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JAN 15 2015



10 CFR 50.90

LR-N15-0001

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

Salem 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: Supplemental to License Amendment Request to Revise Technical Specifications to Adopt TSTF-510, Revision 2, "Revision to Steam Generator Program Inspection Frequencies and Tube Sample Selection"

References: PSEG Letter LR-N14-0146, "License Amendment Request to Revise Technical Specifications to Adopt TSTF-510, Revision 2, "Revision to Steam Generator Program Inspection Frequencies and Tube Sample Selection" Using the Consolidated Line Item Improvement Process," dated July 28, 2014

By letter dated July 28, 2014, PSEG Nuclear, LLC (PSEG) submitted a proposed Technical Specification (TS) amendment for Salem Generating Station, Units 1 and 2. The proposed amendment would modify TS requirements regarding steam generator tube inspections and reporting as described in TSTF-510, Revision 2, "Revision to Steam Generator Program Inspection Frequencies and Tube Sample Selection."

This letter provides minor editorial corrections to the TS markups. There is no change or impact to the "No Significant Hazard Consideration" section that was submitted in the referenced license amendment request.

Attachment 1 describes the changes. Attachment 2 provides revised pages that reflect the changes described in Attachment 1.

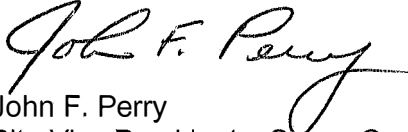
There are no regulatory commitments contained in this letter.

If you have any questions or require additional information, please contact Ms. Tanya Timberman at 856-339-1426.

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

Executed on 1/14/15
(Date)

Respectfully,



John F. Perry
Site Vice President – Salem Generating Station

Attachments:

1. Description of Changes
2. Technical Specification Pages Incorporating Proposed Changes

cc: Mr. D. Dorman, Administrator, Region I, NRC
Ms. C. Sanders-Parker, Project Manager, NRC
NRC Senior Resident Inspector, Salem
Mr. P. Mulligan, Manager IV, NJBNE
PSEG Corporate Commitment Tracking Coordinator
Salem Commitment Tracking Coordinator

Attachment 1

Description of Changes

Changes to Previously Submitted Technical Specification Mark-up Pages

Salem Unit 1

1. TS 6.8.4.i.b.1, on page 6-19c, was changed to insert a hyphen for the word “in-service.”
2. The third sentence in Insert #1 to TS 6.8.4.i.d.2, on page 6-19d, was changed to revise “that” to “the” and “inspected” to “the inspection”. The third sentence now reads (revised words in **bold** for illustrative purposes only):

“If a degradation assessment indicates **the** potential for a type of degradation to occur at a location not previously inspected with a technique capable of detecting this type of degradation at this location and that may satisfy the applicable tube plugging criteria, the minimum number of locations inspected with such a capable inspection technique during the remainder of **the inspection** period may be prorated.”
3. TS 6.9.1.10.f, on page 6-24a, was changed to correctly spell the word “effective” and to remove the word “and” at the end of the statement.

Salem Unit 2

1. TS 6.8.4.i.b.1, on page 6-19c, was changed to insert a hyphen for the word “in-service.”

Attachment 2

Technical Specification Pages Incorporating Proposed Changes

LR-N15-0001
Attachment 2

The following Technical Specifications pages for Renewed Facility Operating License DPR-70 are affected by this change request:

<u>Technical Specification</u>	<u>Page</u>
6.8.4.i, Steam Generator (SG) Program	6-19c 6-19d
6.9.10, Steam Generator Tube Inspection Report	6-24a

The following Technical Specifications pages for Renewed Facility Operating License DPR-75 are affected by this change request:

<u>Technical Specification</u>	<u>Page</u>
6.8.4.i, Steam Generator (SG) Program	6-19c

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outage during which the SG tubes are inspected or plugged to confirm that the performance criteria are being met.

- b. Performance criteria for SG tube integrity. SG tube integrity shall be maintained by meeting the performance criteria for tube structural integrity, accident induced leakage, and operational leakage.

All in-service steam generator tubes shall retain structural integrity over the full range of normal operating conditions (including startup, operation in the power range, hot standby, and cool down), all anticipated transients included in the design specification, and design basis accidents.

