



APR 19 2010

10 CFR 50
10 CFR 51
10 CFR 54

LR-N10-0112

U.S. Nuclear Regulatory Commission
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Salem Nuclear Generating Station, Unit No. 1 and Unit No. 2
Facility Operating License Nos. DPR-70 and DPR-75
NRC Docket Nos. 50-272 and 50-311

Subject: Response to NRC Request for Additional Information dated March 22, 2010,
Related to Section 2.3.3.12 of the Salem Nuclear Generating Station, Units 1 and
2 License Renewal Application

Reference: Letter from Mr. Donnie Ashley (USNRC) to Mr. Thomas Joyce (PSEG Nuclear,
LLC) "REQUEST FOR ADDITIONAL INFORMATION REGARDING SCOPING
OF FIRE PROTECTION FOR THE SALEM NUCLEAR GENERATING STATION
UNITS 1 AND 2", dated March 22, 2010

In the referenced letter, the NRC requested additional information related to Section 2.3.3.12 of
the Salem Nuclear Generating Station, Units 1 and 2 License Renewal Application (LRA).
Enclosed are the responses to this request for additional information.

This letter and its enclosure contain no regulatory commitments.

If you have any questions, please contact Mr. Ali Fakhar, PSEG Manager - License Renewal, at
856-339-1646.

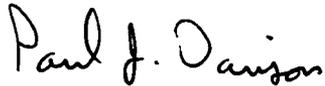
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APR 19 2010

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

Executed on 4/19/10

Sincerely,



Paul J. Davison
Vice President, Operations Support
PSEG Nuclear LLC

Enclosure: Responses to Request for Additional Information

cc: S. Collins, Regional Administrator – USNRC Region I
B. Brady, Project Manager, License Renewal – USNRC
R. Ennis, Project Manager - USNRC
NRC Senior Resident Inspector – Salem
P. Mulligan, Manager IV, NJBNE
L. Marabella, Corporate Commitment Tracking Coordinator
Howard Berrick, Salem Commitment Tracking Coordinator

Enclosure

Responses to Request for Additional Information related to Section 2.3.3.12 of the Salem Nuclear Generating Station, Units 1 and 2 License Renewal Application (LRA)

RAI 2.3.3.12-1
RAI 2.3.3.12-2
RAI 2.3.3.12-3
RAI 2.3.3.12-4

RAI 2.3.3.12-1

The following LRA drawing shows fire protection system components as out of scope (i.e., not highlighted in green):

- LR-205221 SH.1, "No.1 & 2 Units, Fresh Water ": Nos. 1,2,3, 5, and 6 Productions Wells at locations H4, D1, H2, H6, and A2 respectively in the Fresh Water Well Pump House; Fire Pump House at locations C7 and D5; tank 1FWE4 at location G2 and associated components to the Fire Pump House and to the Fire Protection Storage Tank 1FWE16

The staff requests that the applicant verify whether the fire protection system components listed above are in the scope of license renewal in accordance with 10 CFR 54.4(a) and whether they are subject to an AMR in accordance with 10 CFR 54.21(a)(1). If they are excluded from the scope of license renewal and are not subject to an AMR, the staff requests that the applicant provide justification for the exclusion.

PSEG Response:

License renewal drawing LR-205222, Sheet 4, "Fire Protection," shows the No. 1 and No. 2 Fresh Water and Fire Protection Water Storage Tanks. Each tank has a capacity of 350,000 gallons, with 300,000 gallons reserved for fire protection use and 50,000 gallons available for domestic service. The reserved capacity in each tank is sufficient to supply the greatest system demand plus an additional 1000 GPM for hose streams for a minimum of two hours, representing 100% redundant capacity. These two independent tanks supply water to the two fire pumps (1FPE12, 2FPE12) and jockey pump (1FPE11). The fire pump suction piping and valve arrangement allows either fire pump to take water from either or both water storage tanks.

The Fresh Water and Fire Protection Water Storage Tanks are also shown on license renewal drawing LR-205221, Sheet 1, "Fresh Water." The Fresh Water System uses the 50,000 gallons available in each tank that is not reserved for fire protection. The Production Wells (Nos. 1, 2, 3, 5, and 6) in the Fresh Water Well Pump House are included in the Fresh Water System as described in LRA Section 2.3.3.13, and are not part of the Fire Protection System. Similarly, the 15,000 gallon fresh water tank (1FWE4), fresh water pumps, pressure booster pumps, fresh water supply chlorination tank and associated piping and components up to, but not including the Fresh Water and Fire Protection Water Storage Tanks 1FWE16 and 1FWE18, are part of the Fresh Water System.

