



Cold Weather Resource Operational Exercise Survey Summary

June 9, 2015
Operating Committee

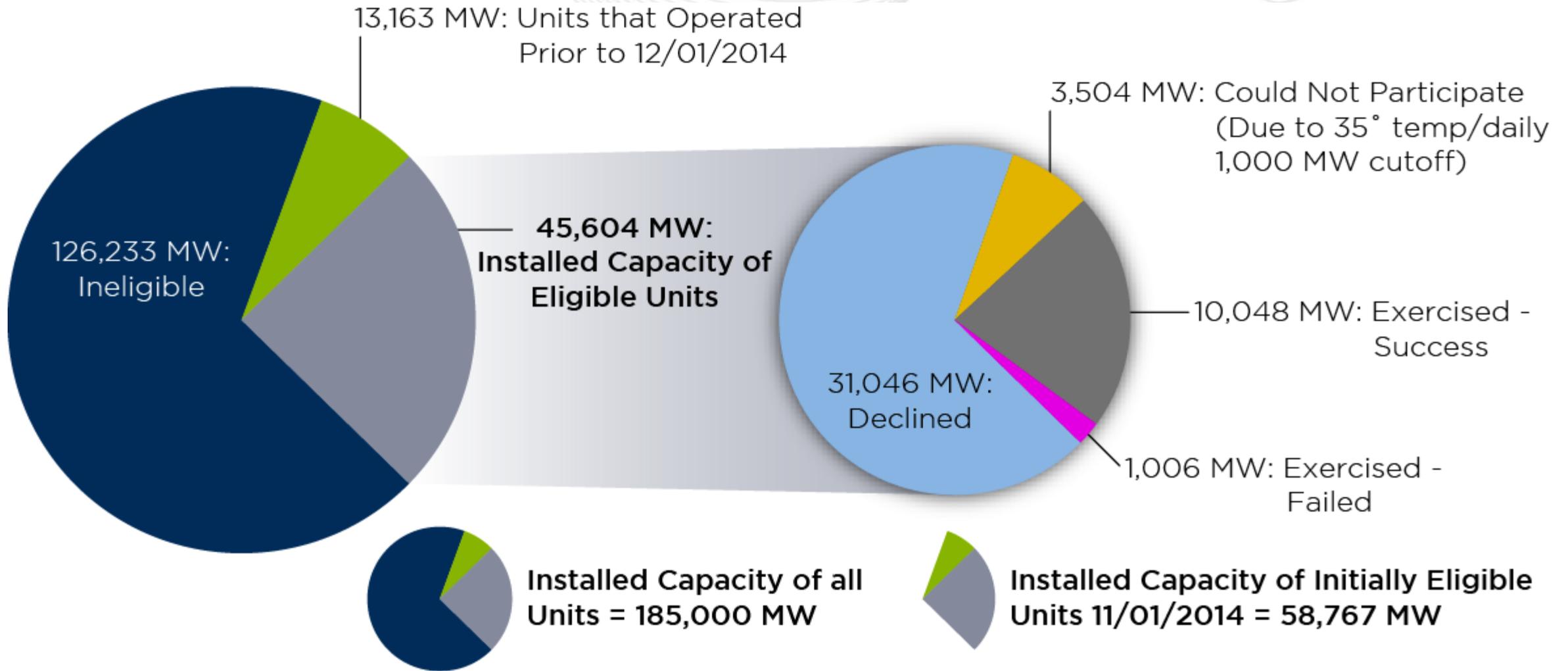


Cold Weather Resource Performance Issue Charge

- [Cold Weather Resource Performance Improvement Issue Charge](#)
- Key Work Activities
 1. Review data on the PJM “Polar Vortex” event including items such as outage code analysis, fuel availability problems, effects on eFORd & eFORp, effects on energy market, etc.
 2. Provide education on best practices for cold weather preparation and resource verification/testing requirements from other geographic areas such as ISO-NE, NYISO, and northern Midwestern states. Include a review of Southwest Cold Weather Event of February, 2011.
 3. Review prior requirements for generator winter capability testing and associated exemption programs.
 4. Investigate need to develop verification/testing requirements to ensure that resources such as traditional generation, variable generation, demand response and those that operate infrequently and/or have alternate fuel capability are prepared to operate during extreme cold weather conditions.
 5. Consider guidelines for the use of a cold weather preparation checklist.
 6. If necessary, draft required Manual changes and, if needed, Tariff, Operating Agreement, and/or RAA changes to implement any new requirements for resource verification/testing under cold weather conditions.
 7. Coordinate any proposed changes with PJM Markets to ensure an equitable transition to any new resource verification/testing requirements.

