

ATTACHMENT C

Methodology to Assess Available Transfer Capability

Part I - Colorado River Storage Project Management Center, Desert Southwest Region, Rocky Mountain Region, and Sierra Nevada Region

- (1) Detailed description of the specific mathematical algorithm used to calculate firm and non-firm ATC for scheduling, operating and planning horizons.

Scheduling Horizon

- a. Firm ATC = TTC - TRM - ETC
- b. Non-Firm ATC = TTC - TRM*Coef - ETC

Operating Horizon

- a. Firm ATC = TTC - TRM - ETC
- b. Non-Firm ATC = TTC - TRM*Coef - ETC

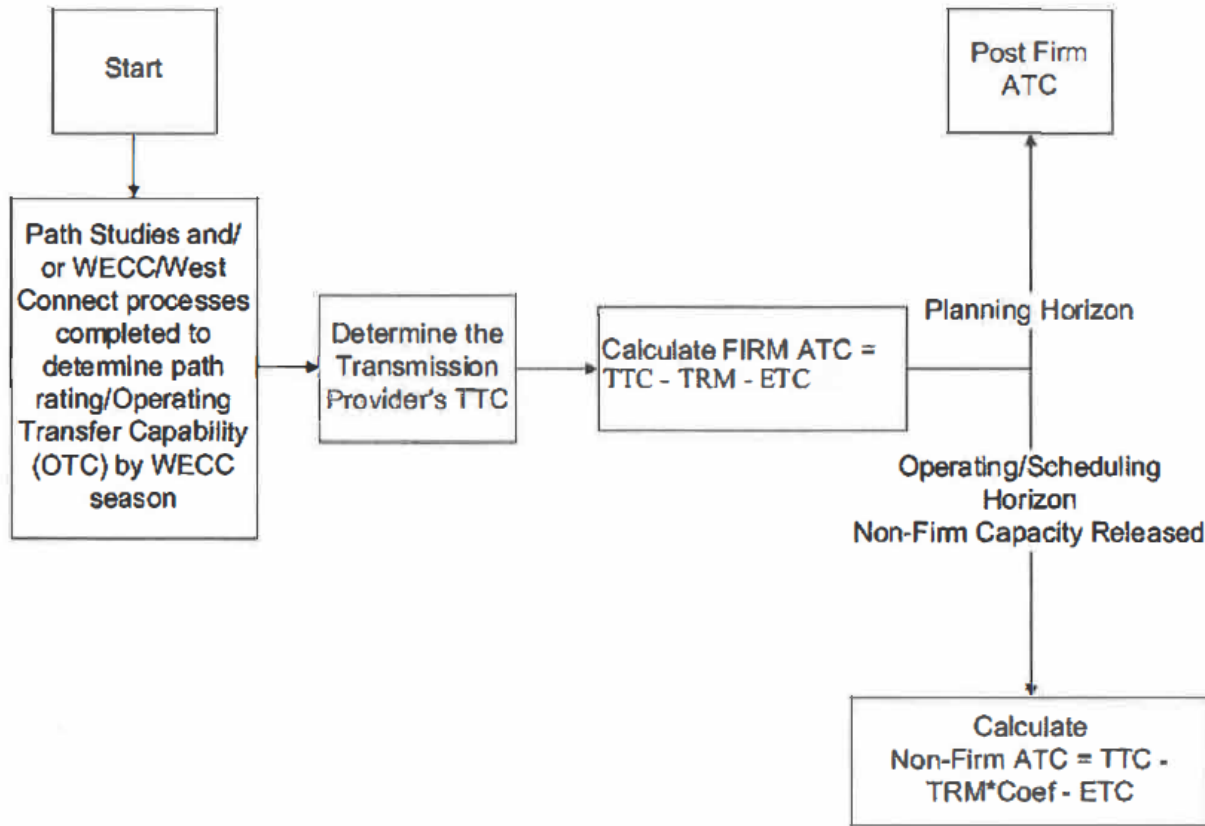
Planning Horizon

- a. Firm ATC = TTC - TRM - ETC
- b. Non-Firm ATC = TTC - ETC

The Transmission Provider's ATC algorithms are also available on the Transmission Provider's OASIS website.

