

Staff Analysis and Recommendations Report Regarding Violation Risk Factor Assignments for Six Board-approved Available Transfer Capability (ATC) Standards

Background

On August 26, 2008, the NERC Board of Trustees (Board) met by conference call to consider approving five ATC-related standards (MOD-001-1, MOD-008-1, MOD-028-1, MOD-029-1, and MOD-030-1) that were approved by the industry stakeholders in accordance to the *Reliability Standards Development Procedure*. During this meeting, the Board approved the proposed standards for filing with the Federal Energy Regulatory Commission (“FERC” or “Commission”), except for the Violation Risk Factor (VRF) assignments for the requirements in the five standards.¹ In deferring action on the VRFs, the Board expressed concerns that the VRFs may not have been given sufficient due diligence during the standards development process as the drafting team and the industry stakeholders were pressed to meet the Commission-imposed deadline for delivery of the suite of ATC standards.

Before taking further action on the proposed VRFs, the Board directed that a review be undertaken that would:

- reconcile the proposed VRF assignments for the ATC standards with VRF assignments for other standard requirements on which the Commission has already ruled;
- develop guidance on what constitutes a “direct” impact on the Bulk Power System (BPS), a necessary criterion for a requirement to merit a “Medium” VRF assignment;
- reconcile the “direct impact” guidance to previous decisions of the Commission; and
- include the opportunity for stakeholder review and comment on the analysis.

Subsequently, on November 13, 2008, the NERC Board of Trustees met by conference call to consider approving another ATC-related standard (MOD-004-1) that was approved by the industry stakeholders in accordance to the *Reliability Standards Development Procedure*. During this meeting, the Board approved the proposed standards for filing with the FERC, but directed that the VRF assignments for the requirements in the standard also be considered during the review previously directed.

Accordingly, this preliminary analysis has been developed to be responsive to the Board directive and is being presented to the industry for stakeholder review and comment.

¹ Each requirement in the five proposed ATC standards were assigned a “Lower” VRF.

Guidance on “Direct Impact on the Bulk Power System”

NERC utilizes specific criteria from its *Reliability Standards Development Procedure*, which is part of NERC’s Rules of Procedure Section 300, to assign VRFs for reliability standard requirements. Unless a requirement meets the criteria for assignment as a “Medium” or “High” VRF, it is assigned a “Lower” VRF. If a requirement has multiple reliability objectives and, as a result, meets the criteria for multiple VRF assignments, the higher VRF level is assigned to the requirement. These criteria are summarized as follows:

A requirement assigned a “Lower” VRF is administrative in nature and is one that, if violated, would not:

- be expected to affect the electrical state or the capability of the BPS;
- be expected to affect the ability to effectively monitor and control the BPS; or
- in a planning time frame, under emergency, abnormal, or restorative conditions-
 - directly affect the electrical state or the capability of the BPS; or
 - directly affect the ability to effectively monitor and control the BPS.

A requirement assigned a “Medium” VRF is one that, if violated, could:

- directly affect the electrical state or the capability of the BPS;
- directly affect the ability to effectively monitor and control the BPS; or
- in a planning time frame, under emergency, abnormal, or restorative conditions, could-
 - directly affect the electrical state or the capability of the BPS; or
 - directly affect the ability to effectively monitor and control the BPS.

A requirement assigned a “High” VRF is one that, if violated, could:

- directly cause, contribute to, or create an unacceptable risk of-
 - BPS instability; and/or
 - BPS separation; and/or
 - a cascading sequence of failures.
- in a planning time frame-
 - could, under emergency, abnormal, or restorative conditions, directly cause, contribute to, or create an unacceptable risk of-
 - instability; and/or
 - separation; and/or
 - a cascading sequence of failures; or

- could hinder restoration to a normal condition.

In general, the ATC-related standards produce values that predict the usage of the BPS at a future point in time by identifying the available capability based on that which has already been committed or reserved as margin. This value is then used to proactively manage the commercial activity allowed on that system. While the essence of ATC is to identify the remaining transmission capability available for commercial purposes, this activity produces physical flows of electricity on the BPS, and therefore ATC operationally impacts the system. NERC has standards that address the need to respond reactively to reliability concerns created by commercial activity, namely, IRO-006-4 – Transmission Loading Relief. The ATC-related standards provide the ability (but not the obligation) to act proactively in reducing the risk of such reliability concerns becoming an issue in real-time for the system operators to manage.

Because the amount of commercial activity on the BPS is proactively managed based on the predicted usage of that system through the determination of ATC, determining that prediction manifests itself as a direct impact on the ability to effectively monitor and control the BPS. Though the determination of ATC reflects a future period of usage, the criteria for VRF assignment contemplates activities in the future, or “planning” timeframe. As the determination of ATC can cause a direct impact on the ability to monitor and control the BPS, the assignment of a “Medium” VRF more aptly describes the general impact caused by the determination of ATC specifically and the implementation of the ATC standards in general.

Additionally, the ATC standards have potential impacts on the state or capability of the BPS. Firm transmission service is sold to customers with the contractual obligation that the provider take action to ensure the service is not interrupted. When operating conditions require firm transmission service to be interrupted, it is possible that customer load will be lost. Accordingly, NERC staff believes that the interruption of firm service and possible accompanying load loss directly affects the state or capability of the BPS. As such, an incorrect determination of the firm commitments that help determine ATC and the associated mismanagement of commercial activity also generally meet the criteria for a “Medium” VRF designation.

Using a similar argument, note that non-firm transmission service is sold to customers with the contractual agreement that the service can be interrupted as necessary. While interruption of non-firm service may have a financial impact to the users of the service, it is not expected to directly affect the state or capability of the BPS (*i.e.*, it is not expected that load will be lost). While such interruptions will have some minimal impact to operations as entities resupply their loads from different resources, this non-firm activity primarily modifies the financial posture of the affected entities, and is therefore

administrative, or non-impacting to reliability in nature. Since an incorrect determination of non-firm ATC and the associated mismanagement of commercial activity do not meet the criteria for a “Medium” or “High” Violation Risk Factor designation, NERC staff believes it to be appropriate for requirements related to this determination to be assigned “Lower” VRFs.

