requests is to allow the transfer or not allow the transfer and the decision is made by the TSP, not by the requestor.</p> <p>Long Term transfers are studied individually and specifically, not measuring available capacity, but instead by modeling the transfer and determining if it causes problems. Situations where existing facilities can not support a transfer and would result in a refusal in short term, are instead evaluated to determine if there are solutions (typically transmission projects) that can be constructed in a particular time frame to accommodate the transfer. The decision with regard to Long Term requests is made by the requestor and is whether to take the service and pay for any needed upgrades.</p> <p>This results in a fundamental difference between analyses of short term and longer term transfers. Short Term transfers are evaluated for a yes or no answer based on pre-calculated capacities. Long Term transfers are studied on demand and studied from the perspective of finding a way to serve the transfer.</p> <p>Because of these differences the SDT does not believe it is prudent to include criteria on long term transfers in this standard, since the standard addresses the fundamentally different short term transfers or more accurately the calculation of the capacities used to approve or refuse a transfer.</p> <p><u>Note that specific practices may vary from region to region.</u></p>			
Consolidated Edison Co. of New York	1	Affirmative	FYI - A "yes" vote was recommended by the NPCC Regional Standards Committee (RSC) to members under Chair Guy Zito.
<p>Response: Thank you for your vote and comment.</p>			
FirstEnergy Energy Delivery First Energy Solutions	1, 3, 5, 6	Negative	FirstEnergy Corp. (FE) appreciates the hard work put forth by the NERC ATC/CBM/TRM standard drafting team (SDT). However, based on difficulties of efficiently and effectively implementing the proposed version 2 MOD-030 Flowgate Methodology standard within the Midwest ISO (MISO) footprint, FE is voting NEGATIVE to the standard as written. The changes made in the proposed balloted version do not address our prior raised concerns of the version 1 standard. During the commenting period for the SAR that provided the work scope for this balloted version, FE asked the drafting team to work with MISO and its members to develop an Entity Variance for the MISO

Entity	Segment	Vote	Comment
			footprint. The team chose not to adjust its work scope and indicated a separate SAR would be needed. FE is currently working with MISO to address our concerns with the MOD-030 standard, as well as the companion MOD-001, MOD-004 and MOD-008 standards. An Entity Variance is one of the options being considered and if deemed the appropriate step towards resolving our concerns we will work through MISO to submit a SAR.
Response: The SDT appreciates your comments, and if a SAR requesting a Variance is submitted, will work with First Energy and MISO to develop a solution. Note that other options include asking for JRO status or pursuing other contractual or delegation options.			
ITC Transmission	1	Negative	Based on concerns with the applicability statement and the difficulties of efficiently and effectively implementing the proposed standard within the Midwest ISO, ITC is voting negative.
Response: The SDT appreciates your comments, and if a SAR requesting a Variance is submitted, will work with First Energy and MISO to develop a solution. Note that other options include asking for JRO status or pursuing other contractual or delegation options.			
Orlando Utilities Commission	1	Abstain	OUC currently does not use the flow gate method, I am abstaining at this time and will consider the comments received by the team and their response to determine my vote on the second round.
Response: Thank you.			
Tucson Electric Power Co.	1	Abstain	Does not apply to TEP.
Response: Thank you.			
Alberta Electric System Operator	2	Abstain	Alberta does not use the Flowgate methodology.
Response: Thank you.			
Lincoln Electric System	3, 5, 6	Negative	Requirement R3 states- "The Transmission operator shall make available to the Transmission Service Provider a Transmission model to determine Available Flowgate Capability (AFC) the meets the following criteria:" Then spells out defining transmission models one for each day for 30 days, 12 monthly etc. This requirement seems overly complicated as the Transmission Service Provider should have the topology and ratings. All the Transmission Operator should have to supply to the Transmission Service Provider are changes to topology or ratings, expected loads and expected generation for the required periods. Even this seems superfluous if there are no flowgates in the Transmission operators area.
Response: This requirement is necessary for the Transmission Operator to supply the models with the initial loads, topology and ratings. While it would also be valid to have one requirement for the Transmission Operator to supply changes, and a separate requirement for the Transmission Service Provide to implement them, the SDT chose a different approach and industry did not seem to object. Note that this language is the same as in the current MOD-030-1; it was not changed during this drafting effort.			
The SDT does not believe it is appropriate to assume that if there are no flowgates defined in the Transmission Operator's area, then there is no			

Entity	Segment	Vote	Comment
need to ensure that the model is up to date and accurate, At a minimum, the impact of operations within the modeled area may have impacts on other areas in which flowgates are defined. As such, it is important that both models be accurate and up to date.			
Orlando Utilities Commission	3	Abstain	We do not use this method. I will consider the support/comments received on this vote to determine my vote in the next round.
Response: Thank you.			
Ohio Edison Company	4	Negative	FirstEnergy Corp. (FE) appreciates the hard work put forth by the NERC ATC/CBM/TRM standard drafting team (SDT). However, based on difficulties of efficiently and effectively implementing the proposed version 2 MOD-030 Flowgate Methodology standard within the Midwest ISO (MISO) footprint, FE is voting NEGATIVE to the standard as written. The changes made in the proposed balloted version do not address our prior raised concerns of the version 1 standard. During the commenting period for the SAR that provided the work scope for this balloted version, FE asked the drafting team to work with MISO and its members to develop an Entity Variance for the MISO footprint. The team chose not to adjust its work scope and indicated a separate SAR would be needed. FE is currently working with MISO to address our concerns with the MOD-030 standard, as well as the companion MOD-001, MOD-004 and MOD-008 standards. An Entity Variance is one of the options being considered and if deemed the appropriate step towards resolving our concerns we will work through MISO to submit a SAR.
Response: The SDT appreciates your comments, and if a SAR requesting a Variance is submitted, will work with First Energy and MISO to develop a solution. Note that other options include asking for JRO status or pursuing other contractual or delegation options.			
Constellation Generation Group	5	Abstain	These standards do not adequately address access to the "Identification Documents" which guide what and how the data is used to comply with the standards. We understand NAESB will be taking that issue on? However, since this remains a gap today, it is difficult to vote for this standard.
Response: The SDT believes that it has addressed the reliability aspects of access; to the extent other entities need access to the same data, you are correct: NAESB is the correct forum addressing such requirements. The NAESB Business Practice related to this item is WEQ-001-13.1.5.			
Orlando Utilities Commission	5	Abstain	We do not use the Flow Gate method for calculating ATC. I am abstaining at this time and will consider the comments received by the team and their responses to determine my vote on the second round.
Response: Thank you.			
MidAmerican Energy Co.	6	Affirmative	It is unfortunate the other two methodologies aren't as detailed as this one.
Response: Thank you for your vote and comment.			
Florida Reliability Coordinating Council	10	Abstain	We do not use the Flow Gate method

Entity	Segment	Vote	Comment
Response: Thank you.			

Standards Announcement Recirculation Ballot Window Open January 20–29, 2009

Now available at: <https://standards.nerc.net/CurrentBallots.aspx>

Standard MOD-030-2 — Flowgate Methodology (Project 2006-07)

A recirculation ballot window for standard MOD-030-2 — Flowgate Methodology is now open **until 8 p.m. EST on January 29, 2009**. The standard is part of Project 2006-07 — ATC/TTC/AFC and CBM/TRM Revisions.

Background

This standard incorporates ballot suggestions for additional improvements to MOD-030-1. (The suggested improvements are aimed at allowing additional methods of achieving the same reliability objective — the suggested improvements are not aimed at correcting any errors in MOD-030-1.) Under the existing standards development process, if the drafting team had made these changes to MOD-030-1, the standard would have needed to be posted for an additional comment period, followed by balloting. This delay would have prevented MOD-030-1 from being ready to file with FERC before its due date.

To remedy this problem, the drafting team submitted a Standards Authorization Request (SAR) to initiate modifications to MOD-030-1, and received Standards Committee authorization to post the SAR and a proposed version of MOD-030-2 reflecting consideration of comments submitted with the initial ballot of MOD-030-1. As envisioned, MOD-030-2 will move through the standards development process and will be filed with governmental authorities before MOD-030-1 becomes effective.

The status, purpose, and supporting documents for this project are posted at the following site: <http://www.nerc.com/filez/standards/MOD-V0-Revision.html>

Recirculation Ballot Process

The Standards Committee encourages all members of the Ballot Pool to review the consideration of comments submitted with the initial ballots. In the recirculation ballot, votes are counted by exception only — if a Ballot Pool member does not submit a revision to that member's original vote, the vote remains the same as in the first ballot. Members of the ballot pool may:

- Reconsider and change their vote from the first ballot.
- Vote in the second ballot even if they did not vote on the first ballot.
- Take no action if they do not want to change their original vote.

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.

*For more information or assistance,
please contact Shaun Streeter at shaun.streeter@nerc.net or at 609.452.8060.*



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 posting the concurrent posting of the SAR and proposed standard on August 8, 2008.
2. SDT posted SAR and first draft of MOD-030-02 for a 45-day comment period from August 11, 2008 through September 24, 2008.

Description of Current Draft:

This is the second draft of the proposed standard posted for stakeholder pre-ballot review. This draft includes consideration of stakeholder comments from the initial ballot of MOD-030-1 and applicable FERC directives from FERC Order 693, Order 890, and Order 890-A.

Future Development Plan:

Anticipated Actions	Anticipated Date
1. Initial Ballot.	December 10, 2008
2. Respond to comments.	February 1, 2009
3. Recirculation ballot.	February 1, 2009
4. Board adoption.	March 15, 2009

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.

None.

A. Introduction

1. **Title:** Flowgate Methodology
2. **Number:** MOD-030-02
3. **Purpose:** To increase consistency and reliability in the development and documentation of transfer capability calculations for short-term use performed by entities using the Flowgate Methodology to support analysis and system operations.
4. **Applicability:**
 - 4.1.1 Each Transmission Operator that uses the Flowgate Methodology to support the calculation of Available Flowgate Capabilities (AFCs) on Flowgates.
 - 4.1.2 Each Transmission Service Provider that uses the Flowgate Methodology to calculate AFCs on Flowgates.
5. **Proposed Effective Date:** The date upon which MOD-030-01 is currently scheduled to become effective.

B. Requirements

- R1. The Transmission Service Provider shall include in its “Available Transfer Capability Implementation Document” (ATCID): [*Violation Risk Factor: Lower*] [*Time Horizon: Operations Planning*]
 - R1.1. The criteria used by the Transmission Operator to identify sets of Transmission Facilities as Flowgates that are to be considered in Available Flowgate Capability (AFC) calculations.
 - R1.2. The following information on how source and sink for transmission service is accounted for in AFC calculations including:
 - R1.2.1. Define if the source used for AFC calculations is obtained from the source field or the Point of Receipt (POR) field of the transmission reservation.
 - R1.2.2. Define if the sink used for AFC calculations is obtained from the sink field or the Point of Delivery (POD) field of the transmission reservation.
 - R1.2.3. The source/sink or POR/POD identification and mapping to the model.
 - R1.2.4. If the Transmission Service Provider’s AFC calculation process involves a grouping of generators, the ATCID must identify how these generators participate in the group.
- R2. The Transmission Operator shall perform the following: [*Violation Risk Factor: Lower*] [*Time Horizon: Operations Planning*]
 - R2.1. Include Flowgates used in the AFC process based, at a minimum, on the following criteria:
 - R2.1.1. Results of a first Contingency transfer analysis for ATC Paths internal to a Transmission Operator’s system up to the path capability such that at a minimum the first three limiting Elements and their worst associated Contingency combinations with an OTDF of at least 5% and within the Transmission Operator’s system are included as Flowgates.

- R2.1.1.1. Use first Contingency criteria consistent with those first Contingency criteria used in planning of operations for the applicable time periods, including use of Special Protection Systems.
 - R2.1.1.2. Only the most limiting element in a series configuration needs to be included as a Flowgate.
 - R2.1.1.3. If any limiting element is kept within its limit for its associated worst Contingency by operating within the limits of another Flowgate, then no new Flowgate needs to be established for such limiting elements or Contingencies.
- R2.1.2.** Results of a first Contingency transfer analysis from all adjacent Balancing Authority source and sink (as defined in the ATCID) combinations up to the path capability such that at a minimum the first three limiting Elements and their worst associated Contingency combinations with an Outage Transfer Distribution Factor (OTDF) of at least 5% and within the Transmission Operator's system are included as Flowgates unless the interface between such adjacent Balancing Authorities is accounted for using another ATC methodology.
- R2.1.2.1. Use first Contingency criteria consistent with those first Contingency criteria used in planning of operations for the applicable time periods, including use of Special Protection Systems.
 - R2.1.2.2. Only the most limiting element in a series configuration needs to be included as a Flowgate.
 - R2.1.2.3. If any limiting element is kept within its limit for its associated worst Contingency by operating within the limits of another Flowgate, then no new Flowgate needs to be established for such limiting elements or Contingencies.
- R2.1.3.** Any limiting Element/Contingency combination at least within its Reliability Coordinator's Area that has been subjected to an Interconnection-wide congestion management procedure within the last 12 months, unless the limiting Element/Contingency combination is accounted for using another ATC methodology or was created to address temporary operating conditions.
- R2.1.4.** Any limiting Element/Contingency combination within the Transmission model that has been requested to be included by any other Transmission Service Provider using the Flowgate Methodology or Area Interchange Methodology, where:
- R2.1.4.1. The coordination of the limiting Element/Contingency combination is not already addressed through a different methodology, and
 - Any generator within the Transmission Service Provider's area has at least a 5% Power Transfer Distribution Factor (PTDF) or Outage Transfer Distribution Factor (OTDF)

impact on the Flowgate when delivered to the aggregate load of its own area, or

- A transfer from any Balancing Area within the Transmission Service Provider's area to a Balancing Area adjacent has at least a 5% PTDF or OTDF impact on the Flowgate.
- The Transmission Operator may utilize distribution factors less than 5% if desired.

