RMDSTF Regulation Requirement
PJM's Current Proposal

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RMDSTF

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- Reviewed basic data
  - Load
  - Generation
- Reviewed ACE statistics
  - Tendencies and outliers
  - Time spent in various ACE bands
- Discussed proposal goals
  - Make requirement more responsive to system needs as close to real time as possible
  - Address unexpected change within relevant ACE bounds

- Desire to declare regulation requirement at least 1 day out
- Challenges associated with dynamic requirement on that timeframe
  - Best horizon available is often 1800
  - Inability to predict forward forecast error and other "unexpected" factors
- Advantages to dynamic requirement
  - Levels are free to contract or expand in line with system need
  - Bounds can be established if desired

- PJM's current proposal for calculating the next day's hourly requirement is as follows:

Regulation Requirement$_t$ = 600 MW +

> **(C$_1$ * Load$_t$ + C$_2$ * Delta Load$_t$ + C$_3$ * Delta Generation$_t$**

> **+ C$_4$ * Delta Interchange$_t$)**

where C represents scaling factors dictated by the historic correlation between each driver and our hourly 10s ACE metric over a chosen lookback period. 600 MW floor is applied as a baseline.

- Requirement would be calculated at approximately 1800 for all hours, *t*, of the following day

- Proposed ACE metric with which to correlate our variables is **the hourly average 10s change in ACE**

Load: Hourly forecasted load for the RTO

Delta Load: Hourly change in forecasted load from (t-1) to (t)

Delta Gen: Hourly change in gross individual generator output, as set forth by the RAC run, from (t-1) to (t)

Delta Interchange: Change in (scheduled) interchange from (t-1) hour to (t) hour

- Floor value preserves stability and predictability
- Correlation lookback period will be based on further analysis, will be calculated with intrahour historic data where available
- **Correlation coefficients naturally lower the influence of factors not associated with ACE on the requirement**
- Correlations can target different ACE terms if necessary
  – Hourly historic ACE tendencies including hourly average ACE movement
  – Hours outside of certain MW threshold(s)
- Terms are selected as best proxies for unexpected future change

- Compute mock requirement values for choice dates, ACE target metric, and lookback horizons

- Provide relevant statistics on new terms where appropriate

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PJM Regulation Requirement

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