Power grid expected to be stable without Oyster Creek, B.L. England plants

By BRADEN CAMPBELL, Staff Writer | Posted: Saturday, March 22, 2014 10:55 pm

With Lacey Township's Oyster Creek Generating Station set to go offline in 2019 and the fate of the B.L. England Generating Station in Upper Township unclear, the region could lose more than 1,000 megawatts of power generation in the coming years.

While the plant closings would no doubt mean a loss of jobs, it remains uncertain what they would mean for the local power supply. A state lawmaker argues the B.L. England plant is a necessary piece of the energy infrastructure, while others, from analysts to the operators of the massive grid that delivers power throughout the Northeast, say there are measures in place to ensure there's no power shortage.

The operators of the Oyster Creek plant have agreed to close in 2019 over concerns its dumping of superheated water into Barnegat Bay is damaging the environment. The 2011 agreement abridges a 20-year renewal license granted in 2009.

"Plants retire," said Frank Felder, Director of the Center for Energy, Economic & Environmental Policy at Rutgers University. "That's common, and new plants are built so life goes on. There could be (issues), and it's something to be looked at, but there are procedures and policies in place to make sure there aren't reliability problems."

The agency responsible for identifying these issues before they appear is PJM Interconnection, an independent, federally regulated organization that directs the flow of power across a transmission system that includes all or parts of 13 states and ensures the long-term reliability of a broad swath of the country's electrical grid. It acts as an intermediary between generators and utility suppliers. Membership fees comprise some of PJM's budget, but most of its operations are covered by service and transaction fees paid by its members.

Much more goes into determining whether an area's power needs can be met than by simply comparing its generation to its consumption. Electrical power is produced at generating stations, such as at the B.L. England plant. This power is not funneled directly from the station to homeowners down the road. Instead, it is pushed into a sprawling web of transmission lines known as the electrical grid.

Local energy suppliers such as Atlantic City Electric purchase power from the grid and, in turn, transmit it to the end user. Because of this, an Upper Township family is as likely to power their television with electricity generated at a station in Pennsylvania as it is the B.L. England plant a mile away. In fact, New Jersey imports as much as a quarter of its energy annually, Felder said.

PJM and other regional regulating companies use complicated models that take into account

population, infrastructure and economic changes to project how much power an area will need at points over a given period.

Based on its load forecast, PJM holds what is called a "capacity auction" in which power generators place bids based on the amount of power they can provide. Once enough energy is bid to accommodate PJM's target, the cost of power is set and the generators are obligated to provide. The capacity auction covers a period of three years from the date of the auction, and New Jersey's power needs are accounted for until May 2016.

In addition to purchasing power through PJM's annual capacity auction, electrical utilities can meet their area's needs through power they generate at their own plants or through private contracts with generating stations.

PJM's projections for South Jersey have yet to take into account the potential loss of the B.L. England station, which must repower with natural gas by 2016 or face closing due to tightening emissions restrictions. And while this would create a 500-megawatt shortfall in the Atlantic City area, the capacity auction allows energy companies to accommodate needs as they develop. In this way, spokeswoman Paula Dupont-Kidd said, the market resolves its own issues.

"It's an opportunity for new projects that are developing to actually get value and know they have a market to sell to," Dupont-Kidd said. "It's (provided incentive for) a lot of new generation to come into the area."

New Jersey already has more than 2,000 megawatts in new generation set to hit the grid in the next few years. The natural gas-powered West Deptford Energy Station in Gloucester County will add more than 700 megawatts of generation potential when it's completed later this year, and another natural gas plant being built in Woodbridge, Middlesex County, is slated to generate 700 megawatts in 2015. The Newark Energy Center will generate 655 megawatts starting in mid-2015.

PJM's load forecast projects peak load, and electrical utilities will typically have on hand about 15 percent more wattage than is expected to be needed, Dupont-Kidd said. This is necessary in the event demand exceeds projections, which can happen during extreme weather events.

A typical Atlantic City Electric customer draws about 1,000 kilowatts of power from the grid per month in winter, said spokesman Frank Tedesco, who added that South Jersey typically sees its peak load at the height of summer. Last year, the utility saw a peak load of more than 2,700 megawatts July 18. There are 1,000 kilowatts in one megawatt.

B.L. England sometimes operates at full capacity but usually does so only when the grid is taxed. This happened in early January during the cold snap, when local load reached nearly 1,800 megawatts. At that time, PJM requested the station keep both of its highest-producing units online to ensure system stability.

Steve Humanick, a union representative for the plant's workers, said he's concerned about what would have happened had the plant not been operational. The worst case scenario, he said, is a brownout — a widespread voltage drop — leading to system failure.

"How are they going to get power?" Humanick said. "How can anybody assure these communities, these counties, that there's not going to be issues, there's not going to be problems?"

State Sen. Jeff Van Drew, D-Cape May, Cumberland, Atlantic, shares this view. He is in the midst of a renewed push to construct a pipeline that would repower the B.L. England plant with natural gas, saying it will create jobs and ensure continued energy resiliency in the area.

"During this winter, it got so cold there were times we were really stretching the grid, and they asked folks to reduce their energy consumption a little bit," Van Drew said. "That's no way to prepare for the future."

But while this would seem to indicate a danger should B.L. England shut down, Dupont-Kidd said this is not necessarily the case. The request was not indicative of a weakness in the local grid but a unique set of circumstances that forced similar concessions across the area PJM administers. Typically when an area is in the midst of an extreme cold snap, PJM simply pulls power from a less-taxed area. Because January's cold was so widespread, this wasn't possible.

At this point, Dupont-Kidd said, PJM does not know what effects the closings of B.L. England and Oyster Creek would have, but they won't be an issue.

Before they go offline, generators in PJM's area are required to notify the organization at least 90 days before shutdown. This triggers a study of whether the grid as it exists can handle the loss of generation and remain reliable. If it's determined the grid can't, the station remains online until enough infrastructure improvements are made to ensure reliability. And if a station is set for shutdown due to government regulations, as could be the case with B.L. England, PJM could acquire a temporary waiver to allow it to remain active.

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