SAWG Members

I had an assignment from the SAWG meeting in July regarding how other ISOs are calculate their real-time reserves? Whether or not unit’s maximum operating limit (HSL) is telemetered in real-time or is an hourly static numbers?

From our discussions with the entities below, what stood out is that none of the ISO’s below including California ISO were using real-time telemetered HSL that could be dynamically adjusted to calculate reserves like we do in ERCOT. Also it appears PJM has methodology to discount the Resources HSL if it does not meet the performance metrics similar to RDF that ERCOT uses.

PJM

* Two tiers for synchronized reserves.
  + Tier 1 are resources that are operating with available headroom that are counted towards reserves.
    - Based on 10-min ramping ability
    - Use SPINMAX (It’s their Pmax that does not include ‘extra’ output they can get from some manual action (i.e. duct burners)). In ERCOT’s case it would be HSL-NFRC.
    - Use a discount called DGP, based on historical performance. If a unit does not perform DGP is less than 1.
    - Tier 1 Reserves Resources contribution is DGP\*MIN(10-min Ramp, SPINMAX-OUTPUT)
  + Tier 2 are resources that are needed to back down or bring online to meet reserves requirement.
    - Obligations offered into the market.
    - These Resources are held to these quantities/obligations otherwise they incur penalties.
* Calculate reserves both an hour ahead and in real-time.
  + During Hour Ahead, “inflexible resources” are committed to provide reserves (resources that must be committed for a full hour based on parameter limitations.)
  + In real-time reserves are determined during each RT SCED execution.

NE-ISO

* Real-time monitoring of reserves
  + Monitors resources ability to be frequency responsive (i.e. over 10 event timeframe)
  + Includes their 5-minute ramp capability for one level of reserves
  + Includes their 10-minute ramp capability for one level of reserves

MISO

* + All Ancillary Service providers are frequency responsive.
  + Market Participants (MPs) offer in resources to their reserves, MPs factor in temperature on their side to estimate capability.