

Public Service Enterprise Group

**Joint Meeting of the New Jersey State Assembly Telecommunications and Utilities Committee and
Senate Environment and Energy Committee, For Consideration Of A-5330/S-3560,
Establishing A Nuclear Diversity Certificate Program**

Wednesday, December 20, 2017

Good morning, Chairman Smith, Chairman DeAngelo and committee members of the Senate Energy and Environment Committee, and the Assembly Telecommunications and Utilities Committee. My name is Ralph Izzo, Chairman, President and CEO of Public Service Enterprise Group (PSEG), a diversified energy company headquartered in Newark, New Jersey. Thank you for the opportunity to testify on the Nuclear Diversity Certificate legislation, S-3560, sponsored by Senators Sweeney, Smith and Van Drew, and A-5330, sponsored by Assembly members McKeon, Burzichelli, Taliaferro and DeAngelo.

Introduction

The future of nuclear power is a critical issue facing the electric industry in New Jersey -- and by extension, the customers we serve. At risk are the diversity, resiliency and air emissions attributes of the electric generation resource mix serving New Jersey. Reducing this risk is directly and appropriately addressed in the bill under consideration.

Under current financial projections, the nuclear baseload generation that serves New Jersey will close long before the end of its useful life. Passage of the bill before you would meet that threat at a reasonable and controllable cost, while protecting New Jersey's electric customers from the substantial costs that would result from the premature retirement of that capacity. Those costs include increased emissions of pollutants, uncertainty regarding customers' sources of electric power, as well as higher prices. We urge you to adopt this measure for the reasons I will discuss below.

In this written testimony, I outline the economic issues that baseload nuclear power plants are facing in the United States, and the costs to New Jersey that would accompany the premature retirement of those plants. I will then explain why state action is necessary at this time, notwithstanding the possibility of a federal solution to the fundamental problems this bill addresses. Finally, I will summarize the bill – what it does and how it works – and describe the extensive and well-designed customer protections included in the bill.

PSEG and PSEG Power's Nuclear Power Plants

PSEG is among the largest energy companies in the United States. Our utility affiliate, Public Service Electric and Gas Company, or PSE&G, is the state's largest electric and gas utility. It serves 2.2 million electric customers and 1.8 million gas customers in New Jersey, many of whom reside in the state's densely populated urban areas.

Another of our subsidiaries, PSEG Power, owns and operates approximately 11,000 megawatts of electric generation capacity. PSEG Power maintains a diverse and well-balanced portfolio of electric power generation resources to meet customers' needs, including nuclear, natural gas, coal and solar generation. While we currently are building three new natural gas plants in three states, PSEG in fact planned and built its diverse generation portfolio across many decades. Thus, our belief in the importance of fuel diversity to our customers stretches back to the earliest days of our company.

The 3,500-megawatt Salem and Hope Creek nuclear generating stations in southern New Jersey constitute the nation's second-largest nuclear site and currently produce approximately 35 percent of the electricity consumed in New Jersey and nearly half of New Jersey's generation. However, after more than 30 years of operation, PSEG's nuclear plants are seeing a future where we will not be earning enough to cover our costs. While we have not announced their closure, we have made it clear they are on an unsustainable path.

At this moment – today – our nuclear plants are in the black. That's due in part to the operational excellence of our workforce, who work tirelessly to improve the efficiency with which our units are able to produce electricity. But it is due primarily to the fact that our company was able to pre-sell electricity the past three years under contracts that are above current market prices. Those contracts are finite, and some of those contracts are set to expire before the end of 2017 - most by the end of 2018. Unless circumstances change, these plants will no longer be covering their costs within the next two years. Thus, without intervention – without a thoughtful, economic safety net – PSEG will be forced to close its New Jersey nuclear plants.

The Economic Issues Facing Baseload Nuclear Generation, And The Costs Of Premature Closure

In the Mid-Atlantic region and in New Jersey, large baseload nuclear plants that fueled the economy for decades and are a critical part of the energy infrastructure are becoming uneconomic. We believe this is because their significant attributes, providing fuel supply diversity as well significant, measureable environmental benefits, are not priced in the marketplace. Several nuclear plants in the United States have already shut down prematurely and owners of other plants have announced their plans to retire.

