

UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of	)	
	)	
PSEG POWER, LLC AND PSEG	)	Docket No. 52-043-ESP
NUCLEAR, LLC	)	
	)	February 25, 2016
(Early Site Permit Application)	)	
	)	

**PSEG PRE-FILED TESTIMONY ON FEIS TOPIC 6 (MITIGATION)**

**I. INTRODUCTION**

**Q1. Please state your name.**

A1. My name is James Mallon. I am the Nuclear Development Manager for the Nuclear Development Department at PSEG Power, LLC.

**Q2. Please describe your educational background and expertise.**

A2. My Statement of Professional Qualifications is provided as Exhibit PSEG002. As shown in that document, I have a B.A. degree in Physics from Franklin and Marshall College and I have completed graduate business courses for an M.B.A. from the University of Southern Maine. I also hold an ANSI 3.1 Senior Reactor Operator (SRO) certification.

I have 34 years of experience working in the nuclear industry. I have worked at a number of nuclear consulting and utility companies, including Stone and Webster Engineering Corporation (1982-1986), PECO Energy Co (1987-1995), Environmental Dimensions Inc. (1995-1996), Maine Yankee Atomic Power Company (1996-2000), Exelon Nuclear (2000-2008), and PSEG Power, LLC (2008-Present). That experience has included positions related to engineering, radiation protection, health physics, waste management, training, regulatory assurance, licensing, and nuclear development.

At PSEG Power, I was the Early Site Permit Manager during the initial phases of the project, including the decision to pursue an Early Site Permit (ESP), vendor selection, application preparation, and responses to Nuclear Regulatory Commission (NRC) requests for additional information. In 2011, I became the Manager of Nuclear Development, which covers the ESP project and other activities related to small modular reactors and advanced nuclear technology.

**Q3. What is the purpose of your testimony?**

A3. The purpose of my testimony is to respond to FEIS Topic 6, which is one of eight pre-filed testimony areas identified by the Atomic Safety and Licensing Board (Board) in its February 8, 2016 Memorandum and Order (Identifying Additional Areas for Prefiled Testimony) and that primarily relate to NUREG-2168, *Environmental Impact Statement for an Early Site Permit (ESP) at the PSEG Site* (FEIS), dated November 2015 (Exhibit NRC004). The Board requested the following testimony for FEIS Topic 6:

In its response to FEIS Question 33, the NRC Staff states that, “[w]ith the exception of the mitigation activities associated with the PSEG traffic study, all of the activities listed in Table 10-1 in the FEIS are associated with expected permit requirements of other Federal, State, and local agencies.” For each of these expected permit requirements, the Staff shall either confirm that the expected permit requirement is essentially certain, or if not essentially certain, provide an estimate of the unavoidable impact if the respective requirement is not made. Likewise, in Table 10-2 of the FEIS, listing unavoidable impacts of operation, the Staff makes use of similar mitigation acts based upon expected permit requirements. The Staff shall make similar confirmations for this table as well.

The purpose of my testimony is to address this topic on behalf of PSEG Power, LLC and PSEG Nuclear, LLC (collectively, PSEG), the applicants for the ESP, and provide some additional discussion of the likelihood that the mitigation activities will be included in permit requirements or otherwise would be addressed by PSEG during construction and operation of a new plant at the PSEG Site.

**Q4. Please summarize your overall conclusions for this testimony.**

A4. As discussed below, both PSEG's Environmental Report and the NRC Staff's FEIS fully consider and identify mitigation for construction and operation of a new plant at the PSEG Site. That evaluation of mitigation satisfies the requirements of the National Environmental Policy Act (NEPA). In this regard, it is reasonable to conclude under NEPA that any necessary mitigation activities identified in FEIS Tables 10-1 and 10-2 will be either included in future permits for a new plant at the PSEG Site or otherwise performed by PSEG.

**Q5. Please describe the structure of your testimony.**

A5. Section II of my testimony below addresses the likelihood of mitigation activities being included in future permit requirements. That section also includes some background information on permits and authorizations and the consideration of mitigation for a new plant at the PSEG Site. Section III provides PSEG's overall conclusions for this testimony on FEIS Topic 6.

**II. LIKELIHOOD OF MITIGATION ACTIVITIES IN PERMIT REQUIREMENTS**

**A. Background on Permits and Authorizations**

**Q6. Please describe the permits and authorizations needed for construction and operation of a new plant at the PSEG Site.**

A6. PSEG would need to obtain a significant number of permits and authorizations in order to implement a construction project of the magnitude of the new plant at the PSEG Site and then to operate that new plant. Appendix H of the FEIS (Exhibit NRC004C) identifies the environmental-related authorizations, permits, and certifications potentially required for site preparation, construction, and operation of a new nuclear power plant at the

PSEG Site. The information in FEIS Appendix H has been adapted from Table 1.3-2 (Authorizations Required for Preconstruction, Construction, and Operation Activities) in the Environmental Report submitted with PSEG's ESP application (ESPA) (Exhibit PSEG004).

