



**MAR 22 2013**

10 CFR 50.90

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LAR S12-02

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

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Salem Nuclear Generating Station, Units 1 and 2  
Renewed Facility Operating License Nos. DPR-70 and DPR-75  
NRC Docket Nos. 50-272 and 50-311

Subject: **Response to Second Request for Additional Information dated March 11, 2013, Re: Deletion of Condition for Inoperable Control Area Air Conditioning System / Control Room Emergency Air Conditioning System Isolation Dampers (TAC NOS. ME9095 and ME9096)**

- References:
- (1) LR-N12-0183, "License Amendment Request to Technical Specification (TS) 3.7.6.1 (Unit 1) and 3.7.6 (Unit 2) Control Room Emergency Air Conditioning System," dated July 17, 2012, ADAMS Accession No. ML12199A426.
  - (2) NRC Letter, Salem Nuclear Generating Station, Units 1 and 2 – Second Request for Additional Information RE: Deletion of Condition for Inoperable Control Area Air Conditioning System / Control Room Emergency Air Conditioning System Isolation Dampers (TAC NOS. ME9095 and ME9096), dated March 11, 2013, ADAMS Accession No. ML13063A717

In Reference 1 PSEG Nuclear LLC (PSEG) requested an amendment (LAR S12-02) to Renewed Facility Operating License Nos. DPR-70 and DPR-75 for Salem Nuclear Generating Station, Units 1 and 2. The proposed amendment would modify the Technical Specifications (TS) to eliminate the separate TS action statement for an inoperable Control Area Air Conditioning System (CAACS) / Control Room Emergency Air Conditioning System (CREACS) isolation damper.

In Reference 2, the NRC provided PSEG a Request for Additional Information (RAI) related to the Reference 1 request, dated March 11, 2013. Attachment 1 to this submittal provides the response to the RAI.

PSEG has determined that the information provided in this response does not alter the conclusions reached in the 10 CFR 50.92 no significant hazards consideration determination previously submitted.

There are no commitments contained in this letter.

If you have any questions or require additional information, please do not hesitate to contact Mr. Brian Thomas at (856) 339-2022.

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

Executed on MAR 22 2013  
(date)

Sincerely,



Carl J. Fricker  
Site Vice President  
Salem Generating Station

Attachment – Response to Request for Additional Information

cc: W. Dean, Regional Administrator - NRC Region I  
J. Hughey, Project Manager - USNRC  
NRC Senior Resident Inspector – Salem Unit 1 and Unit 2  
P. Mulligan, Manager IV, NJBNE  
Commitment Coordinator – Salem  
PSEG Commitment Coordinator – Corporate

RESPONSE TO SECOND REQUEST FOR ADDITIONAL INFORMATION

SALEM GENERATING STATION, UNITS 1 AND 2

DELETION OF CONDITION FOR INOPERABLE CONTROL AREA AIR CONDITIONING SYSTEM

/ CONTROL ROOM EMERGENCY AIR CONDITIONING SYSTEM ISOLATION DAMPERS

DOCKET NUMBERS 50-272 AND 50-311

By letter dated July 17, 2012,<sup>1</sup> as supplemented by letter dated January 28, 2013,<sup>2</sup> PSEG Nuclear LLC (PSEG, the licensee) submitted a license amendment request for Salem Nuclear Generating Station (Salem), Units 1 and 2. Specifically, pursuant to Title 10 of the *Code of Federal Regulations* (10 CFR), Section 50.90, PSEG requested a license amendment to revise Technical Specification (TS) 3/4.7.6.1 (Unit 1) and 3/4.7.6 (Unit 2), "Control Room Emergency Air Conditioning System," by removing the separate action for securing an inoperable Control Area Air Conditioning System (CAACS) and Control Room Emergency Air Conditioning System (CREACS) isolation damper in the closed position and entering the actions for an inoperable control room envelope boundary. The Nuclear Regulatory Commission staff has reviewed the information submitted by the licensee, and based on this review, determined the following information is required to complete the evaluation.

Containment and Ventilation Branch (SCVB) Request for Additional Information:

Salem Unit 1 TS 6.18, "Control Room Envelope Habitability Program," and Unit 2 TS 6.17, "Control Room Envelope Habitability Program," address "Elements a through Element f," regarding control room habitability following a radiological event, hazardous release, or a smoke challenge.

