References to Transmission Reliability Margin in FERC Orders

From FERC Order 890

From Page 1045:

§ 37.6 Information to be posted on the OASIS.
(viii) Transmission Reliability Margin or TRM means the amount of TTC necessary to provide reasonable assurance that the interconnected transmission network will be secure, or such definition as contained in Commission-approved Reliability Standards.

Starting on Page 164:

(4) Transmission Reserve Margin (TRM)

NOPR Proposal

266. Finally, the Commission proposed the development of reliability standards MOD-008 and MOD-009[173] that specify the uncertainties that TRM could be used to accommodate, which could include (1) load forecast and load distribution error, (2) variations in facility loadings, (3) uncertainty in transmission system topology, (4) loop flow impact, (5) variations in generation dispatch, including intermittent resources, (6) automatic sharing of reserves, and (7) other uncertainties identified through the NERC reliability standards development process.

Comments

267. Most commenters agree that the existing definitions for TRM require clarification.[174] Commenters also agree that NERC should be required to develop clear standards for the determination of TRM, including specifying the criteria used in the determination of TRM.[175] PNM-TNMP supports the Commission's proposal, pointing out that the

[173] The MOD-008 and MOD-009 reliability standards document regional TRM methodologies and procedures for verifying TRM values.

[174] E.g., Allegheny, APPA, EEI, EPSA, Exelon, LPPC, MidAmerican, NRECA, Northwest IOUs, NorthWestern, Occidental, Pinnacle, Powerex, PNM-TNMP, PPL, PJM, PPM, and WestConnect.

[175] Exelon recommends that the following factors should be the same for the planning process and ATC/AFC process to achieve consistency: base case flows, reservation impacts, TRM and CBM forecasted to occur simultaneously; counterflows; positive impacts resulting from reservations and generation dispatch; TRM for the same scenarios; and CBM.

implementation of the current NERC standards definition for TRM and CBM could result in its double-counting, which must be eliminated. APPA members in the Western Interconnection suggest that regional variations be permitted. They also note that the modeling methods used by WECC and its sub-regions may differ from those used in the Eastern Interconnection. For example, they contend that uncertainties associated with transmission maintenance schedules that are driven by hydro-production curves will seasonally affect TRM set-asides on certain transfer paths. PJM believes that the TRM methodology should be consistent at the regional reliability organization level. PJM also contends that TRM should be coordinated, exchanged and respected on external flowgates and that the concept of a maximum TRM, by percentage, should be adopted in the NERC standards.

268. Consistent with its position on CBM, TAPS proposes that TRM set-asides should be conditioned on inclusive reserve-sharing arrangements, with the reservations determined by the reserve-sharing group, subject to dispute resolution before the Commission (and, eventually, approval by joint planning groups).

269. PNM-TNMP suggests that the Commission consider definitions to include the following clarification taken from WECC procedures on ATC: "If the limitation on the use of TRM to 59 minutes would force a Transmission Provider to set aside unnecessary CBM on the same path as the TRM, that Transmission Provider may utilize the TRM beyond the 59 minutes."[176] PNM-TNMP states that this would allow the transmission provider to maximize the ATC by not needlessly setting aside twice the amount of transmission (TRM and CBM) than is necessary for reliability.

270. Nevada Companies argue that no new standards are required for TRM and that any further action would be burdensome. They explain that NERC has a well-established definition that does not require further clarification. In their view, all that is required is a complete statement, to be posted on OASIS, regarding the transmission provider's application of TRM. NERC comments that the existing reliability standards for TRM will be revised to require clear documentation of the calculation of TRM. It also adds that the revised standard will make various TRM components mandatory to achieve more consistency across methodologies.

271. Santee Cooper urges the Commission to ensure that service to native load and transmission system reliability will not be compromised as the Commission seeks greater levels of consistency in the calculation of ATC. It states that the Commission also must be cognizant of the importance of TRM in the provision of service to native load.

[176] Citing WECC Rocky Mountain Operating and Planning Group, Determination of Available Transfer Capability within the Western Interconnection, June 2001, page 9, http://www.wecc.biz/modules.php?op=modload&name=Downloads&file=index&req=getit&lid=1035.

