



Minimum Operating Parameters Matrix Update

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1. Unit specific parameter limits are applied to all Capacity Resources regardless of commitment status or type (RPM vs FRR)
 - Unit specific parameter limits apply to Cost and Price Based PLS schedules
 - Price Based PLS schedules are only considered in DA and RT Dispatch when certain Emergency Conditions are in effect*
2. If the unit can not meet the proxy parameters due to an actual constraint, you may submit an adjustment request using the **Unit Specific Parameter Adjustment Process SharePoint site (PJM Connect)** by February 28
3. Approved parameters will remain in place unless a change is communicated to PJM
 - Parameters which were approved and implemented in previous years do NOT have to be submitted each year

*Refer to OATT, Attachment K Appendix, Sec 6.6 Minimum Generator Operating Parameters



Generation Capacity Resource Minimum Unit Specific Operating Parameters¹

| Technology Classification ² | Min Down Time Hrs | Min Run Time Hrs | Max Daily Starts | Max Weekly Starts | Start-up Time | | | Notification Time Cold/Warm/Hot Hrs | Turn Down Ratio | Max Run Time |
|---|------------------------|------------------|------------------|-------------------|---|-----------|-----------|-------------------------------------|-----------------|--------------|
| | | | | | Hot Hrs. | Warm Hrs. | Cold Hrs. | | | |
| Reciprocating Internal Combustion Units | 0.6 | 1 | 12 | 84 | 0.1 | 0.1 | 0.1 | 0.1 | 1.0 or more | 24 hrs. |
| AERO CT Units | 1.1 | 1 | 6 | 42 | 0.1 | 0.1 | 0.1 | 0.1 | 1.0 or more | 24 hrs. |
| Frame CT Units | 1.25 | 2 | 4 | 28 | 0.25 | 0.25 | 0.25 | 0.1 | 1.5 or more | 24 hrs. |
| Combined Cycle Units | 3.5 | 4 | 3 | 21 | 0.5 | 0.5 | 0.5 | 1 | 1.5 or more | 24 hrs. |
| Petroleum and Natural Gas Steam Units | 6 | 4 | 2 | 14 | 2 | 3 | 4 | 1 | 2.0 or more | 24 hrs. |
| Combined Cycle Based QF Units | 4.5 | 4 | 3 | 21 | 0.5 | 0.5 | 0.5 | 1 | 1.5 or more | 24 hrs. |
| Solid Fuel NUG Units | 8 | 4 | 3 | 21 | 4 | 6 | 10 | 1 | 1.5 or more | 24 hrs. |
| Sub-Critical Coal Units | 8 | 8 | 2 | 14 | 4 | 6 | 10 | 1 | 2.0 or more | 24 hrs. |
| Super-Critical Coal Units - Pre 2000 | 8 | 6 | 1 | 7 | 4 | 6 | 10 | 1 | 1.5 or more | 24 hrs. |
| Super-Critical Coal Units - Post 2000 | 6 | 6 | 1 | 7 | 2 | 2.5 | 5 | 1 | 1.5 or more | 24 hrs. |
| Capacity Storage Resource | Shall not exceed 1 hr. | 1 | 12 | 84 | Start Time + Notification Time shall not exceed 1 hr. | | | | N/A | 24 hrs. |
| Intermittent Storage Hybrid | 0 | 0 | No limit | No limit | 0 | 0 | 0 | 0 | N/A | 24 hrs. |

Matrix Update

Intermittent-Storage Hybrid – Intermittent Resource component and storage component behind the same Point of Interconnection operating in the capacity, energy, and/or ancillary services market(s) as a single integrated resource.

Appendix: Unit Specific Parameter and Adjustment Process Reference Material

Reference Materials:

- **Minimum Operating Parameter Matrix-** <https://www.pjm.com/-/media/committees-groups/committees/elc/postings/20150612-june-2015-capacity-performance-parameter-limitations-informational-posting.ashx?la=en>
- **Tariff-** OATT Attachment K Appendix Section 6.6
- **Manual 11-** Section 2.3.4 <https://www.pjm.com/~media/documents/manuals/m11.ashx>
- **FAQs-** <https://www.pjm.com/-/media/committees-groups/committees/elc/postings/20150715-cp-unit-specific-adjustment-request-faqs.ashx?la=en>
- **Request Template-** <https://www.pjm.com/-/media/committees-groups/committees/elc/postings/cp-unit-specific-adjustment-process-template.ashx?la=en>
- **Parameter Definitions-** <http://www.pjm.com/~media/documents/manuals/m11.ashx>
- **PJM Connect Site-** <https://connect.pjm.com/adjustments/SitePages/Home.aspx>



Unit Specific Parameter Adjustment Process Overview

Unit Specific Operating Parameter Adjustment Process Details

| | |
|---|--|
| Why was the process implemented? | PJM was directed by FERC in ER15-623-000, EL15-29-000, ER15-623-001 (CP Order) to implement unit specific parameter limitations for Generation Capacity Resources |
| What is the Unit Specific Operating Parameter Adjustment Process? | Capacity Market Sellers that do not believe their individual resources can meet the proxy operating parameters due to actual operating constraints may submit adjustment requests for the parameters for their cost based and price-based parameter limited schedules to the PJM team for review. The team includes IMM team members |
| What parameters are included in the unit specific operating parameter adjustments? | Turn Down Ratio, Minimum Down Time, Minimum Run Time, Maximum Daily Starts, Maximum Weekly Starts, *Hot Start, *Warm Start, *Cold Start, *Notification Time, and *Maximum Run Time <i>* Additional Parameters for Capacity Performance Resources</i> |



Unit Specific Parameter Adjustment Process Overview

Unit Specific Operating Parameter Adjustment Process Details

| | |
|---|--|
| Who should use the process? | <ul style="list-style-type: none">• Capacity Performance resources for DY 2023/24 and Uncommitted Capacity Resources for DY 2023/24• Replacement Capacity Performance resources for DY 2023/24• Re-submitted adjustments for the same parameters if there is physical change or updated/changed information or documentation |
| What are adjustments used for? | <ul style="list-style-type: none">• Make whole payments• Do not excuse a unit for not performing during a Performance Assessment Interval |
| How long are the parameters effective for? | Parameters will remain in place until PJM determines a change is needed based on changed operational capabilities of the resource |
| When must adjustments be submitted by? | The requests must be submitted by the February 28 and will be evaluated by April 15 (prior to the applicable delivery year). |
| When are adjustments effective? | June 1 for the applicable delivery year |
| How do you submit adjustments? | Submit requests in the template with documentation and data to the Unit Specific Parameter Adjustment Process SharePoint Site. |

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