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Standard Authorization Request Form

Title of Proposed Standard	CBM/TRM Revisions
Request Date:	revised June 16, 2005

SAR Requestor Information	**SAR Type** (Put an 'x' in front of one of these selections)	
Name Long Term AFC/ATC Task Force (LTATF)	☐	New Standard
Primary Contact ltatf@nerc.com	☒	Revision to existing Standard
Telephone Fax	☐	Withdrawal of existing Standard
E-mail	☐	Urgent Action

Purpose/Industry Need (Provide one or two sentences)

The existing standards on TRM should be revised 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.

NOTE: the LTATF passed the following strawman by a vote of 15 to 2:

Because the LTATF debated at length the merits of CBM calculation and utilization, the LTATF asks the SAR Drafting Team (SAR DT) to consider whether the calculation and/or withholding of CBM as an explicit quantity is necessary for reliability and should be part of a reliability standard. (**please also see appendix F to the Final LTATF report**)

If however, the industry still considers CBM to be necessary, the SAR DT is asked to consider the following recommendations:

The existing standards on CBM should be revised to require crisp and clear documentation of the calculation of CBM and make various components of the methodology mandatory so there is more consistency across methodologies.

Reliability Functions

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

Applicability to be determined by SAR DT.

Reliability and Market Interface Principles

Applicable Reliability Principles *(Check boxes for all that apply by double clicking the grey boxes.)*	
☒	1. Interconnected bulk electric systems shall be planned and operated in a coordinated manner to perform reliably under normal and abnormal conditions as defined in the NERC Standards.
☐	2. The frequency and voltage of interconnected bulk electric systems shall be controlled within defined limits through the balancing of real and reactive power supply and demand.
☒	3. Information necessary for the planning and operation of interconnected bulk electric systems shall be made available to those entities responsible for planning and operating the systems reliably.
☐	4. Plans for emergency operation and system restoration of interconnected bulk electric systems shall be developed, coordinated, maintained and implemented.
☒	5. Facilities for communication, monitoring and control shall be provided, used and maintained for the reliability of interconnected bulk electric systems.
☒	6. Personnel responsible for planning and operating interconnected bulk electric systems shall be trained, qualified and have the responsibility and authority to implement actions.
☐	7. The security of the interconnected bulk electric systems shall be assessed, monitored and maintained on a wide area basis.

Does the proposed Standard comply with all of the following Market Interface Principles? *(Select 'yes' or 'no' from the drop-down box by double clicking the grey area.)*
1. The planning and operation of bulk electric systems shall recognize that reliability is an essential requirement of a robust North American economy. Yes
2. An Organization Standard shall not give any market participant an unfair competitive advantage.Yes
3. An Organization Standard shall neither mandate nor prohibit any specific market structure. Yes
4. An Organization Standard shall not preclude market solutions to achieving compliance with that Standard. Yes
5. An Organization Standard shall not require the public disclosure of commercially sensitive information. All market participants shall have equal opportunity to access commercially non-sensitive information that is required for compliance with reliability standards. Yes

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

LTATF proposed changes are highlighted in green

SUGGESTED REVISIONS to MOD-004-0

R1. Each group of transmission service providers/and or AFC/ATC/TTC calculators within a region, in conjunction with the members of that region shall jointly develop and document a CBM methodology. This methodology shall be available to NERC, the Regions, and the stakeholders in the electricity market.

If a RRO's members CBM values are determined by a RTO or ISO, then a jointly developed regional methodology is not required for those members. RRO members not covered by an RTO/ISO would be required to have a jointly developed regional methodology.

Each transmission provider not associated with an RTO or ISO shall comply with the methodology jointly developed within its respective reliability region.

Each CBM methodology shall (S1):

R1.1 Specify that the method used to determine generation reliability requirements as the basis for CBM shall be consistent with the respective generation planning criteria.

R1.2 Specify the frequency of calculation of the generation reliability requirement and associated CBM values.