- (2) A process flow diagram that illustrates the various steps through which ATC/AFC is calculated

ATC Process Flow Diagram



(3) Detailed explanation of how each of the ATC components is calculated for both the operating and planning horizons

a. For TTC:

i. Definition of TTC:

Total Transfer Capability (TTC): The amount of electric power that can be transferred over a specific path within the Transmission Provider's interconnected transmission network in a reliable manner while meeting all of a specific set of defined pre- and post- contingency system conditions. TTC is a variable quantity, dependent upon operating conditions in the near term and forecasted conditions in the long term. TTC shall be calculated consistent with the requirements of FERC, NERC and WECC as needed to represent system conditions, but no less frequently than seasonally. TTC cannot exceed the path rating.

ii. TTC calculation methodology.

- For transmission facilities that will affect the Western Interconnection, the determination of TTC is accomplished through the WECC Path Rating Process. The Transmission Provider follows the ATC methodology adopted by WECC and presented in the WECC document Determination of Available Transfer Capability Within the Western Interconnection. Seasonal Operating Transfer Capability (OTC) studies are completed to determine the limit at which a transmission path can be operated at and still meet reliability requirement under an N-1 (single contingency) condition.
- TTC is determined either prior to a new transmission component being brought into service or when a modification to a transmission component would affect the TTC.
- Once the TTC determination is made, it remains fixed and changes only if there is a physical or operational change to the transmission system or a transmission component which requires a change to TTC.
- When transmission facilities are jointly owned, the capacity is allocated among the owners based on the joint ownership or participation agreement; therefore, the TTC of the jointly owned facilities will be based upon the capacity allocated to each Transmission Provider.
- If a WECC defined path must be separated into components to properly allow for the commercial use of the path and its components, the components' TTCs will be based on the same studies used to determine the path OTC or the thermal rating of the components. The sum of the components' TTCs will not exceed the path OTC.
- For internal constraints, the net of local load and local generation may be used to determine TTC and/or ATC.
- Narratives explaining changes to monthly and/or yearly TTC are posted on the Transmission Provider's OASIS.

iii. List of databases used in TTC assessments:

The Transmission Provider utilizes the NERC and WECC contract path methodology to determine TTC on its transmission system. The determination of the TTC for paths on the Transmission Provider system is segment dependent. However, the tools used to determine TTC are the

same for all segments, i.e., powerflow and stability programs using system modeling data obtained through WECC.

iv. Assumptions used in TTC assessments:

Paths with established transfer capabilities will not be evaluated unless there is a valid reason for doing so, such as a component change or new configuration, which could affect the transfer capability. Should a change in a WECC rated path warrant restudying, the required studies for the path will be performed through the WECC Path Rating Process. Should a change in a non-WECC rated path warrant restudying, the required studies for the path will follow the WECC rated path methodology, but not be brought through the WECC Path Rating Process. However, the study process will be performed through the applicable Regional or SubRegional Planning group.

b. For ETC:

i. Definition of ETC.

Existing Transmission Commitments (ETC): ETC is transmission that is already committed for use.

There are four types of committed uses: 1) native load uses; 2) existing commitments for purchase/exchange/deliveries/sales; 3) existing commitments for transmission service (Pre-Order 888, Post-Order 888, point-to-point and network); and 4) other pending potential uses of transfer capability (non-confirmed Transmission Service Requests). The Transmission Provider determines ETC as the total of all contracts using a contract path methodology.

ii. Explanation of calculation methodology used to determine the transmission capacity to be set aside for native load and non-OATT customers:

The Transmission Service Provider shall determine the impact of firm ETCs based on the following inputs:

- The transmission capability utilized in serving Firm Electric Service, congressionally mandated power deliveries to Transmission Provider's preference customers from the Federally owned generating plants.
- The impact of Firm Network Integration Transmission Service serving Load, to include Load forecast error and losses not otherwise included in TRM.

- The impact of grandfathered firm Transmission Service agreements and bundled contracts for energy and transmission, where executed prior to the effective date of Transmission Provider's Tariff .
- The impact of Firm Point-to-Point Transmission Service.
- The impact of any Ancillary Services not otherwise included in TRM,
- Post-backs of redirected or released Firm services.
- The impact of any other services, contracts, or agreements not specified above using transmission that serves Firm Electric Service or Firm Network Integration Transmission Service.

iii. How Point-to-Point Transmission Service requests are incorporated.