R2.1.4.2. The limiting Element/Contingency combination is included in the requesting Transmission Service Provider's methodology.

- R2.2.** At a minimum, establish a list of Flowgates by creating, modifying, or deleting Flowgate definitions at least once per calendar year.
- R2.3.** At a minimum, establish a list of Flowgates by creating, modifying, or deleting Flowgates that have been requested as part of R2.1.4 within thirty calendar days from the request.
- R2.4.** Establish the TFC of each of the defined Flowgates as equal to:
- For thermal limits, the System Operating Limit (SOL) of the Flowgate.
 - For voltage or stability limits, the flow that will respect the SOL of the Flowgate.
- R2.5.** At a minimum, establish the TFC once per calendar year.
- R2.5.1.** If notified of a change in the Rating by the Transmission Owner that would affect the TFC of a flowgate used in the AFC process, the TFC should be updated within seven calendar days of the notification.
- R2.6.** Provide the Transmission Service Provider with the TFCs within seven calendar days of their establishment.
- R3.** The Transmission Operator shall make available to the Transmission Service Provider a Transmission model to determine Available Flowgate Capability (AFC) that meets the following criteria: [*Violation Risk Factor: Lower*] [*Time Horizon: Operations Planning*]
- R3.1.** Contains generation Facility Ratings, such as generation maximum and minimum output levels, specified by the Generator Owners of the Facilities within the model.
- R3.2.** Updated at least once per day for AFC calculations for intra-day, next day, and days two through 30.
- R3.3.** Updated at least once per month for AFC calculations for months two through 13.
- R3.4.** Contains modeling data and system topology for the Facilities within its Reliability Coordinator's Area. Equivalent representation of radial lines and Facilities 161kV or below is allowed.
- R3.5.** Contains modeling data and system topology (or equivalent representation) for immediately adjacent and beyond Reliability Coordination Areas.
- R4.** When calculating AFCs, the Transmission Service Provider shall represent the impact of Transmission Service as follows: [*Violation Risk Factor: Lower*] [*Time Horizon: Operations Planning*]

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- If the source, as specified in the ATCID, has been identified in the reservation and it is discretely modeled in the Transmission Service Provider's Transmission model, use the discretely modeled point as the source.
 - If the source, as specified in the ATCID, has been identified in the reservation and the point can be mapped to an "equivalence" or "aggregate" representation in the Transmission Service Provider's Transmission model, use the modeled equivalence or aggregate as the source.
 - If the source, as specified in the ATCID, has been identified in the reservation and the point cannot be mapped to a discretely modeled point or an "equivalence" representation in the Transmission Service Provider's Transmission model, use the immediately adjacent Balancing Authority associated with the Transmission Service Provider from which the power is to be received as the source.
 - If the source, as specified in the ATCID, has not been identified in the reservation use the immediately adjacent Balancing Authority associated with the Transmission Service Provider from which the power is to be received as the source.
 - If the sink, as specified in the ATCID, has been identified in the reservation and it is discretely modeled in the Transmission Service Provider's Transmission model, use the discretely modeled point as the sink.
 - If the sink, as specified in the ATCID, has been identified in the reservation and the point can be mapped to an "equivalence" or "aggregate" representation in the Transmission Service Provider's Transmission model, use the modeled equivalence or aggregate as the sink.
 - If the sink, as specified in the ATCID, has been identified in the reservation and the point cannot be mapped to a discretely modeled point or an "equivalence" representation in the Transmission Service Provider's Transmission model, use the immediately adjacent Balancing Authority associated with the Transmission Service Provider receiving the power as the sink.
 - If the sink, as specified in the ATCID, has not been identified in the reservation use the immediately adjacent Balancing Authority associated with the Transmission Service Provider receiving the power as the sink.
- R5.** When calculating AFCs, the Transmission Service Provider shall: [*Violation Risk Factor: Lower*] [*Time Horizon: Operations Planning*]
- R5.1.** Use the models provided by the Transmission Operator.
 - R5.2.** Include in the transmission model expected generation and Transmission outages, additions, and retirements within the scope of the model as specified in the ATCID and in effect during the applicable period of the AFC calculation for the Transmission Service Provider's area, all adjacent Transmission Service Providers, and any Transmission Service Providers with which coordination agreements have been executed.
 - R5.3.** For external Flowgates, identified in R2.1.4, use the AFC provided by the Transmission Service Provider that calculates AFC for that Flowgate.

- R6.** When calculating the impact of ETC for firm commitments (ETC_{Fi}) for all time periods for a Flowgate, the Transmission Service Provider shall sum the following: [*Violation Risk Factor: Lower*] [*Time Horizon: Operations Planning*]
- R6.1.** The impact of firm Network Integration Transmission Service, including the impacts of generation to load, in the model referenced in R5.2 for the Transmission Service Provider's area, based on:
- R6.1.1.** Load forecast for the time period being calculated, including Native Load and Network Service load
- R6.1.2.** Unit commitment and Dispatch Order, to include all designated network resources and other resources that are committed or have the legal obligation to run as specified in the Transmission Service Provider's ATCID.
- R6.2.** The impact of any firm Network Integration Transmission Service, including the impacts of generation to load in the model referenced in R5.2 and has a distribution factor equal to or greater than the percentage¹ used to curtail in the Interconnection-wide congestion management procedure used by the Transmission Service Provider, for all adjacent Transmission Service Providers and any other Transmission Service Providers with which coordination agreements have been executed based on:
- R6.2.1.** Load forecast for the time period being calculated, including Native Load and Network Service load
- R6.2.2.** Unit commitment and Dispatch Order, to include all designated network resources and other resources that are committed or have the legal obligation to run as specified in the Transmission Service Provider's ATCID.
- R6.3.** The impact of all confirmed firm Point-to-Point Transmission Service expected to be scheduled, including roll-over rights for Firm Transmission Service contracts, for the Transmission Service Provider's area.
- R6.4.** The impact of any confirmed firm Point-to-Point Transmission Service expected to be scheduled, filtered to reduce or eliminate duplicate impacts from transactions using Transmission service from multiple Transmission Service Providers, including roll-over rights for Firm Transmission Service contracts having a distribution factor equal to or greater than the percentage² used to curtail in the Interconnection-wide congestion management procedure used by the Transmission Service Provider, for all adjacent Transmission Service Providers and any other Transmission Service Providers with which coordination agreements have been executed.
- R6.5.** The impact of any Grandfathered firm obligations expected to be scheduled or expected to flow for the Transmission Service Provider's area.
- R6.6.** The impact of any Grandfathered firm obligations expected to be scheduled or expected to flow that have a distribution factor equal to or greater than the

¹ A percentage less than that used in the Interconnection-wide congestion management procedure may be utilized.

² A percentage less than that used in the Interconnection-wide congestion management procedure may be utilized.

percentage³ used to curtail in the Interconnection-wide congestion management procedure used by the Transmission Service Provider, for all adjacent Transmission Service Providers and any other Transmission Service Providers with which coordination agreements have been executed.

- R6.7.** The impact of other firm services determined by the Transmission Service Provider.
- R7.** When calculating the impact of ETC for non-firm commitments (ETC_{NFi}) for all time periods for a Flowgate the Transmission Service Provider shall sum: [*Violation Risk Factor: Lower*] [*Time Horizon: Operations Planning*]
- R7.1.** The impact of all confirmed non-firm Point-to-Point Transmission Service expected to be scheduled for the Transmission Service Provider's area.
- R7.2.** The impact of any confirmed non-firm Point-to-Point Transmission Service expected to be scheduled, filtered to reduce or eliminate duplicate impacts from transactions using Transmission service from multiple Transmission Service Providers, that have a distribution factor equal to or greater than the percentage⁴ used to curtail in the Interconnection-wide congestion management procedure used by the Transmission Service Provider, for all adjacent Transmission Service Providers and any other Transmission Service Providers with which coordination agreements have been executed.
- R7.3.** The impact of any Grandfathered non-firm obligations expected to be scheduled or expected to flow for the Transmission Service Provider's area.
- R7.4.** The impact of any Grandfathered non-firm obligations expected to be scheduled or expected to flow that have a distribution factor equal to or greater than the percentage⁵ used to curtail in the Interconnection-wide congestion management procedure used by the Transmission Service Provider, for all adjacent Transmission Service Providers and any other Transmission Service Providers with which coordination agreements have been executed.
- R7.5.** The impact of non-firm Network Integration Transmission Service serving Load within the Transmission Service Provider's area (i.e., secondary service), to include load growth, and losses not otherwise included in Transmission Reliability Margin or Capacity Benefit Margin.
- R7.6.** The impact of any non-firm Network Integration Transmission Service (secondary service) with a distribution factor equal to or greater than the percentage⁶ used to curtail in the Interconnection-wide congestion management procedure used by the Transmission Service Provider, filtered to reduce or eliminate duplicate impacts from transactions using Transmission service from multiple Transmission Service Providers, for all adjacent Transmission Service Providers and any other

³ A percentage less than that used in the Interconnection-wide congestion management procedure may be utilized.

⁴ A percentage less than that used in the Interconnection-wide congestion management procedure may be utilized.

⁵ A percentage less than that used in the Interconnection-wide congestion management procedure may be utilized.

⁶ A percentage less than that used in the Interconnection-wide congestion management procedure may be utilized.

Transmission Service Providers with which coordination agreements have been executed.

- R7.7.** The impact of other non-firm services determined by the Transmission Service Provider.
- R8.** When calculating firm AFC for a Flowgate for a specified period, the Transmission Service Provider shall use the following algorithm (subject to allocation processes described in the ATCID): [*Violation Risk Factor: Lower*] [*Time Horizon: Operations Planning*]

$$AFC_F = TFC - ETC_{Fi} - CBM_i - TRM_i + Postbacks_{Fi} + counterflows_{Fi}$$

Where:

AFC_F is the firm Available Flowgate Capability for the Flowgate for that period.

TFC is the Total Flowgate Capability of the Flowgate.

ETC_{Fi} is the sum of the impacts of existing firm Transmission commitments for the Flowgate during that period.

CBM_i is the impact of the Capacity Benefit Margin on the Flowgate during that period.

TRM_i is the impact of the Transmission Reliability Margin on the Flowgate during that period.

Postbacks_{Fi} are changes to firm AFC due to a change in the use of Transmission Service for that period, as defined in Business Practices.

counterflows_{Fi} are adjustments to firm AFC as determined by the Transmission Service Provider and specified in their ATCID.

- R9.** When calculating non-firm AFC for a Flowgate for a specified period, the Transmission Service Provider shall use the following algorithm (subject to allocation processes described in the ATCID): [*Violation Risk Factor: Lower*] [*Time Horizon: Operations Planning*]

$$AFC_{NF} = TFC - ETC_{Fi} - ETC_{NFi} - CBM_{Si} - TRM_{Ui} + Postbacks_{NFi} + counterflows$$

Where:

AFC_{NF} is the non-firm Available Flowgate Capability for the Flowgate for that period.

TFC is the Total Flowgate Capability of the Flowgate.

ETC_{Fi} is the sum of the impacts of existing firm Transmission commitments for the Flowgate during that period.

ETC_{NFi} is the sum of the impacts of existing non-firm Transmission commitments for the Flowgate during that period.

CBM_{Si} is the impact of any schedules during that period using Capacity Benefit Margin.

TRM_{Ui} is the impact on the Flowgate of the Transmission Reliability Margin that has not been released (unreleased) for sale as non-firm capacity by the Transmission Service Provider during that period.

Postbacks_{NF} are changes to non-firm Available Flowgate Capability due to a change in the use of Transmission Service for that period, as defined in Business Practices.

counterflows_{NF} are adjustments to non-firm AFC as determined by the Transmission Service Provider and specified in their ATCID.

- R10.** Each Transmission Service Provider shall recalculate AFC, utilizing the updated models described in R3.2, R3.3, and R5, at a minimum on the following frequency, unless none of the calculated values identified in the AFC equation have changed: [*Violation Risk Factor: Lower*] [*Time Horizon: Operations Planning*]
- R10.1.** For hourly AFC, once per hour. Transmission Service Providers are allowed up to 175 hours per calendar year during which calculations are not required to be performed, despite a change in a calculated value identified in the AFC equation.
- R10.2.** For daily AFC, once per day.
- R10.3.** For monthly AFC, once per week.
- R11.** When converting Flowgate AFCs to ATCs for ATC Paths, the Transmission Service Provider shall convert those values based on the following algorithm: [*Violation Risk Factor: Lower*] [*Time Horizon: Operations Planning*]

$$ATC = \min(P)$$

$$P = \{PATC_1, PATC_2, \dots, PATC_n\}$$

$$PATC_n = \frac{AFC_n}{DF_{np}}$$

Where:

ATC is the Available Transfer Capability.