- Require that the calculations must be verified at least annually.
- Require that the dates seasonal CBM values apply must be specified.

R1.3 Require that generation unit outages considered in a transmission provider's CBM calculation be restricted to those units within the transmission provider's system.

SAR DT should discuss whether CBM should be an explicit reservation and how/if it would be made a requirement. Also, whether the reservations would be a business practice?

R1.4 Require that CBM be preserved only on the transmission provider's system where the load serving entity's load is located (i.e., CBM is an import quantity only).

SAR DT should discuss whether there could be a reciprocal agreement for the use of CBM.

R1.5 Describe the inclusion or exclusion rationale in the CBM calculation for generation resources of each LSE including those generation resources not directly connected to the transmission provider's system but serving LSE loads connected to the transmission provider's system. The following rationale must be included in all methodologies:

R1.5.1 All generation directly connected to the transmission provider's system being used to serve load directly connected to that system will be considered in the CBM requirement determination.

R1.5.2 The availability of generation not directly connected to the transmission provider's system being used to serve load directly connected to that system would be considered available per the terms under which it was arranged.

R1.6 Describe the inclusion or exclusion rationale for generation connected to the transmission provider's system ~~but not obligated to serve Native/Network Load connected to the TSP's system~~. The following rationale must be included in all methodologies:

R1.6.1 The following units shall be included in the CBM requirement determination because they are considered to be the installed generation capacity, committed to serve load, directly connected to the transmission system for which the CBM requirement is being determined:

i. Generation directly connected to the transmission provider's system but not obligated to serve load directly connected to that system, will be incorporated into the CBM requirement determination as follows:

1. Generation directly connected to the transmission provider's system, but committed to serve load on another system, will not be included in the CBM requirement determination for the transmission system to which the generator is directly connected. (**Note to SAR DT – Ensure that this would be consistent with any pending resource adequacy SAR.) These units are not included because they are committed to serve load on another system and therefore not available to serve load on the system for which the CBM requirement is being determined**.)

2. Generation directly connected to the TSP's system, but not committed to serve load on any system, will be included in the CBM requirement determination for the transmission system to which the generator is directly connected as follows:

   The TSP will use the best information available to them (i.e. confirmed or requested transmission service/no service) to determine how these units should be considered in the CBM requirement determination. All assumptions made must be documented and approved by the entity responsible for the methodology.

R1.4 Describe the formal process and rationale for the RRO to grant any variances to individual transmission providers from the Regional CBM methodology.

R1.6.1 Require any variances must also be approved by NERC or its designate.

R1.5 Specify the relationship of CBM to the generation reliability requirement and the allocation of the CBM values to the appropriate transmission facilities. The sum of the CBM values allocated to all interfaces shall not exceed that portion of the generation reliability requirement that is to be provided by outside resources.

R1.6 Describe the inclusion or exclusion rationale for the loads of each LSE, including interruptible demands and buy-through contracts (type of service contract that offers the customer the option to be interrupted or to accept a higher rate for service under certain conditions).

R1.7 Describe any adjustments to CBM values to account for generation reserve sharing arrangements (i.e. Use of CBM and a reserve sharing event simultaneously occurring that is not planned for). Explain how the simultaneous application of CBM and TRM amounts being implemented in the ATC calculations are being taken into consideration during the planning process.

SAR DT should consider paragraph below:

R1.8 Require that CBM be based on the required or recommended planning reserve. In other words, a load serving entity that does not arrange for resources at least equal to the recommended or required planning reserve levels does not benefit by causing a higher CBM.

The SAR DT should consider the option below:

R1.9 Require that the appropriate entities will plan and reinforce the transmission system for the amount of CBM being preserved.

R2. The ~~RRO's~~ most recent version of the documentation of each entity's CBM methodology shall be available on a web site accessible by NERC, the RROs, and the stakeholders in the electricity market.

