

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.

[DR] My Statement of Professional Qualifications is provided as Exhibit PSEG003. As shown in that document, I have both an A.S. degree in Nuclear Technology and a B.S. degree in Business Administration from Excelsior College.

I have 46 years of experience working on nuclear activities. I started my career as a Machinist Mate in the U.S. Navy (1970-1978). I then worked for General Public Utilities/AmerGen (1978-2008) before joining PSEG Power, LLC (2008-Present). That experience has included positions related to quality assurance, process reengineering, work management planning and implementation, licensing, regulatory assurance, training, emergency preparedness, and nuclear development.

At PSEG Power, I have been the Licensing Lead and Quality Assurance Specialist for the ESP project. In this role, I have been the primary interface with the NRC Safety and Environmental Project Managers, and I have the responsibility for ensuring the quality and accuracy of all submittals to the NRC.

Q3. What is the purpose of your testimony?

A3. **[All]** The purpose of our testimony is to respond to SER Topic 2, which is one of six pre-filed testimony areas identified by the Atomic Safety and Licensing Board (Board) in its January 27, 2016 Memorandum and Order (Identifying Areas for Prefiled Testimony) and that primarily relate to the *Safety Evaluation of the Early Site Permit Application in the Matter of PSEG Power, LLC and PSEG Nuclear, LLC for the PSEG Early Site Permit Site* (SER), dated September 2015 (Exhibit NRC003). The Board requested the following testimony for SER Topic 2:

The Staff's response to SER Question No. 9 acknowledges that each of the nine permit conditions the Staff proposes in the SER (at pp. A-2 through A-6) must be "precisely drawn so that the verification of compliance becomes a largely ministerial . . . act." Yet some of the proposed permit conditions arguably include subjective requirements, such as the direction that a future applicant must examine and adequately "evaluate" geologic features (No. 3) and develop emergency action plans that contain "few or no deviations or differences" from NRC-endorsed standards (No. 9). The Staff shall address in detail how verification of compliance with each proposed permit condition can be accomplished by "largely ministerial" action and, if and where appropriate, propose alternative language that might set forth a more objective standard.

Thus, the purpose of our testimony is to provide the evaluation and conclusions on behalf of PSEG Power, LLC and PSEG Nuclear, LLC (collectively, PSEG) on whether the nine permit conditions proposed by the NRC Staff are largely ministerial. Those proposed permit conditions are found in SER Appendix A.1 (Permit Conditions) (Exhibit NRC003).

Q4. Please summarize your overall conclusions for this testimony.

A4. **[All]** We have evaluated all nine of the NRC Staff's proposed permit conditions in SER Appendix A.1. We conclude that verification activities for all of the proposed permit conditions are "largely ministerial," as that standard has been defined by the

Commission. Therefore, we conclude that the proposed permit conditions are appropriate and can be included in the ESP for the PSEG Site.

Q5. Please describe the structure of your testimony.

A5. [All] Section II of our testimony below discusses the “largely ministerial” standard, including its origin. Section III of our testimony then evaluates each of the nine proposed permit conditions, including reproduction of each permit condition and PSEG’s analysis of whether verification of compliance with each permit condition is “largely ministerial.” Section IV provides PSEG’s overall conclusions for this testimony on SER Topic 2.

II. “LARGELY MINISTERIAL” STANDARD

Q6. Please describe the origin of the “largely ministerial” standard.

A6. [All] There is no statutory or regulatory requirement concerning the nature of license conditions in the licensing process. However, NRC case law has commented that a license condition should be structured so that the Staff’s post-hearing actions to confirm that the condition has been met are ministerial in nature. The phrase “largely ministerial” was included in a 2000 Commission case, *Private Fuel Storage, L.L.C.* (Independent Spent Fuel Storage Installation), CLI-00-13, 52 NRC 23, 34 (2000) (*PFS*).

Q7. Please describe the *PFS* case.

A7. [All] Private Fuel Storage, L.L.C. (PFS) was the applicant for a 10 CFR Part 72 license to construct and operate an independent spent fuel storage installation (ISFSI). Intervenors had challenged a variety of issues related to PFS’s application, including whether PFS was financially qualified to engage in the activities covered by a Part 72 license. As part of its Safety Evaluation Report for the PFS application, the NRC Staff proposed license conditions related to financial assurance. The licensing board

subsequently rejected a number of the intervenors' arguments regarding financial assurance and then referred its ruling to the Commission for consideration.