P is the set of partial Available Transfer Capabilities for all “impacted” Flowgates honored by the Transmission Service Provider; a Flowgate is considered “impacted” by a path if the Distribution Factor for that path is greater than the percentage⁷ used to curtail in the Interconnection-wide congestion management procedure used by the Transmission Service Provider on an OTDF Flowgate or PTDF Flowgate.

PATC_n is the partial Available Transfer Capability for a path relative to a Flowgate *n*.

AFC_n is the Available Flowgate Capability of a Flowgate *n*.

DF_{np} is the distribution factor for Flowgate *n* relative to path *p*.

C. Measures

- M1.** Each Transmission Service Provider shall provide its ATCID and other evidence (such as written documentation) to show that its ATCID contains the criteria used by the Transmission Operator to identify sets of Transmission Facilities as Flowgates and information on how sources and sinks are accounted for in AFC calculations. (R1)
- M2.** The Transmission Operator shall provide evidence (such as studies and working papers) that all Flowgates that meet the criteria described in R2.1 are considered in its AFC calculations. (R2.1)
- M3.** The Transmission Operator shall provide evidence (such as logs) that it updated its list of Flowgates at least once per calendar year. (R2.2)

⁷ A percentage less than that used in the Interconnection-wide congestion management procedure may be utilized.

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- M4.** The Transmission Operator shall provide evidence (such as logs and dated requests) that it updated the list of Flowgates within thirty calendar days from a request. (R2.3)
- M5.** The Transmission Operator shall provide evidence (such as data or models) that it determined the TFC for each Flowgate as defined in R2.4. (R2.4)
- M6.** The Transmission Operator shall provide evidence (such as logs) that it established the TFCs for each Flowgate in accordance with the timing defined in R2.5. (R2.5)
- M7.** The Transmission Operator shall provide evidence (such as logs and electronic communication) that it provided the Transmission Service Provider with updated TFCs within seven calendar days of their determination. (R2.6)
- M8.** The Transmission Operator shall provide evidence (such as written documentation, logs, models, and data) that the Transmission model used to determine AFCs contains the information specified in R3. (R3)
- M9.** The Transmission Service Provider shall provide evidence (such as written documentation and data) that the modeling of point-to-point reservations was based on the rules described in R4. (R4)
- M10.** The Transmission Service Provider shall provide evidence including the models received from Transmission Operators and other evidence (such as documentation and data) to show that it used the Transmission Operator's models in calculating AFC. (R5.1)
- M11.** The Transmission Service Provider shall provide evidence (such as written documentation, electronic communications, and data) that all expected generation and Transmission outages, additions, and retirements were included in the AFC calculation as specified in the ATCID. (R5.2)
- M12.** The Transmission Service Provider shall provide evidence (such as logs, electronic communications, and data) that AFCs provided by third parties on external Flowgates were used instead of those calculated by the Transmission Operator. (R5.3)
- M13.** The Transmission Service Provider shall demonstrate compliance with R6 by recalculating firm ETC for any specific time period as described in (MOD-001 R2), using the requirements defined in R6 and with data used to calculate the specified value for the designated time period. The data used must meet the requirements specified in this standard and the ATCID. To account for differences that may occur when recalculating the value (due to mixing automated and manual processes), any recalculated value that is within +/- 15% or 15 MW, whichever is greater, of the originally calculated value, is evidence that the Transmission Service Provider used the requirements defined in R6 to calculate its firm ETC. (R6)
- M14.** The Transmission Service Provider shall demonstrate compliance with R7 by recalculating non-firm ETC for any specific time period as described in (MOD-001 R2), using the requirements defined in R7 and with data used to calculate the specified value for the designated time period. The data used must meet the requirements specified in the standard and the ATCID. To account for differences that may occur when recalculating the value (due to mixing automated and manual processes), any recalculated value that is within +/- 15% or 15 MW, whichever is greater, of the originally calculated value, is evidence that the Transmission Service Provider used the requirements in R7 to calculate its non-firm ETC. (R7)

- M15.** Each Transmission Service Provider shall produce the supporting documentation for the processes used to implement the algorithm that calculates firm AFCs, as required in R8. Such documentation must show that only the variables allowed in R8 were used to calculate firm AFCs, and that the processes use the current values for the variables as determined in the requirements or definitions. Note that any variable may legitimately be zero if the value is not applicable or calculated to be zero (such as counterflows, TRM, CBM, etc...). The supporting documentation may be provided in the same form and format as stored by the Transmission Service Provider. (R8)
- M16.** Each Transmission Service Provider shall produce the supporting documentation for the processes used to implement the algorithm that calculates non-firm AFCs, as required in R9. Such documentation must show that only the variables allowed in R9 were used to calculate non-firm AFCs, and that the processes use the current values for the variables as determined in the requirements or definitions. Note that any variable may legitimately be zero if the value is not applicable or calculated to be zero (such as counterflows, TRM, CBM, etc...). The supporting documentation may be provided in the same form and format as stored by the Transmission Service Provider. (R9)
- M17.** The Transmission Service Provider shall provide evidence (such as documentation, dated logs, and data) that it calculated AFC on the frequency defined in R10. (R10)
- M18.** The Transmission Service Provider shall provide evidence (such as documentation and data) when converting Flowgate AFCs to ATCs for ATC Paths, it follows the procedure described in R11. (R11)

D. Compliance

1. Compliance Monitoring Process

1.1. Compliance Enforcement Authority

Regional Entity.

1.2. Compliance Monitoring Period and Reset Time Frame

Not applicable.

1.3. Data Retention

The Transmission Operator and Transmission Service Provider shall keep data or evidence to show compliance as identified below unless directed by its Compliance Enforcement Authority to retain specific evidence for a longer period of time as part of an investigation:

- The Transmission Service Provider shall retain its current, in force ATCID and any prior versions of the ATCID that were in force since the last compliance audit to show compliance with R1.
- The Transmission Operator shall have its latest model used to determine flowgates and TFC and evidence of the previous version to show compliance with R2 and R3.
- The Transmission Operator shall retain evidence to show compliance with R2.1, R2.3 for the most recent 12 months.
- The Transmission Operator shall retain evidence to show compliance with R2.2, R2.4 and R2.5 for the most recent three calendar years plus current year.

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- The Transmission Service Provider shall retain evidence to show compliance with R4 for 12 months or until the model used to calculate AFC is updated, whichever is longer.
- The Transmission Service Provider shall retain evidence to show compliance with R5, R8, R9, R10, and R11 for the most recent calendar year plus current year.
- The Transmission Service Provider shall retain evidence to show compliance in calculating hourly values required in R6 and R7 for the most recent 14 days; evidence to show compliance in calculating daily values required in R6 and R7 for the most recent 30 days; and evidence to show compliance in calculating monthly values required in R6 and R7 for the most recent sixty days.
- If a Transmission Service Provider or Transmission Operator is found non-compliant, it shall keep information related to the non-compliance until found compliant.

The Compliance Enforcement Authority shall keep the last audit records and all requested and submitted subsequent audit records.

1.4. Compliance Monitoring and Enforcement Processes:

The following processes may be used:

- Compliance Audits
- Self-Certifications
- Spot Checking
- Compliance Violation Investigations
- Self-Reporting
- Complaints

1.5. Additional Compliance Information

None.

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2. Violation Severity Levels

R #	Lower VSL	Moderate VSL	High VSL	Severe VSL
R1.	The Transmission Service Provider does not include in its ATCID one or two of the sub-requirements listed under R1.2, or the sub-requirement is incomplete.	The Transmission Service Provider does not include in its ATCID three of the sub-requirements listed under R1.2, or the sub-requirement is incomplete.	The Transmission Service Provider does not include in its ATCID the information described in R1.1. OR The Transmission Service Provider does not include in its ATCID the information described in R1.2 (1.2.1, 1.2.2., 1.2.3, and 1.2.4 are missing).	The Transmission Service Provider does not include in its ATCID the information described in R1.1 and R1.2 (1.2.1, 1.2.2., 1.2.3, and 1.2.4 are missing).
R2.	One or more of the following: <ul style="list-style-type: none"> The Transmission Operator established its list of Flowgates less frequently than once per calendar year, but not more than three months late as described in R2.2. The Transmission Operator established its list of Flowgates more than thirty days, but not more than sixty days, following a request to create, modify or delete a flowgate as described in R2.3. The Transmission Operator has not updated its Flowgate 	One or more of the following: <ul style="list-style-type: none"> The Transmission Operator did not include a Flowgate in their AFC calculations that met the criteria described in R2.1. The Transmission Operator established its list of Flowgates more than three months late, but not more than six months late as described in R2.2. The Transmission Operator established its list of Flowgates more than sixty days, but not more than ninety days, following a request to create, modify or 	One or more of the following: <ul style="list-style-type: none"> The Transmission Operator did not include two to five Flowgates in their AFC calculations that met the criteria described in R2.1. The Transmission Operator established its list of Flowgates more than six months late, but not more than nine months late as described in R2.2. The Transmission Operator established its list of Flowgates more than ninety days, but not more than 120 days, following a request to create, modify or delete a 	One or more of the following: <ul style="list-style-type: none"> The Transmission Operator did not include six or more Flowgates in their AFC calculations that met the criteria described in R2.1. The Transmission Operator established its list of Flowgates more than nine months late as described in R2.2. The Transmission Operator did not establish its list of internal Flowgates as described in R2.2. The Transmission Operator established its list of Flowgates more than 120 days following a request to create, modify or delete a

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R #	Lower VSL	Moderate VSL	High VSL	Severe VSL
	<p>TFC when notified by the Transmission Owner in more than 7 days, but it has not been more than 14 days since the notification (R2.5.1)</p> <ul style="list-style-type: none"> The Transmission Operator has not provided its Transmission Service Provider with its Flowgate TFCs within seven days (one week) of their determination, but is has not been more than 14 days (two weeks) since their determination. 	<p>delete a flowgate as described in R2.3.</p> <ul style="list-style-type: none"> The Transmission Operator has not updated its Flowgate TFCs at least once within a calendar year, and it has been not more than 15 months since the last update. The Transmission Operator has not updated its Flowgate TFC when notified by the Transmission Owner in more than 14 days, but it has not been more than 21 days since the notification (R2.5.1) The Transmission Operator has not provided its Transmission Service Provider with its Flowgate TFCs in more than 14 days (two weeks) of their determination, but is has not been more than 21 days (three weeks) since their determination. 	<p>flowgate as described in R2.3.</p> <p>The Transmission Operator has not updated its Flowgate TFCs at least once within a calendar year, and it has been more than 15 months but not more than 18 months since the last update.</p> <ul style="list-style-type: none"> The Transmission Operator has not updated its Flowgate TFCs when notified by the Transmission Owner in more than 21 days, but it has not been more than 28 days since the notification (R2.5.1) The Transmission Operator has not provided its Transmission Service Provider with its Flowgate TFCs in more than 21 days (three weeks) of their determination, but is has not been more than 28 days (four weeks) since their determination. 	<p>flowgate as described in R2.3.</p> <ul style="list-style-type: none"> The Transmission Operator did not establish its list of external Flowgates following a request to create, modify or delete an external flowgate as described in R2.3. The Transmission Operator did not determine the TFC for a flowgate as described in R2.4. The Transmission Operator has not updated its Flowgate TFCs at least once within a calendar year, and it has been more than 18 months since the last update. (R2.5) The Transmission Operator has not updated its Flowgate TFCs when notified by the Transmission Owner in more than 28 calendar days (R2.5.1) The Transmission Operator has not provided its Transmission Service Provider with its Flowgate TFCs in more than 28 days (4 weeks) of their

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R #	Lower VSL	Moderate VSL	High VSL	Severe VSL
				determination.
R3.	<p>One or more of the following:</p> <ul style="list-style-type: none"> • The Transmission Operator used one to ten Facility Ratings that were different from those specified by a Transmission or Generator Owner in their Transmission model. • The Transmission Operator did not update the model per R3.2 for one or more calendar days but not more than 2 calendar days • The Transmission Operator did not update the model for per R3.3 for one or more months but not more than six weeks 	<p>One or more of the following:</p> <ul style="list-style-type: none"> • The Transmission Operator used eleven to twenty Facility Ratings that were different from those specified by a Transmission or Generator Owner in their Transmission model. • The Transmission Operator did not update the model per R3.2 for more than 2 calendar days but not more than 3 calendar days • The Transmission Operator did not update the model for per R3.3 for more than six weeks but not more than eight weeks 	<p>One or more of the following:</p> <ul style="list-style-type: none"> • The Transmission Operator used twenty-one to thirty Facility Ratings that were different from those specified by a Transmission or Generator Owner in their Transmission model. • The Transmission Operator did not update the model per R3.2 for more than 3 calendar days but not more than 4 calendar days • The Transmission Operator did not update the model for per R3.3 for more than eight weeks but not more than ten weeks 	<p>One or more of the following:</p> <ul style="list-style-type: none"> • The Transmission Operator did not update the model per R3.2 for more than 4 calendar days • The Transmission Operator did not update the model for per R3.3 for more than ten weeks • The Transmission Operator used more than thirty Facility Ratings that were different from those specified by a Transmission or Generator Owner in their Transmission model. • The Transmission operator did not include in the Transmission model detailed modeling data and topology for its own Reliability

