



PJM/IMM Proposal Comparison

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- Current challenges and inefficiencies during a synchronized reserve event
 - Dispatch signals and prices may not adequately reflect the verbal instructions from PJM or system conditions
 - New and existing transmission system constraints are not controlled
 - The level of unit response is not controlled or limited by PJM in any manner
 - PJM tends to experience a slow initial recovery followed by an extended over response

System Conditions Reflected in Dispatch/Pricing

Design Component	PJM	IMM
Pricing during events	IRD/RTSCED cases for the duration of the event	Status Quo
Timing	IRD case would override existing RTSCED case	Subsequent RTSCED case
Pricing at the start of a spin event	IRD case used in LMP	Status Quo
Targeted Deployment	Unit basepoints (RTSCED) reflective of expected response	Pro-rata deployment (ADT) based on response needed
Basepoint calculation	Dispatch based on loss of largest contingency	Pro-rata deployment after deploying block loaded condensers and DR

Constraint Control

Design Component	PJM	IMM
Constraint Control	Automatic through IRD case	Use of short term emergency constraint limits in subsequent RTSCED case

Controlled Unit Response

Design Component	PJM	IMM
SCED usage	Consistent throughout the event	Not until SCED sees the unit loss but deployed units are held at ADT dispatch
ACE overshoot actions	Updated basepoints throughout event	Package addresses causes of overshoot

Operator interactions and control

Design Component	PJM	IMM
Operator interactions and control	Proactive with basepoints from IRD optimization to initiate events. RTSCED can be used throughout event to adjust based on updated conditions.	Operators determine total MW to be deployed, based on the actual cause of spin event.

Compliance Concerns

– FERC 825

- “We also require that each regional transmission organization and independent system operator trigger shortage pricing for any interval in which a shortage of energy or operating reserves is indicated during the pricing of resources for that interval. Adopting these reforms will align prices with resource dispatch instructions and operating needs, providing appropriate incentives for resource performance.”

– NERC BAL-002 – Reserve requirements

- R2. Each Responsible Entity shall develop, review and maintain annually, and implement an Operating Process as part of its Operating Plan to determine its Most Severe Single Contingency and make preparations to have Contingency Reserve equal to, or greater than the Responsible Entity’s Most Severe Single Contingency available for maintaining system reliability.
- R3. Each Responsible Entity, following a Reportable Balancing Contingency Event, shall restore its Contingency Reserve to at least its Most Severe Single Contingency, before the end of the Contingency Reserve Restoration Period, but any Balancing Contingency Event that occurs before the end of a Contingency Reserve Restoration Period resets the beginning of the Contingency Event Recovery Period.

– FAC-008-3 – operating limits

- R3. Each Transmission Owner shall have a documented methodology for determining Facility Ratings (Facility Ratings methodology) of its solely and jointly owned Facilities (except for those generating unit Facilities addressed in R1 and R2)
- Short term ratings are only utilized during specific operating conditions as documented in PJM Manual 3B

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