Standard Development Roadmap

This section is maintained by the drafting team during the development of the standard and will be removed when the standard becomes effective.

Development Steps Completed:

1. SAC Authorized posting TTC/ATC/AFC SAR development June 20, 2005.
2. SAC authorized the SAR to be developmed as a standard on February 14, 2006.
3. SC appointed a standard drafting team on March 17, 2006.

Description of Current Draft:

This is the first draft of the proposed standard posted for stakeholders comment.

Future Development Plan:

1. Post revised standard for stakeholder comments.	February 15–March 16, 2007
2. Respond to comments.	
3. Post revised standard for stakeholder comment.	TBD
4. Respond to comments.	TBD
5. First ballot of standard.	TBD
6. Respond to comments.	TBD
7. Post for recirculation.	TBD
8. 30 Day posting before board adoption.	TBD
9. Board adopts MOD-001-1.	TBD
10. Effective date.	TBD

Definitions of Terms Used in Standard

This section includes all newly defined or revised terms used in the proposed standard. Terms already defined in the Glossary of Terms Used in Reliability Standards are not repeated here. New or revised definitions listed below become approved when the proposed standard is approved. When the standard becomes effective, these defined terms will be removed from the individual standard and added to the Glossary.

Available Flowgate Capability (AFC): A measure of the capability remaining in the Flowgate for further commercial activity over and above already committed uses. It is equal to the Total Flowgate Capability less the impacts of Existing Transmission Commitments (including retail customer service), less the impacts of Capacity Benefit Margin and less the impacts of Transmission Reliability Margin.

Existing Transmission Commitments (ETC): Any combination of Native Load uses, Contingency Reserves not included in Transmission Reliability Margin or Capacity Benefit Margin, existing commitments for purchases, exchanges, deliveries, or sales, existing commitments for transmission service, and other pending potential uses of Transfer Capability.

Flowgate: A single transmission element, group of transmission elements and any associated contingency (ies) intended to model MW flow impact relating to transmission limitations and transmission service usage. Transfer Distribution Factors are used to approximate MW flow impact on the flowgate caused by power transfers.

Network Response Method: A method of calculating Transfer Capability for transmission networks where customer Demand, generation sources, and the Transmission systems are closely interconnected.

Rated System Path Method: A method of calculating transfer capability for transmission networks where the critical transmission paths between areas of the network have been identified and rated as to their achievable transfer loading capabilities for a range of system conditions.

Total Flowgate Capability (TFC): The amount of electric power that can flow across the Flowgate under specified system conditions without exceeding the capability of the Facilities. Typically expressed in the form of thermal capability. Flowgates can be proxies for Stability and other limiting criteria.

Transmission Reservation: A reservation is a confirmed Transmission Service Request.

Transmission Service Request: A service requested by the Transmission Customer to the Transmission Service Provider to move energy from a Point of Receipt to a Point of Delivery.

A. Introduction

1. **Title:** **ATC and AFC Calculation Methodologies**

2. **Number:** MOD-001-1

3. **Purpose:** To promote the consistent and uniform application and documentation of Available Transfer Capability (ATC), and Available Flowgate Capability (AFC) calculation methodologies for reliable system operations.

4. **Applicability:**

   4.1. Transmission Service Provider

5. **Proposed Effective Date:** TBD

B. Requirements

R1. The Transmission Service Provider that calculates ATC (using either the Rated System Path Methodology or the Network Response Methodology) shall use the following equation to calculate ATC:

ATC = TTC – TRM – CBM – ETC

Where:

TTC = Total Transfer Capability

TRM = Transmission Reliability Margin

CBM = Capacity Benefit Margin

ETC = Existing Transmission Commitments

The requirements for calculating TTC, TRM, CBM and ETC will be developed in separate sets of standards.

R2. The Transmission Service Provider that calculates ATC shall recalculate ATC when any one of the following components of ATC changes:

R2.1. TTC

R2.2. TRM

R2.3. CBM

R2.4. ETC

The timing requirements for reposting on OASIS will be in accordance with the complementary NAESB Business Practices.

R3. The Transmission Service Provider that calculates ATC, shall, when requested, provide or make available, the following values (within 7 calendar days) to each Transmission Service Provider, Planning Coordinator, Transmission Planner, Reliability Coordinator, and Transmission Operator that requested the values and has a reliability-related need for the values:

R3.1. ATC

R3.2. TTC

R3.3. TRM

R3.4. CBM

R3.5. ETC

The requirements for calculating TTC, TRM, CBM and ETC will be developed in separate sets of standards.

R4. The Transmission Service Provider that calculates AFC (using a Network Response Methodology) shall use the following equation to calculate AFC:

AFC = TFC – (TRM * Distribution Factor) – (CBM * Distribution Factor) – the sum of (ETC impacts * respective Distribution Factors)

Where:

TFC = Total Flowgate Capability

TRM = Transmission Reserve Margin

CBM = Capacity Benefit Margin

ETC = Existing Transmission Commitments

The requirements for calculating TFC, TRM, CBM and ETC will be developed in separate sets of standards.

R5. The Transmission Service Provider that calculates AFC (using a Network Response Methodology) shall have a methodology that includes the following:

Please note that it may appear that the AFC methodology contains more requirements than that ATC methodology. Due to the characteristics of the ATC methodology, the corresponding level of detail will be contained in the standard that determines TTC (e.g. FAC 12 or FAC 13) when it is revised

R5.1. Separate consideration of the Transmission Reservation(s) for Firm (non-recallable) and Non-firm (recallable) Transmission Service inside the Transmission Service Provider's system in the AFC calculation with respect to how each is treated in the Transmission Service Provider's counter flow rules.