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R #	Lower VSL	Moderate VSL	High VSL	Severe VSL
				<p>Coordinator area.</p> <ul style="list-style-type: none"> The Transmission operator did not include in the Transmission modeling data and topology for immediately adjacent and beyond Reliability Coordinator area.
R4.	<p>The Transmission Service Provider did not represent the impact of Transmission Service as described in R4 for more than zero, but not more than 5% of all reservations; or more than zero, but not more than 1 reservation, whichever is greater..</p>	<p>The Transmission Service Provider did not represent the impact of Transmission Service as described in R4 for more than 5%, but not more than 10% of all reservations; or more than 1, but not more than 2 reservations, whichever is greater..</p>	<p>The Transmission Service Provider did not represent the impact of Transmission Service as described in R4 for more than 10%, but not more than 15% of all reservations; or more than 2, but not more than 3 reservations, whichever is greater..</p>	<p>The Transmission Service Provider did not represent the impact of Transmission Service as described in R4 for more than 15% of all reservations; or more than 3 reservations, whichever is greater..</p>
R5.	<p>The Transmission Service Provider did not include in the AFC process one to ten expected generation or Transmission outages, additions or retirements within the scope of the model as specified in the ATCID.</p>	<p>The Transmission Service Provider did not include in the AFC process eleven to twenty-five expected generation and Transmission outages, additions or retirements within the scope of the model as specified in the ATCID.</p>	<p>The Transmission Service Provider did not include in the AFC process twenty-six to fifty expected generation and Transmission outages, additions or retirements within the scope of the model as specified in the ATCID.</p>	<p>One or more of the following:</p> <ul style="list-style-type: none"> The Transmission Service Provider did not use the model provided by the Transmission Operator. The Transmission Service Provider did not include in the AFC process more than fifty expected generation and Transmission outages, additions or retirements within the scope of the model as specified in the

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R #	Lower VSL	Moderate VSL	High VSL	Severe VSL
				<p>ATCID.</p> <ul style="list-style-type: none"> The Transmission Service provider did not use AFC provided by a third party.
R6.	<p>For a specified period, the Transmission Service Provider calculated a firm ETC with an absolute value different than that calculated in M13 for the same period, and the absolute value difference was more than 15% of the value calculated in the measure or 15MW, whichever is greater, but not more than 25% of the value calculated in the measure or 25MW, whichever is greater..</p>	<p>For a specified period, the Transmission Service Provider calculated a firm ETC with an absolute value different than that calculated in M13 for the same period, and the absolute value difference was more than 25% of the value calculated in the measure or 25MW, whichever is greater, but not more than 35% of the value calculated in the measure or 35MW, whichever is greater.</p>	<p>For a specified period, the Transmission Service Provider calculated a firm ETC with an absolute value different than that calculated in M13 for the same period, and the absolute value difference was more than 35% of the value calculated in the measure or 35MW, whichever is greater, but not more than 45% of the value calculated in the measure or 45MW, whichever is greater.</p>	<p>For a specified period, the Transmission Service Provider calculated a firm ETC with an absolute value different than that calculated in M13 for the same period, and the absolute value difference was more than 45% of the value calculated in the measure or 45MW, whichever is greater.</p>
R7.	<p>For a specified period, the Transmission Service Provider calculated a non-firm ETC with an absolute value different than that calculated in M14 for the same period, and the absolute value difference was more than 15% of the value calculated in the measure or 15MW, whichever is greater, but not more than 25% of the value calculated in the measure or 25MW, whichever is greater.</p>	<p>For a specified period, the Transmission Service Provider calculated a non-firm ETC with an absolute value different than that calculated in M14 for the same period, and the absolute value difference was more than 25% of the value calculated in the measure or 25MW, whichever is greater, but not more than 35% of the value calculated in the measure or 35MW, whichever is greater.</p>	<p>For a specified period, the Transmission Service Provider calculated a non-firm ETC with an absolute value different than that calculated in M14 for the same period, and the absolute value difference was more than 35% of the value calculated in the measure or 35MW, whichever is greater, but not more than 45% of the value calculated in the measure or 45MW, whichever is greater.</p>	<p>For a specified period, the Transmission Service Provider calculated a non-firm ETC with an absolute value different than that calculated in M14 for the same period, and the absolute value difference was more than 45% of the value calculated in the measure or 45MW, whichever is greater.</p>

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R #	Lower VSL	Moderate VSL	High VSL	Severe VSL
R8.	The Transmission Service Provider did not use all the elements defined in R8 when determining firm AFC, or used additional elements, for more than zero Flowgates, but not more than 5% of all Flowgates or 1 Flowgate (whichever is greater).	The Transmission Service Provider did not use all the elements defined in R8 when determining firm AFC, or used additional elements, for more than 5% of all Flowgates or 1 Flowgates (whichever is greater), but not more than 10% of all Flowgates or 2 Flowgates (whichever is greater).	The Transmission Service Provider did not use all the elements defined in R8 when determining firm AFC, or used additional elements, for more than 10% of all Flowgates or 2 Flowgates (whichever is greater), but not more than 15% of all Flowgates or 3 Flowgates (whichever is greater).	The Transmission Service Provider did not use all the elements defined in R8 when determining firm AFC, or used additional elements, for more than 15% of all Flowgates or more than 3 Flowgates (whichever is greater).
R9.	The Transmission Service Provider did not use all the elements defined in R8 when determining non-firm AFC, or used additional elements, for more than zero Flowgates, but not more than 5% of all Flowgates or 1 Flowgate (whichever is greater).	The Transmission Service Provider did not use all the elements defined in R9 when determining non-firm AFC, or used additional elements, for more than 5% of all Flowgates or 1 Flowgate (whichever is greater), but not more than 10% of all Flowgates or 2 Flowgates (whichever is greater).	The Transmission Service Provider did not use all the elements defined in R9 when determining non-firm AFC, or used additional elements, for more than 10% of all Flowgates or 2 Flowgates (whichever is greater), but not more than 15% of all Flowgates or 3 Flowgates (whichever is greater).	The Transmission Service Provider did not use all the elements defined in R9 when determining non-firm AFC, or used additional elements, for more than 15% of all Flowgates or more than 3 Flowgates (whichever is greater).
R10	One or more of the following: <ul style="list-style-type: none"> For Hourly, the values described in the AFC equation changed and the Transmission Service provider did not calculate for one or more hours but not more than 15 hours, and was in excess of the 175-hour per year 	One or more of the following: <ul style="list-style-type: none"> For Hourly, the values described in the AFC equation changed and the Transmission Service provider did not calculate for more than 15 hours but not more than 20 hours, and was in excess of the 175-hour per year 	One or more of the following: <ul style="list-style-type: none"> For Hourly, the values described in the AFC equation changed and the Transmission Service provider did not calculate for more than 20 hours but not more than 25 hours, and was in excess of the 175-hour per year 	One or more of the following: <ul style="list-style-type: none"> For Hourly, the values described in the AFC equation changed and the Transmission Service provider did not calculate for more than 25 hours, and was in excess of the 175-hour per year requirement.

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R #	Lower VSL	Moderate VSL	High VSL	Severe VSL
	<p>requirement.</p> <ul style="list-style-type: none"> ▪ For Daily, the values described in the AFC equation changed and the Transmission Service provider did not calculate for one or more calendar days but not more than 3 calendar days. ▪ For Monthly, the values described in the AFC equation changed and the Transmission Service provider did not calculate for seven or more calendar days, but less than 14 calendar days. 	<p>requirement.</p> <ul style="list-style-type: none"> ▪ For Daily, the values described in the AFC equation changed and the Transmission Service provider did not calculate for more than 3 calendar days but not more than 4 calendar days. ▪ For Monthly, the values described in the AFC equation changed and the Transmission Service provider did not calculate for 14 or more calendar days, but less than 21 calendar days. 	<p>requirement.</p> <ul style="list-style-type: none"> ▪ For Daily, the values described in the AFC equation changed and the Transmission Service provider did not calculate for more than 4 calendar days but not more than 5 calendar days. ▪ For Monthly, the values described in the AFC equation changed and the Transmission Service provider did not calculate for 21 or more calendar days, but less than 28 calendar days. 	<ul style="list-style-type: none"> ▪ For Daily, the values described in the AFC equation changed and the Transmission Service provider did not calculate for more than 5 calendar days. ▪ For Monthly, the values described in the AFC equation changed and the Transmission Service provider did not calculate for 28 or more calendar days.
R11.	N/A	N/A	N/A	The Transmission Service Provider did not follow the procedure for converting Flowgate AFCs to ATCs described in R11.

A. Regional Differences

None identified.

B. Associated Documents

Version History

Version	Date	Action	Change Tracking
2		Modified R2.1.1.3, R2.1.2.3, R2.1.3, R2.2, R2.3 and R11 Made conforming changes to M18 and VSLs for R2 and R11	Revised

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 posting the concurrent posting of the SAR and proposed standard on August 8, 2008.
2. SDT posted SAR and first draft of MOD-030-02 for a 45-day comment period from August 11, 2008 through September 24, 2008.

Description of Current Draft:

This is the second draft of the proposed standard posted for stakeholder pre-ballot review. This draft includes consideration of stakeholder comments from the initial ballot of MOD-030-1 and applicable FERC directives from FERC Order 693, Order 890, and Order 890-A.

Future Development Plan:

Anticipated Actions	Anticipated Date
1. Initial Ballot.	December 10, 2008
2. Respond to comments.	February 1, 2009
3. Recirculation ballot.	February 1, 2009
4. Board adoption.	March 15, 2009

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.

None.

A. Introduction

1. **Title:** Flowgate Methodology
2. **Number:** MOD-030-02
3. **Purpose:** To increase consistency and reliability in the development and documentation of transfer capability calculations for short-term use performed by entities using the Flowgate Methodology to support analysis and system operations.
4. **Applicability:**
 - 4.1.1 Each Transmission Operator that uses the Flowgate Methodology to support the calculation of Available Flowgate Capabilities (AFCs) on Flowgates.
 - 4.1.2 Each Transmission Service Provider that uses the Flowgate Methodology to calculate AFCs on Flowgates.
5. **Proposed Effective Date:** The date upon which MOD-030-01 is currently scheduled to become effective.

B. Requirements

- R1. The Transmission Service Provider shall include in its “Available Transfer Capability Implementation Document” (ATCID): [*Violation Risk Factor: Lower*] [*Time Horizon: Operations Planning*]
 - R1.1. The criteria used by the Transmission Operator to identify sets of Transmission Facilities as Flowgates that are to be considered in Available Flowgate Capability (AFC) calculations.
 - R1.2. The following information on how source and sink for transmission service is accounted for in AFC calculations including:
 - R1.2.1. Define if the source used for AFC calculations is obtained from the source field or the Point of Receipt (POR) field of the transmission reservation.
 - R1.2.2. Define if the sink used for AFC calculations is obtained from the sink field or the Point of Delivery (POD) field of the transmission reservation.
 - R1.2.3. The source/sink or POR/POD identification and mapping to the model.
 - R1.2.4. If the Transmission Service Provider’s AFC calculation process involves a grouping of generators, the ATCID must identify how these generators participate in the group.
- R2. The Transmission Operator shall perform the following: [*Violation Risk Factor: Lower*] [*Time Horizon: Operations Planning*]
 - R2.1. Include Flowgates used in the AFC process based, at a minimum, on the following criteria:
 - R2.1.1. Results of a first Contingency transfer analysis for ATC Paths internal to a Transmission Operator’s system up to the path capability such that at a minimum the first three limiting Elements and their worst associated Contingency combinations with an OTDF of at least 5% and within the Transmission Operator’s system are included as Flowgates.

- R2.1.1.1. Use first Contingency criteria consistent with those first Contingency criteria used in planning of operations for the applicable time periods, including use of Special Protection Systems.
 - R2.1.1.2. Only the most limiting element in a series configuration needs to be included as a Flowgate.
 - R2.1.1.3. If any limiting ~~elements or Contingencies are already protected~~ element is kept within its limit for its associated worst Contingency by operating within the limits of another Flowgate, then no new ~~Flowgates need~~ Flowgate needs to be established for such limiting elements or Contingencies.
- R2.1.2.** Results of a first Contingency transfer analysis from all adjacent Balancing Authority source and sink (as defined in the ATCID) combinations up to the path capability such that at a minimum the first three limiting Elements and their worst associated Contingency combinations with an Outage Transfer Distribution Factor (OTDF) of at least 5% and within the Transmission Operator's system are included as Flowgates unless the interface between such adjacent Balancing Authorities is accounted for using another ATC methodology.
- R2.1.2.1. Use first Contingency criteria consistent with those first Contingency criteria used in planning of operations for the applicable time periods, including use of Special Protection Systems.
 - R2.1.2.2. Only the most limiting element in a series configuration needs to be included as a Flowgate.
 - R2.1.2.3. If any limiting ~~elements or Contingencies are already protected~~ element is kept within its limit for its associated worst Contingency by operating within the limits of another Flowgate, then no new ~~Flowgates need~~ Flowgate needs to be established for such limiting elements or Contingencies.
- R2.1.3.** ~~With the exception of flowgates created to address temporary operating conditions, any~~ Any limiting Element/Contingency combination at least within its Reliability Coordinator's Area that has been subjected to an Interconnection-wide congestion management procedure within the last 12 months, unless the limiting Element/Contingency combination is accounted for using another ATC methodology ~~or was created to address temporary operating conditions.~~
- R2.1.4.** Any limiting Element/Contingency combination within the Transmission model that has been requested to be included by any other Transmission Service Provider using the Flowgate Methodology or Area Interchange Methodology, where:
- R2.1.4.1. The coordination of the limiting Element/Contingency combination is not already addressed through a different methodology, and

- Any generator within the Transmission Service Provider's area has at least a 5% Power Transfer Distribution Factor (PTDF) or Outage Transfer Distribution Factor (OTDF) impact on the Flowgate when delivered to the aggregate load of its own area, or
- A transfer from any Balancing Area within the Transmission Service Provider's area to a Balancing Area adjacent has at least a 5% PTDF or OTDF impact on the Flowgate.
- The Transmission Operator may utilize distribution factors less than 5% if desired.