NERC staff believes that neither of these cases (interruption of firm or non-firm service) can create an unacceptable risk of BPS instability, BPS separation, or a cascading sequence of failures that would justify a “High” VRF assignment.

Finally, the Capacity Benefit Margin (CBM) standard in particular addresses the establishment of margins to ensure the availability of transmission capacity to support the import of energy needed by entities experiencing an Energy Emergency Alert. Not having access to this capacity when it is needed by an Energy Deficient Entity may lead to load shedding or other operational actions that clearly have a direct impact on the ability to control the BPS. Many of these requirements are justified in having a VRF assignment of “Medium.” NERC believes that no violation of the CBM standard requirements can create an unacceptable risk of BPS instability, BPS separation, or a cascading sequence of failures that would justify a “High” VRF assignment.

Reconciliation of NERC’s VRF Criteria With VRF Guidelines Used by FERC

In its May 18, 2007 *Order on Violation Risk Factors*, FERC articulated five guidelines it utilizes to evaluate the appropriateness of VRF assignments proposed by NERC. These guidelines are summarized below:

- **Guideline 1:** The evidence and recommendations in the Final Report on the August 14, 2003 blackout should serve as a partial guide to determining the risk level of a requirement. To the extent the Final Report identified a risk to reliability, the VRFs should either support that finding or NERC must justify the difference.
- **Guideline 2:** A requirement within a standard that is essential to achieving compliance with another requirement in the standard should have a VRF consistent with the requirement it is supporting. In other words, if there is a requirement that says $X = A + B$, and the VRF for that requirement is “High,” then the requirements for A and B should be “High” also. This is most clearly shown through an example. If a requirement states that an entity must “document its process for background checks,” and another says “perform background checks using your documented process,” then these requirements are effectively

- linked and should share consistent VRF assignments. While the requirement to document the process may be a “Low” or “Medium” risk factor, the second requirement (with a “High” risk factor) cannot be implemented unless the first requirement has been met, so the first requirement must “inherit” the risk factor from the second.
- **Guideline 3:** Requirements within different standards that are similar and support similar goals should have consistent VRFs. For example, if one standard has a “High” VRF for performing day-ahead studies, and another one has a “Low” VRF for performing similar day-ahead studies, then one of the VRF assignments should be changed to be consistent between the different standards.
 - **Guideline 4:** VRF assignments must be consistent with NERC’s VRF criteria.
 - **Guideline 5:** If a requirement contains both low-risk and high-risk elements, the VRF should reflect the higher risk until such time as the requirement is re-written to separate the elements. This guidelines includes both explicit elements (requiring a low risk element and a high risk element in the same requirement) and implicit references (requiring only the low risk element in the requirement, but realistically, that element cannot exist without the creation of an implied high-risk element). This is most clearly shown through an example. If a requirement states that an entity must “document its process for background checks,” there are actually two requirements: first, the entity must have a process, and second, it must document it. Having the process is likely a medium risk, while documenting it is likely a lower risk. However, since the two conceptual requirements are intertwined in the written requirement, FERC believes it appropriate to use the “Medium” VRF for the requirement.

The Commission has implemented these guidelines in past Orders on NERC VRFs proposals. Additionally, NERC staff believes that these guidelines are generally supportive of its own VRF criteria.

With specific consideration to the VRF assignments for the ATC standards, and in accordance with FERC Guidelines 2 and 3, any requirement which is essential to the determination of firm ATC must have at least the same VRF as that of the determination of Firm ATC. As discussed above, NERC staff believes the correct VRF for the general determination of firm ATC is “Medium,” and for non-firm ATC is “Lower.”

Reconciliation of Specific ATC Violation Risk Factors

NERC staff has reviewed previous FERC Orders in which the Commission expressed its opinion and in some cases directed changes regarding specific VRF assignments. Upon review of this direction, NERC staff generally believes that Commission’s actions have been consistent with its articulated guidelines that includes NERC’s defined VRF criteria. Upon reflection of the VRF assignments developed through the stakeholder standard

development process for the ATC-related standards discussed in this evaluation, NERC staff believes the following VRF recommendations best serve the Board request to reconcile the ATC-related MOD standards with NERC criteria and with previous FERC actions.

MOD-001-1 Available Transmission System Capability

Requirement R1 of MOD-001-1 requires a Transmission Operator to select a single methodology (Area Interchange, Rated System Path or Flowgate) for calculating ATC or Available Flowgate Capability (AFC) for each ATC Path for each time frame (hourly, daily or monthly) for facilities in its footprint. NERC stakeholders developed and balloted this requirement with a “Lower” VRF assignment. Because the determination of Firm ATC is predicated on the selection of a methodology, NERC staff believes that this requirement must have the same VRF assignment as that of the Firm ATC determination in general, that is, “Medium.”

Requirement R2 states that a Transmission Service Provider must calculate ATC or AFC values hourly for the next 48 hours, daily for the next 31 calendar days, and monthly for the next 12 months. NERC stakeholders developed and balloted this requirement with a “Lower” VRF assignment. NERC staff believes that the VRF assignment for this requirement should be “Medium.” Since the determination of Firm ATC is a component in the calculation of an overall ATC value, NERC staff believes that this requirement must have the same VRF assignment as that of the Firm ATC determination.

Requirement R3 mandates that a Transmission Service Provider must keep an ATC Implementation Document (ATCID) that explains the implementation of its chosen methodology(ies), its use of counterflows, the identities of the entities with which it exchanges ATC information for coordination purposes, any capacity allocation processes, and the manner in which it considers outages. NERC stakeholders developed and balloted this requirement with a “Lower” VRF assignment. This requirement specifies the creation of rules and processes that later requirements reference in the determination of ATC, including Firm ATC. On this basis and using FERC Guideline 2, NERC staff believes that the VRF assignment for this requirement should be “Medium.” NAESB standards, not NERC standards, will be addressing the public disclosure of this information.

