



10 CFR 50.90

AUG 18 2010

LR-N10-0315

United States Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, DC 20555

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

Subject: Response to Request for Additional Information - License Amendment Request: One-Time On-Line Safety-Related Battery Replacement

References: (1) Letter from PSEG to NRC, "License Amendment Request: One-Time On-Line Safety-Related Battery Replacement," dated March 29, 2010

(2) Letter from PSEG to NRC, "Response to Request for Additional Information - License Amendment Request: One-Time On-Line Safety-Related Battery Replacement," dated June 25, 2010

In Reference 1, PSEG Nuclear LLC (PSEG) submitted a license amendment request (S10-03) for the Salem Generating Station – Unit 2. This license amendment request proposed changes to Technical Specification (TS) Surveillance Requirements (SR) to allow a one-time replacement of the Salem Unit 2 2C 125VDC battery while at power. Specifically, SR 4.8.2.3.2 f and g would be revised, on a one time basis, to permit battery testing in a non-shutdown condition. The proposed one-time change is necessary to support the on-line replacement of the existing 2C battery with a new battery tested in accordance with the SR 4.8.2.3.2 f and g.

In Reference 2 PSEG provided the response to an NRC Request for Additional Information (RAI) on the license amendment request. Subsequently, the NRC has provided PSEG an additional RAI. The NRC RAI and the PSEG response are provided in Attachment 1 to this letter.

PSEG has reviewed the information supporting a finding of no significant hazards consideration that was provided in Reference 1. The additional information provided in this submittal does not affect the bases for concluding that the proposed license amendment does not involve a significant hazards consideration. No new regulatory commitments are established by this submittal.

Should you have any questions regarding this submittal, please contact Mr. Jeff Keenan at (856) 339-5429.

ADD
LRR

I declare under penalty of perjury that the foregoing is true and correct.

Executed on 8/18/2010
(Date)

Sincerely,



Carl J. Fricker
Site Vice President - Salem

Attachments (1)

CC

M. Dapas, Regional Administrator (Acting) - NRC Region I
R. Ennis, Project Manager - USNRC
NRC Senior Resident Inspector - Salem
P. Mulligan, Manager IV, NJBNE
Commitment Coordinator – Salem
PSEG Corporate Commitment Manager

REQUEST FOR ADDITIONAL INFORMATION
REGARDING PROPOSED LICENSE AMENDMENT
ONE-TIME ON-LINE BATTERY REPLACEMENT
SALEM NUCLEAR GENERATING STATION, UNIT NO. 2
DOCKET NO. 50-311

By letter dated March 29, 2010 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML100970064), PSEG Nuclear LLC (the licensee) submitted an amendment request for Salem Nuclear Generating Station (Salem), Unit No. 2. The proposed amendment would revise the Technical Specifications (TSs) to allow a one-time replacement of the 2C 125-volt direct current (VDC) battery while Salem Unit 2 is at power.

The Nuclear Regulatory Commission staff has reviewed the information the licensee provided that supports the proposed amendment and has made a Request For Additional Information (RAI) in order to complete its review.

NRC Question

In Section 4.8 of Attachment 1 to the application dated March 29, 2010, and on page 8 of Attachment 1 to the letter dated June 25, 2010, PSEG described the testing that will be performed for both the temporary and new replacement (permanent) battery. As proposed, the preoperational testing for the batteries, following installation in the switchgear room (temporary battery) and 2C battery room (permanent battery), will include: (1) check of the battery connection resistance (cell connections, inter-rack connections and connections to the 125 VDC bus); and (2) check of battery cell parameters (intra-cell voltage, electrolyte specific gravity, electrolyte level, electrolyte temperature) and overall battery voltage on float charge. The licensee stated that testing for both batteries will be performed in accordance with IEEE-450-2002.

NRC Regulatory Guide (RG) 1.129, Revision 2, dated February 2007, endorses (with certain clarifying regulatory positions) IEEE-450-2002. Regulatory Position C.1 in RG 1.129 states that:

Subsection 2, "References," which stipulates that this standard should be used in conjunction with other IEEE standards, should be supplemented as follows:

"This recommended practice shall be used in conjunction with the following publications:

- IEEE Std 308, 'Criteria for Class 1E Power Systems for Nuclear Power Generating Stations,' as endorsed by Regulatory Guide 1.32
- IEEE Std 484, 'IEEE Recommended Practice for Installation Design and Installation of Vented Lead-Acid Batteries for Stationary Applications,' as endorsed by Regulatory Guide 1.128
- IEEE Std 485-1997, 'IEEE Recommended Practice for Sizing Lead-Acid Batteries for Stationary Applications'"

In RG 1.32, Revision 3, "Criteria for Power Systems for Nuclear Power Plants," dated March 2004, the NRC staff endorsed, with certain exceptions, IEEE-308-2001, as providing a method acceptable to the staff for use in complying with the NRC's regulations for the design, operation,

and testing of electric power systems in nuclear power plants. Section 6.3, "Preoperational system test" of IEEE-308-2001 states that:

The preoperational system tests shall be performed with all components installed. These tests shall demonstrate that the equipment operates within design limits and that the system is operational and can meet its performance specification. These tests shall be performed after the preoperational equipment tests and shall demonstrate that

- a) All required coincident Class 1E and non-Class 1E loads can operate acceptably on the preferred power supply.
- b) The loss of the preferred power supply can be detected.
- c) Each standby power supply can be started and can accept its design load within the time specified in the design basis while maintaining acceptable voltage regulation.
- d) The redundant Class 1E sources and their associated load groups are each independent of all other sources.
- e) Transfer between preferred and standby power supplies can be accomplished.
- f) The batteries of the direct current power supply can meet the design requirements of their connected load without the charger(s) in operation.
- g) Each battery charger has sufficient capacity to meet the largest combined demands of the various continuous steady-state loads plus the charging capacity to restore the battery from the design minimum charge state to the fully charged state within the time stated in the design basis.

Consistent with IEEE-308-2001, the NRC staff position is that the preoperational tests for the temporary and permanent batteries (after they are installed in the switchgear room and 2C battery room, respectively), need to provide assurance that the batteries would be capable of supplying power to support all required loads for as long as would be required following a loss of alternating current power consistent with the Salem design basis. A battery service test, consistent with SR 4.8.2.3.2.f, on each battery would satisfy the staff's concerns. Please clarify how the proposed testing of the temporary and permanent batteries (after they are installed in the switchgear room and 2C battery room, respectively), provides assurance that the batteries will be demonstrated operable (i.e., battery capacity is adequate to supply all loads for the design duty cycle).

PSEG Response

In accordance with IEEE 308-2001, Section 6.3, the temporary 2C battery and the new 2C replacement battery will be tested to verify the batteries can meet the design requirements of their connected load without the charger(s) in operation. The test, as described below, will be performed after final installation with all components installed.

This testing requirement will be fulfilled by performing an additional test on both the temporary 2C battery and the new replacement 2C battery prior to placing the batteries in service. A service test, in accordance with PSEG Procedure SC.MD-ST.125-0006, will be performed on the temporary 2C battery and the new 2C replacement battery after they are installed in the switchgear room and 2C battery room, respectively. This is a test of the battery's ability to satisfy the battery duty cycle. The test meets the requirements of IEEE 450-2002 for "Service Test" and PSEG TS SR 4.8.2.3.2.f.