R2.1.4.2. The limiting Element/Contingency combination is included in the requesting Transmission Service Provider's methodology.

- R2.2.** At a minimum, establish a list of Flowgates by creating, modifying, or deleting Flowgate definitions at least once per calendar year.
- R2.3.** At a minimum, establish a list of Flowgates by creating, modifying, or deleting Flowgates that have been requested as part of R2.1.4 within thirty calendar days from the request.
- R2.4.** Establish the TFC of each of the defined Flowgates as equal to:
- For thermal limits, the System Operating Limit (SOL) of the Flowgate.
 - For voltage or stability limits, the flow that will respect the SOL of the Flowgate.
- R2.5.** At a minimum, establish the TFC once per calendar year.
- R2.5.1.** If notified of a change in the Rating by the Transmission Owner that would affect the TFC of a flowgate used in the AFC process, the TFC should be updated within seven calendar days of the notification.
- R2.6.** Provide the Transmission Service Provider with the TFCs within seven calendar days of their establishment.
- R3.** The Transmission Operator shall make available to the Transmission Service Provider a Transmission model to determine Available Flowgate Capability (AFC) that meets the following criteria: [*Violation Risk Factor: Lower*] [*Time Horizon: Operations Planning*]
- R3.1.** Contains generation Facility Ratings, such as generation maximum and minimum output levels, specified by the Generator Owners of the Facilities within the model.
- R3.2.** Updated at least once per day for AFC calculations for intra-day, next day, and days two through 30.
- R3.3.** Updated at least once per month for AFC calculations for months two through 13.
- R3.4.** Contains modeling data and system topology for the Facilities within its Reliability Coordinator's Area. Equivalent representation of radial lines and Facilities 161kV or below is allowed.
- R3.5.** Contains modeling data and system topology (or equivalent representation) for immediately adjacent and beyond Reliability Coordination Areas.

- R4.** When calculating AFCs, the Transmission Service Provider shall represent the impact of Transmission Service as follows: [*Violation Risk Factor: Lower*] [*Time Horizon: Operations Planning*]
- If the source, as specified in the ATCID, has been identified in the reservation and it is discretely modeled in the Transmission Service Provider’s Transmission model, use the discretely modeled point as the source.
 - If the source, as specified in the ATCID, has been identified in the reservation and the point can be mapped to an “equivalence” or “aggregate” representation in the Transmission Service Provider’s Transmission model, use the modeled equivalence or aggregate as the source.
 - If the source, as specified in the ATCID, has been identified in the reservation and the point cannot be mapped to a discretely modeled point or an “equivalence” representation in the Transmission Service Provider’s Transmission model, use the immediately adjacent Balancing Authority associated with the Transmission Service Provider from which the power is to be received as the source.
 - If the source, as specified in the ATCID, has not been identified in the reservation use the immediately adjacent Balancing Authority associated with the Transmission Service Provider from which the power is to be received as the source.
 - If the sink, as specified in the ATCID, has been identified in the reservation and it is discretely modeled in the Transmission Service Provider’s Transmission model, use the discretely modeled point as the sink.
 - If the sink, as specified in the ATCID, has been identified in the reservation and the point can be mapped to an “equivalence” or “aggregate” representation in the Transmission Service Provider’s Transmission model, use the modeled equivalence or aggregate as the sink.
 - If the sink, as specified in the ATCID, has been identified in the reservation and the point cannot be mapped to a discretely modeled point or an “equivalence” representation in the Transmission Service Provider’s Transmission model, use the immediately adjacent Balancing Authority associated with the Transmission Service Provider receiving the power as the sink.
 - If the sink, as specified in the ATCID, has not been identified in the reservation use the immediately adjacent Balancing Authority associated with the Transmission Service Provider receiving the power as the sink.
- R5.** When calculating AFCs, the Transmission Service Provider shall: [*Violation Risk Factor: Lower*] [*Time Horizon: Operations Planning*]
- R5.1.** Use the models provided by the Transmission Operator.
- R5.2.** Include in the transmission model expected generation and Transmission outages, additions, and retirements within the scope of the model as specified in the ATCID and in effect during the applicable period of the AFC calculation for the Transmission Service Provider’s area, all adjacent Transmission Service Providers, and any Transmission Service Providers with which coordination agreements have been executed.

- R5.3.** For external Flowgates, identified in R2.1.4, use the AFC provided by the Transmission Service Provider that calculates AFC for that Flowgate.
- R6.** When calculating the impact of ETC for firm commitments (ETC_{Fi}) for all time periods for a Flowgate, the Transmission Service Provider shall sum the following: [*Violation Risk Factor: Lower*] [*Time Horizon: Operations Planning*]
- R6.1.** The impact of firm Network Integration Transmission Service, including the impacts of generation to load, in the model referenced in R5.2 for the Transmission Service Provider's area, based on:
- R6.1.1.** Load forecast for the time period being calculated, including Native Load and Network Service load
- R6.1.2.** Unit commitment and Dispatch Order, to include all designated network resources and other resources that are committed or have the legal obligation to run as specified in the Transmission Service Provider's ATCID.
- R6.2.** The impact of any firm Network Integration Transmission Service, including the impacts of generation to load in the model referenced in R5.2 and has a distribution factor equal to or greater than the percentage¹ used to curtail in the Interconnection-wide congestion management procedure used by the Transmission Service Provider, for all adjacent Transmission Service Providers and any other Transmission Service Providers with which coordination agreements have been executed based on:
- R6.2.1.** Load forecast for the time period being calculated, including Native Load and Network Service load
- R6.2.2.** Unit commitment and Dispatch Order, to include all designated network resources and other resources that are committed or have the legal obligation to run as specified in the Transmission Service Provider's ATCID.
- R6.3.** The impact of all confirmed firm Point-to-Point Transmission Service expected to be scheduled, including roll-over rights for Firm Transmission Service contracts, for the Transmission Service Provider's area.
- R6.4.** The impact of any confirmed firm Point-to-Point Transmission Service expected to be scheduled, filtered to reduce or eliminate duplicate impacts from transactions using Transmission service from multiple Transmission Service Providers, including roll-over rights for Firm Transmission Service contracts having a distribution factor equal to or greater than the percentage² used to curtail in the Interconnection-wide congestion management procedure used by the Transmission Service Provider, for all adjacent Transmission Service Providers and any other Transmission Service Providers with which coordination agreements have been executed.
- R6.5.** The impact of any Grandfathered firm obligations expected to be scheduled or expected to flow for the Transmission Service Provider's area.

¹ A percentage less than that used in the Interconnection-wide congestion management procedure may be utilized.

² A percentage less than that used in the Interconnection-wide congestion management procedure may be utilized.

- R6.6.** The impact of any Grandfathered firm obligations expected to be scheduled or expected to flow that have a distribution factor equal to or greater than the percentage³ used to curtail in the Interconnection-wide congestion management procedure used by the Transmission Service Provider, for all adjacent Transmission Service Providers and any other Transmission Service Providers with which coordination agreements have been executed.
- R6.7.** The impact of other firm services determined by the Transmission Service Provider.
- R7.** When calculating the impact of ETC for non-firm commitments (ETC_{NFi}) for all time periods for a Flowgate the Transmission Service Provider shall sum: [*Violation Risk Factor: Lower*] [*Time Horizon: Operations Planning*]
- R7.1.** The impact of all confirmed non-firm Point-to-Point Transmission Service expected to be scheduled for the Transmission Service Provider's area.
- R7.2.** The impact of any confirmed non-firm Point-to-Point Transmission Service expected to be scheduled, filtered to reduce or eliminate duplicate impacts from transactions using Transmission service from multiple Transmission Service Providers, that have a distribution factor equal to or greater than the percentage⁴ used to curtail in the Interconnection-wide congestion management procedure used by the Transmission Service Provider, for all adjacent Transmission Service Providers and any other Transmission Service Providers with which coordination agreements have been executed.
- R7.3.** The impact of any Grandfathered non-firm obligations expected to be scheduled or expected to flow for the Transmission Service Provider's area.
- R7.4.** The impact of any Grandfathered non-firm obligations expected to be scheduled or expected to flow that have a distribution factor equal to or greater than the percentage⁵ used to curtail in the Interconnection-wide congestion management procedure used by the Transmission Service Provider, for all adjacent Transmission Service Providers and any other Transmission Service Providers with which coordination agreements have been executed.
- R7.5.** The impact of non-firm Network Integration Transmission Service serving Load within the Transmission Service Provider's area (i.e., secondary service), to include load growth, and losses not otherwise included in Transmission Reliability Margin or Capacity Benefit Margin.
- R7.6.** The impact of any non-firm Network Integration Transmission Service (secondary service) with a distribution factor equal to or greater than the percentage⁶ used to curtail in the Interconnection-wide congestion management procedure used by the Transmission Service Provider, filtered to reduce or eliminate duplicate impacts from transactions using Transmission service from multiple Transmission Service

³ A percentage less than that used in the Interconnection-wide congestion management procedure may be utilized.

⁴ A percentage less than that used in the Interconnection-wide congestion management procedure may be utilized.

⁵ A percentage less than that used in the Interconnection-wide congestion management procedure may be utilized.

⁶ A percentage less than that used in the Interconnection-wide congestion management procedure may be utilized.

Providers, for all adjacent Transmission Service Providers and any other Transmission Service Providers with which coordination agreements have been executed.

- R7.7.** The impact of other non-firm services determined by the Transmission Service Provider.
- R8.** When calculating firm AFC for a Flowgate for a specified period, the Transmission Service Provider shall use the following algorithm (subject to allocation processes described in the ATCID): [*Violation Risk Factor: Lower*] [*Time Horizon: Operations Planning*]

$$AFC_F = TFC - ETC_{Fi} - CBM_i - TRM_i + Postbacks_{Fi} + counterflows_{Fi}$$

Where:

AFC_F is the firm Available Flowgate Capability for the Flowgate for that period.

TFC is the Total Flowgate Capability of the Flowgate.

ETC_{Fi} is the sum of the impacts of existing firm Transmission commitments for the Flowgate during that period.

CBM_i is the impact of the Capacity Benefit Margin on the Flowgate during that period.

TRM_i is the impact of the Transmission Reliability Margin on the Flowgate during that period.

Postbacks_{Fi} are changes to firm AFC due to a change in the use of Transmission Service for that period, as defined in Business Practices.

counterflows_{Fi} are adjustments to firm AFC as determined by the Transmission Service Provider and specified in their ATCID.

- R9.** When calculating non-firm AFC for a Flowgate for a specified period, the Transmission Service Provider shall use the following algorithm (subject to allocation processes described in the ATCID): [*Violation Risk Factor: Lower*] [*Time Horizon: Operations Planning*]

$$AFC_{NF} = TFC - ETC_{Fi} - ETC_{NFi} - CBM_{Si} - TRM_{Ui} + Postbacks_{NFi} + counterflows$$

Where:

AFC_{NF} is the non-firm Available Flowgate Capability for the Flowgate for that period.

TFC is the Total Flowgate Capability of the Flowgate.

ETC_{Fi} is the sum of the impacts of existing firm Transmission commitments for the Flowgate during that period.

ETC_{NFi} is the sum of the impacts of existing non-firm Transmission commitments for the Flowgate during that period.

CBM_{Si} is the impact of any schedules during that period using Capacity Benefit Margin.

TRM_{Ui} is the impact on the Flowgate of the Transmission Reliability Margin that has not been released (unreleased) for sale as non-firm capacity by the Transmission Service Provider during that period.

Postbacks_{NF} are changes to non-firm Available Flowgate Capability due to a change in the use of Transmission Service for that period, as defined in Business Practices.

counterflows_{NF} are adjustments to non-firm AFC as determined by the Transmission Service Provider and specified in their ATCID.

- R10.** Each Transmission Service Provider shall recalculate AFC, utilizing the updated models described in R3.2, R3.3, and R5, at a minimum on the following frequency, unless none of the calculated values identified in the AFC equation have changed: [*Violation Risk Factor: Lower*] [*Time Horizon: Operations Planning*]
- R10.1.** For hourly AFC, once per hour. Transmission Service Providers are allowed up to 175 hours per calendar year during which calculations are not required to be performed, despite a change in a calculated value identified in the AFC equation.
- R10.2.** For daily AFC, once per day.
- R10.3.** For monthly AFC, once per week.
- R11.** When converting Flowgate AFCs to ATCs for ATC Paths, the Transmission Service Provider shall convert those values based on the following algorithm: [*Violation Risk Factor: Lower*] [*Time Horizon: Operations Planning*]

$$\begin{aligned} \text{ATC} &= \min(\text{P}) \\ \text{P} &= \{\text{PATC}_1, \text{PATC}_2, \dots, \text{PATC}_n\} \\ \text{PATC}_n &= \frac{\text{AFC}_n}{\text{DF}_{np}} \end{aligned}$$

Where:

ATC is the Available Transfer Capability.