R5.2. Separate consideration of the Schedules for Firm (non-recallable) and Non-firm (recallable) Transmission Service inside the Transmission Service Provider's system in the AFC calculation with respect to how each is treated in the Transmission Service Provider's counter flow rules.

R5.3. Assumptions used for base case and transfer generation dispatch for both external and internal systems on OASIS (or its successor).

R6. The Transmission Service Provider that calculates AFC (using a Network Response Methodology) shall exchange the following data as agreed upon, or within 7 calendar days, with the Transmission Service Providers with whom AFC is coordinated and with each Planning Coordinator, Transmission Planner, Reliability Coordinator, and Transmission Operator that requested that data and has a reliability-related need for that data:

R6.1. Data describing coordinated transmission system elements scheduled to be taken out of or returned to service, that is updated and provided as changes occur.

R6.2. Data describing coordinated generation resources scheduled to be taken out of or returned to service, that is updated and provided as changes occur.

R6.3. A typical generation dispatch order that is updated at least prior to each peak load season or the generation participation factors of all units on an affected

Balancing Authority basis that is updated as required by changes in the status of the unit.

R6.4. The baseline power flow model for calculating AFC updated to reflect facility changes.

R6.5. Load Forecast information provided daily and updated as changes occur.

R6.6. Flowgates and Flowgate definitions and criteria provided on a seasonal basis, and when revised.

R6.7. Total Flowgate Capability (TFC) provided when initially established or revised, and provided daily thereafter.

R6.8. Firm and non-firm AFC values at the minimum update intervals listed below:

R6.8.1. Hourly AFC once per hour for 168 hours.

R6.8.2. Daily AFC once per day for thirty days.

R6.8.3. Weekly AFC once per day for four weeks.

R6.8.4. Monthly AFC once per month for 13 months.

The timing requirements for reposting on OASIS will be in accordance with the complementary NAESB Business Practices.

R6.9. Existing Transmission Commitments (ETC) information as reflected in an initial Power Flow model and provided within seven calendar days of the date the Power Flow Model is updated.

The requirements for calculating ETC may be developed in a separate standard following input from industry.

R6.10. Transmission Service Reservation information provided when revised once per hour.

The timing requirements for reposting on OASIS will be in accordance with the complementary NAESB Business

R7. Each Transmission Service Provider that calculates AFC (using a Network Response Methodology) shall update its AFC values using the updated information received (from Transmission Service Providers with whom AFC is coordinated) at the frequency noted below:

R7.1. For hourly, once per hour.

R7.2. For daily, once per day.

R7.3. For weekly, once per day.

R7.4. For monthly, once a week.

The timing requirements for reposting on OASIS will be in accordance with the complementary NAESB Business

R8. The Transmission Service Provider's methodology for calculating ATC or AFC shall identify how it accounts for the Transmission Reservations and Interchange Schedules for Firm (non-recallable) and Non-firm (recallable) Transmission Service inside its Transmission Service Provider system.

R9. Each Transmission Service Provider shall consistently use its sole ATC or AFC calculation methodology for all instances of coordinating, calculating or posting ATC or AFC values.

R10. Each Transmission Service Provider shall post the most recent version of its ATC or AFC calculation methodology on its OASIS (or its successor).

NAESB will be asked to develop a template in their complementary business practice.

R11. Each Transmission Service Provider's ATC or AFC calculation methodology shall include or address the following:

R11.1. Identify the parties responsible for posting the ATC or AFC values on OASIS.

R11.2. Require that the calculation of ATC or AFC use the same criteria and assumptions used to conduct reliability assessments and internal expansion planning for different time frames (real-time; same day; day-ahead; and from day-ahead up to 13 months).

R11.3. Document the criteria used for calculating ATC or AFC values for the different time frames (real-time; same day; day-ahead; and from day-ahead up to 13 months) and the rationale for any differences between these.

R11.4. Identify the contingencies considered in the ATC and AFC calculations methodology.

R11.5. Require that the calculation of ATC or AFC for use in the 13 months and longer time frame use the same power flow models, and the same assumptions regarding load, generation dispatch, special protection systems, post contingency switching, and transmission and generation facility additions and retirements as those used in the expansion planning for the same time frame.

R12. Identify the Transmission Service Providers with which the data used in the calculation of ATC or AFC is exchanged.

R13. If the Transmission Service Provider approves a Transmission Service Request using a value other than and less than its value for ATC or AFC, then the Transmission Service Provider shall identify how it calculated the lesser value.

R14. The Transmission Service Provider shall require that the Transmission Customer provide both ultimate source and ultimate sink on the Transmission Service Request and shall require that the Transmission Customer use the same source and sink on Interchange Transaction Tags.

C. Measures

D. Compliance

E. Regional Differences

None

F. Associated Documents

Version History

Version	Date	Action	Change Tracking
0	April 1, 2005	Effective Date	New

0	January 13, 2006	Fixed numbering from R.5.1.1, R5.1.2., and R5.1.3 to R1.5.1., R1.5.2., and R1.5.3. Changed “website” and “web site” to “Web site.”	Errata