

**Preventing Undue Discrimination and
Preference in Transmission Service
(Docket No. RM05-25-000)**

**Federal Energy Regulatory Commission Technical Conference
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Good afternoon, ladies and gentlemen. I am Nick Henery, Director of Compliance, Standards, and Reliability for the American Public Power Association. The North American Electric Reliability Council's (NERC) guidance document, dated June 1996, entitled, *Available Transfer Capability (ATC) Definitions and Determination*, requires that the calculation of ATC recognize the necessity of determining ATC values using a regional or "wide area" coordination to capture the interactions of electric power flows.

Unfortunately, the current reality is that the concept of "wide area" coordination was never quite realized. The various components that are required to determine ATC are established using procedures based upon Regional Reliability Organizations' (RROs) study methods, transmission service business practices, or company goals to meet the needs of the markets within each interconnection.

The accuracy and dependability of the ATC calculations are only as good as the accuracy and dependability of the components of the ATC formula. These are, of course, the Total Transfer Capability, Existing Transmission Commitments, Capacity Benefit Margins, and Transmission Reserve Margins.

The first component of the ATC formula is the Total Transfer Capability, or TTC. Under the NERC functional model the "Transmission Planner" is the reliability function tasked with calculating TTC for long-term transmission planning. For short-term transmission planning or operational planning, the operation planners, which are a part of the "Transmission Operator" function, calculate TTC.

The TTC, in all cases, is a prediction by the Transmission Planner or the Transmission Operator of the reliability limit, or total capability, of a path, system or flowgate for a particular time period. The accuracy and dependability of the ATC calculation can be no better than the accuracy and dependability of the TTC values calculated by the Transmission Planners or Transmission Operators. However, accurate TTC values are very important for reliable transmission planning and real time operation of the Bulk Power System. In the Eastern Interconnection, where multiple regional reliability

organizations exist, a collective organization comprised of representatives from each of these groups could establish the long-term planning and operational planning rules for the interconnection. This type of planning program would go a long way toward producing TTC values using consistent and transparent study assumptions and would minimize seam issues throughout the entire interconnection.

The second component of the ATC formula is Existing Transmission Commitments, or ETC. The rules for determining and using the ETC component of the ATC formula are developed and applied at the individual utility level within an RRO. The different methods or rules by which the Transmission Customer reserves transmission capacity with an individual utility, and then schedules energy over that reserved transmission capacity, will often result in different ATC values for each Transmission Service Provider in the same path. This can occur because one Transmission Service Provider will have a rule of decrementing requested transmission capacity from the ATC, while the other Transmission Service Provider will not decrement the ATC until the transmission capacity has been confirmed as reserved and energy has been scheduled on the reserved transmission capacity.

This is one of those areas where regional business practices and rules, transmission tariffs, and/or business objectives can and often do clash with the reliability rules. The electric utility industry has been trying for about a decade to determine if the market rules will define the boundaries for reliable operation of the Bulk Electric System or whether the reliability rules will define the boundaries for the market. At a more fundamental level, Transmission Service Providers and Transmission Operators often make different assumptions and use different methods to account for the current and future transmission needs of Load Serving Entities (LSEs) serving bundled retail loads and LSEs using wholesale transmission service. Additional industry work is needed to ensure that these assumptions and adjustments are relatively consistent and transparent to all affected parties within the interconnection.

The rules for calculating Capacity Benefit Margins (CBM) and Transmission Reserve Margins (TRM) are also determined at the individual utility level. The use of these two values in the ATC formula presently can result in an ATC value that has questionable dependability or accuracy. The majority of APPA members think CBM serves a useful function, but APPA members favor clear Reliability Standards, transparent calculations, and consistent application of CBM. Both CBM and TRM calculations will benefit from ongoing efforts to establish consistent rules for the calculation of CBM and TRM values throughout each interconnection.

In August of this year the Federal Energy Regulatory Commission (Commission) selected NERC to be the nation's Electric Reliability Organization (ERO). As you know, NERC has a Standard-Drafting Team currently developing standards for the Commission's approval that will detail the requirements for calculating and documenting ATC, as well as the components of the ATC formula. After the Commission-approved reliability standards become effective, it should be expected that NERC, the RROs and the electric industry will implement those requirements. This will provide the industry with ATC values established using procedures, within an interconnection, that are consistent and transparent, and therefore are useful to the Transmission Customer without unduly burdening the reliability functions of the industry.

In closing there are two points I want to get across. First, ATC values must be calculated using an open and transparent process, and must be as consistent as possible within an interconnection, given differences in network typology and market design. Second, the best way to achieve this is to have the Reliability Standards, not a commercial tariff, require this consistency and openness.

I have attached to my written remarks, answers to the questions you asked in the Conference Notice. I will be happy to address these responses during the Question and Answer period.

Thank you for the opportunity to speak to you today.