P is the set of partial Available Transfer Capabilities for all “impacted” Flowgates honored by the Transmission Service Provider; a Flowgate is considered “impacted” by a path if the Distribution Factor for that path is greater than the percentage⁷ used to curtail in the Interconnection-wide congestion management procedure used by the Transmission Service Provider on an OTDF Flowgate or PTDF Flowgate.

PATC_n is the partial Available Transfer Capability for a path relative to a Flowgate *n*.

AFC_n is the Available Flowgate Capability of a Flowgate *n*.

DF_{np} is the distribution factor for Flowgate *n* relative to path *p*.

C. Measures

- M1.** Each Transmission Service Provider shall provide its ATCID and other evidence (such as written documentation) to show that its ATCID contains the criteria used by the Transmission Operator to identify sets of Transmission Facilities as Flowgates and information on how sources and sinks are accounted for in AFC calculations. (R1)
- M2.** The Transmission Operator shall provide evidence (such as studies and working papers) that all Flowgates that meet the criteria described in R2.1 are considered in its AFC calculations. (R2.1)

⁷ A percentage less than that used in the Interconnection-wide congestion management procedure may be utilized.

- M3.** The Transmission Operator shall provide evidence (such as logs) that it updated its list of Flowgates at least once per calendar year. (R2.2)
- M4.** The Transmission Operator shall provide evidence (such as logs and dated requests) that it updated the list of Flowgates within thirty calendar days from a request. (R2.3)
- M5.** The Transmission Operator shall provide evidence (such as data or models) that it determined the TFC for each Flowgate as defined in R2.4. (R2.4)
- M6.** The Transmission Operator shall provide evidence (such as logs) that it established the TFCs for each Flowgate in accordance with the timing defined in R2.5. (R2.5)
- M7.** The Transmission Operator shall provide evidence (such as logs and electronic communication) that it provided the Transmission Service Provider with updated TFCs within seven calendar days of their determination. (R2.6)
- M8.** The Transmission Operator shall provide evidence (such as written documentation, logs, models, and data) that the Transmission model used to determine AFCs contains the information specified in R3. (R3)
- M9.** The Transmission Service Provider shall provide evidence (such as written documentation and data) that the modeling of point-to-point reservations was based on the rules described in R4. (R4)
- M10.** The Transmission Service Provider shall provide evidence including the models received from Transmission Operators and other evidence (such as documentation and data) to show that it used the Transmission Operator's models in calculating AFC. (R5.1)
- M11.** The Transmission Service Provider shall provide evidence (such as written documentation, electronic communications, and data) that all expected generation and Transmission outages, additions, and retirements were included in the AFC calculation as specified in the ATCID. (R5.2)
- M12.** The Transmission Service Provider shall provide evidence (such as logs, electronic communications, and data) that AFCs provided by third parties on external Flowgates were used instead of those calculated by the Transmission Operator. (R5.3)
- M13.** The Transmission Service Provider shall demonstrate compliance with R6 by recalculating firm ETC for any specific time period as described in (MOD-001 R2), using the requirements defined in R6 and with data used to calculate the specified value for the designated time period. The data used must meet the requirements specified in ~~MOD-030-1~~ **this standard** and the ATCID. To account for differences that may occur when recalculating the value (due to mixing automated and manual processes), any recalculated value that is within +/- 15% or 15 MW, whichever is greater, of the originally calculated value, is evidence that the Transmission Service Provider used the requirements defined in R6 to calculate its firm ETC. (R6)
- M14.** The Transmission Service Provider shall demonstrate compliance with R7 by recalculating non-firm ETC for any specific time period as described in (MOD-001 R2), using the requirements defined in R7 and with data used to calculate the specified value for the designated time period. The data used must meet the requirements specified in the standard and the ATCID. To account for differences that may occur when recalculating the value (due to mixing automated and manual processes), any recalculated value that is within +/- 15% or 15 MW, whichever is greater, of the originally calculated value, is evidence that the

Transmission Service Provider used the requirements in R7 to calculate its non-firm ETC.
(R7)

M15. Each Transmission Service Provider shall produce the supporting documentation for the processes used to implement the algorithm that calculates firm AFCs, as required in R8. Such documentation must show that only the variables allowed in R8 were used to calculate firm AFCs, and that the processes use the current values for the variables as determined in the requirements or definitions. Note that any variable may legitimately be zero if the value is not applicable or calculated to be zero (such as counterflows, TRM, CBM, etc...). The supporting documentation may be provided in the same form and format as stored by the Transmission Service Provider. (R8)

M16. Each Transmission Service Provider shall produce the supporting documentation for the processes used to implement the algorithm that calculates non-firm AFCs, as required in R9. Such documentation must show that only the variables allowed in R9 were used to calculate non-firm AFCs, and that the processes use the current values for the variables as determined in the requirements or definitions. Note that any variable may legitimately be zero if the value is not applicable or calculated to be zero (such as counterflows, TRM, CBM, etc...). The supporting documentation may be provided in the same form and format as stored by the Transmission Service Provider. (R9)

M17. The Transmission Service Provider shall provide evidence (such as documentation, dated logs, and data) that it calculated AFC on the frequency defined in R10. (R10)

M18. The Transmission Service Provider shall provide evidence (such as documentation and data) when converting Flowgate AFCs to ATCs for ATC Paths, it follows the procedure described in R11. (R11)

D. Compliance

1. Compliance Monitoring Process

1.1. Compliance Enforcement Authority

Regional Entity.

1.2. Compliance Monitoring Period and Reset Time Frame

Not applicable.

1.3. Data Retention

The Transmission Operator and Transmission Service Provider shall keep data or evidence to show compliance as identified below unless directed by its Compliance Enforcement Authority to retain specific evidence for a longer period of time as part of an investigation:

- The Transmission Service Provider shall retain its current, in force ATCID and any prior versions of the ATCID that were in force since the last compliance audit to show compliance with R1.
- The Transmission Operator shall have its latest model used to determine flowgates and TFC and evidence of the previous version to show compliance with R2 and R3.
- The Transmission Operator shall retain evidence to show compliance with R2.1, R2.3 for the most recent 12 months.

- The Transmission Operator shall retain evidence to show compliance with R2.2, R2.4 and R2.5 for the most recent three calendar years plus current year.
- The Transmission Service Provider shall retain evidence to show compliance with R4 for 12 months or until the model used to calculate AFC is updated, whichever is longer.
- The Transmission Service Provider shall retain evidence to show compliance with R5, R8, R9, R10, and R11 for the most recent calendar year plus current year.
- The Transmission Service Provider shall retain evidence to show compliance in calculating hourly values required in R6 and R7 for the most recent 14 days; evidence to show compliance in calculating daily values required in R6 and R7 for the most recent 30 days; and evidence to show compliance in calculating monthly values required in R6 and R7 for the most recent sixty days.
- If a Transmission Service Provider or Transmission Operator is found non-compliant, it shall keep information related to the non-compliance until found compliant.

The Compliance Enforcement Authority shall keep the last audit records and all requested and submitted subsequent audit records.

1.4. Compliance Monitoring and Enforcement Processes:

The following processes may be used:

- Compliance Audits
- Self-Certifications
- Spot Checking
- Compliance Violation Investigations
- Self-Reporting
- Complaints

1.5. Additional Compliance Information

None.

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2. Violation Severity Levels

R #	Lower VSL	Moderate VSL	High VSL	Severe VSL
R1.	The Transmission Service Provider does not include in its ATCID one or two of the sub-requirements listed under R1.2, or the sub-requirement is incomplete.	The Transmission Service Provider does not include in its ATCID three of the sub-requirements listed under R1.2, or the sub-requirement is incomplete.	The Transmission Service Provider does not include in its ATCID the information described in R1.1. OR The Transmission Service Provider does not include in its ATCID the information described in R1.2 (1.2.1, 1.2.2., 1.2.3, and 1.2.4 are missing).	The Transmission Service Provider does not include in its ATCID the information described in R1.1 and R1.2 (1.2.1, 1.2.2., 1.2.3, and 1.2.4 are missing).
R2.	One or more of the following: <ul style="list-style-type: none"> The Transmission Operator established its list of Flowgates less frequently than once per calendar year, but not more than three months late as described in R2.2. The Transmission Operator established its list of Flowgates more than thirty days, but not more than sixty days, following a request to create, modify or delete a flowgate as described in R2.3. The Transmission Operator has not updated its Flowgate 	One or more of the following: <ul style="list-style-type: none"> The Transmission Operator did not include a Flowgate in their AFC calculations that met the criteria described in R2.1. The Transmission Operator established its list of Flowgates more than three months late, but not more than six months late as described in R2.2. The Transmission Operator established its list of Flowgates more than sixty days, but not more than ninety days, following a request to create, modify or 	One or more of the following: <ul style="list-style-type: none"> The Transmission Operator did not include two to five Flowgates in their AFC calculations that met the criteria described in R2.1. The Transmission Operator established its list of Flowgates more than six months late, but not more than nine months late as described in R2.2. The Transmission Operator established its list of Flowgates more than ninety days, but not more than 120 days, following a request to create, modify or delete a 	One or more of the following: <ul style="list-style-type: none"> The Transmission Operator did not include six or more Flowgates in their AFC calculations that met the criteria described in R2.1. The Transmission Operator established its list of Flowgates more than nine months late as described in R2.2. The Transmission Operator did not establish its list of internal Flowgates as described in R2.2. The Transmission Operator established its list of Flowgates more than 120 days following a request to create, modify or delete a

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R #	Lower VSL	Moderate VSL	High VSL	Severe VSL
	<p>TFC when notified by the Transmission Owner in more than 7 days, but it has not been more than 14 days since the notification (R2.5.1)</p> <ul style="list-style-type: none"> The Transmission Operator has not provided its Transmission Service Provider with its Flowgate TFCs within seven days (one week) of their determination, but is has not been more than 14 days (two weeks) since their determination. 	<p>delete a flowgate as described in R2.3.</p> <ul style="list-style-type: none"> The Transmission Operator has not updated its Flowgate TFCs at least once within a calendar year, and it has been not more than 15 months since the last update. The Transmission Operator has not updated its Flowgate TFC when notified by the Transmission Owner in more than 14 days, but it has not been more than 21 days since the notification (R2.5.1) The Transmission Operator has not provided its Transmission Service Provider with its Flowgate TFCs in more than 14 days (two weeks) of their determination, but is has not been more than 21 days (three weeks) since their determination. 	<p>flowgate as described in R2.3.</p> <p>The Transmission Operator has not updated its Flowgate TFCs at least once within a calendar year, and it has been more than 15 months but not more than 18 months since the last update.</p> <ul style="list-style-type: none"> The Transmission Operator has not updated its Flowgate TFCs when notified by the Transmission Owner in more than 21 days, but it has not been more than 28 days since the notification (R2.5.1) The Transmission Operator has not provided its Transmission Service Provider with its Flowgate TFCs in more than 21 days (three weeks) of their determination, but is has not been more than 28 days (four weeks) since their determination. 	<p>flowgate as described in R2.3.</p> <ul style="list-style-type: none"> The Transmission Operator did not establish its list of external Flowgates following a request to create, modify or delete an external flowgate as described in R2.3. The Transmission Operator did not determine the TFC for a flowgate as described in R2.4. The Transmission Operator has not updated its Flowgate TFCs at least once within a calendar year, and it has been more than 18 months since the last update. (R2.5) The Transmission Operator has not updated its Flowgate TFCs when notified by the Transmission Owner in more than 28 calendar days (R2.5.1) The Transmission Operator has not provided its Transmission Service Provider with its Flowgate TFCs in more than 28 days (4 weeks) of their

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R #	Lower VSL	Moderate VSL	High VSL	Severe VSL
				determination.
R3.	<p>One or more of the following:</p> <ul style="list-style-type: none"> • The Transmission Operator used one to ten Facility Ratings that were different from those specified by a Transmission or Generator Owner in their Transmission model. • The Transmission Operator did not update the model per R3.2 for one or more calendar days but not more than 2 calendar days • The Transmission Operator did not update the model for per R3.3 for one or more months but not more than six weeks 	<p>One or more of the following:</p> <ul style="list-style-type: none"> • The Transmission Operator used eleven to twenty Facility Ratings that were different from those specified by a Transmission or Generator Owner in their Transmission model. • The Transmission Operator did not update the model per R3.2 for more than 2 calendar days but not more than 3 calendar days • The Transmission Operator did not update the model for per R3.3 for more than six weeks but not more than eight weeks 	<p>One or more of the following:</p> <ul style="list-style-type: none"> • The Transmission Operator used twenty-one to thirty Facility Ratings that were different from those specified by a Transmission or Generator Owner in their Transmission model. • The Transmission Operator did not update the model per R3.2 for more than 3 calendar days but not more than 4 calendar days • The Transmission Operator did not update the model for per R3.3 for more than eight weeks but not more than ten weeks 	<p>One or more of the following:</p> <ul style="list-style-type: none"> • The Transmission Operator did not update the model per R3.2 for more than 4 calendar days • The Transmission Operator did not update the model for per R3.3 for more than ten weeks • The Transmission Operator used more than thirty Facility Ratings that were different from those specified by a Transmission or Generator Owner in their Transmission model. • The Transmission operator did not include in the Transmission model detailed modeling data and topology for its own Reliability