M3. Each RRO, in conjunction with its members, shall develop and implement a procedure to review the CBM calculations and values of member transmission providers to ensure that they comply with the Regional CBM methodology and are periodically updated (at least annually) and available to stakeholders. Documentation of the results of the most current Regional reviews shall be provided to NERC or its designate within 30 days of completion.

- The RRO must review and approve the TSP methodology to ensure it is consistent with the RRO's Planning Criteria. The TSP is responsible for ensuring that CBM calculations are consistent with the individual TOs planning criteria.

Question for SAR DT - Would the above be applicable to the Planning Authority?

REVISIONS to MOD-005-0

R1. Each Regional Reliability Organization, in conjunction with its members, shall develop and implement a procedure to review (at least annually) the CBM calculations and the resulting values of member Transmission Service Providers ~~to ensure that they comply with the Regional Reliability Organization's CBM methodology~~. The CBM review procedure shall ~~include the following four requirements~~:

R1.1 Indicate the frequency is at least annual, under which the verification review shall be implemented.

R1.2 Require review of the process by which CBM values are updated, and their frequency of update, to ensure that the most current CBM values are available to stakeholders.

R1.3 Require review of the consistency of the transmission provider's CBM components with its published planning criteria. A CBM value is considered consistent with published planning criteria if the same components that comprise CBM are also addressed in the planning criteria. The methodology used to determine and apply CBM does not have to involve the same mechanics as the planning process, but the same uncertainties must be considered and any simplifying assumptions explained. It is recognized that ATC determinations are often time constrained and thus will not permit the use of the same mechanics employed in the more rigorous planning process. The procedure must specify how the consistency would be verified.

<u>The SAR DT should consider the options below:</u>

R1.3.1 Require verification that the appropriate entities are planning and reinforcing the transmission system for the amount of CBM being preserved. The procedure must specify how the verification would be determined. Transmission service providers must also perform this verification and report on the findings as specified below.

R1.4 Require CBM values to be updated at least annually and available to the Regions, NERC, and stakeholders in the electricity markets.

R2. The documentation of the Regional CBM procedure shall be available to NERC on request (within 30 days).

R3. Documentation of the results of the most current implementation of the procedure shall be sent to NERC within 30 days of completion.

REVISIONS to MOD-006-0

<u>Note to SAR DT: Use of CBM should be addressed under business practices and not be part of this standard - consider the withdrawal of MOD-006-0 and transfer to NAESB.</u>

REVISIONS to MOD-008-0

R1. Each group of transmission service providers/and or AFC/ATC/TTC calculators within a region, in conjunction with the members of that region in conjunction with its members, shall jointly develop and document a TRM methodology. This methodology shall be available to NERC, the Regions, and the transmission users in the electricity market. If a RRO's members TRM values are determined by a RTO or ISO, than a jointly developed regional methodology is not required for those members. RRO members not covered by an RTO/ISO would be required to have a regional methodology.

Each TRM methodology shall:

R1.1 Specify the update frequency of TRM calculations.

- Require that calculations be verified at least annually if determined to be required
- Require that dates that seasonal TRM values apply must be specified

R1.2 Specify how TRM values are incorporated into ATC calculations.

R1.3 Specify the uncertainties accounted for in TRM and the methods used to determine their impacts on the TRM values. The following components of uncertainty, if applied, shall be accounted for solely in TRM and not CBM:

R1.3.1 aggregate load forecast error (not included in determining generation reliability requirements).
R1.3.2 load distribution error.
R1.3.3 variations in facility loadings due to balancing of generation within a Balancing Authority Area.
R1.3.4 forecast uncertainty in transmission system topology.
R1.3.5 allowances for parallel path (loop flow) impacts.
R1.3.6 allowances for simultaneous path interactions.
R1.3.7 variations in generation dispatch
R1.3.8 short-term operator response (operating reserve actions not exceeding a 59-minute window).
R1.3.9 Any additional components of uncertainty shall benefit the interconnected transmission systems, as a whole, before they shall be permitted to be included in TRM calculations.
R1.3.10 Additional detail on how variations in generation dispatch are handled from intermittent generation sources such as wind and hydro, need to be provided.

