

10CFR50.59(d)(2)

LR-N21-0055

July 20, 2021

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:

Corrected Report of Changes, Tests, and Experiments

Pursuant to the requirements of 10CFR50.59(d)(2), Salem Generating Station, Units 1 and 2 corrects the summary of changes, tests, and experiments implemented during the period of January 1, 2017 through December 31, 2018. The original report dated April 3, 2019 (ADAMS Accession No. ML19093A392) reported two of three evaluations.

There are no new commitments in this letter.

If there are any questions, please contact Harry Balian at (856) 339 – 2173.

Sincerely,

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Jean Fleming *V* Director of Regulatory Affairs – PSEG Nuclear, LLC

Attachments (1)

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cc: USNRC Administrator – Region 1 USNRC NRR Project Manager – Salem USNRC Senior Resident Inspector – Salem NJ Department of Environmental Protection, Bureau of Nuclear Engineering Commitment Coordinator – Salem Generating Station Corporate Commitment Coordinator – PSEG Nuclear, LLC Attachment 1 Summary of Changes, Tests, and Experiments Salem Units 1 and 2

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<u>Reactor Coolant Pump Seals – Installation of SHIELD Seal</u> <u>Salem PORC S2017-05</u>

The specific activities included in this Design Change Package (DCP) (80109340) are:

- Replace reactor coolant pump (RCP) No. 1 Seal Insert with a modified design called the SHIELD® Shutdown Seal (SDS).
- The SDS is a thermally activated, passive device located between the No. 1 and No. 2 pump seals, just upstream of the No. 1 leak off line.
- The SDS is composed of a passive retractable spacer and a series of stacked rings comprising a wave spring, piston ring, polymer ring, and retaining ring. A thermal actuator holds the piston ring "open," permitting No. 1 seal leak off to flow up the shaft to the No. 1 seal leak off line during normal operation to maintain the existing seal leak off flow characteristics.
- The Seal will limit leakage through the reactor coolant pump seals by obstructing the annular flow
 path between the rotor and the No. 1 seal insert during loss of seal cooling scenarios
- The SDS permits plants to respond to a wide range of events involving loss of all seal cooling with only a turbine-driven auxiliary feedwater pump available. These events can include station blackout (SBO), fires that disrupt water supplies, loss of the Component Cooling System and loss of the Service Water System. Since there are negligible RCS inventory losses through the RCP seals with the SDS actuated, RCS makeup is a lesser priority to achieve a stable state.
- The proposed activity is conservatively assessed to have a potential adverse effect on the RCP's UFSAR described design function, through a minimal increase in probability of a pump trip due to debris blockage in the seal water return flow meters. The proposed activity does not involve a change to a procedure that adversely affects how UFSAR described SSC design functions are performed or controlled. This activity does not involve an adverse change to an element of a UFSAR-described evaluation methodology, or the use of an alternative evaluation methodology that is used in establishing the design bases or used in the safety analyses. The evaluation concluded that based on the design and testing of the SDS, the probability for all required events to occur concurrently is extremely low and the likelihood of occurrence of failure of the described No. 1 seal flow meter can be considered less than minimal. The SDS is passive and inactive during normal plant operation. Whether or not the SDS actuates as designed, inadvertently actuates, or fails to actuate, the proposed activity does not create a new or different accident, nor a different or more severe consequence than any previously evaluated in the UFSAR. Installation of the SDS will not exceed or alter a fission product barrier, nor constitute a departure in methodology described in the UFSAR. Therefore, NRC approval is not required prior to implementation of the proposed activity.

Salem 2 EPRI Temporary RCS Online Monitoring Skid (TCCP 2ST18-008) FRC (Fleet Review Committee) F2018-02

The specific activities included in this Design Change Package (DCP) (80122525) are:

- The activity is the temporary installation of a Reactor Coolant System (RCS) Sample Skid. The skid is an automated, continuous sampling skid for collecting data for multiple parameters. The installation is temporary because it is a prototype being assessed for development for use across the nuclear industry.
- The system is supplied with a sample at up to 0.3 lpm (~0.08 gpm) of the Letdown Mixed Bed Demineralizer Inlet flow, from the Primary Sample Panel, using the same source as the normal routine sample.
- The temporary sample skid will be operated continuously, processing a sample, at up to 0.3 lpm (~0.08 gpm), of reactor coolant. The temporary sample skid is for information only and is not used to control or operate the plant. Normal sampling will be performed concurrently with the continuous sampling by the Sample Skid.
- The installation was temporary and has been removed from the system.

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• A 10 CFR 50.59 Screening was performed and concluded that a 10 CFR 50.59 Evaluation is required. The installation of a temporary sampling skid, supplied with a continuous sample at up to 0.3 lpm (~0.08 gpm) of reactor coolant, does not involve adverse changes to UFSAR-described SSCs, however, it does change the manner in which UFSAR-described Design Functions are performed or controlled. The UFSAR-described Design Function of the RCS Sampling System is to provide a means for obtaining fluid and gas samples for laboratory analysis of chemistry and radiochemistry conditions in the RCS. The system is designed to permit taking samples during reactor operations, during cooldown, and following an accident, without requiring access to the Containment. In the event of a LOCA, the system is isolated at the Containment boundary. The evaluation concluded the temporary sample skid does not initiate any new malfunctions or create any new failure modes, nor does it create the possibility of a different accident or a malfunction with a different result than previously evaluated in the UFSAR. Each of the eight evaluation questions were answered no.

Implementation of the NRC approved Westinghouse core design code package NEXUS/ANC9 and core monitoring system BEACON7, FRC (Fleet Review Committee) F2018-03

The specific activities included in these DCPs (80120308 and 80121133) are:

- Adopt NEXUS/ANC0/BEACON7 per WCAP-12472, Addendum 4, Revision 0, "BEACON Core Monitoring and Operating Support System", September 2012.
- A 10 CFR 50.59 Screening concluded that a 10 CFR 50.59 Evaluation is required because the change is a proposed use of a new or alternative method of evaluation. New or alternative methods of evaluation are considered adverse;
- The evaluation methodology adopted by Salem is approved by the NRC and Salem complies with all limitation and conditions specified in the NRC approval. No changes to the Salem Technical Specifications are required to implement this methodology. Therefore, prior NRC approval is not required to implement this change. See, "Final Safety Evaluation for Westinghouse Electric Company (Westinghouse) Topical Report WCAP-12472-P/WCAP-12472-NP, Addendum 4, 'BEACON[™] Core Monitoring and Operation Support System, Addendum 4' (TAC NO. ME5240)", (ADAMS Accession No. ML12158A243), August 9, 2012.