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R #	Lower VSL	Moderate VSL	High VSL	Severe VSL
				<p>Coordinator area.</p> <ul style="list-style-type: none"> The Transmission operator did not include in the Transmission modeling data and topology for immediately adjacent and beyond Reliability Coordinator area.
R4.	The Transmission Service Provider did not represent the impact of Transmission Service as described in R4 for more than zero, but not more than 5% of all reservations; or more than zero, but not more than 1 reservation, whichever is greater..	The Transmission Service Provider did not represent the impact of Transmission Service as described in R4 for more than 5%, but not more than 10% of all reservations; or more than 1, but not more than 2 reservations, whichever is greater..	The Transmission Service Provider did not represent the impact of Transmission Service as described in R4 for more than 10%, but not more than 15% of all reservations; or more than 2, but not more than 3 reservations, whichever is greater..	The Transmission Service Provider did not represent the impact of Transmission Service as described in R4 for more than 15% of all reservations; or more than 3 reservations, whichever is greater..
R5.	The Transmission Service Provider did not include in the AFC process one to ten expected generation or Transmission outages, additions or retirements within the scope of the model as specified in the ATCID.	The Transmission Service Provider did not include in the AFC process eleven to twenty-five expected generation and Transmission outages, additions or retirements within the scope of the model as specified in the ATCID.	The Transmission Service Provider did not include in the AFC process twenty-six to fifty expected generation and Transmission outages, additions or retirements within the scope of the model as specified in the ATCID.	<p>One or more of the following:</p> <ul style="list-style-type: none"> The Transmission Service Provider did not use the model provided by the Transmission Operator. The Transmission Service Provider did not include in the AFC process more than fifty expected generation and Transmission outages, additions or retirements within the scope of the model as specified in the

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R #	Lower VSL	Moderate VSL	High VSL	Severe VSL
				<p>ATCID.</p> <ul style="list-style-type: none"> The Transmission Service provider did not use AFC provided by a third party.
R6.	<p>For a specified period, the Transmission Service Provider calculated a firm ETC with an absolute value different than that calculated in M13 for the same period, and the absolute value difference was more than 15% of the value calculated in the measure or 15MW, whichever is greater, but not more than 25% of the value calculated in the measure or 25MW, whichever is greater..</p>	<p>For a specified period, the Transmission Service Provider calculated a firm ETC with an absolute value different than that calculated in M13 for the same period, and the absolute value difference was more than 25% of the value calculated in the measure or 25MW, whichever is greater, but not more than 35% of the value calculated in the measure or 35MW, whichever is greater.</p>	<p>For a specified period, the Transmission Service Provider calculated a firm ETC with an absolute value different than that calculated in M13 for the same period, and the absolute value difference was more than 35% of the value calculated in the measure or 35MW, whichever is greater, but not more than 45% of the value calculated in the measure or 45MW, whichever is greater.</p>	<p>For a specified period, the Transmission Service Provider calculated a firm ETC with an absolute value different than that calculated in M13 for the same period, and the absolute value difference was more than 45% of the value calculated in the measure or 45MW, whichever is greater.</p>
R7.	<p>For a specified period, the Transmission Service Provider calculated a non-firm ETC with an absolute value different than that calculated in M14 for the same period, and the absolute value difference was more than 15% of the value calculated in the measure or 15MW, whichever is greater, but not more than 25% of the value calculated in the measure or 25MW, whichever is greater.</p>	<p>For a specified period, the Transmission Service Provider calculated a non-firm ETC with an absolute value different than that calculated in M14 for the same period, and the absolute value difference was more than 25% of the value calculated in the measure or 25MW, whichever is greater, but not more than 35% of the value calculated in the measure or 35MW, whichever is greater.</p>	<p>For a specified period, the Transmission Service Provider calculated a non-firm ETC with an absolute value different than that calculated in M14 for the same period, and the absolute value difference was more than 35% of the value calculated in the measure or 35MW, whichever is greater, but not more than 45% of the value calculated in the measure or 45MW, whichever is greater.</p>	<p>For a specified period, the Transmission Service Provider calculated a non-firm ETC with an absolute value different than that calculated in M14 for the same period, and the absolute value difference was more than 45% of the value calculated in the measure or 45MW, whichever is greater.</p>

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R #	Lower VSL	Moderate VSL	High VSL	Severe VSL
R8.	The Transmission Service Provider did not use all the elements defined in R8 when determining firm AFC, or used additional elements, for more than zero Flowgates, but not more than 5% of all Flowgates or 1 Flowgate (whichever is greater).	The Transmission Service Provider did not use all the elements defined in R8 when determining firm AFC, or used additional elements, for more than 5% of all Flowgates or 1 Flowgates (whichever is greater), but not more than 10% of all Flowgates or 2 Flowgates (whichever is greater).	The Transmission Service Provider did not use all the elements defined in R8 when determining firm AFC, or used additional elements, for more than 10% of all Flowgates or 2 Flowgates (whichever is greater), but not more than 15% of all Flowgates or 3 Flowgates (whichever is greater).	The Transmission Service Provider did not use all the elements defined in R8 when determining firm AFC, or used additional elements, for more than 15% of all Flowgates or more than 3 Flowgates (whichever is greater).
R9.	The Transmission Service Provider did not use all the elements defined in R8 when determining non-firm AFC, or used additional elements, for more than zero Flowgates, but not more than 5% of all Flowgates or 1 Flowgate (whichever is greater).	The Transmission Service Provider did not use all the elements defined in R9 when determining non-firm AFC, or used additional elements, for more than 5% of all Flowgates or 1 Flowgate (whichever is greater), but not more than 10% of all Flowgates or 2 Flowgates (whichever is greater).	The Transmission Service Provider did not use all the elements defined in R9 when determining non-firm AFC, or used additional elements, for more than 10% of all Flowgates or 2 Flowgates (whichever is greater), but not more than 15% of all Flowgates or 3 Flowgates (whichever is greater).	The Transmission Service Provider did not use all the elements defined in R9 when determining non-firm AFC, or used additional elements, for more than 15% of all Flowgates or more than 3 Flowgates (whichever is greater).
R10	One or more of the following: <ul style="list-style-type: none"> For Hourly, the values described in the AFC equation changed and the Transmission Service provider did not calculate for one or more hours but not more than 15 hours, and was in excess of the 175-hour per year 	One or more of the following: <ul style="list-style-type: none"> For Hourly, the values described in the AFC equation changed and the Transmission Service provider did not calculate for more than 15 hours but not more than 20 hours, and was in excess of the 175-hour per year 	One or more of the following: <ul style="list-style-type: none"> For Hourly, the values described in the AFC equation changed and the Transmission Service provider did not calculate for more than 20 hours but not more than 25 hours, and was in excess of the 175-hour per year 	One or more of the following: <ul style="list-style-type: none"> For Hourly, the values described in the AFC equation changed and the Transmission Service provider did not calculate for more than 25 hours, and was in excess of the 175-hour per year requirement.

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R #	Lower VSL	Moderate VSL	High VSL	Severe VSL
	<p>requirement.</p> <ul style="list-style-type: none"> ▪ For Daily, the values described in the AFC equation changed and the Transmission Service provider did not calculate for one or more calendar days but not more than 3 calendar days. ▪ For Monthly, the values described in the AFC equation changed and the Transmission Service provider did not calculate for seven or more calendar days, but less than 14 calendar days. 	<p>requirement.</p> <ul style="list-style-type: none"> ▪ For Daily, the values described in the AFC equation changed and the Transmission Service provider did not calculate for more than 3 calendar days but not more than 4 calendar days. ▪ For Monthly, the values described in the AFC equation changed and the Transmission Service provider did not calculate for 14 or more calendar days, but less than 21 calendar days. 	<p>requirement.</p> <ul style="list-style-type: none"> ▪ For Daily, the values described in the AFC equation changed and the Transmission Service provider did not calculate for more than 4 calendar days but not more than 5 calendar days. ▪ For Monthly, the values described in the AFC equation changed and the Transmission Service provider did not calculate for 21 or more calendar days, but less than 28 calendar days. 	<ul style="list-style-type: none"> ▪ For Daily, the values described in the AFC equation changed and the Transmission Service provider did not calculate for more than 5 calendar days. ▪ For Monthly, the values described in the AFC equation changed and the Transmission Service provider did not calculate for 28 or more calendar days.
R11.	N/A	N/A	N/A	The Transmission Service Provider did not follow the procedure for converting Flowgate AFCs to ATCs described in R11.

A. Regional Differences

None identified.

B. Associated Documents

Version History

Version	Date	Action	Change Tracking
2		Modified R2.1.1.3, R2.1.2.3, R2.1.3, R2.2, R2.3 and R11 Made conforming changes to M18 and VSLs for R2 and R11	Revised

Implementation Plan for Standard MOD-030-2; ATC/TTC/AFC and CBM/TRM Revisions (Project 2006-07)

Summary

As part of compliance with FERC Order 890, the NERC ATC, TTC, CBM, & TRM Standards Drafting Team has prepared the following standard:

- MOD-030-2, which describes the Flowgate methodology (previously referred to as the Flowgate Network Response ATC methodology) for determining AFC.

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

This standard completely replaces MOD-030-1.

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:

Proposed Standard	Transmission Operator	Transmission Planner	Transmission Service Provider	Balancing Authorities	Purchasing Selling Entities	Load-Serving Entities
MOD-030	■		■			

Proposed Effective Date

All requirements in the standard should become effective on the date upon which MOD-030-1 is currently scheduled to become effective.

Standards Announcement Final Ballot Results

Now available at: <https://standards.nerc.net/Ballots.aspx>

Standard MOD-030-2 — Flowgate Methodology (Project 2006-07 — ATC/TTC/AFC and CBM/TRM Revisions SDT)

The ballot pool approved the standard. The standard will be submitted to the NERC Board of Trustees for adoption.

The recirculation ballot for the standard MOD-030-2 — Flowgate Methodology ended January 29, 2009. The final ballot results are shown below. The [Ballot Results](#) Web page provides a link to the detailed results.

Quorum: 85.86%

Approval: 86.39%

Project page: <http://www.nerc.com/filez/standards/MOD-V0-Revision.html>

Background

This standard incorporates balloter suggestions for additional improvements to MOD-030-1. (The suggested improvements are aimed at allowing additional methods of achieving the same reliability objective — the suggested improvements are not aimed at correcting any errors in MOD-030-1.) Under the existing standards development process, if the drafting team had made these changes to MOD-030-1, the standard would have needed to be posted for an additional comment period, followed by balloting. This delay would have prevented MOD-030-1 from being ready to file with FERC before its due date.

To remedy this problem, the drafting team submitted a Standards Authorization Request (SAR) to initiate modifications to MOD-030-1, and received Standards Committee authorization to post the SAR and a proposed version of MOD-030-2 reflecting consideration of comments submitted with the initial ballot of MOD-030-1. As envisioned, MOD-030-2 will move through the standards development process and will be filed with governmental authorities before MOD-030-1 becomes effective.

Ballot Criteria

Approval requires both:

- A quorum, which is established by at least 75% of the members of the ballot pool for submitting either an affirmative vote, a negative vote, or an abstention; and

- A two-thirds majority of the weighted segment votes cast must be affirmative. The number of votes cast is the sum of affirmative and negative votes, excluding abstentions and nonresponses.

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.

