

Unit Specific Parameter Adjustments and Outage Reporting Requirements

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Parameter Limited Schedules Overview

- Generation Capacity Resources
 - Required to submit cost based and parameter limited price price based schedules (price PLS)
 - Based on technology type, resources are required to submit parameter limits that adhere to the established proxy parameters found in the Minimum Operating Parameter matrix
 - Three ways to communicate a change in the operational capability of a resource
 - Unit Specific Parameter Adjustment (permanent)
 - 2. Parameter Limited Exception (persistent, period, and temporary)
 - 3. Real Time Values (temporary)

Parameter Limits

Minimum Down Time

Minimum Run Time

Maximum Run Time

Maximum Daily Starts

Maximum Weekly Starts

Hot/Warm/Cold Start Up Time

Notification Time

Turn Down Ratio (Eco Max/Eco Min)



- Contractual limitation on the Notification Time requirements prior to proposed time of burning gas with a pipeline operator.
 - Requirements
 - Supporting documentation to show that no other more flexible contracts/services are available indicating this was not an economic decision.
 - A senior officer at the company to confirm they cannot get a more flexible gas service.

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- During times of pipeline constraints and therefore increased flexibility in Notification Time may be required.
- When a pipeline operator issues a Ratable Take notice a resource may need to adjust their Minimum Run Time.
 - Requirements:
 - Supporting documentation such as contractual limitations that indicate resource limitations during times of pipeline operator issued restrictions (e.g. OFO, Critical Day notice, Ratable Take Requirement, etc.).



- A pipeline operator-issued restriction (e.g. OFO, Critical Day notice, Force Majeure, etc.) or due to contractual limitations that restricts the ability of a resource to procure gas (ex. Interruptible service level) after the close of the Day-Ahead Market.
 - Requirements:
 - Supporting documentation such as contractual limitations that indicate resource limitations during times of pipeline operator issued restrictions (e.g. OFO, Critical Day notice, Force Majeure, etc.).

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 Due to a pipeline related constraint or maintenance work, a resource may not be able to procure or transport adequate quantity of gas to meet obligation and should put in an outage ticket.



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Appendix

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1. Unit Specific Parameter Adjustment

- Proxy parameter limits are based on technology type (Minimum Operating Parameter matrix)
 - Exempt resources include: Solar, Wind, Run-of-River Hydro, and Nuclear resources
- Adjustment requests are due by February 28th prior to the delivery year in which the parameter adjustment would be in effect and require approval by PJM
- Resources may submit a parameter adjustment request if they are unable to operate according to the proxy parameters based on a physical constraint
- These are permanent adjustments
- Examples of possible reasons for adjustment approval: Compliance with air and emissions permits, required steps for start-up including OEM required hold points, and SCR minimum temperature limits

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2. Parameter Limited Exceptions

- If operating conditions changes such that a resource cannot meet its
 aforementioned proxy parameter or its unit specific parameter limits, the Market
 Seller can seek a non-permanent exception
- Parameter limited exceptions must be approved by PJM and allow a resource to be made whole if committed with less flexible parameters
- Three types of exceptions
 - 1. Temporary One-time use lasting for ≤ 30 days
 - 2. Period lasts 31 days < 1 year during the 12 month period from June 1 May 31
 - 3. Persistent lasts for \geq 1 year
- Example of possible reasons for exception approval: Equipment defects that changes the physical operation parameters, Gas pipeline restrictions, and Short-term environmental restrictions

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3. Real Time Values

- Mechanism for a resource to communicate to PJM the current operating capability of a resource if it could not operate according to its unit specific parameter limits or approved parameter limited exceptions
- Do not require PJM approval and are non-permanent
- Resources using RTVs will not receive Operating Reserve Credits and will not be made whole unless the Market Seller can justify to PJM that operating outside of its unit specific parameters was the result of an actual constraint

Parameters Eligible for RTV Overrides

Minimum Down Time

Minimum Run Time

Maximum Run Time

Hot/Warm/Cold Start Up Time

Notification Time

Turn Down Ratio