Commission Determination

272. The Commission adopts the NOPR proposal and requires public utilities, working through NERC, to complete the ongoing process of modifying TRM standards MOD-008 and MOD-009. We understand that the standard drafting process is underway as a joint project with NAESB.

273. The Commission also adopts the NOPR proposal to establish standards specifying the appropriate uses of TRM to guide NERC and NAESB in the drafting process. Transmission providers may set aside TRM for (1) load forecast and load distribution error, (2) variations in facility loadings, (3) uncertainty in transmission system topology, (4) loop flow impact, (5) variations in generation dispatch, (6) automatic sharing of reserves, and (7) other uncertainties as identified through the NERC reliability standards development process. Because load, facility loading and other uncertainties constantly deviate, we will not require that TRM set aside capacity be set at zero in the non-firm ATC calculation. In other words, we will not require transfer capability that is set aside as TRM to be sold on a non-firm basis. We find that clear specification in this Final Rule of the permitted purposes for which entities may reserve CBM and TRM will virtually eliminate double-counting of TRM and CBM.

274. We will not adopt PNM-TNMP's proposal regarding use of set aside transfer capability as TRM beyond 59 minutes, rather than converting it to CBM. Our proposal is to separate transfer capability set asides as either CBM or TRM without regard to duration of use of the set aside. Therefore, such a clarification is not necessary.

275. In addition, we direct public utilities, working through NERC, to establish an appropriate maximum TRM. One acceptable method may be to use a percentage of ratings reduction, i.e., model the system assuming all facility ratings are reduced by a specific percentage. This is a relatively simple method and, if adopted as the reliability standard's method, should not restrict a transmission provider from using a more sophisticated method that may allow for greater ATC without reducing overall reliability.

276. Because of the operational characteristics of the uncertainties that are to be accommodated using TRM, and their aggregate impact on reliable operation, we require each transmission provider to calculate, and allocate on the paths and flowgates, the aggregate TRM value for all LSEs within its area. We support NERC's plan to revise existing reliability standards for TRM to require clear documentation of the TRM calculation, as we expect the TRM value to be supported and fully transparent. In addition, we require each transmission provider to make available all underlying documentation, including work papers and load flow base cases, used to determine TRM, to any transmission customer and LSE within its control area, subject to a confidentiality agreement,[177] if necessary. We agree with Santee Cooper's comments that the

[177] The agreement may appropriately restrict the sharing of sensitive information with customer personnel that are involved only in transmission functions, as opposed to merchant functions.

Commission must ensure that service to native load and system reliability are not compromised. We believe that our requirement for public utilities to work through NERC satisfies such concerns.

277. With respect to the proposal to permit regional variations in the TRM calculation methodology, we reiterate our position stated above that any request for regional difference from the applicable reliability standards must take place through the NERC reliability standards development process. With respect to TAPS' proposal regarding reserve sharing groups, we clarify that, to the extent transfer capability is needed for transmission of shared reserves, this is included under TRM. However, as noted previously in the CBM discussion, we are not mandating the use of reserve sharing groups.

From FERC Order 693

Starting on Page 305:

j. Documentation and Content of Each Regional Transmission Reliability Margin Methodology (MOD- 008-0)

1112. MOD-008-0 requires the development and posting of a regional methodology for TRM, which is transmission capacity that is reserved to provide reasonable assurance that the interconnected transmission network will remain secure under various system conditions. The Reliability Standard requires each regional reliability organization to: (1) develop and document a regional TRM methodology in conjunction with its members and (2) post on a website the most recent version of its TRM methodology.

1113. In the NOPR, the Commission identified MOD-008-0 as a fill-in-the-blank standard, proposing that because the regional methodologies had not been submitted, the Commission would not propose to approve or remand MOD-008-0 until the ERO submitted the additional information. The Commission expressed concern about the lack of: (1) clear requirements on how TRM should be calculated and allocated across paths and (2) consistent criteria and clarity with regard to the entity on whose behalf TRM had been set aside.