Topic	Status Quo
Exercise Period	Month of December
Exercise Temp.	If projected temperature is > 35° F, PJM may elect to cancel
Exercise Time	Approximately 0600 hours – 1200 hours weekdays
Exercise MW	Amount of generation to be exercised limited to approximately 1000 MW daily
Exercise Type	Start-up unit and operate at economic minimum for minimum run time
Eligible Units	<ul style="list-style-type: none"> • Participation is optional • Units that have not run at all or those that have not run on their alternate fuel for the eight weeks prior to 11/1 • Eligibility reviewed every two weeks • Nuclear powered, wind turbines, hydro powered, and large super critical steam generation resources excluded • All compensation based on cost schedule
Number of Compensated start attempts	Not defined

Cold Weather Resource Operational Exercise ICAP by Category





Reduction in Forced Outage Rates

	ICAP	1/7/2014 1900	1/8/2015 0800	Reduction in Forced Outage Rate from 2014	2/20/201 5 0800	Reduction in Forced Outage Rate from 2014
All Capacity Units	185,000	21.7%	11.8%	9.9%	13.4%	8.3%
Eligible Units	45,604	21.6%	9.8%	11.8%	11.0%	10.6%
Declined	31,046	19.2%	10.7%	8.5%	11.5%	7.7%
Exercised - Total (Success + Failure)	11,054	30.2%	9.5%	20.7%	8.0%	22.2%

- Do you prefer to eliminate the Cold Weather Generation Exercise program?

- Retain Program: 116
- Eliminate Program: 3

- Do you prefer the Cold Weather Generation Exercise program to remain as is?

- Maintain Status Quo: 93
- Make a change: 26

18 Respondents
representing **119** entities

	Retain	Eliminate
Electric Distributor	4	0
End Use Customer	10	0
Generation Owner	46	1
Other Supplier	21	0
Transmission Owner	34	2
State (NOT a sector)	1	0

	Maintain Status Quo	Make a Change
Electric Distributor	4	0
End Use Customer	10	0
Generation Owner	41	6
Other Supplier	19	2
Transmission Owner	19	17
State (NOT a sector)	0	1

Positive feedback:

- Program should remain voluntary
- Provided significant reliability benefits
- Results were valuable
- Do not make any changes
- Program worked great

- Expand exercise period from 12/1-12/31 to 11/1 – 1/15
- Expand temperature range from 35° to 40° in southern zones only
- Expand allowable testing times to match gas day 0600 – 1200 hrs. to 0001 – 1000 hrs.
- Review eligibility more frequently from biweekly to weekly
- Allow more megawatts per day – current cutoff 1,000 MW/day

- Provide clarity around combined cycle offers and compensation
- Do not settle the units day ahead
- Review type of units that have cold weather problems and concentrate on those
- Units take on unnecessary risks by participating
- Data inconclusive to indicate that the improved performance justified the cost
- Emphasize the use of the Cold Weather Checklist



Winter Generation Exercise Option Matrix

Topic	Status Quo	Option 1	Option 2	Option 3
Exercise Period	Month of December	November 15 – January 15	December 1 – February 28/29 (same as current winter test period)	Other
Exercise Temp.	If projected temperature is > 35° F, PJM may elect to cancel	If projected temperature in DOM, PEPCO, DPL, BGE, AE, JCPL, & PSEG is > 40° F, PJM may elect to cancel. Other transmission zones remain at 35° F	Other	
Exercise Time	Approximately 0600 hours – 1200 hours weekdays	Approximately 0100 hours – 0500 hours weekdays	Other	
Exercise MWs	Amount of generation to be exercised limited to approximately 1000 MW daily	Amount of generation to be exercised limited to approximately 1500 MW daily	Generation to be exercised limited to approximately 2000 MW daily	Other
Exercise Type	Start-up unit and operate at economic minimum for minimum run time	Start-up unit and operate at claimed capability for two hours or one hour depending on unit type (same as current summer/winter test requirement)	Other	



Winter Generation Exercise Option Matrix Continued

Topic	Status Quo	Option 1	Option 2	Option 3
Eligible Units	<ul style="list-style-type: none"> • Participation is optional • Units that have not run at all or those that have not run on their alternate fuel for the eight weeks prior to 11/1 • Eligibility reviewed every two weeks • Nuclear powered, wind turbines, hydro powered, and large super critical steam generation resources excluded • All compensation based on cost schedule 	<ul style="list-style-type: none"> • Mandatory for all generation capacity resources • Unit owner self schedules during defined exercise period • Dual fuel units must operate on alternate fuel • No PJM uplift compensation • Phase out requirement for Capacity Performance units 	<ul style="list-style-type: none"> • Mandatory for all generation capacity resources • PJM schedules • Dual fuel units must operate on alternate fuel • PJM uplift compensation per existing agreements • All compensation based on cost schedule • Phase out requirement and uplift compensation for Capacity Performance units 	Other
Number of Compensated start attempts	Not defined	Allow two attempts	Allow two attempts on same day and allow a third attempt on a subsequent day	Other

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