

PJM 2009 Summer Preseasonal Assessment

Demand

The PJM RTO weather normalized summer peak for 2008 was 136,310 MW. The projection for the 2009 PJM RTO summer peak is 134,430 MW which is a decrease of 1,880 MW or 1.4% from the 2008 summer peak. This projected load decrease is due to the deep economic recession that impacts, to varying degrees, the entire PJM region. PJM performs the load forecasting for PJM as a whole so the forecast fully recognizes load diversity across the region.

As of March 13, 2009, 5,925 MW of emergency load management had registered with PJM for summer 2009. This represents a significant increase over the 4,460 MW of load management available in summer 2008. PJM had 1,200 MW of load management in 2003 and has seen this amount increase by a factor of five over the ensuing six year period. The load management is contractually interruptible load which has been delegated to PJM for use under emergency conditions. PJM may interrupt this load up to ten times per year, for up to six hours per event. No other types of demand response are included in the forecast or considered in Reserve Requirement studies. The 2009 forecasted load of 134,430 MW less the load management amount of 5,925 MW is the basis of the Reserve Margin determination.

Variability of forecasted demand is accounted for in the determination of our required Reserve Margin. The PJM forecast uses a Monte Carlo process that produces forecasts over all weather experienced over the last thirty-seven years. The resulting 481 scenarios are rank ordered, with the median value being the base forecast. This extensive distribution of forecasts allows for estimation of peak load uncertainty at all probability levels of weather.

Generation

PJM projects to have about 165,200 MW of deliverable capacity resources on June 1, 2009. The generation procured through the Reliability Pricing Model (RPM) process may not delist for the entire delivery year. PJM also has about 1,300 MW of energy-only generation that may not be deliverable under peak load conditions.

PJM has approximately 7,500 MW of hydro generation and expects normal water availability this summer. PJM counts 250 MW of wind generation and 830 MW of biomass renewables as capacity.

Purchases and Sales

PJM has a net of 1,300 MW of capacity imports under contract through the summer peak period. The net transfers are composed of 2,375 MW of exports and 3,675 MW of imports. These transfers include import of external generation owned by PJM members and the export of internal generation owed by non-members of PJM. All purchases included in this assessment are backed by firm contracts for both generation and transmission. PJM counts on no supply through liquidated damages contracts.

Non-firm transactions are typically short-term and vary greatly depending on weather experienced by PJM and its neighbors. Non-firm transactions historically vary from a 4,000 MW export to a 3,000 MW import.

Fuel

There are no fuel delivery problems anticipated for this summer. Approximately forty percent of PJM generation has dual fuel capability. There are significant financial consequences within the PJM market structures for a generator that is not able to generate when called upon by PJM.

Transmission

A new 500/230 kV transformer has been installed at Bristers in the Dominion transmission zone. In addition a number of 230 kV and 138 kV circuit upgrades in the eastern mid-Atlantic area of PJM have been completed or are expected to be completed prior to the summer. Also, additional upgrades are expected to be completed prior to the upcoming peak summer season. Some of the more significant upgrades include:

- Reconductoring of the Doubs to Dickerson 230 kV lines in Allegheny Power
- Installation of a fourth 500/138 kV transformer at Bedington in Allegheny Power
- Installation of a 500/230 kV transformer at Suffolk station in Dominion
- Replacement of both Conastone 500/230 kV transformers with larger transformers in BG&E
- Installation of a new 500 kV capacitor bank at Elroy station in PECO
- Installation of a second Brighton 500/230 kV transformer in PEPCo
- Installation of a new 230 kV capacitor bank at Roseland station in PSE&G
- Installation of new 230/138 kV transformers at Roseland station and Metuchen stations in PSE&G

Operational Issues

No major generating unit or transmission facility outages are expected.

Reliability Assessment Analysis

The PJM projected reserve margin for this summer is 28.6%. This margin is well in excess of the 15% reserve margin required to satisfy PJM resource adequacy criteria. Results from PJM's most recent Reserve Margin Study were presented to the PJM Planning Committee at their September 2008 meeting and are available at: <http://www.pjm.com/committees/planning/planning-archive.html>

Analysis techniques for performing PJM's Reserve Requirement Study are described in PJM Manual 20 available at <http://www.pjm.com/contributions/pjm-manuals/manuals.html#m20>

All new generators (internal or external) wishing to be PJM capacity must pass deliverability tests. Periodic review of PJM subarea load deliverability is also performed and upgrades to the transmission system, if needed, are recommended to the PJM Board of Managers. Therefore, the only generation considered in our reliability assessments is inherently deliverable. See Appendix E of PJM Manual 14b (<http://www.pjm.com/contributions/pjm-manuals/pdf/m14b.pdf>) for more information on Deliverability. Results of this analysis are evaluated continuously as part of the normal planning process and are reviewed at regularly scheduled Transmission Expansion Advisory Committee (TEAC) meetings. More information on the TEAC is available at <http://www.pjm.com/committees/teac/teac.html>

Fuel supply is not expected to be an issue in PJM this summer. The majority of generation in PJM is coal and is typically delivered from local sources so both transportation and supplies are not issues, particularly during the summer. PJM does not coordinate directly with the fuel industry and monitoring of changes to gas system usage is the responsibility of the generator owner or operator. With respect to FERC Order No. 698, PJM is the electric system operator and provides additional communication with the gas industry.

Voltage stability analysis (voltage drop) is performed as part of all planning studies and is included in periodic analysis (every five minutes) performed by the PJM Energy Management System (EMS). Results are translated into thermal interface limits for the operators to monitor. Transient stability studies are performed as needed and are an integral part of the Regional Transmission Expansion Plan (RTEP) analysis and results are included in the TEAC presentations. Small signal analysis is performed as part of long term studies and not in the preseasonal time frame.

The Eastern Interconnection Reliability Assessment Group is overseeing interregional preseasonal assessment studies. PJM participates in joint interregional studies with NPCC, SERC and MRO. All internal and external constraints are considered in the interregional transfer analysis.

No significant transmission constraints are expected to cause a reliability concern for the upcoming season. Some transmission congestion internal to PJM is an everyday occurrence and is handled seamlessly by our dispatch methods. Generators are normally dispatched in bid-price order. If a constraint occurs, out-of-bid-price-order-dispatch is instituted where additional generators are dispatched that do not further exacerbate the constraint. Our economic planning process gives indication to the market if total constrained time or expense is above normally accepted values.

While there is some under voltage load shedding installed in PJM, it is all installed for local distribution system problems.

Catastrophic events and major fuel interruptions are not considered for short term assessments such as this summer assessment. These events will be covered in longer term analysis.

Region Description

PJM Interconnection is a regional transmission organization (RTO) that coordinates the movement of wholesale electricity 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 operates the world's largest competitive wholesale electricity market and ensures the reliability of the largest centrally dispatched grid in the world. PJM's members, totaling more than 500, include power generators, transmission owners, electricity distributors, power marketers and large consumers. PJM's role as a federally regulated RTO means that it acts independently and impartially in managing the regional transmission system and the wholesale electricity market.