

# Real-Time Values

MIC

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IMM



Monitoring Analytics

# Background

- **Parameter Limited Schedules** were implemented to prevent exercise of market power by using inflexible parameters.
  - **Inflexible parameters** can be used to withhold capacity, e.g., long minimum run time, long time to start, long minimum down time etc.
  - **Inflexible parameters** can be used to extract uplift payments, e.g., high economic minimum MW, long minimum run time.
- **Parameter limits** apply to cost-based and price-based PLS schedules.

# Parameter Limited Schedules

- **Parameter limited schedules can be used by PJM during high load conditions when hot and cold weather alerts or maximum emergency generation alerts are declared.**
- **Cost-based offers, that are parameter limited, can be used by PJM when a market seller fails the TPS test for local market power.**

# Parameter Limits

- **The parameter limit values are unit specific.**
- **The PJM tariff defines a process to obtain exceptions to unit specific parameter limits for physical reasons.**
- **Exceptions that are supported with documentation allow resources to be made whole when they operate under the exception to the parameter limit.**



# Real-Time Values

- **Real-Time Values (RTVs) are not defined in the tariff.**
- **RTVs allow resources to communicate less flexible parameters to PJM.**
  - **A unit has lower turn down ratio for testing.**
  - **A unit has lower turn down ratio due to a derate.**
- **If a unit is committed with inflexible parameter limits due to an RTV, the unit forgoes any uplift, unless it is supported with evidence of a physical reason, or in the case of a gas pipeline issue, a contractual reason.**

# Real-Time Values

- **Real-Time Values are increasingly used to avoid adhering to unit specific limits, for economic reasons.**
  - **Not staffing a unit to increase time to start**
  - **Not procuring flexible fuel supply**
- **Real-Time Values weaken the parameter limited schedule rules because they do not have the same tariff defined process and standards as exceptions.**



# Real-Time Values

- **The use of RTVs to extend startup times, notification times, minimum run time and minimum down time allows generators to circumvent the PLS rules, to avoid commitment by PJM.**
- **Using RTVs to remove a unit from the real-time look-ahead dispatch window, and to avoid commitment, is withholding.**
- **For example, a unit with an approved 30 minute start time overrides the parameter with a 3 hour RTV.**
  - **IT SCED can only commit resources with a time to start of two hours or less.**

# Real-Time Values

- **A resource that is staffed or has remote start capability and offers according to its physical capability, and a resource that makes the economic choice not to staff or invest in remote start and offers to decrease the likelihood of commitment, are paid the same in the capacity market.**
- **The resource that is staffed or has remote start capability has more performance risk because it is more likely to be committed.**

# PJM Proposal for Using RTVs

- **PJM proposal undermines the market power protections of the PLS rules.**
- **PJM proposal allows RTVs with no justification or consequence. It will make the parameter limited schedule rules irrelevant.**
  - **Unit specific parameter limits will be optional.**
- **PJM proposal explicitly allows units to bypass parameter limits on days without weather alerts or maximum emergency alerts.**
  - **On days with alerts, there is no defined consequence.**

# PJM Proposal for Using RTVs

- **PJM proposal includes a proposed remedy: “PJM has the option to refer the Market Seller to the FERC”**
- **Referrals to FERC are not a substitute for good market rules.**
- **Referrals have limited significance if there is not an identified rule.**
- **The IMM has general referral authority defined in the tariff.**

# IMM Proposal

- **Creates a penalty structure to provide incentives for accurate parameter values.**
- **Goal is to prevent generators from bypassing the PLS rules through the use of RTVs.**
- **Maintains the protections from exercise of market power with the current PLS rules.**
- **Creates a level playing field to ensure resources that do invest in staffing or remote start are not disadvantaged.**
- **Ensures resources that do not invest in staffing or remote start are not paid the same capacity price as resources that do.**

# IMM Proposal for Using RTVs

- Forfeit a proportion of daily capacity revenues for use of RTVs.

$$\begin{aligned} & \textit{RTV Penalty} \\ & = \frac{\textit{BRA Price} \times \textit{Committed UCAP} \times \textit{Penalty Intervals}}{288} \end{aligned}$$

where

$$\begin{aligned} & \textit{Penalty Intervals} \\ & = \max(\textit{Min Run Time} \times A, \textit{Economic Intervals}) \end{aligned}$$

- **A = 0** when unit is either unavailable or online for all 24 hours, otherwise **A = 1**.

# IMM Proposal for Using RTVs

- **Economic Intervals = number of intervals during the day in which:**
  1. **the unit submitted an RTV less flexible than its PLS and**
  2. **the unit was available and offline and**
  3. **the unit's lowest offer at Eco Min is equal to or less than the RT LMP (LMP test)**
- **No penalty for use of RTVs for reflecting reduced turn down ratios for testing, or to reflect derates from outage tickets.**

# IMM Proposal for Using RTVs

- **Clearly defined, transparent formula for using RTVs to deviate from unit specific limits.**
- **Ensures that resources that use RTVs to deviate from unit specific limits understand that they do not receive uplift and pay a penalty.**
- **Rules are transparent and known ahead of time.**
  - **Rules use capacity prices, known ahead of time, not real time LMPs.**
- **Closes the current loophole with using RTVs to withhold generation.**

# IMM Proposal for Using RTVs

- **Tied to capacity revenues.**
  - **Resources without a capacity commitment, that do not have a must offer obligation in the energy market, do not face penalty for choosing to operate inflexibly.**
- **Resources that operate according to unit specific limits and tariff defined exceptions do not face penalties.**
- **Resources that operate inflexibly are not paid the same as resources that invest in flexibility.**
- **Maintains the PLS requirements to ensure they work as intended.**

# Misrepresented Parameter Values

- **Resources that misrepresent parameter limits present a reliability risk to PJM operators.**
- **PJM markets rely on accurate information.**
- **FERC Market Behavior Rules (CFR § 35.41) require market sellers to provide accurate information to RTOs.**
- **Resources that misrepresent their parameter values are in violation of the market behavior rules.**

# IMM Proposal for Misrepresented Parameters

- **Penalty for misrepresenting parameters:**

$$365 \times \left( \frac{2 \times \text{BRA Price} \times \text{Committed UCAP} \times \text{Penalty Intervals}}{288} \right)$$

- **To ensure that market sellers that misrepresent parameters face substantial risk.**
- **Flat fee for resources without capacity commitment**
  - **Can submit RTVs with accurate parameters without penalties.**

# IMM Proposal

- **Removes minimum run time from the list of eligible parameters with RTV submissions.**
  - **Units that choose to run longer can self schedule beyond the minimum run time, with PJM operator notification.**
  - **Prevents withholding using longer minimum run time.**
- **Any penalties collected to be allocated to daily real-time load.**
- **Penalties will be highest of RTV penalty, penalty for misrepresenting parameters, CP PAI penalties, and capacity deficiency charges.**

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