Cold Weather Resource Performance Improvement

Problem / Opportunity Statement

During the January 2014 "Polar Vortex," PJM experienced extreme cold temperatures in its region that required the use of emergency procedures on multiple days to maintain adequate supply to meet the demand and reserve needs of the system. Coincident with the cold weather and high demand, generator forced outages and failures to start were significantly higher than expected; as high as 22% (~40,000 MW) during the January 6 – 8, 2014 operating days. PJM's Emergency Operations Manual M13, Section 3.3 includes a chart of potential generation unavailability due to cold weather based on historical performance; however the forced outage rates in January 2014 exceeded these estimates by greater than 200%. As documented in the FERC/NERC Report on Outages and Curtailments During the Southwest Cold Weather Event of February 1-5, 2011 (http://www.nerc.com/files/SW_Cold_Weather_Event_Final_Report.pdf), similar problems led to shedding of firm load and "rolling blackouts" in the ERCOT area.

PJM believes that improvements in the performance of resources during extreme cold weather events is necessary and some level of performance verification or testing of certain resources during cold weather should be implemented.