Comparison of PJM and IMM Packages

SRDTF

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Deployed Resources

Component	PJM	IMM
Expected response	Level depends on RTSCED load bias. Includes resources deemed unreliable by PJM to clear as reserves.	Deploys all resources cleared as reserves.
Tier 1 cleared resources	IRD may hold T1 as reserves to meet reserve requirement instead of aiding ACE recovery.	T1 deployed, proportional to their assignment.
Tier 2 flexible resources	IRD may hold T2 as reserves to meet reserve requirement instead of aiding ACE recovery.	T2 flexible deployed, proportional to their assignment.
Tier 2 inflexible resources	Always deployed, resource limits (Economic Min) honored.	T2 inflexible deployed, proportional to their assignment, resource limits (Economic Min) honored.

Sources of Response

Component	PJM	IMM
Units that do not clear reserves: · Deselected Units (Nuclear, Wind, CC) · MW beyond Spin Max · MW above cleared Tier 1 MW	IRD relies on these MW to respond to spin event. They are not cleared as reserves because PJM deems them unreliable.	ADT deploys units that cleared reserves, and holds them to the assignment.
Resources evaluated for performance.	· Only cleared reserves that are dispatched by IRD are evaluated for performance. · Non-reserves dispatched by IRD are not evaluated for performance; no penalties for nonresponse.	· All cleared reserves held to their pro rata share of the deployed MW. · Non-reserves not deployed, not subject to penalties.

Recovery vs Maintaining Reserves

Component	PJM	IMM
Reliability of Response	· IRD and subsequent SCED cases prioritize maintaining reserves while system is recovering from disturbance. · Not consistent with NERC requirements prioritizing ACE recovery. Not consistent with current PJM practice.	· Prioritizes ACE recovery by deploying reserves, and holding them at deployed levels through the event. · Avoids tradeoff between ACE recovery and reserve requirement. · Consistent with NERC standard allowing 90 minutes to recover reserves after disturbance. Consistent with current PJM practice.

Dispatch

Component	PJM	IMM
Basepoint calculation	· No specific unit loss assumed. · System load increased by MW amount equal to largest contingency. · Dispatch based on assuming lost unit online and dispatchable.	· Uses cleared MW from most recent approved RT SCED case. · Deploys pro rata share of cleared synchronized reserves. · Subsequent SCED cases during event maintain reserve deployments and use economic dispatch for non reserves.

Pricing

Component	PJM	IMM
Pricing during events	· IRD used to reprice/override prices for a five minute interval. · IRD prices based on inaccurate inputs (lost unit assumed online, load increased by a predefined quantity).	· No retroactive repricing/override. · Subsequent SCED calculates accurate prices based on modeling actual disturbance.
Timing	IRD case would override RTSCED case if one was already approved for the same interval.	Subsequent SCED case reflects loss of unit and deployed reserves in prices. Consistent five minute LMPs.
Pricing at the start of the spin event	Existing five minute LMPs overwritten retroactively.	Once five minute prices are calculated based on approved SCED at the top of each five minute interval, they are not retroactively overwritten.

Order 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****."*

- **During a spin event, 'operating need' is ACE recovery. Appropriate incentives are those that ensure ACE recovery by deploying reserves, not maintaining full quantity of reserves.**
- **If reserves fall below the adjusted requirement under the IMM proposal, shortage pricing is triggered, consistent with the order.**

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