

PSEG Nuclear, LLC
ZEC 2 – Salem I
Docket No: ER20080557

Response to Discovery Request: SI-ZECJ-ENV-0003
Date: 10/1/2020

Question:

If applicable, discuss how the Unit's production of electricity generation will support the BPU's Renewable Portfolio Standards ("RPS") requirements, State of New Jersey Energy Master Plan goals, and cost-effective transition to a carbon-neutral supply.

Attachments Provided Herewith: NO

Response:

New Jersey's Energy Master Plan (EMP) defines clean energy as carbon neutral electricity generation, which includes nuclear power. In contrast, renewable energy, as defined in New Jersey's Renewable Portfolio Standard (RPS), does not include nuclear power as a Class 1 or Class 2 resource. Therefore, nuclear power is not a part of New Jersey's RPS, but is crucial to the State's EMP and cost-effective transition to a carbon-neutral supply.

The New Jersey Board of Public Utilities (NJBPU) released its *2019 Energy Master Plan Pathway to 2050* (the "Report") which details Governor Phil Murphy's goal of 100% clean energy by 2050 and the Global Warming Response Act (GWRA) goal to reduce economy-wide state greenhouse gas emissions 80% below 2006 levels by 2050. The report acknowledges that even with continued operation of New Jersey's nuclear plants for their existing licensing periods and beyond, "New Jersey's current trajectory and efforts will be insufficient to reach the goals . . ."¹

The energy system modeling conducted by the Rocky Mountain Institute for the EMP found that the most cost-effect method to achieve the 100% clean energy target was to maintain the state's existing nuclear fleet through 2050. The Integrated Energy Plan (IEP) specifically recommended the retention of nuclear capacity to preserve reliability and meet clean energy goals.² The Least Cost scenario, which includes the retention of existing nuclear and assumes all three units will be relicensed and continue to operate through 2050, would save New Jersey ratepayers approximately \$7.1 billion annually (as compared to Variation 5, which retires New Jersey's existing nuclear fleet at the end of each unit's licensing period).³ In fact, all scenarios other than Variation 5 assume relicensing and continued operation of Salem and Hope Creek through 2050. The primary cost driver in Variation 5 is the increased need for offshore wind and battery storage

¹ NJBPU, "2019 Energy Master Plan Pathways to 2050", pg. 10.

² Id., pg. 17.

³ Rocky Mountain Institute, "New Jersey 2019 IEP Technical Appendix", pg. 31.

capacity to maintain system reliability if existing, clean, firm nuclear retires at the end of its licensing period.⁴ These costs will be incurred whenever the nuclear units retire. Under Variation 5, offshore wind capacity increases from 11 GW to 26 GW.⁵ In addition, the ban on of new natural gas plants, in conjunction with the retirement of nuclear, results in the need for additional storage. Storage capacity must increase from 8 GW in the Least Cost Scenario to 19.5 GW in Variation 5.⁶

The EMP points out the value of existing nuclear in meeting the state’s clean energy goals:

Existing nuclear generation and other “clean firm” technologies are valuable in the context of a 100% carbon-neutral grid in 2050. The Integrated Energy Plan illustrates the value of maintaining a level of dispatchable, carbon-neutral capacity within New Jersey to provide power during weather events where wind and solar resources produce little energy across the region.⁷

Finally, the EMP stresses the importance of nuclear power as the transportation sector transitions from fossil fuels to electrification. Currently, the transportation sector is the largest contributor of in-state greenhouse gases and ozone-producing pollutants. The Report stated that electrification of the transportation sector will be less polluting “[b]ecause New Jersey’s electricity generation sector heavily relies on nuclear and will increasingly utilize renewable energy” that will provide “net emission and air pollution benefits.”⁸

The analyses conducted by the NJBPU and the Rocky Mountain Institute clearly support the fact that the existing in-state nuclear power fleet is crucial to meet the state’s goals under the EMP and cost-effective transition to a carbon-neutral supply.

⁴ NJBPU, “2019 Energy Master Plan Pathways to 2050”, pgs. 276-277.

⁵ Rocky Mountain Institute, “New Jersey 2019 IEP Technical Appendix”, pg. 20.

⁶ Id., pg. 20.

⁷ NJBPU, “2019 Energy Master Plan Pathways to 2050”, pg. 99

⁸ Id., pg. 63.