Q8. What were the Commission's rulings in the *PFS* case?

A8. [All] After reviewing the licensing board decision on financial assurance, the Commission made two important rulings. First, the Commission ruled that license conditions can be an acceptable method for providing reasonable assurance. *PFS*, CLI-00-13, 52 NRC at 29. Second, the Commission ruled that certain matters may be left to the NRC Staff for post-hearing resolution. *Id.* at 33. In doing so, the Commission stated that "[t]he key to the validity of post-licensing Staff reviews is whether the NRC Staff inquiry is essentially 'ministerial' and 'by [its] very nature require[s] post-licensing verification.'" *Id.* (quoting *Hydro Res., Inc.* (2929 Coors Road, Suite 101, Albuquerque, NM 87120), CLI-00-08, 51 NRC 227, 240 (2000)).

The Commission explained:

This is not to say that the Staff is allowed no room to exercise professional judgment in conducting post-licensing verification activities. However, sufficient details should be provided in the license so that the Staff's review is not subject to meaningful debate. . . .

[W]e must insist that the condition be precisely drawn so that the verification of compliance becomes a *largely ministerial* rather than an adjudicatory act -- that is, the Staff verification efforts should be able to verify compliance without having to make overly complex judgments on whether a particular contract provision conforms, as a legal and factual matter, to the promises *PFS* has made.

PFS, CLI-00-13, 52 NRC at 34 (emphasis added).

Q9. Please summarize your understanding of the "largely ministerial" standard from the *PFS* case.

- A9. **[All]** The Commission ruled that the NRC may impose license conditions with post-licensing verifications by the NRC Staff, but the conditions must be precisely drawn so that verification becomes largely ministerial. The verification efforts should not require overly complex judgments or be subject to meaningful debate.

III. PERMIT CONDITIONS

A. Permit Condition 1 (Exclusion Area)

Q10. What is Permit Condition 1?

- A10. **[All]** Permit Condition 1 (SER page A-2), which relates to SER Sections 2.1.2.4 and 2.1.2.5, states:

An applicant for a combined license (COL) or construction permit (CP) referencing this early site permit shall notify the Nuclear Regulatory Commission staff when the COL applicant has acquired the required authority and control over the Exclusion Area (prior to issuance of any combined license that references this ESP) and shall provide confirmation that the basis for that conclusion includes the following:

1. The COL or CP applicant shall complete the acquisition of 0.34 km² (85 ac.) of land, including mineral rights, from the USACE that is currently part of the confined disposal facility north of the site.
2. The COL or CP applicant shall modify the existing PSEG Site Radiological Emergency Response Plan and the existing PSEG Site Security Plan, and reach agreements with the U.S. Coast Guard (USCG), to extend the protections for the Delaware River portion of the existing Salem and Hope Creek Exclusion Area to cover the Delaware River portion of the Exclusion Area related to the ESP.
3. The COL or CP applicant shall reach agreement with the USACE for any land within the EAB that will not be owned by the COL applicant to obtain legal authority from the U.S. Army Corps of Engineers (USACE) to either allow the COL applicant and its surrogates to determine all activities including exclusion or removal of personnel and property from the area or require that the USACE exercise that control in the manner specified by the COL or CP applicant.

Q11. Is verification of compliance with Permit Condition 1 largely ministerial?

A11. [All] Yes.

Q12. Why do you conclude that verification of compliance with Permit Condition 1 is largely ministerial?

A12. [All] Permit Condition 1 requires an applicant referencing the ESP to notify the NRC Staff when it has acquired the required authority and control over the Exclusion Area. As set forth in the permit condition itself, the Staff need only verify three items to ensure satisfaction of the permit condition. These items can be verified by confirming the existence of (1) documentation of the transfer of land and mineral rights from USACE; (2) agreements with the USCG and corresponding revisions to the Site Radiological Emergency Response Plan and Revised Security Plan; and (3) agreements with the USACE regarding appropriate exclusion authority. These are all ministerial verification activities. These activities are not subject to meaningful debate and do not require overly complex judgments by the Staff. Instead, they require a straightforward verification of the relevant documentation. For these reasons, verification of compliance with Permit Condition 1 is largely ministerial.

B. Permit Condition 2 (Potential Explosions)

Q13. What is Permit Condition 2?

