

Survey of Inter-market Commercial Operating Reserve Trade in North America

MPWG49 Presentation, May 16, 2008



Purpose of Presentation

Present results of survey of current state of inter-market commercial operating reserve trade in North America.

Scope of the Survey

North American Electricity Markets: to identify the nature of commercial inter-market OR trade, if it exists.

North American Energy Regulatory Bodies: to identify the barriers to Commercial inter-market Operating Reserve Trade, if they exist.

Mode of Survey:

- Personal Correspondence with Jurisdictions and Regulatory Bodies.
- Review of existing literature, i.e. manuals, websites, various documents, etc.

The presentation is structured in the following sequence:

- 1) The findings from the Regulatory Bodies.
- 2) The findings from the Jurisdictions.
- 3) A summary of key observations.
- 4) An outline of future steps.

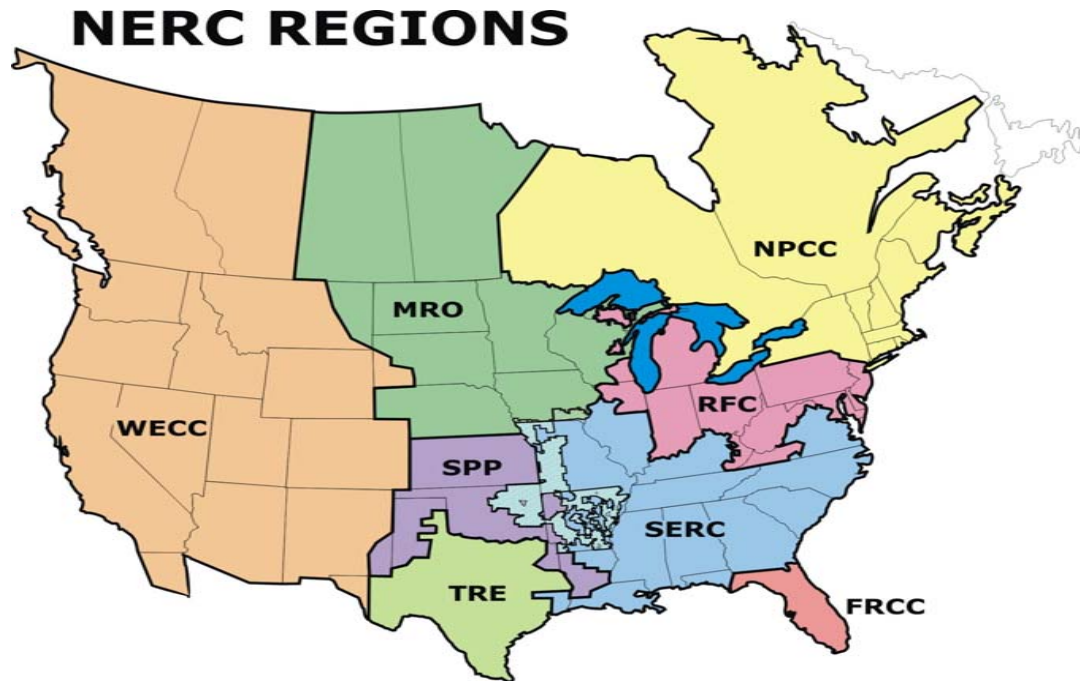
FERC does not impose any restrictions per se on operating reserve trade.

- On June 2007, FERC Issued an Advanced Notice of Proposed Rule (ANOPR) Making. In it FERC encourages inter-market co-ordination and decreasing seams issues across jurisdictions. There is no provision in it that may be a barrier to commercial operating reserve trade
- The subsequent NOPR is to be issued shortly.

NERC's reliability standards BAL-002 provides the requirements for maintaining contingency reserves sufficient to respond to disturbances.

With respect to the question about the commercial trade of operating reserves,

- NERC does not develop standards that prejudice one market or regulatory structure over another.
- **NERC does not concern itself with how the reserves are obtained, just that they are available to meet the standard requirements.**



NPCC sets reliability criteria specifically applicable to the northeast region based on the NERC performance standards.

NPCC sets the criteria and Mechanism of *Shared Activation* of Inter-Area Reserve, but there is no reference of Commercial Inter-Area Operating Reserve trade in NPCC documents.

An Area (when capitalized) refers to one of the following: New England, New York, Ontario, Quebec or the Maritimes (New Brunswick, Nova Scotia and Prince Edward Island)

No restrictions on Operating Reserve trade is identified.

CAISO, AESO falls under WECC.

Under WECC, The Non-spinning Reserve obligations can be met by **interruptible exports.**

Section 15 of IESO's license issued by the OEB states, "The IMO shall use all reasonable efforts consistent with the purposes of the *Electricity Act*, including by seeking to make appropriate Amendments to the Market Rules related to transmission service and connection and access to the IMO-controlled grid, to ensure that Ontario generators have access to customers in interconnected jurisdictions equivalent to the access afforded to generators in those other jurisdictions."

- This section encourages IESO's current initiative to investigate commercial inter-market operating reserve trade.

