

New York Grid Operator Counts on Natural Gas to Replace Indian Point Nuclear Capacity

New Technologies Provide Some Hope while Overall Outlook Remains Bleak

December 19, 2017

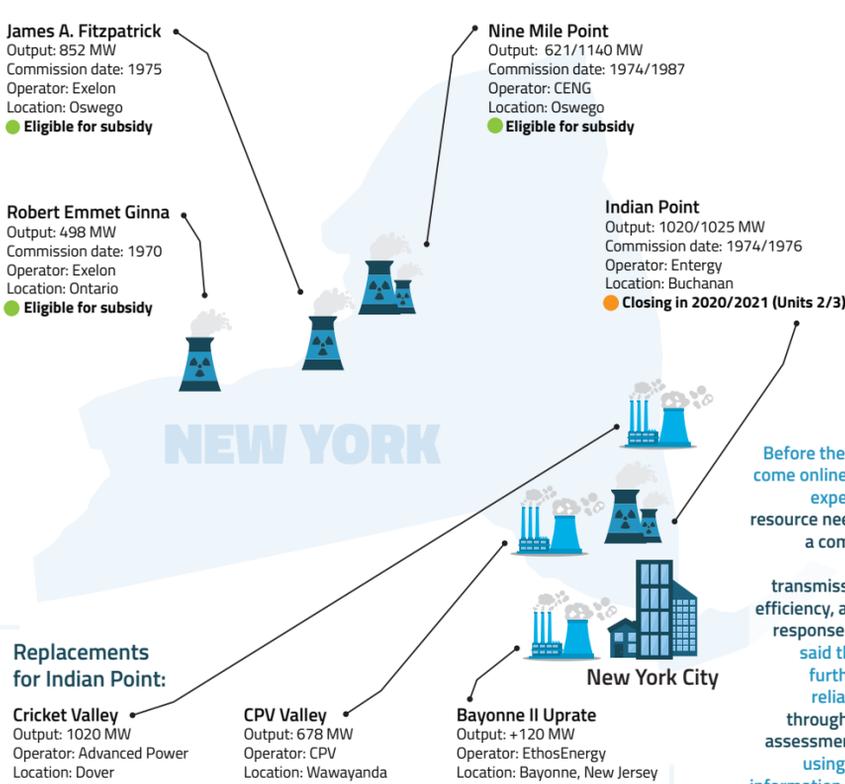
DECEMBER 13 NYISO ASSESSMENT

On December 13, 2017, the New York Independent System Operator (NYISO) released an **assessment of the proposed retirement of the Indian Point nuclear plant** finding that the event in 2021 **will not affect system reliability if 1,800 MW of gas-fired plants come online** as planned. The assessment comes as nuclear plants continue to suffer from competition from cheap natural gas and renewables and the bankruptcy of Westinghouse which has led to cancellations of several nuclear projects.

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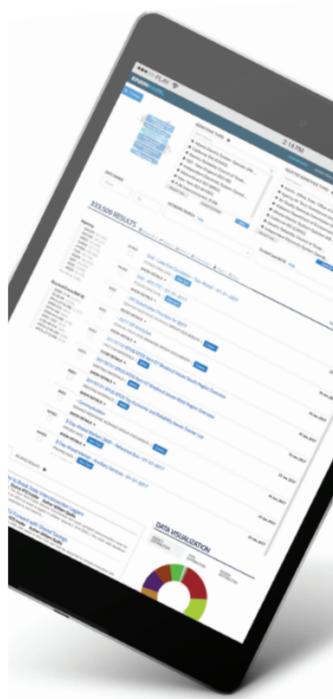
Gas to Replace Nuclear in New York

The NYISO report assesses whether any reliability needs will arise over a five-year period from 2018 to 2023 due to the deactivation the two-unit Indian Point nuclear plant. In January, New York Governor Cuomo announced that Entergy agreed to close the Indian Point Unit 2 in April 2020 and Unit 3 in April 2021, 14 years earlier than anticipated under federal re-licensing terms. New York implemented a program in 2016 to compensate eligible nuclear plants for every MWh of carbon-free electricity generated, excluding Indian Point citing its proximity to the New York metropolitan area.