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Answers to Questions in the Conference Notice

1. What are the challenges that NERC/NAESB and the industry face in the effort to enhance the consistency of certain definitions, data, modeling assumptions and components of the ATC calculation? Which of these elements are most critical to make consistent? Is a focus on comparability of ATC calculation and transparency more important than consistency of ATC calculation?
 1. The consistency and accuracy of ATC values are completely dependent on the consistency and accuracy of the ATC components: Total Transfer Capability (TTC), Capacity Benefit Margin (CBM), Transmission Reserve Margin (TRM), and Existing Transmission Commitment (ETC).
The biggest challenges will be to develop Reliability Standards that require ATC calculations and the calculations of the components of the ATC formula to be made through an open process and as consistently as possible within an interconnection.
 2. ATC values are most sensitive to the ETC and TTC elements of the formula. The degree of consistency and accuracy of the ATC value is most influenced by the methods of calculation and what assumptions are used to determine TTC and ETC.
 3. The best way to obtain consistent and accurate ATC values is to focus on achieving consistency in calculating the components of the ATC formula, which is: $ATC = TTC - ETC - CBM - TRM$
2. What is a reasonable timeline to achieve the consistency goal?
 1. A reasonable time to expect the Eastern Interconnection to achieve consistency will be 1.5 to 2.5 years after the Reliability Standards are finalized and made mandatory. The Eastern Interconnection will have a more difficult time because there are six RROs/Regional Entities to coordinate. Also, the Eastern Interconnection allows commercial practices like “partial path reservations” or “hubbing and parking energy,” which can cause Reliability Coordinators (RCs) and Transmission Operators’ (TOPs) operation planners to make less accurate forecasts of TTC and ATC.

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2. ERCOT and the Western Interconnection should achieve this consistency in 1 to 2 years.
3. Are there common standards and modeling assumptions that can be developed to calculate TRM and CBM?
 1. Transmission Reserve Margin (TRM) is just a way of recognizing that when TTC is calculated, the value is only a prediction of the Total Transfer Capability for a particular time period. In other words, the predicted value of TTC will have some forecast errors; hence, TRM is an estimated “fudge factor” to insure that sufficient transmission will be available when the forecasted hour becomes real time. A monthly ATC calculation uses TTC calculated from long term transmission planning studies. These studies will be conducted by the Transmission Planners and Planning Authorities within an interconnection. If the interconnection has determined a consistent set of planning rules for the interconnection, the “best practice” would be for the interconnection’s Planning Committee to determine the amount of TRM for the monthly ATC calculations. For the Daily and Hourly ATC calculations, the Reliability Coordinator and Transmission Operators calculate the TTC. Because these TTCs are calculated much closer to real time, the TRM is considerably smaller. Again, if consistent operation planning rules have been established for the interconnection, a consistent TRM can be determined by the Interconnection’s Operating Committee for the Daily and Hourly ATC calculations.
 2. Capacity Benefit Margin (CBM) is defined as *“that amount of TTC reserved by Load Serving Entities (LSE) to ensure access to generation from interconnected systems to meet generation reliability requirements.”* The amount of the operating reserves that can be provided by an LSE from outside the LSE’s Balancing Authority (BA) Area, to support the load in the BA Area, is a decision made based on economics and the applicable rules for placing operating reserves within the interconnection. Improper reporting of CBM can reduce the reliability of the

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interconnection or unnecessarily remove transmission capacity from the daily or hourly ATC that could be used by wholesale LSEs to serve load. The likelihood that either of these situation occurring will be minimized by having clear Reliability Standards that require transparent calculations, and consistent application of CBM.

4. What are the most critical data to be exchanged among transmission providers to ensure that all are performing ATC calculations most accurately? How should that data be exchanged, what protocols should be used, and what forum should develop the protocols?
 1. Daily and hourly ATC calculations will be most influenced by the changes that will occur in the predicted amount of energy scheduled on the ETC and TTC of the system inside and outside the Transmission Operator's (TOP's) area. If proper coordination rules are established in the interconnection, then greater consistency will be achieved.
 2. Much of this information currently exists in operating control rooms; however, this kind of information is only available for a short period of time. Many times, it changes too fast for the Reliability Coordinator (RC) or TOP to use it in running their models.]

5. What is the most important data to make transparent? Regarding the Commission's proposal to require a narrative explanation for changes in monthly or yearly ATC, are there modifications that would achieve the Commission's transparency goals without imposing an undue burden on transmission providers? What ATC information posted in narrative form will be most beneficial?
 1. ATC is the most important value to post. But Transmission Customers must keep in mind that ATC calculations are like weather forecasts; they will change.
 2. If the interconnection has a coordinated long term planning program, anyone interested in the changes that occur in the long term planning study's assumptions that are used to calculate TTC for Monthly ATCs and the assumptions used to calculate TTC for the daily or hourly ATCs can compare the published long term study to the updated information in the

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monthly or daily studies. Requiring Planning Authorities to submit narratives explaining why their predictions changed would be counter productive. An example of why this is counter productive: the Transmission Planner (say in the month of November) uses an established design temperature of 95°F for the next June as a peak temperature for the long term transmission planning study to establish the TTC for that June. However, in May the Transmission Operator's operation planners receives an updated weather forecast that says the peak temperature for June is estimated to be 105°F. Having to produce a narrative explaining why a new forecasted temperature is used to determine a new TTC to calculate the daily or hourly ATCs will only divert precious time from duties that will better serve the interconnection.

3. What could be done, if time permits, would be to have the Transmission Service Provider (TSP) give a brief statement of the new environment that is expected for the daily and hourly ATCs. As an example, using the above scenario, the TSP could post something like this as a general statement on the TSP's OASIS; ***“Updated weather forecasts are predicting warmer than average temperatures for the month of June. If this forecast is correct, Transmission Customers can expect less ATC for the daily calculations than what was predicted last month.”***
6. Regarding the proposal to enhance OASIS postings, what are some industry tools/best practices that can be utilized to assist with this effort?
 1. A good model for industry tools/best practices is the OASIS developed by over 20 Western transmission providers called westTTRans; *see* <http://www.westtrans.net>.