



**Appendix A: Mapping of External Transactions to Transmission Reservations**

The business practices described in this Appendix establish conventions for matching requested energy profiles with transmission service reservations from Transmission Owners within the New England Control Area.

More specifically, this Appendix provides step-by-step examples to illustrate the mapping of Real-Time Energy Market transactions to the advance transmission reservations. The mapping is based on the order in which the transactions are submitted and the order in which the transmission reservations are listed by the submitter in the external transaction submittal software. In the examples, all reservation numbers refer to confirmed OASIS reservations specified in an external transaction submittal over a single control area interface by the entity identified as the transmission customer in the OASIS posting of the reservation. All quantities are in whole megawatts (MWs).

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**Multiple transactions, single reservation**

A single reservation is mapped to multiple transactions based on the order in which the transactions are received and validated.

**Example 1.** Company A submits transactions #1, #2, #3 and #4, with the indicated energy profiles and reservation information. Transaction #1 is submitted first, then transaction #2, then transaction #3, then transaction #4.

**Reservation #11111, is for Daily Firm Service, beginning at 00:00 on 05/01/2002, ending at 00:00 on 05/02/2002, 150 MWs in all hours.**

**Step One.** Company A submits transaction #1, self-schedule of 100 MW, HE 08 through 23, 05/01/2002, reservation #11111.

Use of reservation #111111 for transaction #1				
	Original Reservation Capacity	Reservation Capacity Available for New Transaction	Reservation Capacity Mapped to Transaction #1	Reservation Capacity Available After Transaction #1 Validated
HE 01 – 07	150	150		150
HE 08 – 23	150	150	100	50
HE 24	150	150		150

**Step Two.** Company A next submits transaction #2 to be scheduled against the same reservation, #11111.

Transaction #2, dispatchable of 50 MW, HE 1-24, 05/01/2002, reservation #11111.

Use of reservation #111111 for transaction #2				
	Original Reservation Capacity	Reservation Capacity Available After Transaction #1 Validated	Reservation Capacity Mapped to Transaction #2	Reservation Capacity Available After Transaction #2 is Validated
HE 01 – 07	150	150	50	100
HE 08 – 23	150	50	50	0
HE 24	150	150	50	100

**The transaction is mapped to the reservation regardless of transaction price.** If transaction #2 had been a self-schedule of 50 MWs, the mapping would still be as shown above.

**Example 1 continued.****Step Three. Company A next submits transaction #3 to be scheduled against the same reservation.**

Transaction #3, self-schedule of 50 MW, HE 1-24, 05/01/2002, reservation #11111.

Use of reservation #111111 for transaction #3				
	Original Reservation Capacity	Reservation Capacity Available After Transaction #2	Reservation Capacity Mapped to Transaction #3	Reservation Capacity Available for the Next Valid Transaction
HE 01 – 07	150	100	50	100
HE 08 – 23	150	0	50 INSUFFICIENT	0
HE 24	150	100	50	100

Transaction #3 would be considered an invalid or pending transaction so it is not mapped until the transmission customer provides additional transmission reservation numbers as an indication of having reserved sufficient transmission capacity or changes the self-schedule to match the available reserved transmission capacity.

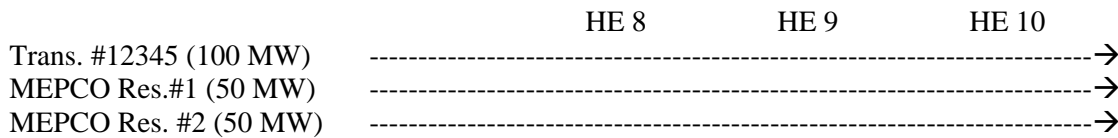
**Step Four. Company A next submits transaction #4 without making changes to transaction #3. (Transaction #3 remains invalid or pending.)**

Transaction #4, self-schedule of 100 MW, HE 1-7 and HE 24, 05/01/2002.

Use of reservation #111111 for transaction #4				
	Original Reservation Capacity	Reservation Capacity Available After Last Valid Transaction (#2)	Reservation capacity Mapped to transaction #4	Reservation Capacity Available After Transaction #4 Validated
HE 01 – 07	150	100	100	0
HE 08 – 23	150	0	0	0
HE 24	150	100	100	0

**“Vertical stacking.” Single transaction, multiple reservations.** “Vertical stacking” defined: In a given hour, the transaction is mapped to more than one reservation from a single transmission Owner. The transaction is mapped to the reservations based on the order in which the reservations are specified in the external transaction submittal software. The transmission priority assigned to the transaction will be based on the lowest of the mapped transmission reservation priorities.