A13. [All] Permit Condition 2 (SER page A-3), which relates to SER Sections 2.2.3.4.1 and 2.2.3.5, states:

An applicant for a COL or CP referencing this early site permit shall demonstrate that the nearest structures, systems, and components (SSCs) important to safety of the selected plant design can withstand the effects of potential explosions associated with the relocated gasoline storage tank and the gasoline delivery tanker truck. The applicant shall demonstrate this by using the methodologies provided in RG 1.91 and RG 1.78 for direct explosion and vapor cloud explosion, respectively, to confirm that a

minimum safe distance exists between the nearest plant SSCs important to safety and the relocated gasoline storage tank and the gasoline delivery tanker truck such that the SSCs would not experience an overpressure in excess of 1.0 psi in the event of an explosion.

Q14. Is verification of compliance with Permit Condition 2 largely ministerial?

A14. [All] Yes.

Q15. Why do you conclude that verification of compliance with Permit Condition 2 is largely ministerial?

A15. [All] Permit Condition 2 requires an applicant referencing the ESP to demonstrate that the nearest SSCs important to safety of the selected plant design can withstand the effects of potential explosions associated with a relocated gasoline storage tank and gasoline delivery tanker truck. The permit condition specifies the methodologies to be used for the calculations by the applicant. The permit condition also provides very specific criteria for satisfying it, by stating that the calculations must show that the SSCs “would not experience an overpressure in excess of 1.0 psi in the event of an explosion.”

Verification of compliance for this permit condition would be largely ministerial. The NRC Staff need only confirm that the calculation shows that 1.0 psi would not be exceeded in the event of an explosion. This verification is not subject to meaningful debate and does not require overly complex judgments by the Staff. Instead, it requires a straightforward verification of the conclusions of the calculations. For these reasons, verification of compliance with Permit Condition 2 is largely ministerial.

C. Permit Condition 3 (Geologic Mapping)

Q16. What is Permit Condition 3?

A16. [All] Permit Condition 3 (SER page A-3), which relates to SER Section 2.5.3.5, states:

An applicant for a COL or CP referencing this early site permit shall perform detailed geologic mapping of excavations for safety-related structures; examine and evaluate geologic features discovered in those excavations; and notify the Director of the Office of New Reactors, or the Director's designee, once excavations for safety-related structures are open for examination by NRC staff.

Q17. Is verification of compliance with Permit Condition 3 largely ministerial?

A17. [All] Yes.

Q18. Why do you conclude that verification of compliance with Permit Condition 3 is largely ministerial?

A18. [All] Permit Condition 3 requires an applicant referencing the ESP to perform detailed geologic mapping of excavations for safety-related structures, examine and evaluate features discovered, and notify the NRC Staff once excavations are open for examination. All of these activities are performed by the applicant, not by the NRC Staff, and the permit condition does not identify any analysis or other verification activities that must be performed by the Staff. The permit condition simply identifies activities that must be undertaken as part of the excavation to confirm that the geologic and geotechnical data match those estimated during analysis and design. In this regard, the permit condition documents NRC guidance, such as that in Regulatory Guide 1.132, Site Investigations for Foundations of Nuclear Power Plants (Rev. 2, Oct. 2003), which states (page 16):

It is essential to verify during construction that in situ conditions have been realistically estimated during analysis and design. Excavations made during construction provide opportunities for obtaining additional geologic and geotechnical data. All construction excavations for safety-related structures and other excavations important to the verification of subsurface conditions should be geologically mapped and logged in detail. This work is usually performed after the excavation has been cleaned to grade and just before the placement of concrete or backfill, to permit recording of geologic details in the foundation. Particular attention should be given to the identification of features that may be important to foundation behavior but were undetected in the investigation program. Changes in foundation design should be noted on the appropriate plans,

and newly discovered geologic features should be surveyed and entered into maps, cross-sections, and the database.

Furthermore, the Staff's activities would be to verify that the applicant had performed geologic mapping, had examined and evaluated the geologic features, and had notified the Staff. These activities are not subject to meaningful debate and do not require overly complex judgments by the Staff. Any further Staff review of the excavation would be undertaken as part of the Staff's construction inspection activities, and not as satisfaction of this permit condition. For these reasons, verification of compliance with Permit Condition 3 is largely ministerial.

Q19. Is Permit Condition 3 similar to conditions placed on past licenses issued by the NRC?

