Reserve Measurement and Eligibility

MIC Special Session

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IMM

Monitoring Analytics

Compliance Directives

- Transparency of eligibility (P 272)
  - Resource Classes
  - Deselections and exemptions
  - Communication with Market Seller
- Capability and Performance Measurement (P 273)
  - Use of spin max
  - Following dispatch
  - Software limitations
- Ramp rates and software limitations (P 274)
- Use of DGP (P 275)
- Removal of cap on DR providing reserves (P 278)

Transparency of Eligibility

- **PJM proposes to disallow reserves from nuclear, wind, solar, hydro, and storage resources except by exception.**
  - **Exceptions must follow clear, documented rules**
  - **Reserves must be able to be calculated using submitted energy offers using the same formula as all other resources providing reserves.**
- **No exceptions to calculating eligibility based on submitted offer parameters.**
- **All resource eligibility should follow the same math and the same process.**

Capability Measurement

- **Synchronized Reserve Max (Spin Max)**
  - **Lower than economic max output limit**
  - **Implies that the resource cannot achieve its eco max in ten minutes, which is the RT SCED look ahead time.**
  - **If a resource needs a spin max, it also needs a derate for energy.**
- **Ramp rates**
  - **New rules require accurate ramp rates.**
  - **With accurate ramp rates, spin max should not be needed.**
  - **Ramp rates need to be updated to include configuration transitions.**

Measurement with Misaligned Intervals

- **New rule caps reserve MW + energy MW in settlements at the resource economic max output MW.**
- **The dispatch and settlement intervals are not aligned.**
  - **SCED calculates a 10 minute resource ramp.**
  - **Resource follows dispatch and provides reserves in the minutes following the SCED case approval.**
  - **Under PJM's proposed fix, the settlement interval occurs later, in the last five minutes before the SCED target time.**
  - **The reserve MW provided and the energy MW produced come from different points in time.**
  - **The calculation will cap reserve MW incorrectly.**

Measurement of VACAR Reserves

- **The interaction between VACAR reserves and PJM reserves should be explicitly accounted for within the market construct.**
- **The measurement of PJM reserves must explicitly account for VACAR reserve requirements.**
- **Capacity resources that clear in the PJM capacity market have the obligation to provide reserves and energy to PJM when called on.**

Performance Measurement

- **Synchronized reserve**
  - **Spin events of 10 minute duration are rare.**
  - **The timing of when the event measurement takes place should be revised.**
  - **Dispatch / settlement interval alignment issues need to be addressed for measuring reserve performance.**

Performance Measurement

- **Nonsynchronized reserve**
  - **Performance is based on nonsynch events.**
  - **PJM never declares nonsynch events.**
  - **Create a process for converting nonsynch to energy during spin events and shortages. Measure performance based on this process.**
- **Secondary reserve**
  - **Same issues as nonsynchronized reserve.**
  - **Proposed penalty of buying back energy when not responding to dispatch is not a sufficient penalty.**

Ramp Rates and Software Limitations

- **Important to maintain strong must offer requirement for synchronized reserve.**
- **Market Seller responsibility to submit accurate physical parameters.**
- **If synchronized reserves cannot be provided in 10 minutes, energy cannot be provided in 10 minutes.**
  - **Units should be derated if energy cannot be provided to ICAP according to the ramp rate.**

Degree of Generator Performance (DGP)

- **PJM is eliminating tier 1 reserves, for which it uses the DGP score as for measurement.**
- **DGP is also used to measure energy MW available in SCED.**
- **PJM should clarify that DGP will not be used to calculate synchronized reserves.**
- **Energy should be calculated consistently, also not using DGP.**

Demand Response

- **Secondary reserves should include 30 minute demand response.**

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