Before the new plants come online, the NYISO expects to meet resource needs through a combination of generation, transmission, energy efficiency, and demand response. The NYISO said that it would further evaluate reliability needs through 2028 in an assessment next year using up-to-date information at the time.

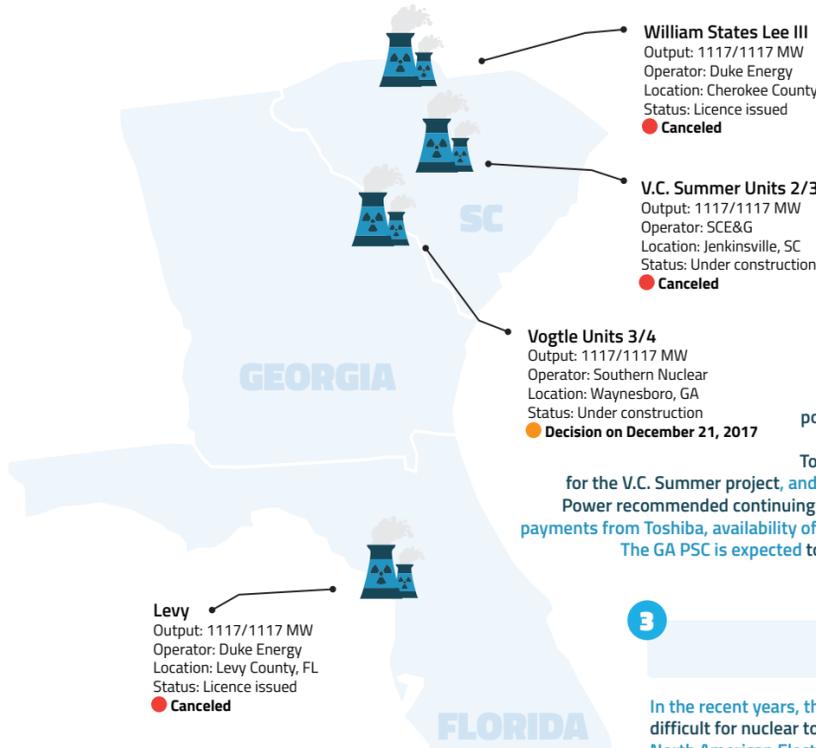
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Westinghouse Bankruptcy Aftermath



The bankruptcy of the reactor designer Westinghouse Electric, a subsidiary of Toshiba, in March led South Carolina utilities SCE&G (a SCANA subsidiary) and Santee Cooper to stop construction at the two-unit V.C. Summer nuclear plant. The abandonment has come as a major blow to the industry especially since Westinghouse's simplified AP1000 plant design was touted as cost-effective. SCE&G and Santee Cooper had nearly \$9 billion and ten years on its two reactors, which were scheduled to go online in 2019 and 2020. In November, SCE&G proposed a \$4.8-billion solution to solve the issues caused by the cancellation including a 3.5 percent reduction in electric rates for SCE&G customers and a \$2.9 billion cut in shareholder earnings to absorb the construction costs.