A19. [All] Yes. The Commission has approved issuance of licenses with nearly identical conditions. For example, the Commission recently approved issuance of the combined license for STP Unit 3, which includes the following condition (Exhibit PSEG008):

NINA shall perform detailed geologic mapping of excavations for safety-related structures; examine and evaluate geologic features discovered in the excavations; and notify the Director of NRO, or the Director's designee, in writing, once excavations for safety-related structures are open for examination by the NRC staff.

D. Permit Condition 4 (Soils Above Vincentown Formation)

Q20. What is Permit Condition 4?

A20. [All] Permit Condition 4 (SER page A-3), which relates to SER Section 2.5.4.5, states:

An applicant for a COL or CP Referencing this early site permit shall remove and replace the soils directly above the Vincentown Formation for soils under or adjacent to Seismic Category I structures to minimize any liquefaction potential.

Q21. Is verification of compliance with Permit Condition 4 largely ministerial?

A21. [All] Yes.

Q22. Why do you conclude that verification of compliance with Permit Condition 4 is largely ministerial?

A22. [All] Permit Condition 4 very specifically requires an applicant referencing the ESP to replace certain soils. The permit condition does not identify any specific analysis activities to be performed by the Staff. Instead, the Staff need only verify that the soil has been replaced. These activities are not subject to meaningful debate and do not require overly complex judgments by the Staff. Any further Staff review of the soil replacement would be undertaken as part of the Staff's construction inspection activities, and not satisfaction of this permit condition. For these reasons, verification of compliance with Permit Condition 4 is largely ministerial.

Q23. Is Permit Condition 4 similar to conditions placed on past licenses issued by the NRC?

A23. [All] Yes. This permit condition is nearly identical to conditions in prior licenses. For example, the Commission approved the issuance of the combined license for Vogtle Unit 3 with a condition stating (Exhibit PSEG009): "SNC shall either remove and replace, or shall improve, the soils directly above the blue bluff marl for soils under or adjacent to Seismic Category I structures, to eliminate any liquefaction potential."

E. Permit Condition 5 (Staffing Assessment)

Q24. What is Permit Condition 5?

A24. [All] Permit Condition 5 (SER page A-4), which relates to SER Section 13.3.4.3.2, states:

An applicant for a COL or CP referencing this early site permit shall propose a license condition for the licensee to perform the following: (i) No later than 18 months before the latest date set forth in the schedule submitted in accordance with 10 CFR 52.99(a) for completing the inspections, tests, and analyses in the ITAAC, the licensee shall have performed an assessment of on-site and augmented staffing capability for responding to a multi-unit event. The staffing assessment shall be performed in accordance with the latest NRC-endorsed revision of NEI 12-01, "Guidance for Assessing Beyond Design Basis Accident Response Staffing and Communications Capabilities," (ii) At least one hundred eighty (180) days before the date scheduled for initial fuel loading, as set forth in the notification submitted in accordance with 10 CFR 52.103(a), the licensee shall complete implementation of corrective actions identified in the staffing assessment described above and identify how the augmented staff will be notified given degraded communications capabilities, including any related emergency plan and implementing procedure changes and associated training.

Q25. Is verification of compliance with Permit Condition 5 largely ministerial?

A25. [All] Yes.

Q26. Why do you conclude that verification of compliance with Permit Condition 5 is largely ministerial?

A26. [All] Permit Condition 5 requires an applicant referencing the ESP to propose a license condition for the requested combined license or construction permit related to performing an assessment of staffing in the event of a multi-unit event and resolving corrective actions arising from the assessment. For purposes of the ESP and this permit condition, the Staff's verification activities would be to confirm that the later application includes this proposed license condition. That activity is not subject to meaningful debate and does not require overly complex judgments by the Staff. For these reasons, verification of compliance with Permit Condition 5 is largely ministerial.

Q27. Is Permit Condition 5 similar to conditions placed on past licenses issued by the NRC?

A27. **[All]** Yes. Permit Condition 5 instructs applicants that reference the ESP to propose a license condition that is nearly identical to those that have been approved by the Commission. For example, the Commission recently approved issuance of the combined license for STP Unit 3, which includes the following condition (Exhibit PSEG008):

2. Staffing

(i) At least 18 months before the latest date set forth in the schedule submitted in accordance with 10 CFR 52.99(a) for completing the inspections, tests, and analyses in the ITAAC, NINA shall have performed assessments of the on-site and augmented staffing capability for responding to a multi-unit event. The staffing assessments will be performed in accordance with NEI 12-01, Revision 0, "Guideline for Assessing Beyond Design Basis Accident Response Staffing and Communications Capabilities."

