

## Schedule 20A Available Transfer Capability Implementation Document (ATCID)

### Records of Revision

Version	Date	Reason
1.0	April 1, 2011	Original
1.1	September 23, 2011	Formatting Error Section 2.5 and Other Miscellaneous Ministerial Modifications
1.2	August 27, 2012	Formatting Error Section 2.5 and Other Miscellaneous Ministerial Modifications

#### 1. Introduction

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, but does not include the transmission system in northern Maine (i.e., Aroostook and parts of Penobscot and Washington Counties) that is radially connected to New Brunswick and administered by the Northern Maine Independent System Administrator. The New England Control Area is comprised of PTF, non-PTF, OTF and MTF, and is also interconnected to three neighboring Balancing Authority Areas (BAA) with various interface types including the Phase I/II HVDC-TF.

The Phase I/II HVDC-TF is a 2,000 MW HVDC tie line (OTF) in New England that interconnects the New England Control Area with the Hydro-Québec Control Area in the Province of Québec, Canada. This HVDC line has one termination point in New England (with paired operation with complementary facilities in Québec). The specific facilities in New England are the Sandy Pond HVDC Terminal, which interconnects Central Massachusetts and the Nicolet and/or Radisson HVDC terminals of Hydro-Québec. Additional information on the Phase I/II HVDC-TF can be found at ISO New England OASIS web site under the “IRH”.

#### 1.1 Schedule 20A Service Provider (SSP) Responsibilities

The SSPs are responsible for calculating the ATC as defined in NERC MOD-001 – Available Transmission System Capability (MOD-001) which dictates how the ISO-calculated TRM, as defined in NERC MOD-008 – Transmission Reliability Margin (MOD-008), is applied in the ATC calculation.

## 1.2 Applicability of this ATCID

This ATCID describes the ATC methodology for which the SSPs, as the Transmission Service Providers, calculate ATC. The SSPs apply NERC MOD-029 – Rated System Path Methodology (“MOD-029”) since that is the standard used by ISO, the Transmission Operator to calculate the TTC for Phase I/II HVDC-TF.

## 2. Calculation of Available Transfer Capability (ATC) by the SSPs

Each SSP, based on its Planning and Operating Horizon timing guidelines, calculates and posts a Firm and Non-Firm Phase I/II HVDC-TF ATC separately using the NERC Standard MOD-029-1 Rated System Path Methodology.

The input to each of these components is defined in the subsequent sections:

$$ATC_F = TTC - ETC_F - CBM - TRM + Postbacks_F + Counterflow_F$$

$$ATC_{NF} = TTC - ETC_F - ETC_{NF} - CBM_S - TRM_U + Postbacks_{NF} + Counterflow_{NF}$$

### 2.1 Total Transfer Capability (TTC)

As Transmission Operator, ISO New England is responsible for determining the TTC for the Phase I/II HVDC-TF. To calculate TTC, ISO uses the NERC Standard MOD-029-1 Rated System Path Methodology. TTC is further described in the ISO ATCID posted on the ISO’s OASIS site.

### 2.2 Coordinating TTCs

The Phase I/II HVDC-TF is a controllable DC inter-Control Area tie line. Therefore it is not necessary to coordinate the Phase I/II HVDC-TF ATC values with the Hydro-Québec Control Area.

### 2.3 ETC

The purpose of the ETC component of the ATC equation is for the TSP to define all elements that reduce the amount of ATC available to the market participant.

### **Existing Transmission Commitments, Firm ( $ETC_F$ )**

The  $ETC_F$  are those Phase I/II HVDC-TF confirmed Firm transmission reservations ( $PTP_F$ ) plus any rollover rights for Firm transmission reservations ( $ROR_F$ ) that have been exercised. There are no allowances necessary for Native Load forecast commitments ( $NL_F$ ), Network Integration Transmission Service ( $NITS_F$ ), grandfathered Transmission Service ( $GF_F$ ) and other service(s), contract(s) or agreement(s) ( $OS_F$ ) to be considered in the  $ETC_F$  calculation.

#### **Existing Transmission Commitments, Non-Firm ( $ETC_{NF}$ )**

The  $ETC_{NF}$  are those Phase I/II HVDC-TF confirmed Non-Firm transmission reservations ( $PTP_{NF}$ ). There are no allowances necessary for Non-Firm Network Integration Transmission Service ( $NITS_{NF}$ ), Non-Firm grandfathered Transmission Service ( $GF_{NF}$ ) or other service(s), contract(s) or agreement(s) ( $OS_{NF}$ ).

#### 2.4 CBM

As defined in the ISO's CBMID, CBM is zero.

#### 2.5 TRM

As defined in the ISO's TRMID, the ISO, as Transmission Operator, is responsible for calculating the TRM on the Phase I/II HVDC-TF interface. The Phase I/II HVDC-TF interface poses one of the largest contingency risks in the NYISO, PJM and New England Control Areas. As such, the Import TRM on the Phase I/II HVDC-TF is directly related to these operational limits which can be enforced at any time and the Import TRM is calculated as TTC minus the largest single source contingency. Therefore the SSPs set the Import TRM at  $TTC - 1200MW$  such that Firm transmission service is not sold above this operational limit.

Export TRM is established based on the methodology to account for operational uncertainties on the Hydro-Quebec TransEnergie transmission system. Therefore, the Export TRM is calculated as TTC minus these operational uncertainties.

#### 2.6 Postbacks

$Postbacks_{NF}$  is considered in the Operating Horizon and Scheduling Horizon for  $ATC_{NF}$ . Postbacks are not considered in the calculation of  $ATC_F$ .

#### 2.7 Counterflows

Counterflows are not considered in the  $ATC_F$  and  $ATC_{NF}$  calculations.

## 2.8 Resulting ATC

Operating Horizon (OH): For the purposes of this document:

- CVPS resets the OH at 16:00 eastern prevailing time each day. At that time, the OH spans from 16:00 through midnight two days out for a total of 56 hours. As time progresses the total hours remaining in the OH decreases until 16:00 the following day when the OH is once again reset to 56 hours.
- All other SSPs reset their OHs at 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. As 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.

Planning Horizon (PH): For the purpose of this document PH for any SSP is any period before the OH.

Scheduling Horizon (SH): For the purpose of this document SH for any SSP is Real-Time and the hour before and utilizes Firm and Non-Firm Phase I/II HVDC-TF Service pursuant to ISO New England Operating Documents.

## 3. Exchange of ATC Related Information

The ISO exchanges outage information for the elements identified on the NPCC Critical Facilities List with their neighboring BAAs who are also registered with NERC as TSPs and TOPs for their respective areas. This outage information is the only information exchanged with these entities for use in calculating transfer capability.

The ISO provides the TTC calculated on the Phase I/II HVDC-TF external interface to the SSPs. These values are posted to OASIS for use by the SSPs. No information is received from the SSPs for use by ISO in calculating the TTC on the Phase I/II HVDC-TF.

## 4. Generation and Transmission Outages

The Phase I/II HVDC-TF is a controllable DC inter-Control Area tie line. Therefore, generation or transmission outages have no impact on the Phase I/II HVDC-TF ATC.