1. ~~Structural integrity performance criterion: All in-service steam generator tubes shall retain structural integrity over the full range of normal operating conditions (including startup, operation in the power range, hot standby, and cool down and all anticipated transients included in the design specification) and design basis accidents.~~ This includes retaining a safety factor of 3.0 against burst under normal steady state full power operation primary-to-secondary pressure differential and a safety factor of 1.4 against burst applied to the design basis accident primary-to-secondary pressure differentials. Apart from the above requirements, additional loading conditions associated with the design basis accidents, or combination of accidents in accordance with the design and licensing basis, shall also be evaluated to determine if the associated loads contribute significantly to burst or collapse. In the assessment of tube integrity, those loads that do significantly affect burst or collapse shall be determined and assessed in combination with the loads due to pressure with a safety factor of 1.2 on the combined primary loads and 1.0 on axial secondary loads.
2. Accident induced leakage performance criterion: The primary-to-secondary accident induced leakage rate for any design basis accident, other than a SG tube rupture, shall not exceed the leakage rate assumed in the accident analysis in terms of total leakage rate for all SGs and leakage rate for an individual SG. Leakage is not to exceed 1 gallon per minute per SG.
3. The operational leakage performance criterion is specified in LCO 3.4.6.2, "Reactor Coolant System Operational Leakage."

- c. Provisions for SG tube ~~repair~~ criteria. Tubes found by inservice inspection to contain flaws with a depth equal to or exceeding 40% of the nominal tube wall thickness shall be plugged.

The following alternate ~~repair~~ criteria shall be applied as an alternative to the 40% depth based criteria:

1. Tubes with service-induced flaws located greater than 15.21 inches below the top of the tubesheet do not require plugging. Tubes with service-induced flaws located in the portion of the tube from the top of the tubesheet to 15.21 inches below the top of the tubesheet shall be plugged upon detection.
- d. Provisions for SG tube inspections. Periodic SG tube inspections shall be performed. The number and portions of the tubes inspected and methods of inspection shall be performed with the objective of detecting flaws of any type (e.g., volumetric flaws, axial and circumferential cracks) that may be present along the length of the tube, from the tube-to-tubesheet weld at the tube inlet to the tube-to-tubesheet weld at the tube outlet, and that may satisfy the applicable tube ~~repair~~ criteria.

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The portion of the tube below 15.21 inches from the top of the tubesheet is excluded from this requirement.

The tube-to-tubesheet weld is not part of the tube. In addition to meeting the requirements of d.1, d.2, and d.3 below, the inspection scope, inspection methods, and inspection intervals shall be such as to ensure that SG tube integrity is maintained until the next SG inspection. An assessment of degradation shall be performed to determine the type and location of flaws to which the tubes may be susceptible and, based on this assessment, to determine which inspection methods need to be employed and at what locations.

DELETE "n"

degradation assessment

1. Inspect 100% of the tubes in each SG during the first refueling outage following SG replacement. ← installation.

2. Inspect 100% of the tubes at sequential periods of 120, 90, and thereafter, 60 effective full power months. The first sequential period shall be considered to begin after the first inservice inspection of the SGs. In addition, inspect 50% of the tubes by the refueling outage nearest the midpoint of the period and the remaining 50% by the refueling outage nearest the end of the period. No SG shall operate for more than 48 effective full power months or two refueling outages (whichever is less) without being inspected.

INSERT: "affected and potentially affected"

3. If crack indications are found in portions of the SG tube not excluded above, then the next inspection for each SG for the degradation mechanism that caused the crack indication shall not exceed 24 effective full power months or one refueling outage (whichever is less). If definitive information, such as from examination of a pulled tube, diagnostic non-destructive testing, or engineering evaluation indicates that a crack-like indication is not associated with a crack(s), then the indication need not be treated as a crack.

results in more frequent inspections

e. Provisions for monitoring operational primary-to-secondary leakage.

DELETE AND REPLACE FROM INSERT #1

Insert #1

Salem Unit 1

6.8.4.i.d.2 / page 6-19d

"After the first refueling outage following SG installation, inspect each SG at least every 48 effective full power months or at least every other refueling outage (whichever results in more frequent inspections). In addition, the minimum number of tubes inspected at each scheduled inspection shall be the number of tubes in all SGs divided by the number of SG inspection outages scheduled in each inspection period as defined in a, b, and c below. If a degradation assessment indicates the potential for a type of degradation to occur at a location not previously inspected with a technique capable of detecting this type of degradation at this location and that may satisfy the applicable tube plugging criteria, the minimum number of locations inspected with such a capable inspection technique during the remainder of the inspection period may be prorated. The fraction of locations to be inspected for this potential type of degradation at this location at the end of the inspection period shall be no less than the ratio of the number of times the SG is scheduled to be inspected in the inspection period after the determination that a new form of degradation could potentially be occurring at this location divided by the total number of times the SG is scheduled to be inspected in the inspection period. Each inspection period defined below may be extended up to 3 effective full power months to include a SG inspection outage in an inspection period and the subsequent inspection period begins at the conclusion of the included SG inspection outage.