Requirement R4 states that a Transmission Service Provider is required to keep the following reliability entities advised regarding changes to the ATCID: each Planning Coordinator associated with the Transmission Service Provider’s Area, each Reliability Coordinator associated with the Transmission Service Provider’s area, each Transmission Operator associated with the Transmission Service Provider’s area, each Planning Coordinator adjacent to the Transmission Service Provider’s area, each Reliability

Coordinator adjacent to the Transmission Service Provider's area, and each Transmission Service Provider whose area is adjacent to the Transmission Service Provider's area. NERC stakeholders developed and balloted this requirement with a "Lower" VRF assignment. NERC staff agrees that the VRF assignment for this requirement should be "Lower." While advising entities regarding changes to the ATCID is valuable from a peer-review and disclosure standpoint, it does not meet the criteria for "Medium" or "High" risk factor assignment. NAESB standards, not NERC standards, will be addressing the public disclosure of this information.

Requirement R5 directs that a Transmission Service Provider is required to make the ATCID available to those same reliability entities identified in Requirement R4. NERC stakeholders developed and balloted this requirement with a "Lower" VRF assignment. NERC staff agrees that the VRF assignment for this requirement should be "Lower." While providing entities the ATCID is valuable from a peer-review and disclosure standpoint, it does not meet the criteria for "Medium" or "High" risk factor assignment. NAESB standards, not NERC standards, will be addressing the public disclosure of this information.

Requirement R6 states that the Transmission Operator's calculation of Total Transfer Capability (TTC) or Total Flowgate Capability (TFC) shall use assumptions no more limiting than those used in the planning of operations. NERC stakeholders developed and balloted this requirement with a "Lower" VRF assignment. Since the determination of Firm ATC is predicated on calculation of a valid TTC or TFC, NERC staff believes that this requirement must have the same VRF as that of the Firm ATC determination. Therefore, NERC staff believes that the VRF assignment for this requirement should be "Medium."

Requirement R7 states that the Transmission Service Provider's calculation of ATC or AFC shall use assumptions no more limiting than those used in the planning of operations. NERC stakeholders developed and balloted this requirement with a "Lower" VRF assignment. Since the determination of Firm ATC or AFC is included in this requirement, NERC staff believes that this requirement must have the same VRF as that of the Firm ATC determination. Therefore, NERC staff believes that the VRF assignment for this requirement should be "Medium."

Requirement R8 specifies that the Transmission Service Provider's calculation of ATC or AFC shall occur on a periodic schedule. NERC stakeholders developed and balloted this requirement with a "Lower" VRF assignment. The requirement does not specify if the calculation is related to the firm or non-firm calculation of ATC or AFC, so it must be assumed to address both. Since this requirement addresses the determination of Firm ATC, NERC staff believes that this requirement should be assigned a "Medium" VRF.

Requirement R9 states that a Transmission Service Provider must support requests for the following information from other reliability entities to support accurate calculation of ATC or AFC:

- expected generation and Transmission outages, additions, and retirements;
- load forecasts;
- unit commitments and order of dispatch, 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, in one of the following formats chosen by the data provider:
 - Dispatch Order, Participation Factors, or Block Dispatch;
- aggregated firm capacity set-aside for Network Integration Transmission Service and aggregated non-firm capacity set aside for Network Integration Transmission Service (*i.e.* Secondary Service);
- firm and non-firm Transmission reservations;
- aggregated capacity set-aside for Grandfathered obligations;
- firm roll-over rights;
- any firm and non-firm adjustments applied by the Transmission Service Provider to reflect parallel path impacts;
- power flow models and underlying assumptions;
- contingencies, provided in one or more of the following formats:
 - a list of Elements, a list of Flowgates, or a set of selection criteria that can be applied to the Transmission model used by the Transmission Operator and/or Transmission Service Provider;
- Facility Ratings;
- any other services that impact Existing Transmission Commitments (ETCs);
- values of CBM and TRM for all ATC Paths or Flowgates;
- values of TFC and AFC for any Flowgates considered by the Transmission Service Provider receiving the request when selling Transmission service;
- values of TTC and ATC for all ATC Paths for those Transmission Service Providers receiving the request that do not consider Flowgates when selling Transmission Service; and,
- source and sink identification and mapping to the model.

NERC stakeholders developed and balloted this requirement with a “Lower” VRF assignment. Because the determination of Firm ATC is predicated on having the data listed in the requirement, NERC believes that this requirement must have the same VRF as that of the Firm ATC determination. NERC staff also believes this directly supports Recommendation 24 of the Final Report on the August 14, 2003 Blackout, which encourages the improvement of the quality of system modeling data and data exchange

practices. Therefore, NERC staff believes that the VRF assignment for this requirement should be “Medium.”

MOD-004-1 Capacity Benefit Margin

Requirement R1 of MOD-004-1 requires that a Transmission Service Provider that has elected to maintain CBM must create and keep current a “CBM Implementation Document (“CBMID”)” that includes details on how to request CBM, how CBM is established, how CBM is used, and how conflicting needs for CBM are addressed. NERC stakeholders developed and balloted this requirement with a “Lower” VRF assignment. This requirement specifies the creation of rules and processes that are used to determine CBM. If these processes are not developed, it is possible that an appropriate amount of CBM will not be withheld. Since Requirements R11 and R12, which define the use of CBM, are assigned a VRF of “Medium,” Commission VRF Guideline 2 dictates that Requirement R1 should also be assigned a VRF of “Medium.” On this basis, NERC believes that the VRF assignment for this requirement should be “Medium.” NAESB standards, not NERC standards, will be addressing the public disclosure of this information.

