



Relevant Peer ISO/RTO Policies

Operating Reserve Clarification for Resources Operating as Requested by PJM

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- *PJM has compiled this information from publicly available data and documents (i.e. business manuals, governing documents, FERC filing materials) in 1Q2022.*
- *As such, PJM cannot guarantee the perfect accuracy of the information in this presentation.*
- *All information is included here for discussion and education purposes only. PJM does not endorse any of the policies described.*

- Example Policies Defining Operation as Instructed
 - Real-Time Dispatch Tolerance Bands
- Relevant Settlements Impacts
 - Make Whole Credits
 - Make Whole Charges
- Additional Relevant Policies



Real-Time Dispatch Tolerance Bands

	PJM	ISO-NE	MISO	SPP	CAISO	NYISO
Tolerance Band	Greater of 10% for generators or 20% for DR	10% for units >50 MW or +/- 5 MW for units <50 MW	8%	10% bound between 5 and 25 MW	10%	3%
Deviation Intervals before Considered Out of Tolerance	Single 5-min interval **	Single interval in an hour	Four (4) consecutive 5-min intervals in an hour	Single 5-min interval in an hour	Seven (7) 5-min intervals in 2 hour rolling window	Calculated over rolling 15-min period
Tolerance Band Reference MW (vs. Actual Output)	Desired MW	Dispatch Point	Dispatch Point modified by offered ramp rate	Dispatch Point	Dispatch Point	Dispatch Point

** Deviations less than 5 MW hourly on average are not considered out of tolerance.



Relevant Settlements Impacts: Make Whole Credits

PJM	RT Dispatch: Resources who operate outside of tolerance are made whole only to the MW requested, if over tolerance, or MW produced, if under tolerance
ISO-NE	RT Dispatch: Operation outside of tolerance for a single interval within an hour makes that hour ineligible for uplift Startup/Shutdown: Start-up costs eligible for recovery are reduced if the resource synchronizes prior to ISO request
SPP	RT Dispatch: Incremental energy produced above tolerance is not eligible for make whole cost recovery Startup/Shutdown: Units who synchronize ahead of or behind the start of their commitment may lose startup cost recovery eligibility
CAISO	Startup/Shutdown: Startup costs not eligible for bid cost recovery in periods in which the ISO has not committed the resource economically Startup/Shutdown: Minimum load costs not eligible for bid cost recovery in all intervals after an expected shutdown
NYISO	Startup/Shutdown: No startup or shutdown-related impacts to make whole credits



Relevant Settlements Impacts: Make Whole Charges

	PJM	ISO-NE	MISO	SPP	CAISO	NYISO
Make Whole Charges for Generation Over Tolerance	Y	Y	Y**	Y	N	Y**
Make Whole Charges for Generation Under Tolerance	Y	Y**	Y**	Y	N	N

- ** MISO specifically does not penalize intermittent resources for under or overgeneration should they approve the use of a MISO forecast to reflect ECOMAX. Except during curtailment.
- ** ISO-NE exempts “Do Not Exceed” (DNE) Dispatch resources from undergeneration penalty. Free operation below the DNE dispatch limit is permitted.
- ** In addition: NYISO does not pay resources for MW generated above the upper limit of the tolerance band.

Are there additional ISO/RTO practices you are aware of that would help to inform this discussion?

- Seeking to define “operating as requested”
- Seeking to strengthen incentives to follow dispatch within make whole credit calculations

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Operating Reserve Clarification - Relevant Peer ISO/RTO Policies



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