Attachment #4.1
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March 30th, 2021 ICS Meeting #245
Prepared for the April 9th, 2021 EC Meeting – Brian Shanahan

1. An interim ICS meeting will be scheduled for mid-April 2021 to further discuss the following items with respect to the white paper on incorporating Transmission Security Limits into the IRM :

   - Status of TSL issue work to date from NYISO
   - Review the basic question of the need for TSL's to be incorporated into the IRM.

   Executive Committee Action Requested: None.

2. The NYISO provided a presentation on Load Forecast Uncertainty Phase I results to the ICS. This had previously been provided to the LFTF for discussion. A main objective of the White Paper is to provide a better understanding of the variability of Temperature-Humidity relationships across the NYCA in order to better inform future Load Forecast Uncertainty (LFU) Modeling efforts and process updates. Additionally, it is intended to provide additional background materials to stakeholders on the LFU Modeling approach. Early results show that the use of a normal distribution to represent the LFU bins continues to be a viable assumption. The results also suggest modeling improvements occur if the midpoints of the bins are based on the number of observations rather than a simple mathematical average. The next steps for the ICS are to:

   - Review the draft white paper and determine recommendations for the 2022(current) IRM study..
   - Develop a scope for the continuation of the examination of LFU in resource adequacy studies (Phase II)

   Executive Committee Action Requested: None.

3. The High Renewable Case Phase II Study preliminary results were presented. In this whitepaper, both the addition of 2,000 MW, 4,000 and 6,000 MW of renewable resources (on-shore wind, off-shore wind, and solar PV) were added to the NYCA system. The Phase II study evaluates these scenarios with transmission constraints removed. Results are tabulated using the NYSRC parametric study method. The currently issued whitepaper (phase I) considered 4,000 MW of additions using the Tan45 method.

   Several follow-up actions will be provided by the NYISO to finalize the results for the next ICS meeting, including:
   - Finalize results
   - Equivalent tabulated results will be provided similar to the Phase I study (similar to Tables 7A & 7B for example) to enable evaluation of URM impact.

- Evaluate whether a full Tan-45 curve needs to be produced for Phase 2 results.
- Update study output and document the results of the Phase II study via an abbreviated White Paper Addendum.

Executive Committee Action Requested: None.

4. GE presented progress results on the Energy Limited Resource (ELR) White Paper. The White Paper explores improvements to GE MARS to represent ELRs in the IRM model as the current model uses a fixed-shape (repeated daily) to capture the dispatch of ELRs during high-risk hours. The new GE MARS release (4.0) includes improvements to as-needed energy limited resources (EL3) and new energy storage model (ES).

   - Several Models were evaluated:
     - "Fixed shape": current model
     - "Max shape": maximum capacity, help at all hours (to bound performance)
     - "ES Window": ES unit that only generates after 1pm
     - "EL3 window": EL3 unit with generation window gradually enabled 6-10am

   Preliminary Conclusions:

   - The ES model (with generation window) improves model performance, as it avoids battery storage charging at times that trigger the need for EOPs (it happens with fixed shapes)
   - The EL3 model (with gradual window)performs well, compared to other options. GE and NYISO will perform a few additional simulations and check dispatch shapes.
   - The presentation suggested that the current fixed shape modeling for EL3 units is equitable with the new MARS release and could be retained, it desired.
   - All simulations and changes from the prior study and whitepaper will be summarized in the White Paper, . The paper is scheduled to be presented at the June 11th EC meeting after review and the June 2nd, ICS meeting.

     The ICS noted the need to balance summary of results with confidentiality of ELR elections. Any relevant sensitive data should be reviewed by the NYSRC consultants under their NDA agreements.

   Executive Committee Action Requested: None.