FEIS Appendix H identifies a wide range of potential permits or approvals that relate to erection of structures, generation and transportation of hazardous and radioactive materials, wetlands, navigable waters, spill/discharge prevention and response, protected species, surface and groundwater use, waste and wastewater treatment, earth disturbance, plant construction, stormwater control, dewatering, water quality, flood hazard, re-use of excavated materials, and air quality.

**Q7. Please describe the primary permitting agencies for these activities.**

A7. In addition to the NRC, the primary permitting agencies are the United States Army Corps of Engineers (USACE) with authority under Section 10 of the Rivers and Harbors Act and Section 404 of the Clean Water Act, and the New Jersey Department of Environmental Protection (NJDEP) with air, water, and land use approval authority under a number of New Jersey environmental regulations. Other permitting agencies include the Delaware River Basin Commission (DRBC) with water withdrawal and discharge authorities, and both Salem County and Lower Alloways Creek for differing land use authorizations. Additional agencies responsible for permits and authorizations for a new plant at the PSEG Site are identified in FEIS Appendix H.

**Q8. Is PSEG familiar with these permitting agencies?**

A8. Yes. PSEG has constructed and operated the existing Salem Generating Station and Hope Creek Generating Station at the PSEG Site since approximately 1968. The

permitting authorities and PSEG are familiar with the site and the expected conditions of permits to perform various construction and operations activities.

**B. Background on Mitigation**

**Q9. What is mitigation in the context of NEPA?**

A9. The Council on Environmental Quality regulations, 40 CFR 1508.20, define “mitigation” to include: (a) Avoiding the impact altogether by not taking a certain action or parts of an action; (b) Minimizing impacts by limiting the degree or magnitude of the action and its implementation; (c) Rectifying the impact by repairing, rehabilitating, or restoring the affected environment; (d) Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action; or (e) Compensating for the impact by replacing or providing substitute resources or environments. This definition is incorporated into the NRC’s environmental protection regulations at 10 CFR 51.14(b).

**Q10. How did PSEG consider mitigation in its Environmental Report?**

A10. Mitigation is considered throughout the Environmental Report (Exhibit PSEG004), but primarily in Chapters 4 (Environmental Impacts of Construction) and 5 (Environmental Impacts of Operation). Those chapters consider mitigation for each of the impact areas for construction and operation. Environmental Report Section 10.1 (Exhibit PSEG004AB) also considers unavoidable adverse environmental impacts, which that section defines as “predicted adverse environmental impacts that cannot be avoided and for which there are no practical means of further mitigation.”

**Q11. Describe the Environmental Report’s consideration of mitigation during construction.**

A11. Environmental Report Section 10.1.1 (Exhibit PSEG004AB) discusses the unavoidable adverse environmental impacts of construction. Table 10.1-1 summarizes construction-related impacts that result in a measurable loss or permanent change in resources, the mitigation and control measures available to reduce those impacts, and the remaining unavoidable adverse impacts after mitigation and control measures are applied. Section 10.1.1 explains: “For many of the impacts related to construction activities, the mitigation measures are referred to as best management practices (BMPs). Typically, these mitigation measures are based on the types of activities that are to be performed. The mitigation measures are implemented through permitting requirements, and plans and procedures developed for the construction activities.”

**Q12. Describe the Environmental Report’s consideration of mitigation during operation.**

A12. Environmental Report Section 10.1.2 (Exhibit PSEG004AB) discusses the unavoidable adverse environmental impacts of operations. Table 10.1-2 summarizes operations-related impacts that result in a measurable loss or permanent change in resources, the mitigation and control measures available to reduce these impacts, and the remaining adverse impacts after mitigation and controls measures are applied. Section 10.1.2 concludes that most of the adverse impacts are either avoidable or negligible after mitigation and control measures are considered.

**Q13. Describe how mitigation is addressed in the FEIS.**

A13. Similar to the approach in the Environmental Report, potential mitigation actions are discussed throughout the FEIS (Exhibit NRC004), and particularly in FEIS Chapter 4 for construction impacts and FEIS Chapter 5 for operation impacts. FEIS Section 10.2 addresses unavoidable adverse environmental impacts. FEIS Table 10-1 identifies the

unavoidable adverse impacts associated with construction and preconstruction activities and the identified mitigation measures that would reduce the impacts. FEIS Table 10-2 identifies similar information for operations.