Requirement R2 of MOD-004-1 requires that a Transmission Service Provider that has elected to maintain CBM must make its current CBMID available to Transmission Operators, Transmission Service Providers, Reliability Coordinators, Transmission Planners, Resource Planners, and Planning Coordinators that are within or adjacent to the Transmission Service Provider’s area, and to the Load Serving Entities and Balancing Authorities within the Transmission Service Provider’s area, and notify those entities of any changes to the CBMID prior to the effective date of the change. NERC stakeholders developed and balloted this requirement with a “Lower” VRF assignment. This requirement mandates two things: that information generally be shared with certain entities for peer review, and that Load Serving Entities and Balancing Authorities be provided the same information so they can understand how to request and schedule CBM. The general sharing provision is administrative in nature, and NERC agrees should be assigned a Violation Risk Factor of “Lower.” However, the sharing of the information with the Load Serving Entities and Balancing Authorities supports their ability to use CBM. Requirements R11 and R12 are related in that they indicate the importance of using CBM, and have been therefore assigned a VRF of “Medium.” Because Requirement R2 supports the use of CBM, Commission VRF Guideline 2 indicates that the associated violation risk factor should match those of the other requirements related to it: “Medium.” Furthermore, Commission VRF Guideline 5 indicates that in the case where there are multiple objectives embedded within a single requirement, the higher risk level appropriate for the objectives should be utilized. Therefore, NERC believes it appropriate for Requirement R2 to be assigned a VRF of “Medium.” NAESB standards, not NERC standards, will be addressing the public disclosure of this information.

Requirement R3 of MOD-004-1 requires that an Load Serving Entity that is defining the need for CBM define that need using Loss of Load Expectation (“LOLE”) studies and/or Loss of Load Probability (“LOLP”) studies and/or deterministic risk-analysis and/or reserve margin or resource adequacy requirements established by other entities. The Load Serving Entity must also identify any expected import paths or source regions. NERC stakeholders developed and balloted this requirement with a “Lower” VRF assignment. NERC agrees that the VRF assignment for this requirement should be “Lower.” Complying with this requirement will aid in the establishment of an appropriate CBM, but it is not the only source of information from which the appropriate level of CBM may be derived. Additionally, entities are not required to use CBM. Accordingly, it does not meet the criteria for “Medium” or “High” risk factor assignment.

Requirement R4 of MOD-004-1 requires that a Resource Planner that is defining the need for CBM define that need using LOLE studies and/or LOLP studies and/or deterministic risk-analysis and/or reserve margin or resource adequacy requirements established by other entities. The Resource Planner must also identify any expected import paths or source regions. NERC stakeholders developed and balloted this requirement with a “Lower” VRF assignment. NERC agrees that the VRF assignment for this requirement should be “Lower.” Complying with this requirement will aid in the establishment of an appropriate CBM, but it is not the only source of information from which the appropriate level of CBM may be derived. Additionally, entities are not required to use CBM. Accordingly, it does not meet the criteria for “Medium” or “High” risk factor assignment.

Requirement R5 of MOD-004-1 requires that every 13 months, the Transmission Service Provider that maintains CBM must establish CBM for use in ATC calculations for the next 13 months, based on the analyses used by the Load Serving Entities or Resource Planners to determine the amount of CBM needed, as well as the import paths or source regions specified by the Load Serving Entities or Resource Planners. NERC stakeholders developed and balloted this requirement with a “Lower” VRF assignment. If this requirement is violated, it is possible that CBM that is needed will not be withheld as part of the margin, and therefore available for use during operations. Because the use of CBM as defined in Requirements R11 and R12 is considered a “Medium” risk, Commission VRF Guideline 2 indicates that Requirement R5 should also be a “Medium” risk, as it supports these other requirements. NERC believes that the VRF assignment for this requirement should be “Medium.”

Requirement R6 of MOD-004-1 requires that every 13 months, the Transmission Planner establish CBM for use in planning activities for the next 2-10 years, based on the analyses by the Load Serving Entities or Resource Planners to determine the amount of CBM needed, as well as the import paths or source regions specified by the Load Serving

Entities or Resource Planners. NERC stakeholders developed and balloted this requirement with a “Lower” VRF assignment. NERC agrees that the VRF assignment for this requirement should be “Lower.” Violating this requirement will not result in any immediate threat to reliability, as it is addressing the reservation of capacity for use at a minimum one year from now. Accordingly, it does not meet the criteria for “Medium” or “High” risk factor assignment.

Requirement R7 of MOD-004-1 requires that the Transmission Service Provider that maintains CBM shall inform the Load Serving Entity or Resource Planner how much CBM has been set aside less than 31 calendar days after CBM has been established. NERC stakeholders developed and balloted this requirement with a “Lower” VRF assignment. Because entities may be developing their operational plans based on whether or not CBM will be available to meet their reliability needs, alerting those entities of whether or not their needs can be met has a direct impact on their ability to meet their load serving obligations. Accordingly, NERC believes that the VRF assignment for this requirement should be “Medium.”

Requirement R8 of MOD-004-1 requires that the Transmission Planner shall inform the Load Serving Entity or Resource Planner how much CBM has been set aside less than 31 calendar days after CBM has been established. NERC stakeholders developed and balloted this requirement with a “Lower” VRF assignment. NERC agrees that the VRF assignment for this requirement should be “Lower.” Because the establishment of CBM in Requirement R6 is a “Lower” risk, Commission VRF Guideline 3 indicates that Requirement 8 should also be a “Lower” risk.

Requirement R9 of MOD-004-1 requires the Transmission Service Provider that maintains CBM and the Transmission Planner to share data and models used to determine the CBM needed with their associated Transmission Operators and any Transmission Service Provider, Reliability Coordinator, Transmission Planner, Resource Planner, or Planning Coordinator within 30 calendar days of the request for CBM data. NERC stakeholders developed and balloted this requirement with a “Lower” VRF assignment. NERC agrees that the VRF assignment for this requirement should be “Lower.” The intent of this requirement is to share information for analysis. Accordingly, it does not meet the criteria for “Medium” or “High” risk factor assignment.