1114. The Commission requested comment in the NOPR on how TRM is currently calculated and allocated across paths, and what would be a recommended approach for the future.

i. Comments

1115. APPA agrees that MOD-008-0 is a fill-in-the-blank standard, is not sufficient as currently drafted, and should not be approved as a mandatory Reliability Standard until

NERC and the regional reliability organizations and regional entities develop the necessary regional methodologies and the Commission approves them.

1116. MISO adds that there should be a consistent framework to be followed by entities in determining TRM. It states that relevant MOD standards should be revised if such a framework is not clearly delineated. However, MISO cautions that a Reliability standard should not be used to address a perceived equity concern. MidAmerican also supports greater uniformity of TRM definitions and calculations, and proposes that a revised standard and/or new standards should encourage transparency with increased availability of information, consistent data input and certain modeling assumptions. International Transmission agrees and proposes that TRM consistency should be addressed either on a regional basis or on an Interconnection-wide basis.

1117. In response to the Commission's request for comments on the current calculation of TRM, and recommended approaches for the future, International Transmission provides a description of the MISO approach to TRM. International Transmission states that during the operating horizon (next 48 hours), TRM is limited to a reserve sharing component which only applies to flowgates that are not based on transmission outages (unit tripping and transmission outages are considered a double contingency). International Transmission states that the logic behind this approach is that there are fewer uncertainties in the operating horizon because schedules and market flows are known. International Transmission explains that during the planning horizon (next 48 hours), a two percent TRM component for uncertainty is used on all flowgates, including those requiring reserve sharing TRM. In addition, other assumptions regarding the sale of transmission service enter into the need for TRM to cover "uncertainties." In addition, International Transmission cautions that MISO's minimal two percent margin may not be sufficient for long-term planning horizon requests (i.e., over 13 months) if planning "assumptions" are not reasonable. International Transmission argues that MISO must also employ proper sensitivity studies to other system variables for a two percent margin to be sufficient. TRMs in the five to ten percent range are not necessarily unreasonable if a wide range of potential system operating conditions is not studied. Regardless of the ultimate approach adopted in future standards, International Transmission proposes that all entities follow a consistent framework when calculating TRM.

1118. MidAmerican responds with a discussion of its current approach to TRM calculation, which has been performed in accordance with MAPP-approved methodologies. MidAmerican states that these methodologies include an amount to allow for both the delivery of operating reserves and for uncertainties. Since delivery of operating reserves keeps the interconnected network in service, benefiting all market participants, MidAmerican contends that it is appropriate for TRM to include an amount to allow for the delivery of operating reserves. The allowance for uncertainty is calculated as a percentage of TTC required to protect reliability. All market participants benefit from the provision of an appropriate margin for uncertainty because the reliability

of the interconnected network is maintained and service interruptions are reasonably minimized.

1119. With respect to applicable entities, APPA proposes the addition of two new functional entities. Specifically, APPA believes that NERC should expand the applicability section of MOD-008-0 to include planning authorities and reliability coordinators. APPA points out that these are the only entities that can evaluate the amount of error in their transfer capability predictions.

1120. ERCOT states that the Commission's concerns about TRM do not apply to ERCOT, because ERCOT has a balanced grid in which all transmission is firm, no transmission is reserved and there are no transmission paths.

ii. Commission Determination

1121. The Commission does not approve or remand MOD-008-0 until the ERO submits additional information. Consistent with Order No. 890 and comments received in response to the NOPR, the Commission directs the ERO to modify MOD-008-0 through the Reliability Standards development process, as discussed below.