R1.4 Describe the conditions, if any, under which TRM may be available to the market as Non-Firm Transmission Service.

R1.5 Describe the formal process for the granting of any variances to individual transmission service providers from the regional TRM methodology.

R1.5.1 Any variances must also be approved by NERC or its designate

R1.6 Describe the methodology and conditions thereof that are used to reflect if TRM is reduced for the operating horizon.

R1.7 Explain how the simultaneous application of CBM and TRM amounts being implemented in the ATC calculations are being taken into consideration during the planning process.

<u>SAR DT should consider paragraph below:</u>

R1.8 Specify TRM methodologies and values must be consistent with the approved planning criteria.

R1.8.1 Require that the appropriate entities will plan and reinforce the transmission system for the amount of TRM being preserved. The methodology must specify how the verification of the consistency would be determined.

R1.8.2 Each TRM methodology shall address each of the items above and shall explain its use, if any, in determining TRM values. Other items that are entity specific or that are considered in each respective methodology shall also be explained along with their use in determining TRM values.

REVISIONS to MOD-009-0

R1. Each group of transmission service providers/and or AFC/ATC/TTC calculators within a region, in conjunction with the members of that region , in conjunction with its members, shall develop and implement a procedure to review the TRM calculations and resulting values of member transmission providers to ensure that they comply with the regional TRM methodology and are updated at least annually and available to transmission users.

The SAR DT should consider ways to ensure adherence with the paragraph below:

- The RRO must review and approve the transmission service provider(s)' methodology to ensure it is consistent with the RRO's Planning Criteria. The RRO is responsible for ensuring that TRM calculations are consistent with the individual TOs planning criteria.

The TRM review procedure shall:

R1.1 Indicate the frequency is at least annual, under which the verification review shall be implemented.

R1.2 Require review of the process by which TRM values are updated, and their frequency of update, to ensure that the most current TRM values are available to stakeholders.

R1.3 Require review of the consistency of the transmission service provider's or Transmission Owner's TRM components with its published planning criteria. A TRM value is considered consistent with published planning criteria if the same components that comprise TRM are also addressed in the planning criteria. The methodology used to determine and apply TRM does not have to involve the same mechanics as the planning process, but the same uncertainties must be considered and any simplifying assumption explained. It is recognized that ATC determinations are often time constrained and thus will not permit the use of the same mechanics employed in the more rigorous planning process. The review process used by a transmission service provider or transmission owner also needs to be documented.

R1.3.1 Explain how the simultaneous application of CBM and TRM amounts being implemented in the ATC calculations are being taken into consideration during the planning process.

SAR DT to review paragraph below:

R1.4 TRM methodologies and values must be consistent with the applicable planning criteria

- The methodology must specify how the verification of the consistency would be determined

R2. The documentation of the regional TRM procedure shall be available to NERC on request (within 30 days). Documentation of the results of the most current implementation of the procedure shall be available to NERC within 30 days of completion.

R3. Documentation of the results of the most current regional reviews shall be provided to NERC within 30 days of completion.

R4. Require TRM values to be verified at least annually and made available to the RROs, NERC, and stakeholders.

Related Standards

Standard No.	Explanation
t.b.d	LTATF SAR for ATC and TTC (submitted with this SAR).
R05004	NAESB proposed Business Practice for a single Business Practice Standard to be developed related to both: 1) the processing and evaluation of transmission service requests, which use TTC/ATC/AFC and CBM/TRM 2) the processing and evaluation of request(s) to schedule against approved transmission service reservation(s).

Related SARs

SAR ID	Explanation

Regional Differences

Region	Explanation
ECAR	
ERCOT	
FRCC	
MAAC	
MAIN	
MAPP	
NPCC	
SERC	
SPP	
WECC	

Related NERC Operating Policies or Planning Standards

ID	Explanation