Requirement R10 of MOD-004-1 states that Load Serving Entities or Balancing Authorities may only use CBM when in an Energy Emergency Alert Level 2 (“EEA2”) or higher based on NERC Reliability Standard EOP-002-2 – Capacity and Energy Emergencies. NERC stakeholders developed and balloted this requirement with a “Lower” VRF assignment. NERC agrees that the VRF assignment for this requirement should be “Lower.” Violating this requirement and requesting the use of CBM when not

in an EEA2 or higher will most likely result in a denied schedule. If it does not, it may result in a scenario where the associated schedule might need to be curtailed. In either case, the impact to reliability is limited. Accordingly, it does not meet the criteria for “Medium” or “High” risk factor assignment.

Requirement R11 of MOD-004-1 requires that all Balancing Authorities and Transmission Service Providers shall waive any ramping or timing requirements when presented with a request to approve an Interchange transaction using CBM. NERC stakeholders developed and balloted this requirement with a “Medium” VRF assignment. NERC agrees that the VRF assignment for this requirement should be “Medium.” Mandating that the Balancing Authorities and Transmission Service Providers not hinder the use of CBM by refusing transactions based on operations practices that could be waived without harm to reliability clearly has a direct impact on the ability to control the BPS. However, this requirement supports a local balancing problem, and as such, does not meet the criteria for “High” risk factor assignment.

Requirement R12 of MOD-004-1 requires that Transmission Service Providers that maintain CBM must approve, within the bounds of reliable operation, Arranged Interchange using CBM that is submitted by an “energy deficient entity” under an EEA2 if the following conditions are met: the CBM is available, some or all of their area is in an EEA2, and the energy deficient entity load is within that area. NERC stakeholders developed and balloted this requirement with a “Medium” VRF assignment. NERC agrees that the VRF assignment for this requirement should be “Medium.” Mandating that the Transmission Service Provider support the use of CBM to ensure load is served clearly has a direct impact on the ability to control the BPS. However, this requirement supports a local balancing problem, and as such, does not meet the criteria for “High” risk factor assignment.

MOD-008-1 Transmission Reliability Margin

Requirement R1 of MOD-008-1 specifies that a Transmission Operator must keep a Transmission Reliability Margin (TRM) Implementation Document (TRMID) that explains how specific risks are accounted for in the TRM; how TRM is allocated; and how TRM is determined for various time frames. These risks include:

- aggregate Load forecast uncertainty;
- load distribution uncertainty;
- forecast uncertainty in Transmission system topology (including, but not limited to, forced or unplanned outages and maintenance outages);
- allowances for parallel path (loop flow) impacts;
- allowances for simultaneous path interactions;

- variations in generation dispatch (including, but not limited to, forced or unplanned outages, maintenance outages and location of future generation);
- short-term System Operator response (Operating Reserve actions);
- reserve sharing requirements; and,
- inertial response and frequency bias.

NERC stakeholders developed and balloted this requirement with a “Lower” VRF assignment. While this requirement is primarily about documentation, it directs that TRM be calculated in recognition of the identified risks. Additionally, since Requirement R1 supports Requirement R2, NERC staff believes that this requirement must have the same VRF as that of Requirement 2. Therefore, NERC staff believes that the VRF assignment for this requirement should be “Medium.”

Requirement R2 states that a Transmission Operator can only account for certain risks in TRM, and cannot incorporate risks that are addressed in CBM. NERC stakeholders developed and balloted this requirement with a “Lower” VRF assignment. Since the determination of Firm ATC is predicated on calculation of a valid TRM, NERC staff believes that this requirement must have the same VRF as that of the Firm ATC determination. Therefore, NERC staff believes that the VRF assignment for this requirement should be “Medium.”

Requirement R3 mandates that a Transmission Operator that has elected to maintain TRM must make the TRMID and associated information available to certain reliability entities if requested. NERC stakeholders developed and balloted this requirement with a “Lower” VRF assignment. NERC staff agrees that the VRF assignment for this requirement should be “Lower.” While making the TRMID available is valuable from a peer-review and disclosure standpoint, it does not meet the criteria for “Medium” or “High” risk factor assignment. NAESB standards, not NERC standards, will be addressing the public disclosure of this information.

Requirement R4 directs that a Transmission Operator that has elected to maintain TRM must determine the TRM value per the methods described in the TRMID at least once every thirteen months. NERC stakeholders developed and balloted this requirement with a “Lower” VRF assignment. Because the determination of Firm ATC is predicated on calculation of a valid TRM, NERC staff believes that this requirement must have the same VRF as that of the Firm ATC determination. Therefore, NERC staff believes that the VRF assignment for this requirement should be “Medium.”

Requirement R5 specifies that a Transmission Operator that has elected to maintain TRM must provide that TRM to its Transmission Service Providers and Transmission Planners no more than seven days after it has been determined. NERC stakeholders developed and

balloted this requirement with a “Lower” VRF assignment. Because the determination of Firm ATC is predicated on use of a valid TRM, NERC staff believes that this requirement must have the same VRF as that of the Firm ATC determination. Therefore, NERC staff believes that the VRF assignment for this requirement should be “Medium.”

MOD-028-1 Area Interchange Methodology

Requirement R1 of MOD-028 states that a Transmission Service Provider implementing this methodology must include the following information in their ATCID in addition to that already required in MOD-001-1 Requirement R3:

- information describing how the selected methodology has been implemented, in such detail that, given the same information used by the Transmission Operator, the results of the TTC calculations can be validated;
- a description of the manner in which the Transmission Operator will account for Interchange Schedules in the calculation of TTC;
- any contractual obligations for allocation of TTC,
- a description of the manner in which Contingencies are identified for use in the TTC process, and
- information on how source and sink for transmission service is accounted for in ATC calculations.

NERC stakeholders developed and balloted this requirement with a “Lower” VRF assignment. This requirement specifies the creation of rules and process that later requirements mandate the use of. Accordingly, based on FERC VRF Guideline 2, NERC staff believes that this requirement must have the same VRF assignment as those later requirements. Therefore, NERC staff believes that the VRF assignment for this requirement should be “Medium.” NAESB standards, not NERC standards, will be addressing the public disclosure of this information.

