



10 CFR 50.90

LR-N10-0408
November 19, 2010

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

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

Subject: Response to Draft Request for Additional Information - Risk-Informed Relocation
of Surveillance Frequency Requirements

- Reference (1) Letter from Carl J. Fricker, PSEG Nuclear LLC, to U.S. Nuclear
Regulatory Commission, "Application for Technical Specification Change
Regarding Risk-Informed Justification for the Relocation of Specific
Surveillance Frequency Requirements to a Licensee Controlled
Program," dated March 23, 2010 (ADAMS Accession No. ML100910154)
- (2) Email from R. Ennis, USNRC to PSEG, "Salem Nuclear Generating
Station, Unit Nos. 1 and 2, Draft Request for Additional Information (TAC
Nos. ME3574 and ME3575)," dated September 1, 2010 (ADAMS
Accession No. ML102440592)

In Reference 1, PSEG Nuclear LLC (PSEG) submitted a license amendment request for the Salem Nuclear Generating Station (Salem). Specifically, the proposed change would modify Salem Technical Specifications (TS) by relocating specific surveillance frequencies to a licensee-controlled program, the Surveillance Frequency Control Program, with the implementation of Nuclear Energy Institute (NEI) 04-10, "Risk Informed Method for Control of Surveillance Frequencies."

In Reference 2 the NRC requested additional information regarding PSEG's license amendment request. The information requested by the NRC and PSEG's responses are in Attachment 1.

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 determination previously submitted.

There are no new commitments contained in this letter. Should you have any questions, please contact Paul Duke at (856) 339-1466.

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

Executed on November 19, 2010
(date)

Sincerely,



Carl J. Fricker
Site Vice President - Salem
PSEG Nuclear LLC

Attachment

1. Response to draft request for additional information
- cc: W. Dean, Regional Administrator - NRC Region I
R. Ennis, Project Manager - USNRC
NRC Senior Resident Inspector - Salem
P. Mulligan, Manager IV, NJBNE
L. Marabella, Corporate Commitment Tracking Coordinator
H. Berrick, Salem Commitment Tracking Coordinator

Response to Draft Request for Additional Information

Salem Nuclear Generating Station - Units 1 and 2 NRC Docket Nos. 50-272 and 50-311

In Reference 1, PSEG Nuclear LLC (PSEG) submitted an amendment request for Salem Nuclear Generating Station (Salem), Unit Nos. 1 and 2. The proposed amendment would modify the Technical Specifications by relocating specific surveillance frequencies to a licensee-controlled document. The proposed amendment is based on Nuclear Regulatory Commission (NRC)-approved Technical Specification Task Force (TSTF) Traveler TSTF-425, Revision 3, "Relocate Surveillance Frequencies to Licensee Control - RITSTF [Risk-Informed TSTF] Initiative 5b." The NRC reviewed the license amendment request and identified the need for additional information. A draft request for additional information (RAI) was electronically transmitted to PSEG on September 1, 2010 (Reference 2). The questions are restated below along with PSEG's response.

- Section 2.2 of Attachment 2 of the application dated March 23, 2010, states that PSEG completed the 4.3 update to the Salem Probabilistic Risk Assessment (PRA) model in late 2009 as the result of the incorporation of significant plant changes into the prior PRA model. Confirm that the 4.3 PRA update also incorporated model and documentation changes that resolved all of those gaps identified by the peer review on the 4.2 model (used in the September 21, 2009, license amendment request to extend the Type A containment test interval for Salem Unit 1) which no longer appear as gaps in Table 2-1 (of Attachment 2) for this application.

Response:

The model that was reviewed in the Salem 2009 PRA peer review was the Salem PRA 4.1 revision. See the table below reconciling the differences between the Type A containment test interval LAR RAI response (Tables B-1 through B-10 in Attachment 1 to Reference 3) and the surveillance frequency change LAR Attachment 2 Table 2-1. The items not appearing in Attachment 2 Table 2-1 in Reference 1 generally are either closed as indicated in the RAI or are represented by a finding named for another supporting requirement (SR). For example, LE-G4 is associated with Finding SC-C3-02. The table in the ILRT RAI response lists the SRs that were not met per the Salem PRA peer review report. Table 2-1 of Attachment 2 of the current submittal lists the still open findings from the peer review report. Thus, the two tables would not necessarily match.