**Example 2.** An example of vertical stacking would be a single transaction with more than one MEPCO reservation specified to import energy from New Brunswick in a given hour. Company A submits transaction #12345 for 100 MW for hours ending 8 through 10 to be scheduled against Reservations #1 and #2, each of which is for 50 MW for hours ending 8 through 10. Both reservations are from the MEPCO transmission Owner for the non-PTF interface between New England and New Brunswick.



<b>Table A.1. Vertical Stacking Combinations</b>				
<b>In the initial implementation of the Standard Market Design, vertical stacking is allowed for transmission reservations on the non-PTF paths.</b>				
Vertical Stacking: Multiple reservations for a single transaction in any single hour on a single external interface.				
	<b>New York-New England Interface (PTF)</b>		<b>All Other External Interfaces (Highgate, Phase I/II, New Brunswick, Cross Sound Cable) (Non-PTF)</b>	
<b>Reservation Combinations:</b>	<b>IMPORT</b>	<b>EXPORT</b>	<b>IMPORT</b>	<b>EXPORT</b>
1 Reservation from NRTG	No Reservation required	No Reservation required	Not Applicable	Not Applicable
1 Reservation from Non-PTF Transmission Owner	Not Applicable	Not Applicable	<b>Allowed</b>	<b>Allowed</b>
Multiple reservations from single Non-PTF Owner	Not Applicable	Not Applicable	<b>Allowed</b>	<b>Allowed</b>
Reservations from multiple Non-PTF Owners	Not Applicable	Not Applicable	<b>Allowed</b> (Not applicable to New Brunswick or Cross Sound Cable ties*)	<b>Allowed</b> (Not applicable to New Brunswick or Cross Sound Cable ties*)
* The New Brunswick and Cross Sound Cable ties each have a single Transmission Owner.				

**Example 3.** Company A submits transaction #5 for an import on a non-PTF interface, with reservations #22222 and #33333 from a non-PTF owner.

Reservation #22222, Daily Firm Service, beginning at 00:00 on 05/01/2002, ending at 00:00 on 05/02/2002, 150 MWs in all hours

Reservation #33333, Daily Non-Firm Service, beginning at 00:00 on 05/01/2002, ending at 00:00 on 05/02/2002, 150 MWs in all hours

Transaction #5, self-schedule of 200 MW, HE 1-24, 05/01/2002, reservations #22222 and #33333.

**Step One. Reservation #22222 is listed first in the transaction and, therefore, mapped to Transaction #5 first.**

Use of reservation #22222 for transaction #5				
	Original Reservation Capacity of #22222	Reservation Capacity Available for Transaction #5	Reservation Capacity from #22222 Mapped to Transaction #5	Reservation #22222 Capacity Available for the Next Valid Transaction
HE 01 – 07	150	150	150	0
HE 08 – 23	150	150	150	0
HE 24	150	150	150	0

**Step Two. Reservation #33333 is listed second in the transaction and, therefore, mapped to transaction #5 second.**

Use of reservation #33333 for transaction #5				
	Original Reservation Capacity of #33333	Reservation Capacity Available for Transaction #5	Reservation Capacity from #33333 Mapped to Transaction #5	Reservation #33333 Capacity Available for the Next Valid Transaction
HE 01 – 07	150	150	50	100
HE 08 – 23	150	150	50	100
HE 24	150	150	50	100

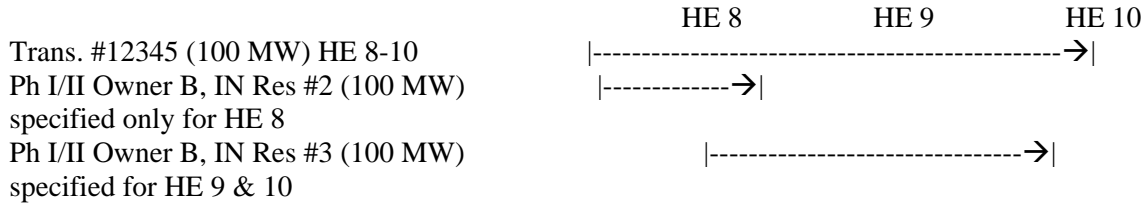
Transmission priority of Non-Firm Daily would be assigned to transaction #5.