- a) After the first refueling outage following SG installation, inspect 100% of the tubes during the next 120 effective full power months. This constitutes the first inspection period;
- b) During the next 96 effective full power months, inspect 100% of the tubes. This constitutes the second inspection period; and
- c) During the remaining life of the SGs, inspect 100% of the tubes every 72 effective full power months. This constitutes the third and subsequent inspection periods."

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2. WCAP-8385, Power Distribution Control and Load Following Procedures - Topical Report, (W Proprietary) Methodology for Specification 3/4.2.1 Axial Flux Difference.
 3. WCAP-10054-P-A, Westinghouse Small Break ECCS Evaluation Model Using NOTRUMP Code (W Proprietary), Methodology for Specification 3/4.2.2 Heat Flux Hot Channel Factor.
 4. WCAP-10266-P-A, The 1981 Version of Westinghouse Evaluation Model Using BASH Code, (W Proprietary) Methodology for Specification 3/4.2.2 Heat Flux Hot Channel Factor.
 5. WCAP-12472-P-A, BEACON - Core Monitoring and Operations Support System, (W Proprietary).
 6. CENPD-397-P-A, Improved Flow Measurement Accuracy Using Crossflow Ultrasonic Flow Measurement Technology.
- c. The core operating limits shall be determined such that all applicable limits (e.g., fuel thermal mechanical limits, core thermal hydraulic limits, Emergency Core Cooling Systems (ECCS) limits, nuclear limits such as SDM, transient analysis limits, and accident analysis limits) of the safety analysis are met.
- d. The COLR, including any mid-cycle revisions or supplements, shall be provided upon issuance for each reload cycle to the NRC.

6.9.1.10 STEAM GENERATOR TUBE INSPECTION REPORT

A report shall be submitted within 180 days after the initial entry into HOT SHUTDOWN following completion of an inspection performed in accordance with the Specification 6.8.4.i, "Steam Generator (SG) Program." The report shall include:

- a. The scope of inspections performed on each SG,
- b. Active degradation mechanisms found,
- c. Nondestructive examination techniques utilized for each degradation mechanism,
- d. Location, orientation (if linear), and measured sizes (if available) of service induced indications,
- e. Number of tubes plugged during the inspection outage for each active degradation mechanism,
- f. ~~Total number and percentage of tubes plugged to date, and~~
- g. The results of condition monitoring, including the results of tube pulls and in-situ testing.

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The number and percentage of tubes plugged to date, and the effective plugging percentage in each steam generator,

ADMINISTRATIVE CONTROLS

a. Provisions for condition monitoring assessments. Condition monitoring assessment means an evaluation of the "as found" condition of the tubing with respect to the performance criteria for structural integrity and accident induced leakage. The "as found" condition refers to the condition of the tubing during an SG inspection outage, as determined from the inservice inspection results or by other means, prior to the plugging of tubes. Condition monitoring assessments shall be conducted during each outage during which the SG tubes are inspected or plugged to confirm that the performance criteria are being met.

b. Performance criteria for SG tube integrity. SG tube integrity shall be maintained by meeting the performance criteria for tube structural integrity, accident induced leakage, and operational leakage.

All in-service steam generator tubes shall retain structural integrity over the full range of normal operating conditions (including startup, operation in the power range, hot standby, and cool down), all anticipated transients included in the design specification, and design basis accidents.

1. Structural integrity performance criterion: ~~All in-service steam generator tubes shall retain structural integrity over the full range of normal operating conditions (including startup, operation in the power range, hot standby, and cool down and all anticipated transients included in the design specification) and design basis accidents.~~ This includes retaining a safety factor of 3.0 against burst under normal steady state full power operation primary-to-secondary pressure differential and a safety factor of 1.4 against burst applied to the design basis accident primary-to-secondary pressure differentials. Apart from the above requirements, additional loading conditions associated with the design basis accidents, or combination of accidents in accordance with the design and licensing basis, shall also be evaluated to determine if the associated loads contribute significantly to burst or collapse. In the assessment of tube integrity, those loads that do significantly affect burst or collapse shall be determined and assessed in combination with the loads due to pressure with a safety factor of 1.2 on the combined primary loads and 1.0 on axial secondary loads.

2. Accident induced leakage performance criterion: The primary-to-secondary accident induced leakage rate for any design basis accident, other than a SG tube rupture, shall not exceed the leakage rate assumed in the accident analysis in terms of total leakage rate for all SGs and leakage rate for an individual SG. Leakage is not to exceed 1 gallon per minute per SG.

3. The operational leakage performance criterion is specified in LCO 3.4.7.2, "Reactor Coolant System Operational Leakage."

c. Provisions for SG tube ~~repair~~ criteria. Tubes found by inservice inspection to contain flaws with a depth equal to or exceeding 40% of the nominal tube wall thickness shall be plugged.