ILRT RAI SRs Not Met	Associated Finding	Finding Appears in Att. 2 Table 2-1	Basis For Non-Inclusion In Table 2-1
IE-A1	IE-A1-01	Yes	N/A
IE-A3	IE-A3-01	Yes	N/A
IE-A3a	IE-A3a-01	Yes	N/A
IE-A4a	IE-A4-01	Yes	N/A
IE-A5	IE-A5-01	Yes	N/A
IE-B3	IE-B3-01	Yes	N/A

ILRT RAI SRs Not Met	Associated Finding	Finding Appears in Att. 2 Table 2-1	Basis For Non-Inclusion In Table 2-1
IE-C3	IE-C3-01	Yes	N/A
IE-C4	IE-A1-01	Yes	SR listed with non-matching finding.
IE-D3	SC-C3-02	Yes	SR listed with non-matching finding.
AS-B6	AS-A8-01	Yes	SR listed with non-matching finding.
AS-C2	AS-C2-01	No	Finding closed
AS-C3	SC-C3-02	Yes	SR listed with non-matching finding.
SC-A1	SC-A1-01	No	Finding closed
SC-A2	SC-A2-01	No	Finding closed
SC-B4	SC-B4-01	No	Finding closed
SC-B5	SC-B5-01	Yes	N/A
SC-C3	SC-C3-02	Yes	N/A
SY-A4	SY-A4-01	Yes	N/A
SY-A6	SY-A6-01	Yes	N/A
SY-A8	SY-A8-01	Yes	N/A
SY-A10	SY-A10-01	Yes	N/A
SY-A12	SY-A12-01	Yes	N/A
SY-A13	SY-A13-01	Yes	N/A
SY-A19	SY-A19-01	Yes	N/A
SY-A21	SY-A21-01	Yes	N/A
SY-B3	SY-B3-01	No	Finding closed
SY-B4	SY-B3-01	No	Finding closed
SY-B5	SY-B5-01	Yes	N/A
SY-B6	SY-B6-01	No	Finding closed

ILRT RAI SRs Not Met	Associated Finding	Finding Appears in Att. 2 Table 2-1	Basis For Non-Inclusion In Table 2-1
SY-B10	SY-B5-01	Yes	SR listed with non-matching finding.
SY-B11	SY-B11-01	Yes	N/A
SY-B12	SY-B12-01	No	Finding closed
SY-B15	None	No	No associated finding specifically attributed to this SR in peer review report.
SY-B16	HR-C3-01	Yes	SR listed with non-matching finding.
SY-C2	SY-A6-01	Yes	SR listed with non-matching finding.
SY-C3	SC-C3-02	Yes	SR listed with non-matching finding.
HR-B2	HR-B2-01	No	Finding closed
HR-C3	HR-C3-01	Yes	N/A
HR-D6	SC-C3-02	Yes	SR listed with non-matching finding.
HR-F2	HR-F2-01	No	Finding closed
HR-G4	HR-F2-01	No	Finding closed
HR-G9	SC-C3-02	Yes	SR listed with non-matching finding.
HR-I3	SC-C3-02	Yes	SR listed with non-matching finding.
DA-A1a	DA-A1a-01	Yes	N/A
DA-A2	DA-A2-01	No	Finding closed
DA-C1	DA-A1a-01, DA-C1-01	Yes	N/A
DA-C2	DA-C2-01	Yes	N/A
DA-C4	DA-C4-01	No	Finding closed
DA-C5	DA-C5-01	No	Finding closed
DA-C6	DA-C6-01	Yes	N/A

ILRT RAI SRs Not Met	Associated Finding	Finding Appears in Att. 2 Table 2-1	Basis For Non-Inclusion In Table 2-1
DA-C7	DA-E2-01	Yes	SR listed with non-matching finding.
DA-C9	DA-E2-01	Yes	SR listed with non-matching finding.
DA-C10	DA-C10-01	Yes	N/A
DA-C11	DA-C11-01	No	Finding closed
DA-C11a	DA-C11a-01	No	Finding closed
DA-C12	DA-C12-01	No	Finding closed
DA-C13	DA-C13-01	No	Finding closed
DA-E2	DA-E2-01	Yes	N/A
DA-E3	SC-C3-02	Yes	N/A
IF-A4	IF-A4-01	No	Finding closed
IF-B1a	IF-B1a-01, IF-C4a-01	No	Finding closed
IF-B3a	IF-A4-01	No	Finding closed
IF-C1	IF-C1-01	No	Finding closed
IF-C2	IF-C2-01	No	Finding closed
IF-C2a	IF-C2a-01	No	Finding closed
IF-C2b	IF-C2b-01	No	Finding closed
IF-C2c	IF-C2c-01	No	Finding closed
IF-C3a	IF-C3a-01	No	Finding closed
IF-C4	IF-C4-01	No	Finding closed
IF-C4a	IF-C4a-01, IF-B1a-01	No	Finding closed
IF-D3	IF-C4-01	No	Finding closed
IF-D4	IF-C4a-01	No	Finding closed
IF-E8	IF-A4-01	No	Finding closed
IF-F2	See all IF F&Os	No	Finding closed
IF-F3	IF-F3-01	No	Finding closed