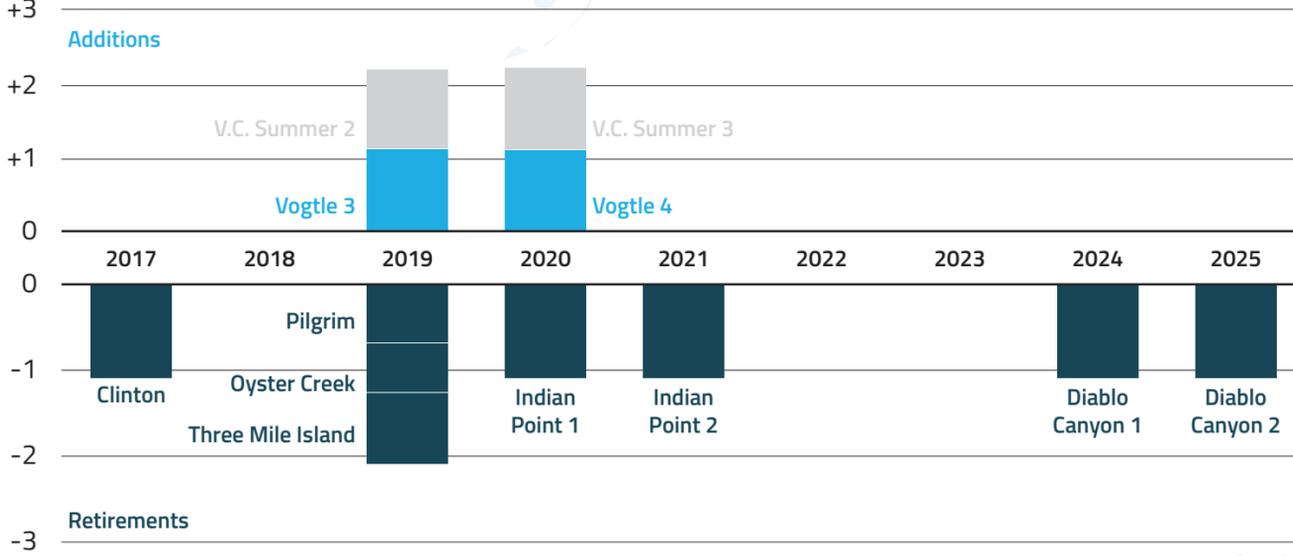
The GA PSC has suggested that Vogtle project may be in a better position given its five percent impact on rates – compared to SCE&G's 18 percent – spread across over three times more customers, Toshiba's \$3.7 billion parental guarantee for Vogtle versus \$2.2 billion for the V.C. Summer project, and four co-owners involved in underwriting efforts. In August, Georgia Power recommended continuing its Vogtle project despite cost overruns and delays assuming future payments from Toshiba, availability of production tax credits, and extension of loan guarantees from DOE. The GA PSC is expected to decide on the future of the Vogtle 3 and 4 project on December 21.

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Nuclear Struggles

In the recent years, the glut of cheap natural gas from the shale revolution has made it difficult for nuclear to compete leading to closures nationwide. On December 14, the North American Electric Reliability Corporation highlighted the shift away from conventional generation through retirements and canceled projects due to slower demand growth and rapid additions of natural gas-fired and renewable resources, as well as the tightening reserve margins in some regions.

Announced U.S. nuclear additions and retirements, GW



Source: EIA

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Policy Support for Nuclear



On November 15, the House Science, Space and Technology Committee approved a bill (H.R. 4378) that would facilitate the development of next-generation materials and fuels for advanced nuclear reactor technology.



On December 7, DOE announced \$30 million for cost-shared projects to develop innovative, industry-driven reactor designs. Among the companies working on such models, Oregon-based NuScale Power submitted the first application for a small modular reactor to federal regulators.



In November, the Nuclear Regulatory Commission (NRC) issued a regulatory basis document laying out the case for the new rules for small modular reactors (up to 1000 MW) to establish greater regulatory stability, predictability, and clarity in the licensing process.



At the same time, the wave of closures has prompted the NRC to consider new rules for decommissioning nuclear plants to make the process more efficient and reduce the need for exemptions from existing regulations.

BOTTOM LINE

Some Consolation

According to EIA, the U.S. has successfully decommissioned ten commercial nuclear reactors as of 2017, and another 20 are currently in different stages of the costly and lengthy decommissioning process paid. State subsidies and the Department of Energy's (DOE) recently proposed grid resiliency rule aimed to value reliability and resiliency attributes of generation with on-site fuel supplies have brought some optimism for financially struggling nuclear power plants thanks to their zero-carbon generation.

Last Hope

Besides state and federal policy support, it remains to be seen whether advanced technologies bring a resurgence and expansion. New technologies may slow down the nuclear decline brought by high construction costs, the glut of inexpensive natural gas, and uncertain future demand. However, as long as the market fundamentals stay unfavorable, the outlook on nuclear remains bleak.

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