The transaction is mapped to reservations in the order that the reservation numbers are listed in the external transaction submittal.

**“Horizontal stacking.” Single transaction, multiple reservations.**

“Horizontal stacking” defined: In a given hour, the transaction is mapped to a single reservation; In a different hour, the same transaction is mapped to a different reservation. The transaction priority assigned to the transaction will be based on the lowest of the mapped transmission reservation priorities.

**Example 4.** Horizontal stacking refers to the mapping of multiple reservations with no overlapping hours:



**Example 5.** Company A submits transaction #6 with reservations #44444, #55555 and #66666.

Reservation #44444, Daily Non-Firm Service, beginning at 00:00 on 05/01/2002, ending at 07:00 on 05/02/2002, 200 MWs in all hours.

Reservation #55555, Hourly Non-Firm Service, beginning at 07:00 on 05/01/2002, ending at 00:00 on 05/02/2002, 100 MWs in all hours.

Reservation #66666, Daily Non-Firm Service, beginning at 23:00 on 05/01/2002, ending at 00:00 on 05/02/2002, 100 MWs in all hours.

Transaction #6, self-schedule of 100 MW, HE 1-24, 05/01/2002, reservations #44444 only for HE 1-7, #55555 only for HE 8-23 and #66666 only for HE 24.

**Step One.** Transaction #6 is mapped to Reservation #44444 for HE 1-7 since #44444 was listed only for those hours in the external transaction submittal software.

Use of reservation #44444 for transaction #6				
	Original Reservation Capacity of #44444	Reservation #44444 Capacity Available for Transaction #6	Reservation #44444 Capacity Mapped to Transaction #6	Reservation #44444 Capacity Available for the Next Valid Transaction
HE 01 – 07	200	200	100	100
HE 08 – 23	0	0	0; NOT CONSIDERED	0
HE 24	0	0	0; NOT CONSIDERED	0

Because the transaction has not yet been completely mapped, the validation of the transaction is not complete at this point. Note that if transaction #6 had been submitted with only reservation #44444, it would not be valid since reservation #44444 covers only HE 1-7.

**Step Two.** Transaction #6 is mapped to Reservation #55555 for HE 8-23 since Reservation #55555 was listed only for those hours in the external transaction submittal software. HE 24 is not considered since the submitter did not specify Transaction #5 be mapped to Reservation #55555 for HE 24.

Use of reservation #55555 for transaction #6				
	Original Reservation Capacity of #55555	Reservation #55555 Capacity Available for Transaction #6	Reservation #55555 Capacity Mapped to Transaction #6	Reservation #55555 Capacity Available for the Next Valid Transaction
HE 01 – 07	0	0	0; NOT CONSIDERED	0
HE 08 – 23	100	100	100	0
HE 24	100	100	0; NOT CONSIDERED	0

**Step Three.** Transaction #6 is mapped to Reservation #66666 for HE 24 only since Reservation #66666 was listed only for those hours in the external transaction submittal software.

Use of reservation #66666 for transaction #6				
	Original Reservation Capacity of #66666	Reservation #66666 Capacity Available for Transaction #6	Reservation #66666 Capacity Mapped to Transaction #6	Reservation #66666 Capacity Available for the Next Valid Transaction
HE 01 – 07 (On 5/01/02)	0	0	0; NOT CONSIDERED	0
HE 08 – 23 (On 5/01/02)	0	0	0; NOT CONSIDERED	0
HE 24 (On 5/01/02)	100	100	100	0
HE 01-07 (On 5/01/02)	100	100	0; NOT CONSIDERED	100

Transmission priority of Non-Firm Hourly would be assigned to transaction #6.

**OP 9 Appendix A Revision History**

**Document History** (This Document History documents action taken on the equivalent NEPOOL Procedure prior to the RTO Operations Date as well revisions made to the ISO New England Procedure subsequent to the RTO Operations Date.)

Rev. No.	Date	Reason
Rev 1	02/01/05	Updated to conform to RTO terminology