Requirement R2 directs that a Transmission Operator must calculate TTC using a model that meets the scope specified in the requirement and includes rating information specified by Generator Owners and Transmission Owners whose equipment is represented in the model. NERC stakeholders developed and balloted this requirement with a “Lower” VRF assignment. Since the determination of Firm ATC is predicated on calculation of a valid TTC which is predicated on the accuracy of the model used for analysis, NERC staff believes that this requirement must have the same VRF assignment as that of the Firm ATC determination. NERC staff also believes this indirectly supports Recommendation 27 of the Final Report on the August 14, 2003 Blackout, which encourages the development of enforceable standards for transmission line ratings. Therefore, NERC staff believes that the VRF assignment for this requirement should be “Medium.”

Requirement R3 mandates that a Transmission Operator must include the following information in its determination of TTC for the on-peak and off-peak intra-day and next day time periods, as well as days two through 31 and for months two through 13: expected generation and transmission outages, additions, and retirements; load forecasts; and unit commitment and dispatch order. NERC stakeholders developed and balloted this requirement with a “Lower” VRF assignment. Because the determination of Firm ATC is predicated on calculation of a valid TTC, NERC staff believes that this requirement must have the same VRF assignment as that of the Firm ATC determination. Therefore, NERC staff believes that the VRF assignment for this requirement should be “Medium.”

Requirement R4 requires that a Transmission Operator must determine TTC while modeling contingencies and reservations consistently, and respect any contractual allocations of TTC. NERC stakeholders developed and balloted this requirement with a “Lower” VRF assignment. Because the determination of Firm ATC is predicated on calculation of a valid TTC which is predicated on the accuracy of the model used for analyses, NERC staff believes that this requirement must have the same VRF assignment as that of the Firm ATC determination. Therefore, NERC staff believes that the VRF assignment for this requirement should be “Medium.”

Requirement R5 states that a Transmission Operator must determine TTC on a periodic basis (as specified in the requirement) or upon certain operating conditions significantly affecting Bulk Electric System topology. NERC stakeholders developed and balloted this requirement with a “Lower” VRF assignment. Because the determination of Firm ATC is predicated on calculation of a valid TTC, NERC staff believes that this requirement must have the same VRF assignment as that of the Firm ATC determination. Therefore, NERC staff believes that the VRF assignment for this requirement should be “Medium.”

Requirement R6 mandates that a Transmission Operator must establish TTCs using the detailed process listed in the requirement. NERC stakeholders developed and balloted this requirement with a “Lower” VRF assignment. Because the determination of Firm ATC is predicated on calculation of a valid TTC, NERC staff believes that this requirement must have the same VRF assignment as that of the Firm ATC determination. Therefore, NERC staff believes that the VRF assignment for this requirement should be “Medium.”

In Requirement R7, the standard states that a Transmission Operator must provide a Transmission Service Provider with the appropriate TTC values within certain time frames (as specified in the requirement). NERC stakeholders developed and balloted this requirement with a “Lower” VRF assignment. Because the determination of Firm ATC is predicated on calculation of a valid TTC, NERC staff believes that this requirement

must have the same VRF assignment as that of the Firm ATC determination. Therefore, NERC staff believes that the VRF assignment for this requirement should be “Medium.”

Requirement R8 says that a Transmission Service Provider must calculate Firm ETC using the specified formula and detailed specification of the variables. NERC stakeholders developed and balloted this requirement with a “Lower” VRF assignment. NERC staff believes that the VRF for this requirement should be “Medium.” Since the determination of firm ATC is predicated on calculation of a valid firm ETC, NERC staff believes that this requirement must have the same VRF assignment as that of the firm ATC determination. Therefore, NERC staff believes that the VRF assignment for this requirement should be “Medium.”

Requirement R9 directs that a Transmission Service Provider must calculate Non-firm ETC using the specified formula and detailed specification of the variables. NERC stakeholders developed and balloted this requirement with a “Lower” VRF assignment. NERC staff agrees that the VRF for this requirement should be “Lower.” Because the determination of non-firm ATC is predicated on calculation of a valid non-firm ETC, NERC staff believes that this requirement must have the same VRF assignment as that of the non-firm ATC determination. NERC staff does not find this requirement to meet any of the criteria for VRF assignments of “Medium” or “High.”

In Requirement R10, the standard states that a Transmission Service Provider must calculate firm ATC using the specified formula and detailed specification of the variables. NERC stakeholders developed and balloted this requirement with a “Lower” VRF assignment. Because the determination of firm ATC is closely tied to the ability to serve load, and can potentially result in load shedding if the system is subscribed beyond the calculated firm ATC value, NERC staff believes this requirement can directly affect the electrical state or the capability of the BPS. Therefore, NERC staff believes that the VRF assignment for this requirement should be “Medium.” NERC staff does not find this requirement to meet any of the criteria for assignment as a “High” VRF.

Requirement R11 requires that a Transmission Service Provider must calculate non-firm ATC using the specified formula and detailed specification of the variables. NERC stakeholders developed and balloted this requirement with a “Lower” VRF assignment. NERC staff agrees that the VRF assignment for this requirement should be “Lower.” As described above, the determination of non-firm ATC results primarily in changes to the financial statements of the companies utilizing non-firm service. Accordingly, NERC staff does not find this requirement to meet any of the criteria for assignment of the VRF at “Medium” or “High.”

MOD-029-1 Rated System Path Methodology

Requirement R1 of MOD-029-1 states that a Transmission Operator must calculate TTC using a model that meets the scope and criteria specified in the requirement. NERC stakeholders developed and balloted this requirement with a “Lower” VRF assignment. Because the determination of Firm ATC is predicated on calculation of a valid TTC, NERC staff believes that this requirement must have the same VRF assignment as that of the Firm ATC determination. Therefore, NERC staff believes that the VRF assignment for this requirement should be “Medium.”