The economic stress facing PSEG's nuclear plants has a host of aggravating factors, including significant additional regulatory costs imposed on nuclear plant operators by the Nuclear Regulatory Commission over the past 15 years, the proliferation of non-dispatchable renewable and demand-side resources enabled through federal and state subsidies, renewable portfolio standards, and other regulatory treatments such as net-metering. However, a major factor is that the environmental and fuel diversity attributes of nuclear power are not valued, which tilts the playing field in favor of the production of

electricity using currently low-cost natural gas. When it comes to energy, however, short-term cost is by no means the only factor we should be focused on—as New Jersey has recognized in promoting generators of solar electric power through the issuance of solar renewable energy certificates.

Nuclear power has many beneficial long-term attributes that are vitally important to New Jersey. Nuclear energy is carbon-free, it contributes to fuel diversity and a resilient energy supply, it fuels New Jersey's economy to the tune of more than \$800 million a year and, if the nuclear plants New Jersey relies on were to close and these important attributes are lost, it would cost more to replace them than it would to provide an economic safety net to preserve them. The expert economic studies that have been presented to you as you have considered this issue identify quantitative benefits to New Jersey far in excess of the costs of the proposed Nuclear Diversity Certificate program.

Direct Economic Benefits

For example, IHS Markit, a consulting group with extensive knowledge and modeling capabilities concerning the interaction between regional power system demand and supply, recently completed an assessment of the impact on New Jersey consumers and the New Jersey economy of the premature retirement of the Salem and Hope Creek nuclear plants. The study found that the results of the plants' premature retirement would include:

- \$530 million per year in public health and environmental costs from increased air and carbon pollution, including an annual increase in CO₂ emissions of 13 million tons;
- More than \$400 million per year in higher electricity costs;
- \$820 million per year reduction in New Jersey's GDP; and
- The loss of 6,100 in-state jobs (direct and secondary) and \$37 million in annual state tax revenues.

Other economic experts have reached similar conclusions. An analysis by The Brattle Group, an economic consulting firm specializing in electric power market issues, reached conclusions that were similar to IHS Markit's with respect to the additional costs of increased CO₂ emissions, the plants' contribution to statewide economic activity and jobs and the impact on consumers' power bills if the plants were to prematurely retire.

Benefits Of A More Diverse Electric Generation Fuel Supply

In addition to these issues, the most critical concern addressed by the proposed bill is the need to ensure the resiliency of electric supply against all manner of unforeseen contingencies, to protect the system from high-impact/low-probability events. If PSEG's nuclear plants were to close, the overwhelming majority of remaining generation serving New Jersey would be natural gas-fueled. Whether it's a polar vortex, a cyber intrusion, an accidental or purposeful fuel supply interruption, or another event we can't imagine today, the utility mantra has always been to have an additional line of defense to deal with unexpected events. Indeed, the IHS study that I mentioned concluded that the cost to New Jersey consumers attributable to the less resilient power supply in place after closure of these plants

would be as much as \$230 million for each disruptive event of similar severity and duration as the January 7, 2014 polar vortex, and as much as \$790 million for a 24-hour disruption of similar severity. IHS also identified additional costs due to the greater PJM production cost variability associated with a move toward an increasingly gas-fired electric power supply. At PSEG, it's in our DNA to strive to build a system where we are not overly reliant on any single facility – or any single fuel source – to ensure the availability of the life-giving commodity our customers rely on.

The Need For A State Solution

At PSEG, we have worked tirelessly at the federal and regional level, generally before the Federal Energy Regulatory Commission (FERC or the Commission) and at PJM, to address a variety of issues affecting nuclear power in our state and region. While I have stated repeatedly that a national or regional market solution that values the environmental and fuel diversity attributes of nuclear is preferable, the fact is that PJM has failed to adopt such a solution and has no clear plan or timetable to do so under current projections. PSEG's nuclear plants will be cash negative in two years. If there are not significant, meaningful changes, we cannot be expected to operate on that basis.

A-5330/S-3560 Will Help Preserve The Diversity, Resiliency, And Air Emissions Attributes Of New Jersey's Electric Generation Resource Mix At Reasonable And Controllable Cost, With Consumer Protections That Compare Favorably With Other State Programs

The bill introduced by the Legislature provides for a robust process, directed and overseen by the New Jersey Board of Public Utilities (Board or BPU), to establish the parameters of the Nuclear Diversity Certificate (NDC) program. The bill ensures that only plants that are demonstrably in need, that can certify to that need within 30 days of the bill's enactment, and whose closure would result in demonstrable harm to New Jersey, will receive support. The Board would establish the program parameters within 180 days after the effective date of the bill. By a date seven (7) months after the effective date of the act, nuclear power plants seeking to participate in the program must submit their applications to the Board. There is a \$250,000 application fee per unit and this fee will be used to offset the Board's costs to structure and implement the program. No later than approximately ten (10) months after the effective date of the bill the Board shall complete its administrative preparations and formally commence the program by issuing an order establishing a list of the eligible nuclear power plants and identifying which ones were selected to received NDCs. The Board may find that no nuclear power plant qualifies.