PSEG stated in Section 4.0 of Attachment 1, to the submittal dated July 17, 2012, that the current actions for an inoperable control room boundary would allow the implementation of mitigating actions that ensure the control room envelope boundary is able to meet the limits of the radiological, smoke and chemical hazards analyses. Performance of these actions in lieu of isolating an inoperable CAACS/CREACS damper in the closed position would allow the performance of preventative maintenance and avoid the unnecessary shutdown of the Salem Units when actions can be implemented that ensure the plant operates within the bounds of the radiological, smoke and chemical hazards analyses.

PSEG also stated that for preventative maintenance activities that require the inoperability of the CAACS/CREACS isolation dampers, the mitigating actions would be developed and reviewed prior to implementation, to ensure the mitigating actions maintain operation of the plant within the limits of the radiological, smoke and chemical hazards analyses.

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<sup>1</sup> Agencywide Documents Access and Management System (ADAMS) Accession Nos. ML12199A426.

<sup>2</sup> ADAMS Accession Nos. ML13028A268.

The NRC staff requests the PSEG to provide clarification for the following:

SCVB RAI 1: What is the fail position of the isolation damper(s) under loss of air or loss of power?

Response: The CAA14 and CAA20 dampers are spring loaded dampers designed to fail closed on the loss of control air or power.

SCVB RAI 2: Under the circumstances the isolation damper(s) are inoperable due to preventive maintenance, what compensatory measures will be taken to make sure that the control room boundary is maintained?

Response: The CAA14 and CAA20 dampers are designed to close on actuation of the CREACS in either the accident pressurized mode or recirculation mode. These isolation dampers are located outside of the control room envelope (CRE). The concern with an inoperable CAACS/CREACS isolation damper is to ensure that the duct work from the CRE is isolated from the areas outside of the CRE.

If the preventative maintenance being performed does not impact the damper in the duct, the damper can be used to isolate the flow path by closing the damper and securing the damper in the closed position. If the damper can not be used to isolate the flow path, then the compensatory measure will consist of placing a barrier between the CRE and the CAACS/CREACS isolation damper, in accordance with the CRE Habitability Program, in order to maintain the control room boundary (e.g., removing the damper from the duct work and installing a blank).

SCVB RAI 3: Please describe what mitigating actions and any compensatory measures that would be developed and reviewed prior to implementation to maintain operation of the plant within the limits of the radiological, smoke and chemical hazards analyses during inoperability of the CAACS/CREACS isolation dampers.

Response: As described in response to question 2, the mitigating action would consist of closing the CAACS/CREACS isolation damper or placing a barrier between the CRE and the CAACS/CREACS isolation damper.

During radiological design basis accidents the CREACS is automatically initiated by either a safety injection signal or a control room radiation monitor and operates in the pressurization mode. For chemical and fire events outside of the control area, the CREACS is manually initiated by the control room operators in recirculation mode. In either the pressurization mode or recirculation mode both the CAA14 and CAA20 dampers are closed.

As required by surveillance requirement 4.7.6.2, CRE unfiltered air inleakage testing is performed in accordance with the Control Room Habitability Program. The unfiltered air inleakage testing is performed with the CREACS system operating in both the pressurized and recirculation mode. During these modes of operation the CAA14 and CAA20 dampers are closed. The successful performance of this

inleakage test demonstrates that closure of the CAA14 and CAA20 dampers as a mitigating action, when the isolation damper can be closed, would maintain the plant within the limits of the radiological, smoke, and chemical hazard evaluations.

If the isolation damper can not be used to isolate the flow path, then a barrier will be installed that will close the opening in the duct between the CRE and the CAACS/CREACS isolation damper to maintain the closure of the flow paths. This barrier will be evaluated in accordance with the CRE Habitability Program to maintain the habitability of the CRE within the limits of the radiological, smoke, and chemical hazard evaluations as discussed in the response to question 4. The barrier would be developed to withstand the pressure differential between the CRE and the adjacent areas where the dampers are physically located. The barrier would allow the CREACS fans to continue to pressurize the control room envelope during a radiological hazard.

SCVB RAI 4: Also, clarify that these mitigating actions conform to Salem Unit 1 TS 6.18, "Control Room Envelope Habitability Program" and Unit 2 TS 6.17, "Control Room Envelope Habitability Program."

