UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

December 13, 2010

LICENSEE: PSEG Nuclear, LLC

FACILITY: Salem Nuclear Generating Station, Units 1 and 2

SUBJECT: SUMMARY OF TELEPHONE CONFERENCE CALL HELD ON OCTOBER 22, 2010, BETWEEN THE U.S. NUCLEAR REGULATORY COMMISSION AND PSEG NUCLEAR, LLC, CONCERNING QUESTIONS PERTAINING TO THE SALEM NUCLEAR GENERATION STATION, UNITS 1 AND 2, LICENSE RENEWAL APPLICATION

The U.S. Nuclear Regulatory Commission (NRC or the staff) and representatives of PSEG Nuclear, LLC (the applicant), and Exelon held a telephone conference call on October 22, 2010, to discuss and clarify the staff's questions concerning the Salem Nuclear Generating Station, Units 1 and 2, license renewal application. The telephone conference call was useful in clarifying the intent of the staff's questions.

Enclosure 1 provides a listing of the participants, Enclosure 2 contains a brief summary of the discussion and status of the items, and Enclosure 3 provides the draft request for additional information.

The applicant had an opportunity to comment on this summary.

Bennett Brady

Bennett M. Brady, Project Manager
Projects Branch 1
Division of License Renewal
Office of Nuclear Reactor Regulation

Docket Nos. 50-272 and 50-311

Enclosures:
1. List of participants
2. Summary of meeting discussion
3. Draft request for additional information

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TELEPHONE CONFERENCE CALL
SALEM NUCLEAR GENERATING STATION, UNIT 1 AND 2
LICENSE RENEWAL APPLICATION

LIST OF PARTICIPANTS
OCTOBER 22, 2010

PARTICIPANTS	AFFILIATIONS
Bennett Brady	U.S. Nuclear Regulatory Commission (NRC)
Louise Lund	NRC
Allen Hiser	NRC
On Yee	NRC
Gary Stevens	NRC
John Hufnagel	Exelon
Sam Speer	Exelon
Albert Piha	Exelon
Ali Fakhar	PSEG Nuclear, LLC

ENCLOSURE 1

SUMMARY OF MEETING ON DRAFT REQUEST FOR ADDITIONAL INFORMATION
ON WESTEMS PROGRAM
SALEM NUCLEAR GENERATING STATION, UNITS 1 AND 2
LICENSE RENEWAL APPLICATION

OCTOBER 22, 2010

The U.S. Nuclear Regulatory Commission (NRC or the staff) and representatives of PSEG Nuclear, LLC, held a telephone conference call on October 22, 2010, to discuss and clarify the draft request for additional information (RAI) on the WESTEMS fatigue monitoring software as shown in Enclosure 3.

Based on the discussion, the NRC will:

- In the fourth request (4th bullet), delete everything in the sentence from "if any" to the end of the request as it was redundant with the third request.
- In the sixth request (6th bullet), delete Table 4.3.1-2, Table 4.3.2-1, and Table 4.3.2-2 as these TLAAs had been dispositioned from (ii) to (iii) in an earlier telephone conference on metal fatigue analysis.
- In bullets five and six, for the benchmarking analysis requested, provide additional information to the applicant on the specific locations to be used. This would only be necessary for one unit if it can be shown that it is bounding.
- Provide the applicant with a revised draft of the final RAI.

ENCLOSURE 2

U.S. NUCLEAR REGULATORY COMMISSION
DRAFT REQUEST FOR ADDITIONAL INFORMATION

Background:

Section 4.3.1 of the Salem Nuclear Generating Station (Salem), Units 1 and 2, license renewal application (LRA) mentions that data from the WESTEMS fatigue monitoring software was reviewed with respect to pressurizer heatups and cooldowns. Section 4.3.4.2 of the Salem LRA credits the WESTEMS code for evaluation of fatigue for the pressurizer and surge line locations. Sections A.3.1.1 and B.3.1.1 of the Salem LRA identify that WESTEMS computes cumulative usage factors (CUFs) for select locations under a discussion of the Metal Fatigue of Reactor Pressure Boundary Program. Section A.4.3.4.2 of the Salem LRA mentions that WESTEMS was used to evaluate pressurizer insurge/outsurge transients and surge line stratification on the pressurizer.

