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To: NEPOOL Markets Committee

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Subject: Treatment of External Interfaces with Respect to Congestion and FTRs

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On September 20, 2002 the Federal Energy Regulatory Commission (the "Commission") issued its order on a joint filing made by the New England Power Pool ("NEPOOL") Participants Committee and ISO New England Inc. (the "ISO") proposing a standard market design ("SMD") for New England.¹ In this order the Commission suggested that ISO and NEPOOL work with interested parties to resolve issues concerning the development of FTRs and ARRs as they arise and that the ISO provide a useful level of disclosure in its manuals on these issues. In addition, Participants have raised specific questions regarding how the external ties, particularly the non-PTF ties, will be treated with respect to congestion and FTRs.

This paper discusses how congestion and FTRs over external interfaces controlled by facilities with tariffs other than the NEPOOL tariff (non-PTF tie facilities) will be treated under SMD. This approach has been designed to enable those holding reservations over the non-PTF ties to have energy flow over those ties without paying congestion over those facilities. In brief, because flows over those facilities in Real-Time will be limited to those with reservations, consistent with the physical limits of those facilities, there will be no congestion over those facilities in Real-Time. Since there is no congestion in Real-Time over these non-PTF tie facilities, there will be no congestion in the Day-Ahead market. If there is no congestion in the Day-Ahead market, there is no need for FTRs over the facilities. Consequently, these facilities will not be included in the FTR Auction. This approach and its rationale are described further below.

¹ *New England Power Pool and ISO New England, Inc., et al.*, 100 FERC ¶61,287 (2002) (the "New England SMD Order").

Congestion Over External Interfaces

Since reliability concerns require the system to be operated within its physical limitations, flows in the Real-Time Market (RTM) will never be scheduled to exceed the external interface limits. Consequently, an external interface constraint will never become binding, and there will never be congestion across that external interface in the RTM. This means that the price at all external nodes that will be the same (except for losses) as the corresponding internal node on the NEPOOL system. This is a simplified description since the "next inward" NEPOOL node may consist of more than one NEPOOL node.

External interface limits must also be honored in the clearing of the Day-Ahead Market (DAM). In other words, the DAM will not clear more MWs at an External Node than can physically flow across the interface. Not honoring external interface limits ~~Doing so~~ could result in an inappropriate dispatch of NEPOOL resources and a financial commitment of transactions in the DAM that cannot be delivered in the RTM.

While the external interface limits will be enforced in the DAM, a constraint on an external interface caused by more external transactions being committed than can flow, will not result in congestion across the interface. As a result, the only difference in price between the External Node and the "next inward" NEPOOL node in the DAM will be due to losses. This is a simplified description since the "next inward" NEPOOL node may consist of more than one NEPOOL node.

This approach is applied in the DAM for the following reasons:

1. The non-PTF tie facilities can only be used by those holding reservations over those facilities. The reservation holders have paid to use those facilities. Limiting the facilities use to those with reservations assures that there will be no congestion over the facilities in Real-Time. Since Day-Ahead market treatment should be consistent with Real-Time market treatment, there should not be any congestion in the Day-Ahead market.
2. By preventing congestion across the external interfaces, inappropriate gaming strategies, as described below cannot be used:
 - Day-Ahead market bidding
 - When congestion is allowed across an external interface, a Participant can knowingly force a \$0 price (for imports) or \$1000 price (for exports) at the External Node by submitting fixed transactions in excess of the external interface limit.
 - If the above was to occur, those Participants who do not want \$0 prices (for imports) or \$1000 prices (for exports) would be precluded from unencumbered participation in the market, as illustrated by the following:
 - a. If they submit fixed transactions they risk either not getting paid for importing energy (because the price has been artificially manipulated to be \$0/MWh) or paying too much for exporting energy (because the price has been artificially manipulated to be \$1000/MWh).
 - b. If they submit price-sensitive transactions, those transactions will not clear due to the excess of fixed transactions that were used to manipulate the nodal price.

- Disallowing congestion removes the incentive for gaming FTRs at the External Node related to FTRs
- The ability to predict/cause extreme prices the External Node could be used in conjunction with an FTR to game in the DAM and/or FTR auction to create congestion revenue. By eliminating congestion across the external interface, the external Nodal DAM LMPs cannot be manipulated using fixed transactions.

LMPs at the External Nodes

The DAM and RTM LMP at the External Nodes will be calculated in the same manner as all other nodes in NEPOOL, based on the next economic MW to serve the load at that location. However, since the external interface constraint will never become binding (i.e., the external interface’s transfer limit will not be exceeded), that next economic MW will be the same as that for the "next inward" NEPOOL node(s). Therefore, the energy and congestion component of the LMP at the External Node will always be the same as the "next inward" NEPOOL node. The only difference in price between the External Node and the "next inward" NEPOOL node will be due to losses. This is a simplified description since the "next inward" NEPOOL node may consist of more than one NEPOOL node. The details associated with the different external interfaces and the handling of losses on these external interfaces can be found in separate ISO White Papers.

FTRs and Non-PTF Tie Facilities

FTRs will not be offered over any non-PTF tie facilities (MEPCO, Highgate, Phase I/Phase II, Cross Sound Cable).

As described above, congestion will not occur between any External Node and the “next inward” node on the NEPOOL system (including any non-PTF tie facilities) in the DAM or RTM. Since there will be no congestion over the non-PTF tie facilities, there is no need for Participants to purchase FTRs over these facilities to hedge congestion costs in the DAM.

However, the External Nodes are currently used when bidding for FTRs between the neighboring control area and some point within (or through) NEPOOL. Auctioning FTRs in this manner has raised questions regarding allocation of any associated Auction revenues. These concerns will be eliminated by disallowing bids to and from the External Nodes associated with Keswick, Highgate, Phase I/Phase II and the Cross Sound Cable. Instead, proxies for FTR bidding at NEPOOL nodes will be provided. These bidding locations are being evaluated; a preliminary list is shown in the table below. Manual 6 will be updated to clarify this treatment of non-PTF tie facilities in the FTR implementation.

External Interface	External Node for D-aM and R-tM	Proxies for FTR Auction (PRELIMINARY)
NB	Keswick 345	Orrington 115, Maxcys 115 and Maine Yankee 345
Highgate	HQHighgate 120	Georgia Tap 115
Phase I/II	HQ_P1_P2 345	Comerford 230 or Sandy Pond 345
CSC	Shoreham 138	Halvarrison 345
NY-AC	Roseton 345	Roseton 345

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As seen in the above table:

- The External Nodes in the DAM and RTM are unaffected by the proxies used in the FTR auction.
- The External Node for the NY-AC external interface is unaffected since all ties associated with the interface are PTF