Response: The Salem Unit 1 TS 6.18 and Unit 2 TS 6.17 control room habitability program is governed by procedure ER-AA-390, *Control Room Envelope Habitability Program*, and Training and Reference Material (T&RM) ER-AA-390-1001, *Control Room Envelope Habitability Program Implementation*. Step 2.1 of ER-AA-390-1001 defines a breach as, "any work or testing that creates an opening through a barrier, which would allow the propagation of a hazard through the barrier...." Section 4.2 of ER-AA-390-1001 establishes that procedural guidance shall be established to manage and control breaches of the CRE. Procedure SC.OP-SO.CAV-0001, *Control Room Envelope Breach*, provides the control of breaches to the CRE boundary. Procedure SC.OP-SO.CAV-0001 Section 5.1, *Planned Breach*, provides the direction to evaluate the effect on control room habitability prior to breaching the CRE boundary and to ensure that mitigating actions are in place to close the breach when CRE isolation is required. Therefore, the mitigating actions identified in question 2 are consistent with the control room envelope habitability program described in Salem Unit 1 TS 6.18 and Salem Unit 2 TS 6.17.

SCVB RAI 5: Surveillance Requirement 4.7.6.1.d.4 involves the operability of the isolation dampers discussed in action statement 3.7.6.1.f/g (Salem Unit 1) and 3.7.6.f/g (Salem Unit 2). These dampers are active components, since they are required to change position (from open to close) on applicable actuation signals. If an 18 month surveillance test fails for reasons of failure of the isolation damper from an active component viewpoint, entrance into action statement 3.7.6.1.f/g or 3.7.6.f/g would be required. Therefore, please address why action statements 3.7.6.1.f/g and 3.7.6.f/g can be deleted as opposed to revised to accommodate maintenance on the dampers.

**Response:** The elimination of the separate action for the CAACS/CREACS isolation dampers will make the Salem TS more consistent with the Westinghouse NUREG-1431 standard technical specifications (STS). Salem TS SR 4.7.6.1.d.4 is similar to STS SR 3.7.10.3. STS SR 3.7.10.3 requires licensees to “verify each CREFS train actuates on an actual or simulated actuation signal.” The STS does not contain a separate action statement for dampers that serve to isolate the CRE boundary. An inoperable CRE isolation damper during performance of STS SR 3.7.10.3 would result in the entry of the action for the inoperable CRE boundary. Therefore, the proposed change to the Salem TS to eliminate the separate action for the CAACS/CREACS isolation damper and entering the action for the inoperable CRE boundary is consistent with the STS.

In the event a CAACS/CREACS isolation damper is declared inoperable due to the inability to close upon an actuation signal during the performance of 18-month surveillance testing, entry into the actions for an inoperable CRE boundary requires that mitigating actions are initiated immediately.

In the event that the inability of the CAACS/CREACS damper to close does not impact the ability to use the damper to isolate the flow path, the CAACS/CREACS isolation damper would be physically closed to isolate the flow path as the mitigating action under Salem TS action 3.7.6.1.c.1 (Unit 1) and 3.7.6.c.1 (Unit 2). In this case action statement 3.7.6.1.f/g (Salem Unit 1) and 3.7.6.f/g (Salem Unit 2) is redundant to the actions required by the action statement for the inoperable CRE boundary.

If the failure of the CAACS/CREACS damper to close during surveillance testing is the result of the inability of the damper to physically close, action statement 3.7.6.1.f/g (Salem Unit 1) and 3.7.6.f/g (Salem Unit 2) would require the shutdown of both Salem Units since the dampers could not be secured in the closed position. Under the current TS action statement, even if actions could be taken to ensure the isolation of the CRE boundary, these actions are not allowed to be performed. Eliminating the specific action to secure the CAACS/CREACS dampers in the closed position and entering the action for the CRE boundary would avoid the unnecessary shutdown of the units when an acceptable mitigating action can be implemented that would maintain the CRE boundary and ensure the units are operated within the limits of the radiological, chemical, and smoke hazard evaluations. If a mitigating action can not be established that would maintain the

units within the limits of the radiological, chemical, and smoke hazard evaluations then the action statement for the inoperable CRE boundary would require the shutdown of both Salem Units consistent with action statement 3.7.6.1.f/g (Salem Unit 1) and 3.7.6.f/g (Salem Unit 2).

Modifying action statement 3.7.6.1.f/g (Salem Unit 1) and 3.7.6.f/g (Salem Unit 2) to accommodate maintenance of the CAACS/CREACS isolation dampers would involve modifying the action statement to include the same controls currently provided by the elements of the CRE Habitability Program for the CRE boundary. The action statement would need to ensure any barrier installed to maintain the closure of the CRE boundary during maintenance on the CAACS/CREACS dampers ensures the plant continues to meet the limits of the radiological, chemical, and smoke hazard evaluations. Therefore modifying action statement 3.7.6.1.f/g (Salem Unit 1) and 3.7.6.f/g (Salem Unit 2) to accommodate maintenance of the CAACS/CREACS isolation dampers would make these actions redundant to the actions for the inoperable CRE boundary.