To be certified as eligible, the applicant plant is required to make several showings ensuring that only plants that actually benefit New Jersey, and that are genuinely in financial need, will receive support under the NDC program. These showings include that the plant:

- is licensed by the Nuclear Regulatory Commission (NRC) through 2030 or later, assuring that plants that receive support will be able to continue providing emissions-free electricity well into the future;
- demonstrate to the satisfaction of the Board that it makes a significant, material contribution to the: (1) diversity and resiliency of the resource mix serving New Jersey

customers, and (2) New Jersey air quality, which contribution would be lost if the plant were to prematurely retire;

- demonstrate, through certified financial projections to the BPU, that it is in financial peril of closure, and certify that the plant will cease operations within three (3) years unless it experiences a material financial change; and
- certify annually that it receives no direct or indirect payments or credits under federal or state law for fuel diversity or environmental attributes that will eliminate the need for premature retirement.

Following the identification of eligible plants, the BPU will be required to rank-order all eligible nuclear plants, based on the eligibility criteria listed above as well as sustainability and long-term commitment to operate. The BPU will then select plants to receive NDCs until the total number of MWh produced by those plants in Energy Year 2017 equals or exceeds 40 percent of total energy sales by New Jersey electric utilities, ensuring that the share of New Jersey consumption provided by zero-emission nuclear power plants remains at its current level; the plant that puts the total over 40 percent will not be selected.

Similar to the issuance of RECs and SRECs for qualified renewable projects, selected nuclear plants will receive a number of NDCs in each energy year equal to the number of MWh produced by those plants in that energy year. A selected plant will be eligible to receive NDCs for a three-year term, although the first term will be three years plus several months, because the program might begin in the middle of an energy year. If the plant does not operate it will not receive NDCs. Importantly, once a plant is recognized as eligible for support, that needs test would be reviewed and re-assessed every three years. In other states, payments are guaranteed to flow for 10 to 12 years, with no review period.

In order to compensate the selected plants for their clean energy output, retail customers of New Jersey's electric distribution companies (EDCs) will be assessed an annual, non-bypassable charge of \$0.004 per kWh, although that figure may be reduced by the Board in its discretion if it determines a reduced payment will prevent the premature retirement of the selected plants. The Board may also reduce the value an NDC (which value cannot, incidentally, go up) to offset any amount a selected nuclear plant receives under any federal, state or regional program for its fuel diversity, resilience or environmental attributes. This creates a fund of dollars. That fund (in \$) is divided each year by the output of the selected nuclear plants or 40 percent of the total electric usage in New Jersey (whichever is higher) (in MWh), and this will create the value of the NDC (in \$/MWh). Given current usage and nuclear output, this figure will generally be approximately \$10 per MWh, which is an excellent value in exchange for the environmental, fuel diversity, and resilience benefits provided by the continued operation of nuclear power plants that serve New Jersey.

As described above, while providing necessary support to plants that can demonstrate financial need and specific benefits to New Jersey, the bill also contains important limitations and customer protections. No funds flow until the BPU determines there is a financial need, and as noted, the Board can re-evaluate that need, as well as the satisfaction of all other eligibility criteria, every three (3) years. Through this process, the bill ensures that no funds will flow until the plant owner files a certification that

it will close the plants within three (3) years if there is no material change. Similarly, the NDC price can be reduced by any direct or indirect payments received by a selected plant for its fuel diversity and environmental attributes through any federal or state regulation or regional compact. In addition, the bill requires that any plant selected to receive NDCs must remain open during the period it is receiving NDCs, and requires the plant to reimburse the state for payments received during the three-year period it is receiving NDCs if it closes during that period, except in certain circumstances where that closure would be justified.

PSEG supports this effort by the New Jersey Legislature to squarely face this fundamental issue and to take steps to preserve the nuclear power plants serving the state's electricity consumers before irreversible steps are taken to shut down these vital resources. I thank you for the opportunity to share the views of my company this morning, and I would be glad to answer any questions you may have.