Issue:

The U.S. Nuclear Regulatory Commission (NRC or the staff) is not clear on the specific use of WESTEMS at Salem. In addition, the staff has identified concerns regarding the results determined by the WESTEMS program as a part of the ASME Code fatigue evaluation process. For example, Westinghouse's response to NRC questions regarding the AP1000 Technical Report (see ADAMS Accession No. ML102300072, dated August 13, 2010), describes the ability of users to modify intermediate data (peak and valley stresses/times) used in the analyses. In addition, a response provided on August 20, 2010 (ADAMS Accession No. ML102350440) describes different approaches for summation of moment stress terms. These items can have significant impacts on calculated fatigue CUF. The potential impact for modifications such as these formed the basis for the staff's conclusions in Regulatory Issue Summary 2008-30, "Fatigue Analysis of Nuclear Power Plant Components," dated December 16, 2008, where it was noted that simplification of the analysis requires a great deal of judgment by the analyst to ensure that the simplification still provides a conservative result. The staff recognizes that WESTEMS has been developed under a formal Quality Assurance Program with supporting Technical Bases; however, it is difficult to ascertain the accuracy or conservatism of a component-specific application of WESTEMS given that a variety of analyst judgments may still be applied to the software outputs by the user on a case-specific basis.

Request:

The staff requests that the licensee provide clarification on the use of WESTEMS at Salem, as follows:

- Please clarify how WESTEMS is used at each Salem unit, especially with regard to the Metal Fatigue of Reactor Pressure Boundary Program. Specifically, what transients and locations are monitored by WESTEMS, what WESTEMS stress modules are used, and are the stress models used at each Salem unit identical?
- Please describe whether the issues raised in ADAMS Accession Nos. ML102300072 dated August 13, 2010, and ML102350440 dated August 20, 2010, are applicable to each Salem WESTEMS monitored location. If not, please describe the reasons those issues are not applicable.

- For each location monitored by WESTEMS, please describe the historical fatigue analyses of record starting from the original ASME Code, Section III design basis fatigue analysis of record. For each follow-on analysis, please describe the reason for the re-analysis, whether the evaluation was referenced in the current licensing basis, and whether an updated ASME Code, Section III Design Specification and Code Reconciliation were performed in accordance with ASME Code, Section III requirements. Please describe how these analyses are reflected in the results tabulated in Tables 4.3.1-1, 4.3.4-1, 4.3.7-1 and 4.3.7-2.
- Please describe the environmentally-assisted fatigue (EAF) analyses performed for each monitored location, if any, and how the stress models used in those analyses differ from the stress models and assumptions used in the governing analysis of record for each monitored location.
- Please describe the differences between the stress models used in WESTEMS and the stress models used in the currently governing fatigue analysis of record and the EAF analysis of record, if any, for each monitored location.
- Please describe how the transient counting results tabulated in Tables 4.3.1-2, 4.3.1-3, 4.3.1-4, 4.3.2-1, and 4.3.2-2 are incorporated into the fatigue results shown in Tables 4.3.7-1 and 4.3.7-2.

In addition, the staff requests a benchmarking evaluation of the component-specific application of the Salem locations monitored in WESTEMS using the same input parameters and assumptions as those used in the initial design basis analysis of record performed for each location in accordance with the ASME Code, Section III. The intent of this benchmarking evaluation is to confirm that the results of the WESTEMS model, including any analyst judgments, are acceptable and comparable to traditional ASME Code, Section III analyses of record for each of the monitored locations.

For each location, provide a summary of the benchmarking evaluation that includes the following information:

- A comparison of the calculated stresses and CUF using WESTEMS to the same results from the initial design basis analysis of record for all transient pairs representing at least 75% of the total CUF from the initial design basis analysis of record. One comparison for each unique stress model used in WESTEMS is sufficient.
- Describe the differences in the results between the WESTEMS evaluation and the initial design basis analysis of record for each location, and provide a justification for acceptability of the differences.

December 13, 2010

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/RA/

Bennett M. Brady, Project Manager
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ADAMS Accession No.: ML103210250 *concurrence via e-mail

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NAME	B. Brady	SFigueroa	B. Pham	B. Brady
DATE	12/09/10	11/23/10	12/10/10	12/13/10

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Memorandum to PSEG Nuclear, LLC from B. Brady dated December 13, 2010

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