Point-to-point type contracts are modeled using the specified megawatt quantity, Point of Receipt, Point of Delivery, and contract term.

iv. How rollover rights are accounted for:

Western takes into consideration an existing transmission customer's rollover rights when assessing whether to confirm a new request for Long-Term Firm Point-to-Point Transmission Service. Western posts on OASIS potentially available ATC, including capacity associated with the rollover rights, but it does not grant new transmission service until such rollover rights have expired. This approach allows a customer viewing Western's posted ATC to consider all potentially available ATC and submit a request to obtain a queue position, should the existing transmission customer allow its rollover rights to expire. An OASIS assignment reference and queue time will be given to these new requestors. The new requests will be evaluated with the assumption that the existing transmission customer's rollover rights will rollover. If there is insufficient capacity to accommodate the transmission service request, the requests will follow the system impact study procedure outlined in Section 19 of Western's Tariff.

v. Processes for ensuring that non-firm capacity is released properly:

The Transmission Provider calculates and releases the unused firm transmission capacity as non-firm transmission capacity immediately after the deadline for firm schedule submissions to account for firm transmission capacity which has not been scheduled (tagged).

- c. If a Transmission Provider uses an AFC methodology to calculate ATC, it shall:
- (i) explain its definition of AFC;
 - (ii) explain its AFC calculation methodology;
 - (iii) explain its process for converting AFC into ATC for OASIS posting;
 - (iv) list the databases used in its AFC assessments; and
 - (v) explain the assumptions used in its AFC assessments regarding load levels, generation dispatch, and modeling of planned and contingency outages.

The Transmission Provider does not use an AFC methodology to calculate ATC.

- d. For TRM:

- i. Definition of TRM:

Transmission Reliability Margin (TRM): The amount of transmission transfer capability necessary to provide reasonable assurance that the interconnected transmission network will be secure, TRM accounts for the inherent uncertainty in system conditions and the need for operating flexibility to ensure reliable system operation as system conditions change.

- ii. TRM calculation methodology:

The Transmission Provider currently reserves TRM to support the activation of operating reserves internally or via participation in a Reserve Sharing Group, if applicable. The Transmission Provider's obligation to deliver reserves is calculated pursuant to the requirements of the Transmission Provider or its applicable Reserve Sharing Group. In addition, the Transmission Provider may include an additional transmission capacity to account for its network customers load forecast error and at certain paths to account for unscheduled flow.

- iii. Databases used in TRM assessments:

The Transmission Provider uses a value between 0 to 1 for TRM Coefficient to release a portion of the capacity reserved under TRM as non-firm. The Transmission Provider uses its scheduling system, PI, and SCADA, WECC powerflow and stability models, and associated simulation software in its calculation of TRM.

- iv. Conditions under which the Transmission Provider uses TRM:

The Transmission Provider may use TRM for any of the following:

- Transmission necessary for the activation of operating reserves;
- Unplanned transmission outages;

- Simultaneous limitations associated with operating under a nomogram;
- Loading variations due to balancing of generation and load;
- Uncertainty in load distribution and/or load forecast;
- Allowed for unscheduled flow.

e. For CBM:

- i. Identification of the entity who performs the resource adequacy for CBM determination:

The Transmission Provider does not utilize CBM.

- ii. The methodology used to perform the generation reliability assessment:

The Transmission Provider has established CBM of zero on all transmission paths when calculating ATC.

- iii. Explanation of whether the assessment method reflects a specific regional practice:

The Transmission Provider has established CBM of zero on all transmission paths when calculating ATC.

- iv. Assumptions used in this assessment:

The Transmission Provider has established CBM of zero on all transmission paths when calculating ATC.

- v. Basis for the selection of paths on which CBM is set aside:

The Transmission Provider has established CBM of zero on all transmission paths when calculating ATC.

f. Additionally for CBM:

- i. Explain definition of CBM:

The transmission Provider has established CBM of zero on all transmission paths when calculating ATC.

ii. List of databases used in CBM calculations:

The Transmission Provider does not use any databases in its CBM calculation,

iii. Demonstration that there is no double-counting of outages when performing CBM, TTC and TRM calculations:

Since the Transmission Provider has established CBM as zero on all transmission paths, the Transmission Provider can't double count for outages.

g. Procedures for allowing use of CBM during emergencies (with explanation of what constitutes an emergency, entities that are permitted to use CBM during emergencies and procedure which is followed by the Transmission Provider's merchant function and other load-serving entities when they need to access CBM:

At this time, the Transmission Provider's Network Customers have not requested CBM set aside, therefore the Transmission Provider does not have CBM set aside.

Part II - Upper Great Plains Region

Western's Upper Great Plains Region (UGPR) joined the Southwest Power Pool, Inc. (SPP) as a transmission owner and transferred functional control of all of its eligible transmission facilities to SPP on October 1, 2015. Transmission service over those UGPR transmission facilities is available solely under the SPP Open Access Transmission Tariff (SPP Tariff). SPP is the Transmission Provider for UGPR's transmission facilities under the SPP Tariff and utilizes SPP's ATC calculation methodology.