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PJM Makes Multiple Reliability-Focused Improvements To Prepare for Winter

Generator and Fuel System Performance Remains Key to Reliability for 2023–2024 Season

(Valley Forge, PA – Dec. 14, 2023) – PJM Interconnection has implemented its winter readiness steps for 2023–2024 and, along with its member utilities, is prepared to serve the forecasted demand for electricity this winter under expected conditions.

PJM, the grid operator in 13 states and the District of Columbia, expects to have more than 181,000 MW of resources to meet the forecasted peak demand of approximately 137,000 MW plus an average forecast of just under 4,000 MW of electricity exports to neighboring systems. The system should also remain reliable under several more extreme and less likely scenarios involving lower levels of gas and/or renewable generation, higher electricity demand or increased exports.

PJM's all-time winter peak was 143,295 MW, set on Feb. 20, 2015.

In 2023, PJM has implemented winter readiness measures beyond the annual Cold Weather Preparation Guideline and Checklist, seasonal fuel and emissions surveys, and other operations and planning steps. These measures were implemented as a result of lessons learned from recent extreme weather events, including Winter Storm Elliott in December 2022, when the grid was stressed, but PJM was able to maintain reliable electric service.

"PJM has further strengthened winter preparations focused on grid reliability for the 65 million people we serve," PJM President and CEO Manu Asthana said. "The actions we have taken have improved communications with generators, increased accountability for generator reporting and testing, and laid the foundation for market changes that will further incentivize reliable generator performance."

PJM's subsequent <u>Winter Storm Elliott Event Analysis</u> (PDF) included 30 separate recommendations. PJM and its stakeholders have made a number of improvements to rules and processes regarding generator performance and overall cold weather reliability, in the short term and long term. For this winter, PJM has:

- Improved generator operational and seasonal reporting requirements
- Adjusted short-term forecasting to better capture long-term extreme weather trends
- Enhanced communication protocols with generation owners before and during cold weather events to ensure that required preparations and actions are received, understood and acknowledged
- Received FERC approval to allow generators to update their Day-Ahead Market operating parameters in real time, providing PJM operators with greater situational awareness of generators' capabilities

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Generators are also reporting specifics of cold weather preparedness and operations to PJM as a result of new requirements this season introduced by the North American Electric Reliability Corporation (NERC), including identifying and taking corrective actions for equipment that failed during Winter Storm Elliott or may be at risk of failing under similar conditions.

The NERC Winter Reliability Assessment for the 2023–2024 season found that a large portion of the North American bulk power system – including PJM – is at risk of insufficient electricity supplies during extreme peak winter conditions, based in part on the failure rate of generators during Winter Storm Elliott.

The NERC assessment supports the appraisal that PJM has adequate resources for normal winter conditions as well as more extreme scenarios. But it also notes that since 2022, forecasted peak demand has risen while total generation resources have fallen, leaving a degree of risk that generator failures on the level of Winter Storm Elliott could deplete operating reserves and leave the system vulnerable to power outages.

Michael Bryson, Sr. Vice President – Operations, said all of PJM's work with stakeholders was aimed at making that scenario unlikely.

"The experience from Winter Storm Elliott last year provided a number of valuable lessons learned for both PJM and generation owners," said Bryson. "Going into this winter, we have more information at our fingertips, and we have acted together to improve generator preparation, communication, scheduling and performance."

PJM analyzes the expected demand for electricity, weather predictions and other factors to develop its forecast for winter operations. PJM's ongoing Cold Weather Preparation Guideline and Checklist for generation owners includes everything from increasing staffing for weather emergencies to performing required maintenance activities to prepare equipment for winter conditions. The checklist is now mandatory.

Each year, PJM performs winter readiness assessments in advance of the cold weather months, collecting data on fuel inventory, supply and delivery characteristics, emissions limitations, and minimum operating temperatures. PJM meets with federal and state regulators and neighboring systems to review winter preparations. PJM also conducts weekly operational review meetings with major natural gas pipeline operators serving generators in the PJM footprint to coordinate operations with the pipelines that supply a large portion of the gas generation fleet.

In 2023, PJM and the Independent Market Monitor developed and published <u>guidance for generators</u> (PDF) on how best to provide timely and accurate information about their operating parameters and availability during periods of natural gas pipeline operating restrictions.

<u>PJM Interconnection</u>, founded in 1927, ensures the reliability of the high-voltage electric power system serving 65 million people in all or parts of Delaware, Illinois, Indiana, Kentucky, Maryland, Michigan, New Jersey, North Carolina, Ohio, Pennsylvania, Tennessee, Virginia, West Virginia and the District of Columbia. PJM coordinates and directs the operation of the region's transmission grid, which includes 88,115 miles of transmission lines; administers a competitive wholesale electricity market; and plans regional transmission expansion improvements to maintain grid reliability and relieve congestion. PJM's regional grid and market operations produce annual savings of \$3.2 billion to \$4 billion. For the latest news about PJM, visit PJM Inside Lines at <u>insidelines.pim.com</u>.