ILRT RAI SRs Not Met	Associated Finding	Finding Appears in Att. 2 Table 2-1	Basis For Non-Inclusion In Table 2-1
QU-B5	QU-B5-01	Yes	N/A
QU-B9	QU-B9-01	Yes	N/A
QU-D1b	QU-D1b-01	Yes	N/A
QU-D1c	No finding	No	QU-A4-01 associated with this SR is categorized as a suggestion not a finding.
QU-D4	QU-D4-01	Yes	N/A
QU-D5a	QU-F2-01	Yes	SR listed with non-matching finding.
QU-D5b	QU-F2-01	Yes	SR listed with non-matching finding.
QU-E1	SC-C3-02	Yes	SR listed with non-matching finding.
QU-E3	SC-C3-02	Yes	SR listed with non-matching finding.
QU-E4	SC-C3-02	Yes	SR listed with non-matching finding.
QU-F2	QU-F2-01	Yes	N/A
QU-F4	SC-C3-02	Yes	SR listed with non-matching finding.
QU-F6	QU-F2-01	Yes	SR listed with non-matching finding.
LE-C8a	LE-C8a-01	Yes	N/A
LE-D1b	LE-D1b-01	No	Finding closed
LE-D6	LE-D6-01	No	Finding closed
LE-F1b	LE-F1b-01	Yes	N/A
LE-F3	LE-F3-01	Yes	N/A
LE-G4	SC-C3-02	Yes	SR listed with non-matching finding.
LE-G5	LE-G5-01	Yes	N/A
LE-G6	LE-G6-01	Yes	N/A

ILRT RAI SRs Not Met	Associated Finding	Finding Appears in Att. 2 Table 2-1	Basis For Non-Inclusion In Table 2-1
MU-B4	MU-B4-01	No	Finding closed
MU-C1	MU-C1-01	No	Finding closed

The following questions relate to facts and observations (F&Os) entries in Table 2-1 in Attachment 2 of the application which identifies gaps to Capability Category II of the American Society of Mechanical Engineers (ASME) PRA standard.

- For F&O DA-A1a-01, confirm that component boundaries are properly defined and that the supporting requirement is met, and that only the documentation is insufficient.

Response:

There was a documented process used for defining component boundaries, which was followed during the data and systems analyses. Boundaries are consistent with the failure data sources (primarily NUREG/CR-6928) and unavailability data is consistent with the definition in the system analysis. The supporting requirement is met, only documentation of the process used was judged insufficient by the peer review team.

- For F&O DA-C1-01, confirm that the test and maintenance philosophies and approach are the same for Salem as the generic unavailability data used and that the supporting requirement is met. In addition, confirm that only the documentation is insufficient.

Response:

Relatively few component types used generic unavailability data. A majority of the SSCs, for which unavailability is modeled, used plant-specific unavailability data.

- A majority of the components using generic unavailability data had no actual unavailability data at the plant, due to their reliability, very short Technical Specification Allowed Outage Times (AOT), and/or importance to power production. For these component types, nominal generic unavailability values were used in lieu of zero unavailability.
- There were a few component types that did not have readily available plant-specific unavailability data, but were more routinely removed from service (e.g., Station Air Compressors). For these components, either older plant specific data was used or it was determined that the generic data was applicable to be used for the Salem PRA.

Thus, the intent of the SR was met, but the documentation describing the above information lacks detail.

- Regarding F&O DA-C2-01, confirm whether plant-specific data would be developed for SSCs whose surveillance intervals are under consideration for change.

Response:

Plant-specific failure rates are not required per the NEI 04-10 methodology. As noted in the submittal for F&O DA-C2-01, Step 14 of the NEI 04-10 methodology requires that

sensitivity studies regarding the failure rate value be performed. The actual performance of the system is addressed in Step 7 of the NEI 04-10 methodology.

5. For F&O DA-C6-01, provide additional information that confirms this is only a documentation issue and that the number of plant-specific demands on standby components is accurately counted.

Response:

The number of demands on standby components was determined by a review of surveillance tests and operational demands. The basis is documented in calculations and reports not directly associated with the Salem PRA. Some, but not all of this documentation is referenced in the Data Notebook. Therefore, this is only a documentation issue and the intent of the SR is actually met.