*For more information or assistance,
please contact Shaun Streeter at shaun.streeter@nerc.net or at 609.452.8060.*



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Ballot Results	
Ballot Name:	Project 2006-07 (ATC) MOD-030-2_rc
Ballot Period:	1/20/2009 - 1/29/2009
Ballot Type:	recirculation
Total # Votes:	164
Total Ballot Pool:	191
Quorum:	85.86 % The Quorum has been reached
Weighted Segment Vote:	86.39 %
Ballot Results:	The Standard has Passed

Summary of Ballot Results									
Segment	Ballot Pool	Segment Weight	Affirmative		Negative		Abstain # Votes	No Vote	
			# Votes	Fraction	# Votes	Fraction			
1 - Segment 1.	50	1	30	0.857	5	0.143	9	6	
2 - Segment 2.	7	0.3	3	0.3	0	0	4	0	
3 - Segment 3.	45	1	29	0.906	3	0.094	4	9	
4 - Segment 4.	11	0.6	5	0.5	1	0.1	5	0	
5 - Segment 5.	36	1	20	0.87	3	0.13	6	7	
6 - Segment 6.	28	1	19	0.864	3	0.136	2	4	
7 - Segment 7.	0	0	0	0	0	0	0	0	
8 - Segment 8.	2	0.1	0	0	1	0.1	0	1	
9 - Segment 9.	4	0.4	4	0.4	0	0	0	0	
10 - Segment 10.	8	0.5	4	0.4	1	0.1	3	0	
Totals	191	5.9	114	5.097	17	0.803	33	27	

Individual Ballot Pool Results				
Segment	Organization	Member	Ballot	Comments
1	Allegheny Power	Rodney Phillips	Affirmative	
1	Ameren Services	Kirit S. Shah	Negative	View
1	American Electric Power	Paul B. Johnson	Affirmative	
1	American Transmission Company, LLC	Jason Shaver	Abstain	
1	Associated Electric Cooperative, Inc.	John Bussman	Affirmative	
1	Avista Corp.	Scott Kinney	Affirmative	
1	Bonneville Power Administration	Donald S. Watkins	Affirmative	
1	Brazos Electric Power Cooperative, Inc.	Tony Kroskey	Abstain	

1	Central Maine Power Company	Brian Conroy	Affirmative	
1	City of Vero Beach	Randall McCamish	Abstain	
1	Consolidated Edison Co. of New York	Christopher L de Graffenried	Affirmative	View
1	Dairyland Power Coop.	Robert W. Roddy	Abstain	
1	Duke Energy Carolina	Douglas E. Hils	Affirmative	
1	E.ON U.S. LLC	Larry Monday	Affirmative	
1	East Kentucky Power Coop.	George S. Carruba		
1	El Paso Electric Company	Dennis Malone		
1	Entergy Corporation	George R. Bartlett	Affirmative	
1	Farmington Electric Utility System	Alan Glazner	Affirmative	
1	FirstEnergy Energy Delivery	Robert Martinko	Negative	View
1	Florida Keys Electric Cooperative Assoc.	Dennis Minton		
1	Florida Power & Light Co.	C. Martin Mennes	Abstain	
1	Georgia Transmission Corporation	Harold Taylor, II	Affirmative	
1	Great River Energy	Gordon Pietsch	Negative	
1	Hoosier Energy Rural Electric Cooperative, Inc.	Damon Holladay	Affirmative	
1	Hydro One Networks, Inc.	Ajay Garg	Affirmative	
1	ITC Transmission	Elizabeth Howell	Negative	View
1	JEA	Ted E. Hobson	Affirmative	
1	Kansas City Power & Light Co.	Jim Useldinger	Affirmative	
1	Manitoba Hydro	Michelle Rheault	Affirmative	
1	National Grid	Michael J Ranalli	Affirmative	
1	New York State Electric & Gas Corp.	Henry G. Masti		
1	Northeast Utilities	David H. Boguslawski	Affirmative	
1	Oklahoma Gas and Electric Co.	Marvin E VanBebber	Affirmative	
1	Orange and Rockland Utilities, Inc.	Edward Bedder	Abstain	
1	Orlando Utilities Commission	Brad Chase	Abstain	View
1	Otter Tail Power Company	Lawrence R. Larson	Negative	
1	PacifiCorp	Robert Williams	Affirmative	
1	Potomac Electric Power Co.	Richard J. Kafka	Affirmative	
1	PP&L, Inc.	Ray Mammarella	Affirmative	
1	Progress Energy Carolinas	Sammy Roberts	Affirmative	
1	Public Service Electric and Gas Co.	Kenneth D. Brown	Affirmative	
1	Salt River Project	Robert Kondziolka	Affirmative	
1	Seattle City Light	Pawel Krupa	Affirmative	
1	Southern California Edison Co.	Dana Cabbell		
1	Southern Company Services, Inc.	Horace Stephen Williamson	Affirmative	
1	Southwest Transmission Cooperative, Inc.	James L. Jones	Abstain	View
1	Tri-State G & T Association Inc.	Keith V. Carman		
1	Tucson Electric Power Co.	Ronald P. Belval	Abstain	View
1	Western Area Power Administration	Robert Temple	Affirmative	
1	Xcel Energy, Inc.	Gregory L. Pieper	Affirmative	
2	Alberta Electric System Operator	Anita Lee	Abstain	View
2	British Columbia Transmission Corporation	Phil Park	Abstain	
2	California ISO	David Hawkins	Affirmative	
2	Independent Electricity System Operator	Kim Warren	Affirmative	
2	Midwest ISO, Inc.	Terry Bilke	Abstain	
2	New York Independent System Operator	Gregory Campoli	Abstain	
2	PJM Interconnection, L.L.C.	Tom Bowe	Affirmative	
3	Alabama Power Company	Robin Hurst	Affirmative	
3	American Electric Power	Raj Rana	Affirmative	
3	Arizona Public Service Co.	Thomas R. Glock	Affirmative	
3	Avista Corp.	Robert Lafferty	Affirmative	
3	BC Hydro and Power Authority	Pat G. Harrington	Abstain	
3	Bonneville Power Administration	Rebecca Berdahl	Affirmative	
3	City of Tallahassee	Rusty S. Foster		
3	Consumers Energy	David A. Lapinski	Abstain	
3	Delmarva Power & Light Co.	Michael R. Mayer	Affirmative	
3	Dominion Resources, Inc.	Jalal (John) Babik	Affirmative	
3	Duke Energy Carolina	Henry Ernst-Jr	Affirmative	
3	Entergy Services, Inc.	Matt Wolf	Affirmative	
3	FirstEnergy Solutions	Joanne Kathleen Borrell	Negative	View
3	Florida Power & Light Co.	W. R. Schoneck	Abstain	
3	Florida Power Corporation	Lee Schuster	Affirmative	
3	Georgia Power Company	Leslie Sibert	Affirmative	
3	Grays Harbor PUD	Wesley W Gray	Affirmative	

3	Great River Energy	Sam Kokkinen	Negative	
3	Gulf Power Company	Gwen S Frazier	Affirmative	
3	Hydro One Networks, Inc.	Michael D. Penstone	Affirmative	
3	Idaho Power Company	Shaun Jensen	Affirmative	
3	JEA	Garry Baker	Affirmative	
3	Kansas City Power & Light Co.	Charles Locke	Affirmative	
3	Kissimmee Utility Authority	Gregory David Woessner		
3	Lincoln Electric System	Bruce Merrill	Negative	View
3	Louisville Gas and Electric Co.	Charles A. Freibert		
3	Manitoba Hydro	Ronald Dacombe	Affirmative	
3	MidAmerican Energy Co.	Thomas C. Mielnik	Abstain	
3	Mississippi Power	Don Horsley	Affirmative	
3	New York Power Authority	Michael Lupo		
3	Northern Indiana Public Service Co.	William SeDoris		
3	Orlando Utilities Commission	Ballard Keith Muters	Affirmative	
3	PacifiCorp	John Apperson	Affirmative	
3	PECO Energy an Exelon Co.	John J. McCawley		
3	Platte River Power Authority	Terry L Baker	Affirmative	
3	Potomac Electric Power Co.	Robert Reuter	Affirmative	
3	Progress Energy Carolinas	Sam Waters	Affirmative	
3	Public Service Electric and Gas Co.	Jeffrey Mueller	Affirmative	
3	Public Utility District No. 2 of Grant County	Greg Lange		
3	Salt River Project	John T. Underhill	Affirmative	
3	San Diego Gas & Electric	Scott Peterson		
3	Seattle City Light	Dana Wheelock	Affirmative	
3	Wisconsin Electric Power Marketing	James R. Keller	Affirmative	
3	Wisconsin Public Service Corp.	James Maenner		
3	Xcel Energy, Inc.	Michael Ibold	Affirmative	
4	Alliant Energy Corp. Services, Inc.	Kenneth Goldsmith	Abstain	
4	American Municipal Power - Ohio	Chris Norton	Abstain	
4	Consumers Energy	David Frank Ronk	Abstain	
4	Florida Municipal Power Agency	Thomas Reedy	Abstain	
4	Integrus Energy Group, Inc.	Christopher Plante	Abstain	
4	Ohio Edison Company	Douglas Hohlbaugh	Negative	View
4	Public Power Council	Nancy Baker	Affirmative	
4	Public Utility District No. 1 of Snohomish County	John D. Martinsen	Affirmative	
4	Seattle City Light	Hao Li	Affirmative	
4	Seminole Electric Cooperative, Inc.	Steven R. Wallace	Affirmative	
4	Wisconsin Energy Corp.	Anthony Jankowski	Affirmative	
5	AEP Service Corp.	Brock Ondayko	Affirmative	
5	Avista Corp.	Edward F. Groce	Affirmative	
5	Bonneville Power Administration	Francis J. Halpin	Affirmative	
5	City of Tallahassee	Alan Gale	Affirmative	
5	Conectiv Energy Supply, Inc.	Richard K. Douglass	Affirmative	
5	Constellation Generation Group	Michael F. Gildea	Abstain	View
5	Consumers Energy	James B Lewis	Abstain	
5	Dairyland Power Coop.	Warren Schaefer		
5	Detroit Edison Company	Ronald W. Bauer	Affirmative	
5	Dominion Resources, Inc.	Mike Garton	Affirmative	
5	East Kentucky Power Coop.	Stephen Ricker		
5	Entergy Corporation	Stanley M Jaskot		
5	Exelon Nuclear	Michael Korchynsky	Affirmative	
5	FirstEnergy Solutions	Kenneth Dresner	Negative	View
5	Great River Energy	Cynthia E Sulzer	Negative	
5	JEA	Donald Gilbert	Affirmative	
5	Lincoln Electric System	Dennis Florom	Negative	View
5	Luminant Generation Company LLC	Larry Gurley		
5	Manitoba Hydro	Mark Aikens	Affirmative	
5	New York Power Authority	Gerald Mannarino		
5	Northern States Power Co.	Liam Noailles		
5	Oklahoma Gas and Electric Co.	Kim Morphis		
5	Orlando Utilities Commission	Richard Kinan	Abstain	View
5	PacifiCorp Energy	David Godfrey	Affirmative	
5	PPL Generation LLC	Mark A. Heimbach	Affirmative	
5	Progress Energy Carolinas	Wayne Lewis	Affirmative	
5	PSEG Power LLC	Thomas Piascik	Affirmative	

5	Salt River Project	Glen Reeves	Affirmative	
5	Seattle City Light	Michael J. Haynes	Affirmative	
5	Seminole Electric Cooperative, Inc.	Brenda K. Atkins	Affirmative	
5	Southeastern Power Administration	Douglas Spencer	Abstain	
5	Southern Company Services, Inc.	Roger D. Green	Affirmative	
5	Tenaska, Inc.	Scott M. Helyer	Abstain	
5	U.S. Army Corps of Engineers Northwestern Division	Karl Bryan	Affirmative	
5	U.S. Bureau of Reclamation	Martin Bauer	Abstain	
5	Wisconsin Electric Power Co.	Linda Horn	Affirmative	
6	AEP Marketing	Edward P. Cox	Affirmative	
6	Ameren Energy Marketing Co.	Jennifer Richardson		
6	Black Hills Power	Larry Williamson	Affirmative	
6	Bonneville Power Administration	Brenda S. Anderson	Affirmative	
6	Cleco Power LLC	Matthew D Cripps	Abstain	
6	Consolidated Edison Co. of New York	Nickesha P Carrol	Affirmative	
6	Dominion Resources, Inc.	Louis S Slade	Abstain	
6	Entergy Services, Inc.	William Franklin	Affirmative	
6	Eugene Water & Electric Board	Daniel Mark Bedbury	Affirmative	
6	FirstEnergy Solutions	Mark S Travaglianti	Negative	View
6	Florida Municipal Power Agency	Robert C. Williams		
6	Great River Energy	Donna Stephenson	Negative	
6	Lincoln Electric System	Eric Ruskamp	Negative	View
6	Louisville Gas and Electric Co.	Daryn Barker	Affirmative	
6	Manitoba Hydro	Daniel Prowse	Affirmative	
6	MidAmerican Energy Co.	Dennis Kimm	Affirmative	View
6	New York Power Authority	Thomas Papadopoulos	Affirmative	
6	OATI	Robert D Schwermann	Affirmative	
6	PacifiCorp	Gregory D Maxfield	Affirmative	
6	PP&L, Inc.	Thomas Hyzinski	Affirmative	
6	Progress Energy	James Eckelkamp	Affirmative	
6	PSEG Energy Resources & Trade LLC	James D. Hebson	Affirmative	
6	Public Utility District No. 1 of Chelan County	Hugh A. Owen	Affirmative	
6	Salt River Project	Mike Hummel	Affirmative	
6	Seminole Electric Cooperative, Inc.	Trudy S. Novak	Affirmative	
6	Southern California Edison Co.	Marcus V Lotto	Affirmative	
6	Western Area Power Administration - UGP Marketing	John Stonebarger		
6	Xcel Energy, Inc.	David F. Lemmons		
8	JDRJC Associates	Jim D. Cyrulewski	Negative	
8	Volkman Consulting, Inc.	Terry Volkman		
9	California Energy Commission	William Mitchell Chamberlain	Affirmative	
9	Commonwealth of Massachusetts Department of Public Utilities	Donald E. Nelson	Affirmative	
9	National Association of Regulatory Utility Commissioners	Diane J. Barney	Affirmative	
9	Public Utilities Commission of Ohio	Klaus Lambeck	Affirmative	
10	Electric Reliability Council of Texas, Inc.	Kent Saathoff	Abstain	
10	Florida Reliability Coordinating Council	Linda Campbell	Abstain	View
10	Midwest Reliability Organization	Larry Brusseau	Abstain	
10	New York State Reliability Council	Alan Adamson	Affirmative	
10	Northeast Power Coordinating Council, Inc.	Guy Zito	Affirmative	
10	SERC Reliability Corporation	Carter B. Edge	Affirmative	
10	Southwest Power Pool	Charles H. Yeung	Negative	View
10	Western Electricity Coordinating Council	Louise McCarren	Affirmative	

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