**Q14. Are the impacts and mitigation considered in the FEIS conservative?**

A14. Yes. The impacts and mitigation actions listed in FEIS Tables 10-1 and 10-2 are comprehensive and inclusive of the expected conditions of the permits, approvals, and authorizations that will be necessary to construct and operate the plant. The impacts of the new plant at the PSEG Site were evaluated based on a Plant Parameter Envelope approach, where realistic and bounding impacts were defined for four different reactor technologies. As such, specific impacts may be lower depending on a particular design. In other words, there is a reasonable probability that the impacts of a final reactor technology will be within or less than the bounding Plant Parameter Envelope impacts. As such, the mitigation measures listed in FEIS Tables 10-1 and 10-2 are conservative.

**Q15. Will PSEG consider the environmental impacts and mitigation as part of any future combined license (COL) application?**

A15. Yes. Prior to beginning any NRC-regulated construction or operation, PSEG would need to apply for and receive a COL that references the ESP. As required by 10 CFR 51.50(c)(1)(iii), an applicant for a COL that references an ESP must provide: “Any new and significant information for issues related to the impacts of construction and operation of the facility that were resolved in the early site permit proceeding.” PSEG’s identification and evaluation of new and significant information would include any changes to impacts and resulting changes to mitigation actions. Similarly, any

environmental reviews following selection of reactor technology that determine that impacts would be less could result in fewer necessary mitigation measures.

**Q16. Does the consideration of mitigation in the Environmental Report and FEIS satisfy NEPA requirements?**

A16. Yes. The Environmental Report and FEIS include a thorough discussion of mitigation for all areas of potential adverse impacts and identify numerous mitigation activities. In the context of NEPA's "rule of reason," it is reasonable to conclude that any necessary mitigation activities identified in FEIS Tables 10-1 and 10-2 will be implemented. Likewise, it is reasonable to conclude that necessary mitigation will be included in permitting activities or will otherwise be undertaken by PSEG as part of its plans and procedures during construction and operation. In *Methow Valley*, the U.S. Supreme Court held that NEPA requires a "reasonably complete discussion of possible mitigation measures," but that there is no "substantive requirement that a complete mitigation plan be actually formulated and adopted." *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 352 (1989). The Environmental Report and the FEIS fully satisfy that standard, because they provide a reasonably complete discussion of possible mitigation measures.

**C. Likelihood of Mitigation Being Included in Permit Requirements**

**Q17. Do you expect that the mitigation measures identified in the FEIS will be included as part of necessary permits, approvals, and authorizations?**

A17. PSEG has reviewed Tables 10-1 and 10-2 in depth and, based on over 40 years of site knowledge, expects that the necessary permits, approvals, and authorizations from the agencies accountable to the public for permitting will address most of the mitigation

actions. This includes traffic impacts, which will be addressed, as appropriate, by Lower Alloways Creek Township and potentially Salem County. While PSEG cannot offer certainty as to the exact wording of impact mitigation actions and conditions, it is likely, based on the long-term experience and working knowledge of the agency practices, that mitigation actions will be comprehensive and complete.

**Q18. Please provide more detail about the construction mitigation measures in FEIS**

**Table 10-1.**

A18. With regard to specific mitigation measures addressed in FEIS Table 10-1 (Unavoidable Adverse Environmental Impacts During Construction and Preconstruction), they are expected to be conditions of the various land use approvals required for any construction on the PSEG Site (inclusive of pre-construction and construction as defined by the NRC). These approvals include, but are not limited to, the Federal USACE Section 10 and Section 404 Permit, the NJDEP Coastal Area Facility Review Act / Waterfront Development Permit, the local Lower Alloways Creek Township zoning, planning, and construction approvals, and others such as those from Salem County.

During both pre-construction and construction, PSEG routinely implements monitoring mitigation activities to assure compliance with the conditions of regulatory approvals. No land use/construction approvals have been received to date for the new plant at the PSEG Site and therefore, there are no specific conditions to implement at this time. Based on PSEG's experience with other large construction projects, combined with the anticipated conditions of the NJDEP and USACE land use construction approvals, specific monitoring conditions and mitigation activities will be included. Those agencies will monitor and enforce compliance with any such conditions. Essentially all of the

mitigation activities in Table 10-1 are identified as such conditions. As necessary, observations during the initial stages of site preparation activities also are expected to identify any changed site conditions, and appropriate mitigation measures would be implemented or modified by the agencies at that time.

**Q19. How will mitigation related to impacts to terrestrial or aquatic resources be addressed?**

A19. Minimization of impacts to terrestrial or aquatic resources is expected to be addressed by specific requirements and conditions of the various State and Federal authorizations. In addition, formal wetland and habitat mitigation must be a condition in the USACE and NJDEP authorizations and PSEG will implement those as required. Similarly, the use of BMPs for both stormwater and soil erosion / sediment control is required in specific NJDEP and / or County authorizations. As an example, PSEG will prepare a Soil Erosion and Sediment Control Plan which will be reviewed and approved, with monitoring conditions by Salem County and / or NJDEP and a Stormwater Pollution Prevention Plan, which will be reviewed and approved by NJDEP. PSEG is required to prepare stormwater plans for both the final plant design and construction activities. These stormwater plans will be implemented subject to the approval of conditions imposed by NJDEP.

