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U.S. Nuclear Regulatory Commission,
ATTN: Document Control Desk,
Washington, DC 20555-0001

Salem Generating Station Unit 2
Renewed Facility Operating License No. DPR-75
NRC Docket No. 50-311

Subject: **Response to Integrated Inspection Report 05000272/2016002 and 05000311/2016002**

- Reference: (1) Salem Nuclear Generating Station, Units 1 and 2 – Integrated Inspection Report 05000272/2016002 and 05000311/2016002
- (2) NEI letter to the NRC dated September 29, 2016 – NRC Non-Cited Violations Related to Susceptibility to Baffle Bolt Degradation

PSEG is submitting this letter to contest the Green non-cited violation (NCV) of 10 CFR 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," as described in NRC Inspection Report 05000272/2016002 and 05000311/2016002 (Reference 1).

The NRC stated that a violation existed when PSEG inadequately implemented the station's procedures to determine operability for a degraded condition associated with the Unit 2 baffle-former bolts. PSEG believes the violation did not occur. PSEG used the correct station procedures and processes to evaluate the Unit 2 baffle-former bolts. The violation does not involve a dispute over the rigor of the evaluation or analytical methods used. The PSEG evaluations concluded that the plant is susceptible to irradiation assisted stress corrosion cracking (IASCC). This conclusion, and stated susceptibility of Unit 2, does not infer or relate to actual degradation without some other corroborating evidence which does not exist at this time. To put it more concisely, **susceptibility** does not equal **degradation**.

Background

During the March 2016 refuel outage for Salem Unit 1, a number of degraded baffle-former bolts were identified. Salem Unit 1 has more effective full power years and had just entered the susceptibility window for extended operation. During the most recent Salem Unit 2 outage, in the fall of 2015, a visual examination of approximately 70% of

the bolts was performed and no anomalies were found. Since there were baffle-former bolt failures at Salem Unit 1, PSEG entered the baffle bolt issue into the Corrective Action Process and performed an Extent of Condition review on Salem Unit 2. A Technical Evaluation was performed by PSEG with support from Westinghouse, the original equipment manufacturer (OEM), and was independently reviewed by a third party vendor. The Technical Evaluation analyzed a number of factors contributing to IASCC and concluded that Salem Unit 2, while **susceptible** to IASCC, is less susceptible than Unit 1. There is no safety significance or operability concerns with solely being susceptible without corroborating evidence of **any** degradation. This conclusion supports the decision that an operability determination is not required. Salem Unit 2 will undergo a baffle-former bolt inspection and replacement if necessary during its next scheduled outage in the spring of 2017.

During a Problem Identification and Resolution inspection, the NRC inspectors shared their interpretation of Inspection Manual Chapter (IMC) 0326 and their conclusion that PSEG should have evaluated the Unit 2 baffle-former bolts using the Operability Determination process. The inspectors had no technical concerns with the evaluations provided. The concern was limited solely to a process question. An issue of using the wrong process, with no safety significance, does not meet the more than minor criteria of IMC 0612, Appendix E.

PSEG engaged with industry representatives and staff from the Indian Point plant to discuss this process question. The industry group concluded that PSEG did not meet the entry conditions for operability; however, it appeared based on the interactions with the NRC that it would be beneficial to enter that process. Eventually PSEG entered the Operability Determination process and prepared an operability evaluation using the same technical evaluations that were previously shown to the NRC inspectors. Changing from one process to another did not improve the quality of the evaluation or change the conclusions.

Entry Conditions for an Operability Determination

The entry conditions for an Operability Determination in the PSEG procedure are very similar to the NRC IMC 0326. These entry conditions are subjective, making it possible for well-intentioned individuals to reach different conclusions about whether an Operability Determination is required. However the entry conditions entail "reasonable" evidence of degradation or nonconforming conditions. In the case of Salem Unit 2, these entry conditions were not present. To make this point, Salem Unit 1 experienced a peripheral fuel failure during its cycle which is an indication of a baffle-former bolt failure. Comparing this to Unit 2, there is no indication of fuel degradation, much less failure, in the Unit 2 reactor core. Additionally, there are no other actual indications at Unit 2 that would lead one to question the integrity of the baffle-former bolts other than operating experience at other units. Further, Salem Unit 2 has not even entered the

time frame where the susceptibility for IASCC is a prominent concern. The technical evaluation performed for Unit 2 concluded that it was susceptible to IASCC due to material characteristics, however this **susceptibility** does not equate to actual or presumed **degradation**.

The OEM released a Nuclear Safety Advisory Letter (NSAL-16-1) on July 5, 2016 which concluded that the issue did not require 10 CFR 21 reporting. The detailed technical evaluation of the baffle-former bolt issue experienced at both Salem Unit 1 and Indian Point Unit 2 concludes that the most likely cause of baffle-former bolts degradation is IASCC. The OEM evaluation of the degraded baffle-former bolts concluded that this situation does not represent a potential defect, does not create a substantial safety hazard if left uncorrected, and continued operation of the unit(s) in consideration of this issue is acceptable.

Both PSEG and the OEM have concluded that systems supported by the baffle-former bolts would respond as designed and that there is no basis to perform an Operability Determination.

Conclusion

The basis for issuing a violation citing 10 CFR 50, Appendix B, Criterion V is not appropriate. The Operability Determination process procedure is not a Criterion V instruction and therefore there was no violation of 10 CFR 50, Appendix B, Criterion V.

PSEG requests that this non-cited violation be dismissed because PSEG believes procedures and NRC regulations were correctly followed. The condition of Salem Unit 2 was appropriately evaluated in accordance with PSEG procedures and the entry conditions for an Operability Determination were not met.

In addition, this violation represents an expansion of the NRC position of when operability evaluations are required. IMC 0326 states that (emphasis added): "information **reasonably** indicating a degraded or nonconforming condition..." provides entry into the Operability Determination process. Being "susceptible" without any corroborating evidence of degradation or a nonconforming condition does not meet the "reasonable" threshold for presuming actual degradation or nonconforming conditions. If **susceptible** becomes synonymous with **degraded**, then the entry conditions for Operability Determinations become more subjective, making it difficult to implement in a consistent manner.

PSEG did evaluate the condition of Salem Unit 2 using an Extent of Condition review and a technical evaluation. The evaluation concluded there was no safety significance for the Unit 2 baffle-former bolt susceptibility to IASCC. The technical argument supporting that conclusion was reviewed by the NRC and no deficiencies were identified. The violation is not based on a technical inadequacy but rather on a question

of process. It is difficult to see how a process question with no safety consequences is more than minor.

As a result of this finding, PSEG Nuclear has requested the Nuclear Energy Institute (NEI) to engage the NRC on this issue (Reference 2). PSEG looks forward to working with NEI and the NRC on a solution to clarifying the appropriate uses of the Operability Determination process.

There are no regulatory commitments in this correspondence.

Should there be any questions regarding this matter, please contact James Mallon, Director of Site Regulatory Compliance, at 856-339-7908.

Sincerely,

A handwritten signature in black ink, appearing to read 'C. McFeaters', with a long horizontal line extending to the right across the page.

Charles V. McFeaters
Site Vice President
Salem Generating Station

ako/jm

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cc: Mr. Daniel Dorman, Regional Administrator – Region I, NRC
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