(ii) At least 180 days before the date scheduled for initial fuel load set forth in the notification submitted in accordance with 10 CFR 52.103(a), NINA shall revise the Emergency Plan to include the following:

a. Incorporation of corrective actions identified in the staffing assessment required by Condition 2.D.(14)(j)2.(i) of this license.

b. Identification of how the augmented staff will be notified given degraded communications capabilities.

F. Permit Condition 6 (Communications Systems and Equipment)

Q28. What is Permit Condition 6?

A28. **[All]** Permit Condition 6 (SER page A-4), which relates to SER Section 13.3.4.3.2, states:

An applicant for a COL or CP referencing this early site permit shall propose a license condition for the licensee to perform the following: (i) No later than 18 months before the latest date set forth in the schedule submitted in accordance with 10 CFR 52.99(a) for completing the inspections, tests, and analyses in the ITAAC, the licensee shall have performed an assessment of on-site and offsite communications systems and equipment relied upon during an emergency event to ensure communications capabilities can be maintained during an extended loss of

ac power. The communications capability assessment shall be performed in accordance with the latest NRC-endorsed revision of NEI 12-01, "Guidance for Assessing Beyond Design Basis Accident Response Staffing and Communications Capabilities," (ii) At least one hundred eighty (180) days before the date scheduled for initial fuel loading, as set forth in the notification submitted in accordance with 10 CFR 52.103(a), the licensee shall complete implementation of corrective actions identified in the communications capability assessment described above, including any related emergency plan and implementing procedure changes and associated training.

Q29. Is verification of compliance with Permit Condition 6 largely ministerial?

A29. [All] Yes.

Q30. Why do you conclude that verification of compliance with Permit Condition 6 is largely ministerial?

A30. [All] Permit Condition 6 requires an applicant referencing the ESP to propose a license condition to perform an assessment of the on-site and off-site communications systems and equipment to ensure capabilities can be maintained during an extended loss of ac power. For purposes of the ESP and this permit condition, the Staff's verification activities would be to confirm that the later application includes this proposed license condition. That activity is not subject to meaningful debate and does not require overly complex judgments by the Staff. For these reasons, verification of compliance with Permit Condition 6 is largely ministerial.

Q31. Is Permit Condition 6 similar to conditions placed on past licenses issued by the NRC?

A31. [All] Yes. Permit Condition 6 instructs applicants that reference the ESP to propose a license condition that is nearly identical to those that have been approved by the Commission. For example, the Commission recently approved issuance of the combined license for STP Unit 3, which includes the following condition (Exhibit PSEG008):

1. Communications

(i) At least 18 months before the latest date set forth in the schedule submitted in accordance with 10 CFR 52.99(a) for completing the inspections, tests, and analyses in the ITAAC, NINA shall have performed an assessment of on-site and off-site communications systems and equipment relied upon during an emergency event to ensure communications capabilities can be maintained during an extended loss of all ac power. The communications capability assessment shall be performed in accordance with NEI-12-01, Revision 0, "Guideline for Assessing Beyond Design Basis Accident Response Staffing and Communications Capabilities."

(ii) At least one hundred eighty (180) days before the date scheduled for initial fuel load set forth in the notification submitted in accordance with 10 CFR 52.103(a), NINA shall complete implementation of corrective actions identified in the communications capability assessment described above, including any related emergency plan and implementing procedure changes and associated training.

G. Permit Condition 7 (On-Shift Emergency Response Personnel)

Q32. What is Permit Condition 7?

A32. [All] Permit Condition 7 (SER page A-5), which relates to SER Section 13.3.4.3.2, states:

An applicant for a COL or CP referencing this early site permit shall revise the emergency plan to describe on-shift personnel assigned emergency plan implementing functions associated with the chosen reactor technology and the number of proposed reactor units. In addition, the COL or CP applicant shall propose a license condition for the licensee to perform the following: (i) No later than 18 months before the latest date set forth in the schedule submitted in accordance with 10 CFR 52.99(a) for completing the inspections, tests, and analyses in the ITAAC, the licensee shall have performed an on-shift staffing analysis in accordance with the latest NRC-endorsed revision of NEI 10-05, "Assessment of On-Shift Emergency Response Organization Staffing and Capabilities," (ii) At least one hundred eighty (180) days before the date scheduled for initial fuel loading, as set forth in the notification submitted in accordance with 10 CFR 52.103(a), the licensee shall incorporate any changes to the emergency plan needed to bring staffing to the required levels.