Requirement R2 states that a Transmission Operator must establish TTCs using the detailed process listed in the requirement. NERC stakeholders developed and balloted this requirement with a “Lower” VRF assignment. Because the determination of Firm ATC is predicated on calculation of a valid TTC, NERC staff believes that this requirement must have the same VRF assignment as that of the Firm ATC determination. Therefore, NERC staff believes that the VRF assignment for this requirement should be “Medium.”

Requirement R3 mandates that a Transmission Operator must establish TTCs as the lesser of the SOL or the value determined in R2. NERC stakeholders developed and balloted this requirement with a “Lower” VRF assignment. Because the determination of Firm ATC is predicated on calculation of a valid TTC, NERC staff believes that this requirement must have the same VRF assignment as that of the Firm ATC determination. Therefore, NERC staff believes that the VRF assignment for this requirement should be “Medium.”

Requirement R4 directs that a Transmission Operator must provide a Transmission Service Provider with the appropriate TTC values and study report within certain seven days of finalization of the study report. NERC stakeholders developed and balloted this requirement with a “Lower” VRF assignment. Because the determination of Firm ATC is predicated on use of a valid TTC and that the provision of an updated TTC is integral to the accuracy of the calculation, NERC staff believes that this requirement must have the same VRF assignment as that of the Firm ATC determination. Therefore, NERC staff believes that the VRF assignment for this requirement should be “Medium.”

Requirement R5 specifies that a Transmission Service Provider must calculate Firm ETC using the specified formula and detailed specification of the variables. NERC stakeholders developed and balloted this requirement with a “Lower” VRF assignment. Because the determination of firm ATC is predicated on calculation of a valid firm ETC, NERC staff believes that this requirement must have the same VRF assignment as that of the firm ATC determination. Therefore, NERC staff believes that the VRF assignment for this requirement should be “Medium.”

Requirement R6 directs that a Transmission Service Provider must calculate Non-firm ETC using the specified formula and detailed specification of the variables. NERC stakeholders developed and balloted this requirement with a “Lower” VRF assignment. NERC staff agrees that the VRF for this requirement should be “Lower.” Because the determination of non-firm ATC is predicated on calculation of a valid non-firm ETC, NERC staff believes that this requirement must have the same VRF assignment as that of the non-firm ATC determination. NERC staff does not find this requirement to meet any of the criteria for VRF assignments of “Medium” or “High.”

In Requirement R7, the standard states that a Transmission Service Provider must calculate Firm ATC using the specified formula and detailed specification of the variables. NERC stakeholders developed and balloted this requirement with a “Lower” VRF assignment. Because the determination of firm ATC is closely tied to the ability to serve load, and can potentially result in load shedding if the system is oversubscribed, NERC staff believes this requirement can directly affect the electrical state or the capability of the BPS. Therefore, NERC staff believes that the VRF assignment for this requirement should be “Medium.” NERC staff does not find this requirement to meet any of the criteria for assignment as a “High” VRF.

Requirement R8 states that a Transmission Service Provider must calculate Non-firm ATC using the specified formula and detailed specification of the variables. NERC stakeholders developed and balloted this requirement with a “Lower” VRF assignment. NERC staff agrees that the VRF for this requirement should be “Lower.” As described above, the determination of non-firm ATC results primarily in changes to the financial statements of the companies utilizing non-firm service. Accordingly, NERC staff does not find this requirement to meet any of the criteria for assignment of the VRFs at the “Medium” or “High” level.

MOD-030-1 Flowgate Methodology

Requirement R1 of MOD-030-1 states that a Transmission Service Provider implementing this methodology must include the following information in its ATCID in addition to that already required in MOD-001 R3: the criteria used by the Transmission Operator to identify sets of Transmission Facilities as Flowgates that are to be considered in AFC calculations, and information on how source and sink for transmission service is accounted for in AFC calculations. NERC stakeholders developed and balloted this requirement with a “Lower” VRF assignment. This requirement specifies the creation of rules and process that later requirements mandate the use of. Accordingly, based on FERC VRF Guideline 2, NERC staff believes that this requirement must have the same VRF assignment as those later requirements. Therefore, NERC staff believes that the VRF assignment for this requirement should be “Medium.” Note that NAESB standards, not NERC standards, will be addressing the public disclosure of this information.

Requirement R2 directs that a Transmission Operator must determine and manage the flowgates used in the methodology based on the criteria listed in the requirement, and provide TFC to the Transmission Service Provider within seven days of their determination. NERC stakeholders developed and balloted this requirement with a “Lower” VRF assignment. Because the determination of Firm AFC is predicated on the selection of flowgates, NERC staff believes that this requirement must have the same VRF assignment as that of the Firm AFC determination. Therefore, NERC staff believes that the VRF assignment for this requirement should be “Medium.”

Requirement R3 of the standard states that the Transmission Operator must provide the Transmission Service Provider with a Transmission model that meets the criteria specified in the requirement. NERC stakeholders developed and balloted this requirement with a “Lower” VRF assignment. Because the determination of Firm AFC is predicated on use of a valid and accurate model, NERC believes that this requirement must have the same VRF assignment as that of the Firm AFC determination. Therefore, NERC staff believes that the VRF assignment for this requirement should be “Medium.”

Requirement R4 mandates that the Transmission Service Provider evaluate reservations consistently when determining AFCs. NERC stakeholders developed and balloted this requirement with a “Lower” VRF assignment. Because the determination of firm AFC is predicated on accurate analysis of other firm uses such as those specified in the requirement, NERC staff believes that this requirement must have the same VRF assignment as that of the Firm AFC determination. Therefore, NERC staff believes that the VRF assignment for this requirement should be “Medium.”