1122. Consistent with the NOPR proposal and Order No. 890, the Commission directs the ERO to modify standard MOD-008-0 to clarify how TRM should be calculated and allocated across paths or flowgates. We understand that the standards drafting process is underway as a joint project with NAESB. We agree with International Transmission, MidAmerican and MISO about the need for more uniformity and transparency in TRM calculation methodology and use, in order to eliminate potential reliability and discrimination concerns. Consistent with Order No. 890, the Commission directs the ERO to specify the parameters for entities to use in determining uncertainties for which TRM can be set aside and used, such as: (1) load forecast and load distribution error; (2) variations in facility loadings; (3) uncertainty in transmission system topology; (4) loop flow impact; (5) variations in generation dispatch; (6) automatic reserve sharing and (7) other uncertainties as identified through the NERC Reliability Standards development process. We find that clear specification in this Final Rule of the permitted purposes for which entities may reserve CBM and TRM will also virtually eliminate double-counting of TRM and CBM. Therefore, we direct the ERO to determine clear requirements regarding permitted uses for TRM through its Reliability Standards development process.

1123. We agree with the commenters that the percentage reduction of line rating can be one way to establish an appropriate maximum TRM if thermal considerations are the only limiting factors. While this is a relatively simple method, it ignores limitations relative to voltage or stability limitations which are the more typical reasons for transmission limitations. If adopted as the Reliability Standard method, it should not restrict a transmission provider from using a more sophisticated method that may allow for greater ATC without reducing overall reliability. However, we disagree with the use

of an arbitrary percentage over a long time frame that is not based on either proven historical need or sensitivity studies that support that determination. Therefore, consistent with our OATT Reform Final Rule, we direct the ERO to develop requirements regarding transparency of the documentation that supports TRM determination**.**

1124. We agree with APPA that NERC should revise the applicability section of this standard to add planning authorities and reliability coordinators, and in addition, any other entities that may be identified in the Reliability Standards development process.

1125. Regarding ERCOT's statement that TRM does not apply to ERCOT, we reiterate our position that any request for a regional exemption from the applicable Reliability Standards must take place in the Reliability Standards development process.

1126. The Commission neither accepts nor remands MOD-008-0 until the ERO submits additional information. In the interim, compliance with MOD-008-0 should continue on a voluntary basis, and the Commission considers compliance with the Reliability Standard to be a matter of good utility practice. Although the Commission did not propose any action with regard to MOD-008-0, it addressed above a number of concerns regarding the Reliability Standard, consistent with those proposed in Order No. 890. Accordingly, we direct the ERO to develop modifications to the Reliability Standard through the Reliability Standards development process including: (1) clear requirements on how TRM should be calculated, including a methodology for determining the maximum TRM value, and allocated across paths; (2) clear requirements for permitted purposes for which TRM can be set aside and used; (3) clear requirements for availability of documentation that supports TRM determination and (4) expanding the applicability to add planning authorities and reliability coordinators and any other appropriate entity identified in the Reliability Standards development process.

k. Procedure for Verifying Transmission Reliability Margin Values (MOD-009-0)

1127. MOD-009-0 requires each regional reliability organization to develop and implement a procedure to review TRM calculations and the resulting values determined by member transmission providers to ensure compliance with the regional TRM methodology.

1128. In the NOPR, the Commission identified MOD-009-0 as a fill-in-the-blank standard that requires each regional reliability organization to develop a procedure for review of TRM calculations and the resulting values. In the NOPR, the Commission stated that because the regional procedures had not been submitted, the Commission would not propose to approve or remand MOD-009-0 until the ERO submits the additional information.

i. Comments

1129. APPA agrees that MOD-009-0 is a fill-in-the-blank standard, is not sufficient as currently drafted, and should not be approved as a mandatory Reliability Standard until NERC and the regional reliability organizations and regional entities develop the necessary regional methodologies and the Commission approves them.

ii. Commission Determination

1130. The Commission will not approve or remand MOD-009-0 until the ERO submits additional information. Because the regional procedures have not been submitted to the Commission, it is not possible to determine at this time whether MOD-009-0 satisfies the statutory requirement that a proposed Reliability Standard be "just, reasonable, not unduly discriminatory or preferential, and in the public interest." Accordingly, the Commission neither approves nor remands this Reliability Standard until the regional procedures are submitted. In the interim, compliance with MOD-009-0 should continue on a voluntary basis, and the Commission considers compliance with the Reliability Standard to be a matter of good utility practice.