



# Updated Operating Parameter Matrix

RMWG

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Market Monitor

- Detailed discussions with unit owners
  - Steam units generally have well established historical operating practices based on physical units
  - Different approaches to CC units
- Detailed review of 2006 data for every PJM unit
- Key changes:
  - Use of historical data based parameters for steam units of all types
  - Use of historical data based parameters for CC units
- Exception process still in place



# Minimum Down Time

Parameter	Minimum Down Time (Hrs)	2006 System Mean	Observations (Unit-Day)
Small Frame CT and Aero CT Units - Up to 29 MW ICAP	2 or Less	1	49,677
Medium Frame CT and Aero CT Units - 30 MW to 65 MW ICAP	2 or Less	1	59,332
Medium-Large Frame CT Units - 65 MW to 125 MW ICAP	3 or Less	2	33,115
Large Frame CT Units - 135 MW to 180 MW ICAP	4 or Less	3	24,734
Combined Cycle Units	4 or Less	4	17,540
Petroleum and Natural Gas Steam Units - Pre-1985	7 or Less	7	9,902
Petroleum and Natural Gas Steam Units - Post-1985	4 or Less	4	13,885
Sub-Critical Coal Units	9 or Less	8	15,660
Super-Critical Coal Units	84 or Less	53	20,748



# Minimum Run Time

Parameter	Minimum Run Time (Hrs)	2006 System Mean	Observations (Unit-Day)
Small Frame CT and Aero CT Units - Up to 29 MW ICAP	2 or Less	2	49,677
Medium Frame CT and Aero CT Units - 30 MW to 65 MW ICAP	3 or Less	2	59,332
Medium-Large Frame CT Units - 65 MW to 125 MW ICAP	5 or Less	3	33,115
Large Frame CT Units - 135 MW to 180 MW ICAP	5 or Less	3	24,734
Combined Cycle Units	6 or Less	5	16,178
Petroleum and Natural Gas Steam Units - Pre-1985	8 or Less	9	9,909
Petroleum and Natural Gas Steam Units - Post-1985	6 or Less	5	13,017
Sub-Critical Coal Units	15 or Less	10	18,257
Super-Critical Coal Units	24 or Less	24	20,748



# Maximum Daily Starts

Parameter	Maximum Daily Starts	2006 System Mean	Observations (Unit-Day)
Small Frame CT and Aero CT Units - Up to 29 MW ICAP	2 or More	3	42,547
Medium Frame CT and Aero CT Units - 30 MW to 65 MW ICAP	2 or More	4	56,056
Medium-Large Frame CT Units - 65 MW to 125 MW ICAP	2 or More	2	25,471
Large Frame CT Units - 135 MW to 180 MW ICAP	2 or More	2	24,318
Combined Cycle Units	2 or More	1	20,677
Petroleum and Natural Gas Steam Units - Pre-1985	1 or More	1	13,468
Petroleum and Natural Gas Steam Units - Post-1985	2 or More	2	14,833
Sub-Critical Coal Units	1 or More	1	56,780
Super-Critical Coal Units	1 or More	1	16,744



# Maximum Weekly Starts

Parameter	Maximum Weekly Starts	2006 System Mean	Observations (Unit-Day)
Small Frame CT and Aero CT Units - Up to 29 MW ICAP	14 or More	20	42,547
Medium Frame CT and Aero CT Units - 30 MW to 65 MW ICAP	14 or More	22	56,056
Medium-Large Frame CT Units - 65 MW to 125 MW ICAP	14 or More	13	25,471
Large Frame CT Units - 135 MW to 180 MW ICAP	14 or More	16	24,318
Combined Cycle Units	11 or More	9	20,677
Petroleum and Natural Gas Steam Units - Pre-1985	7 or More	5	13,468
Petroleum and Natural Gas Steam Units - Post-1985	11 or More	7	14,833
Sub-Critical Coal Units	5 or More	4	57,507
Super-Critical Coal Units	2 or More	2	16,744



# Minimum Turn Down Ratio

Parameter	Turn Down Ratio	2006 System Mean	Observations (Unit-Hour)
Small Frame CT and Aero CT Units - Up to 29 MW ICAP	1.0 or More	1.1	1,187,875
Medium Frame CT and Aero CT Units - 30 MW to 65 MW ICAP	1.0 or More	1.4	1,418,660
Medium-Large Frame CT Units - 65 MW to 125 MW ICAP	1.0 or More	1.2	791,939
Large Frame CT Units - 135 MW to 180 MW ICAP	1.0 or More	1.0	591,508
Combined Cycle Units	1.5 or More	2.9	504,925
Petroleum and Natural Gas Steam Units - Pre-1985	3.0 or More	4.0	330,790
Petroleum and Natural Gas Steam Units - Post-1985	2.0 or More	2.1	546,223
Sub-Critical Coal Units	2.0 or More	2.0	1,593,001
Super-Critical Coal Units	1.5 or More	1.6	496,185

- For all steam units
  - Units have some unique characteristics
    - Typically relatively old
  - Units must use most flexible actual historical values
    - Offered at least 10 percent of the time
  - For each parameter
  - Calculated for calendar year 2006
  - Parameters from market-based offers
  - Parameters from cost-based offers if no market-based offers



- For all combined cycle units
  - Units must use most flexible actual historical values within defined limits
    - Offered at least 10 percent of the time
  - For each parameter
  - Calculated for calendar year 2006
  - Parameters from market-based offers
  - Parameters from cost-based offers if no market-based offers

- For all combined cycle units
  - Maximum daily starts
    - 1 or 2
  - Maximum weekly starts
    - 7 or 14
  - Minimum down time
    - 4 or 6
  - Minimum run time
    - 4; 6; or 8
  - Minimum Turn down ratio
    - 1.5