Q33. Is verification of compliance with Permit Condition 7 largely ministerial?

A33. [All] Yes.

Q34. Why do you conclude that verification of compliance with Permit Condition 7 is largely ministerial?

A34. [All] Permit Condition 7 requires an applicant referencing the ESP to revise the emergency plan to describe on-shift personnel assigned emergency plan implementing functions associated with the chosen reactor technology and the number of units and to propose a license condition to perform an on-shift staffing analysis and make changes to bring staffing to required levels. With respect to the revisions to the emergency plan, the Staff would only need to verify that the revisions have been made to account for the reactor technology and number of units. This would not require any analysis by the Staff. With respect to the requirement to propose a license condition, the Staff's verification activities would be to confirm that the later application includes this proposed license condition. Those activities are not subject to meaningful debate and do not require overly complex judgments by the Staff. For these reasons, verification of compliance with Permit Condition 7 is largely ministerial.

Q35. Is Permit Condition 7 similar to conditions placed on past licenses issued by the NRC?

A35. [All] Yes. Permit Condition 7 instructs applicants that reference the ESP to propose a license condition that is nearly identical to those that have been approved by the Commission. For example, the Commission recently approved issuance of a combined license for Fermi Unit 3, which included the following condition (Exhibit PSEG010):

DTE Electric Company shall conduct a detailed analysis of on-shift staffing, in accordance with the NRC endorsed version of NEI 10-05,

“Assessment of On-Shift Emergency Response Organization Staffing and Capabilities,” Revision 0, and DTE Electric Company shall incorporate any changes to the Emergency Plan needed to bring staffing to the required levels, prior to or concurrent with completion of the EP ITAAC in Table C.3.9.4 in Appendix C to this license.

H. Permit Condition 8 (AP1000 Emergency Action Levels)

Q36. What is Permit Condition 8?

A36. [All] Permit Condition 8 (SER page A-5), which relates to SER Section 13.3.4.3.4, states:

An applicant for a COL or CP referencing this early site permit and the AP1000 standard design shall propose a license condition for the licensee to develop an Emergency Action Level (EAL) scheme with fully developed site-specific EALs, in accordance with the latest NRC-endorsed revision of NEI 07-01, “Methodology for Development of Emergency Action Levels, Advanced Passive Light Water Reactors,” with few or no deviations or differences. All deviations or differences from NEI 07-01 must be fully described in the COL application, including providing the initiating condition, operating modes, notes, EAL threshold(s), basis information, and developer guidance for how a particular setpoint is (or will be) determined. The EALs shall have been discussed and agreed upon with State and local officials. The fully developed site-specific EAL scheme shall be submitted to the NRC at least one hundred eighty (180) days before the date scheduled for initial fuel loading, as set forth in the notification submitted in accordance with 10 CFR 52.103(a).

Q37. Is verification of compliance with Permit Condition 8 largely ministerial?

A37. [All] Yes.

Q38. Why do you conclude that verification of compliance with Permit Condition 8 is largely ministerial?

A38. [All] Permit Condition 8 requires an applicant referencing the ESP to propose a license condition to develop an Emergency Action Level scheme in accordance with NEI 07-01 for the AP1000 design. For purposes of the ESP and this permit condition, the Staff’s verification activities would be to confirm that the later application includes this proposed

license condition. That activity is not subject to meaningful debate and does not require overly complex judgments by the Staff. For these reasons, verification of compliance with Permit Condition 8 is largely ministerial.

Q39. Is Permit Condition 8 similar to conditions placed on past licenses issued by the NRC?

