

## Available Transfer Capability Methodology

### **Introduction and Background:**

ISO is the regional transmission organization (RTO) for the New England Control Area. The New England Control Area includes the transmission system located in the states of Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, and Vermont. The New England Control Area is comprised of PTF, non-PTF, OTF, MTF, and is interconnected to three neighboring Balancing Authority Areas (“BAA”) with various interface types.

As part of its RTO responsibilities, the ISO is registered with the North American Electric Reliability Corporation (“NERC”) as several functional model entities that have responsibilities related to the calculation of ATC as defined in the following NERC Standards: MOD-001 – Available Transmission System Capability (“MOD-001”), MOD-004 – Capacity Benefit Margin (“MOD-004”), and MOD-008 – Transmission Reliability Margin Calculation Methodology (“MOD-008”). The extent of those responsibilities is based on various Commission approved transmission operating agreements and the provisions of the ISO New England Operating Documents.

Pursuant to CFR § 37.6(b)<sup>1</sup> of the FERC Regulations Transmission Provider’s are obligated to calculate and post TTC and ATC for each Posted Path.

Posted Path is defined as any control area to control area interconnection; any path for which service is denied, curtailed or interrupted for more than 24 hours in the past 12 months; and any path for which a customer requests to have ATC or TTC posted. For this last category, the posting must continue for 180 days and thereafter until 180 days have elapsed from the most recent request for service over the requested path. For purposes of this definition, an hour includes any part of any hour during which service was denied, curtailed or interrupted.

VTransco does not currently have a Posted Paths based on the above definition. However to extent that VTransco does in the future have a Posted Path VTransco will calculate TTC using NERC Standard MOD-029-1 Rated System Path Methodology as outlined below.

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<sup>1</sup> §37.6(b) Posting transfer capability. The available transfer capability on the Transmission Provider’s system (ATC) and the total transfer capability (TTC) of that system shall be calculated and posted for each Posted Path as set out in this section.

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Basic information on ATC and TTC may be found on VT Transco's website at:

[www.vermonttransco.com](http://www.vermonttransco.com).

**Capacity Benefit Margin (CBM):**

CBM is defined as the amount of firm transmission transfer capability set aside by a TSP for use by the Load Serving Entities. The ISO does not set aside any CBM for use by the Load Serving Entities, because of the New England approach to capacity planning requirements in the ISO New England Operating Documents. Load Serving Entities operating within the New England Control Area are required to arrange for their Capacity Requirements prior to the beginning of any given month in accordance with ISO Tariff, Section III.13.7.3.1 (Calculation of Capacity Requirement and Capacity Load Obligation). Load Serving Entities do not utilize CBM to ensure that their capacity needs are met; therefore, CBM is not applicable within the New England market design. Accordingly, for purposes of ATC calculation, As long as this market design is in place in New England, the CBM is set to zero (0). VTransco provides local transmission service over its non-PTF facilities that are connected to ISO-NE and the Vermont distribution utilities. VTransco does not reserve CBM for these paths, and the CBM is presently set to zero.

**Existing Transmission Commitments, Firm (ETC<sub>F</sub>):**

The ETC<sub>F</sub> are those confirmed Firm transmission reservation (PTP<sub>F</sub>) plus any rollover rights for Firm transmission reservations (ROR<sub>F</sub>) that have been exercised. There are no allowances necessary for Native Load forecast commitments (NL<sub>F</sub>), Network Integration Transmission Service (NITS<sub>F</sub>), grandfathered Transmission Service (GF<sub>F</sub>) and other service(s), contract(s) or agreement(s) (OS<sub>F</sub>) to be considered in the ETC<sub>F</sub> calculation.

**Existing Transmission Commitments, Non-Firm(ETC<sub>NF</sub>):**

The (ETC<sub>NF</sub>) are those confirmed Non-Firm transmission reservations (PTP<sub>NF</sub>) There are no allowances necessary for Non-Firm Network Integration Transmission Service (NITS<sub>NF</sub>), Non-Firm grandfathered Transmission Service (GF<sub>NF</sub>) or other service(s), contract(s) or agreement(s) (OS<sub>NF</sub>).

**Transmission Reliability Margin (TRM):**

The Transmission Reliability Margin (TRM) is the portion of the TTC that cannot be used for the reservation of firm transmission service because of uncertainties in system operation conditions and the need for operating flexibility to ensure reliable system operation as system conditions change. It is used only for external interfaces under the New England market design. Since VTRANSOCO provides

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transmission service over its non-PTF facilities that are connected only to the internal New England system, VTRANSCO does not reserve TRM for these paths, and the TRM is presently set to zero.

**Calculation of ATC for VTransco's Local Facilities – General Description:**

NERC Standards MOD-001-1 – Available Transmission System Capability and MOD-029-1 – Rated System Path Methodology defines the required items to be identified when describing a transmission provider's ATC methodology.

As a practical matter, the ratings of the radial transmission paths are always higher than the transmission requirements of the Transmission Customers connected to that path. As such, transmission services over these posted paths are considered to be always available.

Common practice is not to calculate or post firm and non-firm ATC values for the non-PTF assets described above, as ATC is positive and listed as 9999. Transmission customers are not restricted from reserving firm or non-firm transmission service on non-PTF facilities.