Requirement R5 specifies that when determining AFCs, a Transmission Service Provider must utilize the models given to it as described in Requirement R3, include appropriate outages, and use the AFCs on external flowgates as provided by the Transmission Service Providers calculating AFCs for those flowgates. NERC stakeholders developed and balloted this requirement with a “Lower” VRF assignment. Because the determination of firm AFC is predicated on utilizing an accurate model, NERC staff believes that this requirement must have the same VRF assignment as that of the Firm AFC determination. Using another entity’s provided AFCs on external flowgates is more related to administrative transfers of responsibility and would more likely be attributed a “Lower” VRF. However, FERC Guideline 5 indicates that the requirement should be specified as “Medium,” because there are two objectives of the requirement and thus two potential VRFs. Therefore, NERC staff believes that the VRF assignment for this requirement should be “Medium.”

Requirement R6 directs that a Transmission Service Provider must calculate the impact of Firm ETC using the process specified in the requirement. NERC stakeholders

developed and balloted this requirement with a “Lower” VRF assignment. Because the determination of firm AFC is predicated on calculation of a valid firm ETC, NERC staff believes that this requirement must have the same VRF assignment as that of the firm AFC determination. Therefore, NERC staff believes that the VRF assignment for this requirement should be “Medium.”

Requirement R7 states that a Transmission Service Provider must calculate the impact of Non-firm ETC using the process specified in the requirement. NERC stakeholders developed and balloted this requirement with a “Lower” VRF assignment. NERC staff agrees that the VRF for this requirement should be “Lower.” Because the determination of non-firm AFC is predicated on calculation of a valid non-firm ETC, NERC staff believes that this requirement must have the same VRF assignment as that of the non-firm AFC determination. NERC staff does not find this requirement to meet any of the criteria for assignment at the “Medium” or “High” VRF level.

Requirement R8 specifies that a Transmission Service Provider must calculate Firm AFC using the specified formula and detailed specification of the variables. NERC stakeholders developed and balloted this requirement with a “Lower” VRF assignment. Because the determination of firm AFC is closely tied to the ability to serve load, and can potentially result in load shedding, NERC staff believes this requirement can directly affect the electrical state or the capability of the BPS. Therefore, NERC staff believes that the VRF assignment for this requirement should be “Medium.” NERC staff does not find this requirement to meet any of the criteria for assignment at the VRF level of “High.”

In Requirement R9, the standard says a Transmission Service Provider must calculate Non-firm AFC using the specified formula and detailed specification of the variables. NERC stakeholders developed and balloted this requirement with a “Lower” VRF assignment. NERC staff agrees that the VRF for this requirement should be “Lower.” As described above, the determination of non-firm AFC results primarily in changes to the financial statements of the companies utilizing non-firm service. Accordingly, NERC staff does not find this requirement to meet any of the criteria for assigning VRFs at “Medium” or “High.”

Requirement R10 directs that a Transmission Service Provider shall recalculate AFC at a certain specified periodicity (Hourly once per hour, Daily once per day, Monthly once per week) unless the input values specified in the AFC calculation have not changed. The requirement does not specify if the calculation is related to the firm or non-firm calculation, so it must be assumed to address both. NERC stakeholders developed and balloted this requirement with a “Lower” VRF assignment. Because this requirement

addresses the determination of Firm AFC, NERC staff believes that this requirement should be “Medium.”

Requirement R11 specifies that a Transmission Service Provider that desires to convert AFC to ATC or TFC to TTC must use the specified formula and detailed specification of the variables. This requirement is purely for the convenience of entities that wish to see flowgate values in a different format, and is administrative in nature. NERC stakeholders developed and balloted this requirement with a “Lower” VRF assignment. NERC staff agrees that the VRF for this requirement should be “Lower,” as the requirement does not meet the criteria for “Medium” or “High” risk factor assignment

Conclusion

NERC staff believes this evaluation:

- reconciles the proposed VRF assignments for the ATC standards with VRF assignments for other standard requirements on which the Commission has already ruled;
- develops guidance on what constitutes a “direct” impact on the BPS; and,
- reconciles the “direct impact” guidance to previous decisions of the Commission; and
- addresses the tasks assigned to the staff by the Board of Trustees.

In accordance with further NERC Board direction to include the opportunity for stakeholder review and comment on the analysis, NERC is presenting this evaluation to the industry.

Summary of Recommended Violation Risk Factor Changes

Requirement	Original Violation Risk Factor as Balloted by Stakeholders	Staff Recommendation based on Rules of Procedure and FERC Criteria
MOD-001		
R1	Lower	Medium
R2	Lower	Medium
R3	Lower	Medium
R4	Lower	Lower
R5	Lower	Lower
R6	Lower	Medium
R7	Lower	Medium
R8	Lower	Medium
R9	Lower	Medium
MOD-004		
R1	Lower	Medium
R2	Lower	Medium
R3	Lower	Lower
R4	Lower	Lower
R5	Lower	Medium
R6	Lower	Lower
R7	Lower	Medium
R8	Lower	Lower
R9	Lower	Lower
R10	Lower	Lower
R11	Medium	Medium
R12	Medium	Medium
MOD-008		
R1	Lower	Medium
R2	Lower	Medium
R3	Lower	Lower
R4	Lower	Medium
R5	Lower	Medium
MOD-028		
R1	Lower	Medium
R2	Lower	Medium
R3	Lower	Medium
R4	Lower	Medium
R5	Lower	Medium
R6	Lower	Medium
R7	Lower	Medium
R8	Lower	Medium
R9	Lower	Lower
R10	Lower	Medium
R11	Lower	Lower
MOD-029		
R1	Lower	Medium
R2	Lower	Medium
R3	Lower	Medium
R4	Lower	Medium
R5	Lower	Medium
R6	Lower	Lower
R7	Lower	Medium
R8	Lower	Lower
MOD-030		
R1	Lower	Medium
R2	Lower	Medium
R3	Lower	Medium
R4	Lower	Medium
R5	Lower	Medium
R6	Lower	Medium
R7	Lower	Lower
R8	Lower	Medium
R9	Lower	Lower
R10	Lower	Medium
R11	Lower	Lower