



Unit Specific Minimum Operating Parameters for Generation Capacity Resources

Last Updated: 10/24/2023

Unit specific parameter limitations apply to all Generation Capacity Resources as defined in Tariff, Attachment K-Appendix, Section 6.6 (and the parallel provisions of Operating Agreement, Schedule 1).

Capacity Market Sellers who do not believe their individual resources can meet these minimum unit specific operating parameters, due to actual operating constraints, may request adjusted unit specific parameters for those resources. These adjustment requests must be submitted by no later than February 28 to be effective June 1 of the same year. Requests must be submitted through the Unit Specific Parameter Adjustment Process SharePoint site (PJM Connect) <https://connect.pjm.com/adjustments/SitePages/Home.aspx> and must include all the necessary data, information and documentation to justify the requested adjustment. The Independent Market Monitor for PJM (IMM) will also have access to the SharePoint (PJM Connect) site for review. Please send any questions to unitspecificpls@pjm.com.

The table below provides the minimum unit specific operating parameters that PJM has determined, with input from the IMM, and applies to all Generation Capacity Resources based on technology classification. Capacity Market Sellers should determine the technology classification category into which each of their resources fits in order to determine the applicable minimum unit specific operating parameters. Unit specific operating parameters referenced below will apply to the resource if no adjusted unit specific parameter is requested and subsequently approved by PJM.

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.
Pumped Hydro Resource	Shall not exceed 1 hr.	1	12	84	Start Time + Notification Time shall not exceed 1 hr.				N/A	24 hrs.
Battery	0	0	Unlimited	Unlimited	0				N/A	24 hrs.

¹ Parameter definitions can be found in the Markets Gateway user guide, (<https://www.pjm.com/-/media/etools/markets-gateway/markets-gateway-user-guide.ashx?la=en>).

² The technology classifications in the above table will apply to all Generation Capacity Resources. The technology classifications have been revised based in part on advice from the IMM considering the current PJM generation fleet as well as the Planned Generation Capacity Resources being constructed in the PJM Region.

Intermittent-Storage Hybrid	0	0	Unlimited	Unlimited	0	0	0	0	N/A	24 hrs.
Solar Units	0	0	Unlimited	Unlimited	0	0	0	0	N/A	24 hrs.
Wind Units	0	0	Unlimited	Unlimited	0	0	0	0	N/A	24 hrs.
Run-of-River Hydro Units	0	0	Unlimited	Unlimited	0	0	0	0	N/A	24 hrs.
Nuclear Units	48	24	1	1	48	72	96	1	1.0 or more	24 hrs.

Brief descriptions of the new technology classifications are:

Reciprocating Internal Combustion Engines – Petroleum, natural gas, or landfill gas fired internal combustion engines.

AERO CT Units –Aero-derivative combustion turbines and hybrid designs of any MW size which use a power turbine to drive the generator, including single Pratt and Whitney FT4 and FT8 units of about 20 MW, Pratt and Whitney FT4 TwinPac units of about 40 MW and Rolls Royce Trent units at 50 MW.

Frame CT Units – Industrial combustion turbines and hybrid technology designs with shaft connected generators of any MW size.

Combined Cycle Units – All Combined Cycle units that are not PURPA Qualifying Facilities (“QF”).

Petroleum and Natural Gas Steam Units – Boiler steam generator units that use natural gas or liquid petroleum derived fuels as primary fuel; QFs that are not Combined Cycle units; Non-Utility Generation (“NUG”) units that do not burn solid fuel.

Combined Cycle Based QF Units - QFs that are Combined Cycle units.

Solid Fuel NUG Units - NUG units, primarily municipal waste, biomass or waste coal fired steam boiler and –steam generator power plants.

Sub-Critical Coal Units – Boiler steam generator units that use coal as the primary fuel operating at sub-critical boiler steam pressure. Super-Critical Coal Units – Pre 2000 – Boiler

steam generator units that use coal as the primary fuel operating at super-critical boiler steam pressure with commercial operation date 2000 or earlier.

Super-Critical Coal Units – Post 2000 – Boiler steam generator units that use coal as the primary fuel operating at super-critical boiler steam pressure with commercial operation date after 2000.

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.

Pumped Hydro - a generating/pumping resource which pumps water to an elevated pond/basin and generates by discharging the water to a lower pond or basin.

Battery – A resource that stores energy as electrical energy in a battery or mechanical energy in a spinning flywheel.

Solar Units – an intermittent generating resource that generates using solar radiation.

Wind Units – an intermittent generating resource which generates using wind.

Run-of-River Hydro Units – a generating resource which uses topographic elevation difference on a river to generate.

Nuclear Units – is a generating resource which uses nuclear fission as a fuel. This includes both Boiling Water Reactors (BWR) and Pressurized Water Reactors (PWR).

Adjustment requests must be submitted through the Unit Specific Parameter Adjustment Process SharePoint site (PJM Connect)

<https://connect.pjm.com/adjustments/SitePages/Home.aspx> and must include all the necessary data, information and documentation to justify the requested adjustment. Unit specific adjustment request FAQs can be found at the following link:

<http://www.pjm.com/~media/committees-groups/committees/elc/postings/20150715-cp-unit-specific-adjustment-request-faqs.ashx>