There is no other regulatory issue that might have a bearing on OR Trade, as far as OEB is concerned.

The *National Energy Board Act* (NEB Act) provides for, among other things, the regulation of electricity exports and international power lines. US Department of Energy has more or less analogous responsibilities.

The NEB does not have any regulatory restriction on exporters who wish to trade "capacity" in any form including operating trade reserve.

- NEB's firm export permits include both a capacity (MW) limit and an energy limit (MW.h).

- Manitoba Hydro and Hydro Quebec have the exclusive authority over electricity matters in Manitoba and Quebec respectively.
- Currently no operating reserve trade with Manitoba.
- Ontario imported 30 Minute Operating Reserve from Quebec Interface in the past.

The study could not identify any Quebec and Manitoba barriers to OR export from Ontario to Quebec or Manitoba.

Currently,

- No co-optimization of energy and ancillary services.
- AESO is undergoing major redesign in the OR Market to enhance the efficiency of the OR market.

No evidence of commercial importing and exporting of operating reserve.

The CAISO does allow for inter-control area exchange of Operating Reserves, which is a WECC characteristic and is long standing.

CAISO literature uses 'export' and 'import' when describing sharing, but it is rather a different concept related to 'resource adequacy', which is a program to ensure local area and system reliability.

No evidence of commercial importing and exporting of operating reserve.

- ERCOT itself is a self-contained grid and only does small imports and exports of energy with neighboring grids through DC ties.
- ERCOT is the sole provider of system-wide Replacement Reserve Service.

**There is no evidence/provision for OR
Trade.**

Procurement and Pricing Process

- The forward reserve market of the ISO-NE includes a Forward Reserve Auction, held twice per year, when offers are submitted on a portfolio basis and must specify the Reserve Zone the offer is applicable to.
- Only Market Participants may submit Forward Reserve Auction Offers.

There is no evidence that ISO-NE currently allows exporting and importing of OR.

ISO-NE has Provision for Export-Import

External Resources will be permitted to participate in the Forward Reserve Market when the respective Control Areas implement the technology and processes necessary to support recognition of Operating Reserve from External Resources.

The NYISO selects Operating Reserve Suppliers that are *properly located* electrically so that

- all locational Operating Reserves requirements are satisfied, and
- transmission constraints resulting from either the commitment or dispatch of Generators do not limit the NYISO's ability to deliver Energy to Loads in the case of a Contingency.
- Section 6.2.3 of the Ancillary Services Manual specifies this by stating, "All Suppliers of Operating Reserve **must** be located within the NYCA and **must** be under NYISO Operational Control."

The NYISO does not allow commercial inter-market export/import of OR.

A change to these requirements would require

- 1) Review and approval by the NYISO Committees
- 2) Modifications to the NYISO tariffs.

At present:

The MISO is not responsible for providing ancillary services. Rather, local management and procurement of reserves occur by the 24 Balancing Authorities.

In Near Future:

MISO's new Ancillary Services market is scheduled for Spring of 2008, when it will transfer and consolidate Balancing Authority responsibility allowing for the centralized management of ancillary services.

Operating Reserve Trades could occur only to the extent it is allowed via the Midwest Contingency Reserve Sharing Group (CRSG) agreement.

- CRSG is made of Midwest ISO members and non-members.
- OR import from MISO to Ontario are actually from one of the Balancing Authorities.
- **No apparent commercial inter-market OR trade exists.**
- **In the future, there may be opportunities for OR Trade with MISO.**

- Currently PJM only has a synchronized reserve market.
- Moving Closer to Defining a Non-Synchronized Reserve Market.

There is no evidence of Commercial Operating Reserve Trade.

Key features of IESO's OR market is described in the MPWG 48 Meeting.

- Joint Optimization of energy and operating reserve.
- No Day Ahead Market or Nodal Pricing.
- Current Market Rules allow Import of Operating Reserve, but not export
- Import of 30 minute Operating Reserve has occurred from Quebec and Balancing Authority within MISO.

This survey did not identify any existing evidence of commercial inter-market operating reserve trade in any jurisdiction in North America, *other than* IESO, which currently only allows commercial Operating Reserve import.

- OR Trade does not apply to some ISOs, For example:
 - ERCOT (a self contained Grid),
 - MISO (Still to develop an OR Market),
 - PJM (has no synchronized OR Market).
- NYISO does not allow commercial OR trade as it is not possible under their current market rules.
- ISO-NE identified software limitation as a barrier to OR trade. It has provision to consider importing OR when the software tool supports it.

- The survey did identify potential opportunities for OR trade in future with other jurisdictions.
 - with MISO when it opens OR market.
 - with NYISO if it makes rule changes.
 - with Quebec and Manitoba.
- The survey identified no existing regulatory barriers in doing commercial inter-jurisdictional operating reserve trade.

- Solicit MPWG Feedback on analysis and findings in writing by 30 May, 08:
iesomarketpricingworkinggroup@ieso.ca
- A general analysis of efficiency gains of trade, expected to present in the June MPWG meeting.
- Draft Recommendation.

THANK YOU.