As Real-Time approaches, the ISO utilizes the Real-Time energy market rules to determine which of the submitted energy transactions will be scheduled in the coming hour. Basically, the ATC of the non-PTF assets in the New England market is almost always positive. The ATC is equal to the amount of net energy transactions that the ISO will schedule on an interface for the designated hour. With this simplified version of ATC, there is no detailed algorithm to be described or posted other than: ATC equals TTC. Thus, for those non-PTF facilities that serve as a path for the VTransco Schedule 21-Vermont Transco Point-to-Point Transmission Customers, VTransco has posted the ATC as 9999, consistent with industry practice. ATC on these paths varies depending on the time of day. However, it is posted with an ATC of "9999" to reflect the fact that there are no restrictions on these paths for commercial transactions.

**Calculation of  $ATC_F$  in the Planning Horizon (PH):**

For purposes of this Attachment A PH is any period before the Operating Horizon. Consistent with the NERC definition,  $ATC_F$  is the capability for Firm transmission reservations that remain after allowing for TRM, CBM,  $ETC_F$ ,  $Postbacks_F$  and  $counterflows_F$ .

As discussed above, TRM and CBM are zero. Firm Transmission Service over Schedule 21-Vermont Transco that is available in the Planning Horizon (PH) includes: Yearly, Monthly, Weekly, and Daily.

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Postbacks<sub>F</sub> and counterflows<sub>F</sub> of Schedule 21-Vermont Transco transmission reservations are not considered in the ATC calculation. Therefore, ATC<sub>F</sub> in the PH is equal to the TTC minus ETC<sub>F</sub>

**Calculation of ATC<sub>F</sub> in the Schedule 21-Vermont Transco Operating Horizon (OH):**

For purposes of this Attachment A OH is noon eastern prevailing time each day. At that time, the OH spans from noon through midnight of the next day for a total of 36 hours. At that time progresses the total hours remaining in the OH decreases until noon the following day when the OH is once again reset to 36 hours.

Consistent with the NERC definition, ATC<sub>F</sub> is the capability for Firm transmission reservations that remain after allowing for ETC<sub>F</sub>, CBM, TRM, Postbacks<sub>F</sub> and counterflows<sub>F</sub>.

As discussed above, TRM and CBM is zero. Daily Firm Transmission Service over Schedule 21-Vermont Transco is the only firm service offered in the Operating Horizon (OH). Postbacks<sub>F</sub> and counterflows<sub>F</sub> of Schedule 21-Vermont Transco transmission reservations are not considered in the ATC<sub>F</sub> calculation. Therefore, ATC<sub>F</sub> in the OH is equal to the TTC minus ETC<sub>F</sub>.

Because Firm Schedule 21-Vermont Transco transmission service is not offered in the Scheduling Horizon (SH): ATC<sub>F</sub> in the SH is zero.

**Calculation of ATC<sub>NF</sub> in the PH:**

ATC<sub>NF</sub> is the capability for Non-Firm transmission reservations that remain after allowing for ETC<sub>F</sub>, ETC<sub>NF</sub>, scheduled CBM (CBM<sub>S</sub>), unreleased TRM (TRM<sub>U</sub>), Non-Firm Postbacks (Postbacks<sub>NF</sub>) and Non-Firm counterflows (counterflows<sub>NF</sub>).

As discussed above, the TRM and CBM for Schedule 21-Vermont Transco are zero. Non-Firm ATC available in the PH includes: Monthly, Weekly, Daily and Hourly. TRM<sub>U</sub>, Postbacks<sub>NF</sub> and counterflows<sub>NF</sub> of Schedule 21-Vermont Transco transmission reservations are not considered in this calculation. Therefore, ATC<sub>NF</sub> in the PH is equal to the TTC minus ETC<sub>F</sub> and ETC<sub>NF</sub>.

**Calculation of ATC<sub>NF</sub> in the OH:**

ATC<sub>NF</sub> available in the OH includes: Daily and Hourly.

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As discussed above TRM and CBM for Schedule 21-Vermont Transco are zero.  $TRM_U$ , counterflows and  $ETC_{NF}$  are not considered in this calculation. Therefore,  $ATC_{NF}$  in the OH is equal to the TTC minus  $ETC_F$ , plus postbacks of  $PTP_F$  in OH as  $PTP_{NF}$  (Postbacks<sub>NF</sub>)

### **Negative ATC:**

As stated above, the ratings of the radial transmission paths are always higher than the transmission requirements of the Transmission Customers connected to that path. As such, transmission services over these posted paths are considered to be always available.

For those non-PTF Vermont Transco facilities that are primarily radial paths that provide transmission service to directly interconnected generators it is possible, in the future, that a particular radial path may interconnect more nameplate capacity generation than the path's TTC. However, due to the ISO's security constrained dispatch methodology, the ISO will only dispatch an amount of generation interconnected to such path so as not to incur a reliability or stability violation on the subject path. Therefore, ATC in the PH, OH and SH may become zero, but will not become negative.

### **Posting of ATC Related Information - ATC Values:**

As described above, the ATC values for VTransco's non-PTF utilized for internal Point-to-Point transmission service are always positive, and are thus set at 9999. The ATC values for these internal posted paths are posted in accordance with NAESB standards on VTransco's provider page of the ISO-NE OASIS website. Common practice is not to calculate or post firm and non-firm ATC values for the non-PTF assets described above, as ATC is positive and listed as 9999. Transmission customers are not restricted from reserving firm or non-firm transmission service on non-PTF facilities.

### **Updates To ATC:**

When any of the variables in the ATC equations change, the ATC values are recalculated and immediately posted.

### **Coordination of ATC Calculations:**

Schedule 21-Vermont Transco non-PTF has no external interfaces. Therefore it is not necessary to coordinate the values.

### **Mathematical Algorithms:**

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A link to the actual mathematical algorithm for the calculation of ATC for VTransco's non-PTF internal interfaces is located on VTransco's website at

<http://www.VermontTransco.com>

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