**April 30, 2019 RTCTF Meeting**

**Summary and Follow-Up Items for the Specific Agenda Topics**

General RTCTF Information

* No issues identified during discussion of RTCTF calendar and review process.
* No issues with process of escalation to TAC of consensus and non-consensus items.
  + For non-consensus items, market stakeholders will need to take ownership of documenting and presenting alternatives.
* High-level process to iterate through design principles
  + Meeting 1: ERCOT presents concepts and approach.
  + Meeting 2: ERCOT provides more information as requested, market provides concerns or alternative concepts.
  + Meeting 3: ERCOT will post the language supporting the design principles 7 days prior to upcoming meeting. If there are alternatives, market will also provide alterative language using the same timeline.
* NO HOMEWORK

ISO Lessons Learned

* There is value in having one or two ISOs present on lessons learned from implementing RTC in other regions.
* MARKET HOMEWORK: Provide feedback on any specific topics to be discussed in a 30-60 minute forum with other ISOs. Suggested topics include: uplift impacts, best practices, pricing discussion.

ERCOT Proposed RTC Principles

* ERCOT posted the draft RTC principles of the key design areas that be will developed in the RTCTF meetings. Any principles overlapping with PUCT discussions are included in the draft principles list but will be deferred to later meetings.
* NO HOMEWORK

Resource Limit Calculator

* Changes proposed
  + Discontinue ramp rate sharing because RTC/SCED will economically select Energy and Regulation-Up/Down respective of ramp rates (no issues identified). Desire to have the ramp sharing be a tunable parameter to allow for further consideration at another time. Suggestion was made to enhance reasonability checks on telemetered values.
  + Resource Limits of HASL and LASL will be discontinued, and HSL/LSL will be used directly to calculate HDL/LDL (no issues identified).
* MARKET HOMEWORK
  + Provide feedback on any additional information needed to build consensus and/or offer alternative proposals and associated rationalization.

Load Frequency Control

* ERCOT reinforced effectiveness of current design for immediate dispatch from SCED. Similarly, RTC awards and dispatch will be immediate as applicable to the services.
* Changes proposed
  + Regulation Deployment/instruction from ERCOT will change from QSE portfolio level (remove Participation Factors) to Resource specific.
  + Upon receipt of new Base Points, AS awards from RTC, LFC, will reset the Regulation instruction to zero.
  + Updated Desired Base Points (UDBP) will be replaced by “Updated Desired Generation” (UDG). UDG is the sum of two components, base ramp and Resource specific regulation instruction. Base ramp is a four minute ramp similar to UDBP, except that the starting point of the ramp is the expected output of the generator considering previous base point and last regulation request from LFC before new base points were input to LFC. LFC, in its calculations, determines the Resource specific instruction and then adds it to the Base Ramp and sends UDG every 4 seconds till the next RTC results are available.
  + The system level regulation will be distributed to Resource specific regulation instructions proportionate to their regulation awards, respecting resource limits (HSL,LSL, ramp rates) by considering both UDG and resource level reg instruction. Undeployed system level regulation will be distributed to resources with regulation awards that still have undeployed regulation award capacity.
* Market discussion for further consideration
  + Desire to have the ramp sharing be a tunable parameter to allow for further consideration at another time.
  + Consider pros/cons of LFC start from Telemetered Output vs. Base Point + Regulation Instruction.
* MARKET HOMEWORK
  + Provide feedback on any additional information needed to build consensus and/or offer alternative proposals and associated rationalization.

A/S Offers

* ERCOT recommended using DAM AS Offer Structure as structural foundation.
* ERCOT explained structure may change for Offline reserves due to NPRR 863 impacts (undetermined if NPRR 863 will implement before or with RTC).
* Changes proposed
  + Recommend AS Offers are always inclusive with Energy Offer Curve in RTC.
  + Recommend default AS Offer linking. For the same offered capacity, assume the price offered in higher AS type can be automatically used for the non-offered lower AS type. This will increase offer liquidity and solution space for both DAM and RTC.
  + Recommend AS Offer submission window same as EOC. The current window for Energy Offer Curves is end of Adjustment Period.
  + QSGR provide OFFQS ECRS in RTC. Only QSGR with OFFQS Resource status can provide OFFQS ECRS in RTC. The OFFQS unit will be treated as online in RTC and can get both Base Points and OFFQS ECRS awards.
* Market discussion for further consideration
  + Timing alternatives for Energy Offer and AS Offers curves
    - Extend to end of Operating Period instead of current end of Adjustment Period
    - Extend into Operating Hour
* MARKET HOMEWORK
  + Provide feedback on any additional information needed to build consensus and/or offer alternative proposals and associated rationalization.

A/S Imbalance

* Changes proposed
  + ERCOT recommended aligning A/S imbalance with current energy imbalance.
* Market discussion for further consideration
  + Consensus on this approach.
  + More examples or spreadsheet to help with understanding this approach.
* MARKET HOMEWORK
  + Provide feedback on any additional information needed to build consensus and/or offer alternative proposals.

Please provide feedback by May 9, 2019 to allow preparation for May 13, 2019 meeting.

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