**Q20. How will other mitigation be addressed?**

A20. Other areas where specific mitigation measures are identified in FEIS Table 10-1 are expected to be addressed through the use of standard construction and construction management practices. These include control of fugitive dust during construction, use of properly maintained equipment, control of site activities that generate excessive noise

during off-hours, and any locally required traffic mitigation actions (whether passive, such as road or intersection improvements, or active, such as remote parking / car-pooling). PSEG will implement those activities, as required. Standard practices include the use of processes to identify and manage the identification of unexpected historic or cultural resources, as well as any unexpected natural resources.

**Q21. How will mitigation related to traffic impacts be addressed?**

A21. With regard to traffic impacts, the local approvals through the Lower Alloways Creek Township Planning and Zoning Board, as well as potentially the Salem County Planning Board, are expected to include traffic mitigation requirements. As noted above, specific impacts will be more accurately defined after a reactor technology and constructor have been selected by PSEG.

**Q22. Please provide more detail about the mitigation measures for operations in FEIS Table 10-2.**

A22. Similar to the above discussion for construction mitigation, and subject to the same assessment of final impacts after a reactor technology is selected, PSEG expects that mitigation measures addressed in FEIS Table 10-2 (Unavoidable Adverse Environmental Impacts from Operations) will be conditions of the various operational approvals required for the new plant at the PSEG Site (inclusive of start-up and commissioning activities). These approvals include, but are not limited to, the New Jersey Pollutant Discharge Elimination System permit, the Title V Air Operating Permit, and the numerous other authorizations required to operate and maintain the new plant. Those agencies will enforce compliance with any conditions in their approvals.

Minimization of impacts to terrestrial or aquatic resources is expected to be an ongoing obligation of the various approvals. In addition, formal wetland and habitat mitigation conditions in the USACE and NJDEP authorizations may continue into the operational phase and PSEG will continue to implement those as required. Similarly, the use of BMPs for both stormwater and soil erosion / sediment control is normally required in specific NJDEP authorizations; some of these will be applicable during the operational phase as well.

Other areas where specific mitigation measures are identified in FEIS Table 10-2 are expected to be addressed through the use of standard maintenance and maintenance management practices, which are similar to construction practices. These include site maintenance, road maintenance, vegetation management, and other similar approvals. Water use is monitored and managed on an ongoing basis; this is not expected to change.

**Q23. How does PSEG ensure that it complies with environmental requirements?**

A23. PSEG currently maintains an organization accountable for site environmental compliance and expects to continue this accountability in the future. This includes monitoring for unexpected or newly identified cultural, historic, or natural resources on the PSEG Site.

**Q24. How does PSEG ensure that it complies with permit conditions?**

A24. After permits, approvals, and authorizations are issued, PSEG expects to implement, as in the past, a permit compliance program to assure that all regulatory requirements are met.

**Q25. Based on the above information, please discuss the likelihood that the mitigation activities in FEIS Tables 10-1 and 10-2 will be associated with permit requirements?**

A25. Given that specific permit requirements will be under the control of the permitting agencies, it is difficult to predict with great certainty what mitigation requirements will be

directly associated with future permits. However, I believe it is likely that most or all of the necessary mitigation activities identified in Tables 10-1 and 10-2 will be associated with future permit requirements. As discussed above, it is reasonable to conclude under NEPA that any necessary mitigation activities identified in FEIS Tables 10-1 and 10-2 will be either included in future permits for a new plant at the PSEG Site or otherwise performed by PSEG.

### **III. CONCLUSIONS**

**Q26. What are your overall conclusions regarding FEIS Topic 6?**

A26. The consideration of mitigation for construction and operation of a new plant at the PSEG Site has been robust in both PSEG's Environmental Report and the NRC Staff's FEIS, and fully satisfies the requirements of NEPA. It is reasonable to conclude under NEPA that any necessary mitigation activities identified in FEIS Tables 10-1 and 10-2 will be either included in future permits for a new plant at the PSEG Site or otherwise performed by PSEG.

**Q27. Does this conclude your testimony?**

A27. Yes.

I certify that this written testimony was prepared by me or under my direction, and I adopt the testimony as my sworn testimony in this proceeding.

I declare under penalty of perjury that the foregoing written testimony is true and correct to the best of my information, knowledge, and belief.

Executed on February 25, 2016.

*Executed in Accord with 10 CFR § 2.304(d)*

/s/ James Mallon

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