A39. [All] Yes. Permit Condition 8 instructs applicants that reference the ESP to propose a license condition that is nearly identical to those that have been approved by the Commission. For example, the Commission recently approved issuance of the combined license for STP Unit 3, which includes the following condition (Exhibit PSEG008):

No later than 180 days before the date scheduled for initial fuel load as set forth in the notification submitted in accordance with 10 CFR 52.103(a), NINA shall submit to the Director of NRO, or to the Director's designee, in writing, a fully developed set of site-specific emergency action levels (EALs) for STP 3 in accordance with the Nuclear Energy Institute (NEI) 99-01, Revision 5 endorsed EAL scheme

The reference to NEI 99-01 instead of NEI 07-01 is due to the differences in the type of reactor design between the AP1000 and the ABWR for STP Units 3 and 4.

I. Permit Condition 9 (U.S. EPR, ABWR, or US-APWR Emergency Action Levels)

Q40. What is Permit Condition 9?

A40. [All] Permit Condition 9 (SER page A-6), which relates to SER Section 13.3.4.3.4, states:

An applicant for a COL or CP referencing this early site permit and the U.S. EPR, ABWR, or USAPWR standard design shall propose a license condition for the licensee to develop an Emergency Action Level (EAL) scheme with fully developed site-specific EALs, in accordance with the latest NRC-endorsed revision of NEI 99-01, "Methodology for Development of Emergency Action Levels," with few or no deviations or differences, other than those attributable to the specific reactor design. All deviations or differences from NEI 99-01 must be fully described in the

COL application, including providing the initiating condition, operating modes, notes, EAL threshold(s), basis information, and developer guidance for how a particular setpoint is (or will be) determined. The EALs shall have been discussed and agreed upon with State and local officials. The fully developed site-specific EAL scheme shall be submitted to the NRC at least one hundred eighty (180) days before the date scheduled for initial fuel loading, as set forth in the notification submitted in accordance with 10 CFR 52.103(a).

Q41. Is verification of compliance with Permit Condition 9 largely ministerial?

A41. [All] Yes.

Q42. Why do you conclude that verification of compliance with Permit Condition 9 is largely ministerial?

A42. [All] Permit Condition 9 requires an applicant referencing the ESP to propose a license condition to develop an Emergency Action Level scheme in accordance with NEI 99-01 for the U.S. EPR, ABWR, or US-APWR design. For purposes of the ESP and this permit condition, the Staff's verification activities would be to confirm that the later application includes this proposed license condition. That activity is not subject to meaningful debate and does not require overly complex judgments by the Staff. For these reasons, verification of compliance with Permit Condition 9 is largely ministerial.

Q43. Is Permit Condition 9 similar to conditions placed on past licenses issued by the NRC?

A43. [All] Yes. Permit Condition 9 instructs applicants that reference the ESP to propose a license condition that is nearly identical to those that have been approved by the Commission. For example, the Commission recently approved issuance of the combined license for STP Unit 3, which includes the following condition (Exhibit PSEG008):

No later than 180 days before the date scheduled for initial fuel load as set forth in the notification submitted in accordance with 10 CFR 52.103(a), NINA shall submit to the Director of NRO, or to the Director's designee, in writing, a fully developed set of site-specific emergency action levels

(EALs) for STP 3 in accordance with the Nuclear Energy Institute (NEI) 99-01, Revision 5 endorsed EAL scheme

IV. CONCLUSIONS

Q44. Please summarize your overall conclusions regarding SER Topic 2.

A44. [All] We have evaluated all nine of the NRC Staff's proposed permit conditions in SER Appendix A.1. We conclude that verification activities for all of the proposed permit conditions are "largely ministerial," as that standard has been defined by the Commission. We also note that in most cases the Commission has approved the inclusion of similar license conditions in other recent licenses. For these reasons, we conclude that the proposed permit conditions are appropriate and can be included in the ESP for the PSEG Site.

Q45. Does this conclude your testimony?

A45. [All] Yes.

We certify that this written testimony was prepared by us or under our direction, and we adopt the testimony as our sworn testimony in this proceeding.

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

Executed on February 25, 2016.

Executed in Accord with 10 CFR § 2.304(d)

/s/ James Mallon

James Mallon
Nuclear Development Manager
Nuclear Development Department
PSEG Power, LLC
244 Chestnut Street
Salem, NJ 08079
Phone: (856) 339-7908
E-mail: James.Mallon@pseg.com

Executed in Accord with 10 CFR § 2.304(d)

/s/ David Robillard

David Robillard
Licensing Engineer
Nuclear Development Department
PSEG Power, LLC
244 Chestnut Street
Salem, NJ 08079
Phone: (856) 339-7914
E-mail: David.Robillard@pseg.com

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