6. The description of F&O DA-C10-01 matches neither the element and supporting requirement in the ASME PRA standard nor the description of the same F&O in PSEG's February 24, 2010, letter, "Response to Request for Additional Information Regarding License Amendment Request for One-Time Extension of the Type A Test Interval." Provide a description of F&O DA-C10-01 (as relevant for the 4.3 PRA update) and an assessment of the impact on this application.

Response:

The finding listed in PSEG's March 23, 2010 submittal matches the description contained in Table 4-12 of the Salem peer review report. This is a typographic error in the Salem peer review report and does not match the supporting requirement in the ASME PRA standard. There is different text for this finding in other locations of the peer review report which matches the supporting requirement in the ASME PRA standard and was used for the ILRT LAR RAI response. The Finding text which matches the subject of the SR is as stated in the ILRT extension LAR RAI response. This is repeated below for convenience:

Documentation describing the process of reviewing test procedures to determine surveillance test data could not be identified. No specific surveillance tests were discussed in the Data Analysis Notebook. The Systems Analysis Notebooks for specific systems described various surveillance testing, but did not reference surveillance tests by name.

The impact is minimized for this application as the surveillance test interval change process in NEI 04-10 requires a sensitivity to be performed on the failure probabilities used in the assessment.

7. Regarding F&O DA-D4-01, confirm that the relevant comparisons, and an evaluation of the issue of relatively small generic alpha factors possibly biasing the updated value, have been performed, and that it is only the documentation that is insufficient.

Response:

For failure rates determined using a Bayesian update process, comparisons were made of the updated (posterior) values with the prior values in order to ensure that the updated results were reasonable, in light of the prior data and plant specific evidence. As part of this comparison, it was confirmed that plant specific data did not excessively bias the

updated data. This review and comparison has not been documented. Therefore, it is only the documentation that is insufficient for this SR.

8. For F&Os SY-B11-01, DA-D6-01, QU-D3-01, QU-D4-01, QU-F2-01, LE-F1b-01, provide additional information that confirms that the supporting requirements are actually met (e.g., through appropriate analyses, reviews, and evaluations, and that it is only the documentation that is insufficient).

Response:

- SY-B11-01
The SR states that actuation signals must be considered or justification provided. Although not all AFW logic starts were modeled, the main ones for the Salem PRA model which most impact the AFW results are included. The documentation for excluding the less significant AFW initiators is what is insufficient.
- DA-D6-01
Generic common cause alpha-factors from INL/NRC were used. The appropriate factors were used for component types and failure modes specifically designated in the common cause data (e.g., PWR High Pressure Injection Pumps). Pooled data alpha-factors were used where component types or failure modes did not have specific alpha-factors identified. There was no plant specific evidence of common cause failures that would invalidate the use of generic common cause factors. Only the documentation requires improvement.
- QU-D3-01
There is no formal documented comparison of the current Salem PRA results; however, in comparisons of results and importances through various PWROG activities, no outliers were identified. Thus the intent of the SR has been met.
- QU-D4-01
A sampling of non-significant accident cutsets or sequences to determine they are reasonable and have physical meaning was performed but not documented. The review of a sampling of dominant and non-dominant cutsets is required by the PRA update procedure, ER-AA-600-1015.
- QU-F2-01
Given that this is a documentation-only SR, not meeting this SR is only a documentation issue. Several of the listed deficient items are performed during creation of applications such as the site risk awareness poster.
- LE-F1b-01
Application of the Large Early Release Frequency (LERF) model has not revealed any unreasonable results or distributions. There was no documented check for reasonableness, but the results as reported in the quantification notebook are typical of a Westinghouse large dry containment. Additionally in the Severe Accident Mitigation Alternatives (SAMA) analysis the basic event importances for LERF and other Level 2 sequences were thoroughly analyzed. Therefore, it is only the documentation that is insufficient.

References

1. Letter from Carl J. Fricker, PSEG Nuclear LLC, to U.S. Nuclear Regulatory Commission, "Application for Technical Specification Change Regarding Risk-Informed Justification for the Relocation of Specific Surveillance Frequency Requirements to a Licensee Controlled Program," dated March 23, 2010 (ADAMS Accession No. ML100910154)
2. Email from R. Ennis, USNRC to PSEG, "Salem Nuclear Generating Station, Unit Nos. 1 and 2, Draft Request for Additional Information (TAC Nos. ME3574 and ME3575)," dated September 1, 2010 (ADAMS Accession No. ML102440592)
3. Letter from Carl J. Fricker, PSEG Nuclear LLC, to USNRC, "Response to Request for Additional Information Regarding License Amendment Request for One-Time Extension of the Type A Test Interval," dated February 24, 2010 (ADAMS Accession No. ML100630695)