The Fresh Water System is a nonsafety-related, normally operating mechanical system designed to provide a source of water for potable, sanitary, and process make-up use. The system also provides makeup water from the production wells to the Fresh Water and Fire Protection Water Storage Tanks, which are part of the Fire Protection System. Water level in each tank is maintained above the minimum required to assure a reserve volume of 300,000 gallons for fire protection. The reserve volume in each tank is adequate to meet Fire Protection System demands in the event of a fire, without the need for tank makeup. The Fresh Water System production well pumps and associated piping and components are not required to support any fire protection intended functions for license renewal.

The Fresh Water System piping and components shown in black on drawing LR-205221, Sheet 1 do not provide structural support for safety-related components, and do not have the potential

for spatial interaction because they are not located in the vicinity of safety-related components. Therefore, the Production Wells (Nos. 1, 2, 3, 5, and 6) in the Fresh Water Well Pump House, the 15,000 gallon fresh water tank (1FWE4), and the associated piping and components in the Fresh Water System shown in black on drawing LR-205221, Sheet 1 are not in the scope of license renewal and are not subject to aging management review.

The Fire Pump House structure is in the scope of license renewal, and is addressed in the LRA sections 2.4.4 and 2.4.17 for structures.

RAI 2.3.3.12-2

Tables 2.3.3-12 and 3.3.2-12 of the LRA do not include the following fire protection components:

- hose racks
- filter housing
- flame arrestor
- passive components in diesel engines for fire water pumps
- fire retardant coating for structural steel
- fire retardant coating on duct work

The staff requests that the applicant verify whether the fire protection system components listed above are in the scope of license renewal in accordance with 10 CFR 54.4(a) and whether they are subject to an AMR in accordance with 10 CFR 54.21(a)(1). If they are excluded from the scope of license renewal and are not subject to an AMR, the staff requests that the applicant provide justification for the exclusion.

PSEG Response:

The scoping results of each of the fire protection components are as follows:

- **Hose Racks**

Hose rack assemblies consist of valves, piping and fittings. These components are in the scope of license renewal and subject to aging management review. They are included in the "Valve Body" and "Piping and Fittings" component types in LRA Tables 2.3.3-12 and 3.3.2-12. Fire hoses associated with hose racks are evaluated as consumables as described in LRA Section 2.1.6.4. Fire hoses are periodically inspected in accordance with NFPA standards and replaced as required. Therefore, fire hoses are not considered long-lived and are not subject to aging management review.

- **Filter Housing**

Filter housings are included in the component category of "Strainer Body" in LRA Tables 2.3.3-12 and 3.3.2-12 and, therefore, are in the scope of license renewal and are subject to aging management review.

- **Flame Arrestor**

Flame arrestors exist on each of the six Diesel Fuel Oil Day Tanks and on each of the two Fire Pump Day Tanks. They are shown on Boundary Drawings 205249, Sheets 2 and 3. These flame arrestors are evaluated with the Fuel Oil System. LRA Tables 2.3.3-16 and 3.3.2-16 include flame arrestors as a component type. Therefore, flame arrestors are in the scope of license renewal and are subject to aging management review.

- **Passive components in diesel engines for fire water pumps**

The diesel driven fire water pumps were purchased as a pump and pump driver assembly from the pump manufacturer. The pump and diesel engine driver are mounted together on the vendor supplied equipment base plate, which is anchored and grouted to the Fire Pump House foundation slab. The equipment supports and supporting structural components are subject to aging management review and are included in the applicable tables in the structural sections 2.4.4 and 3.5 of the LRA.

The diesel engines as supplied from the manufacturer include various components necessary to support engine operation. Many of these components are either located internal to the engine, or are physically mounted on the engine. These components are considered integral subcomponent parts of the active diesel engine assembly. Table 2.1-5 of NUREG-1800, Revision 1, "Standard Review Plan for Review of License Renewal Applications for Nuclear Power Plants" and Appendix B of NEI 95-10, Revision 6, "Industry Guideline for Implementing the Requirements of 10 CFR Part 54 – The License Renewal Rule" indicate that Fire Pump Diesel Engines are not subject to aging management review. The engine components that are part of the active engine assembly are not included in LRA Tables 2.3.3-12 or 3.3.2-12. Boundary Drawing LR-205249, Sheet 3, Note 7 indicates that the diesel engine is an active assembly and not subject to aging management review.

Fuel oil components that are not part of the active diesel engine assembly are evaluated with the Fuel Oil System and are included in LRA Tables 2.3.3-16 and 3.3.2-16. This includes the fuel oil storage tank and the fuel inlet and return piping and components from the tank up to the diesel engine assembly. The component types are Tanks, Piping and Fittings, and Valve Body.

- **Fire retardant coating for structural steel**

There is no fire retardant coating on structural steel at Salem. Therefore, this coating is not included in Tables 2.3.3-12 and 3.3.2-12. Fire retardant coating is not in the scope of license renewal and is not subject to aging management review.

- **Fire retardant coating on duct work**

Fire retardant coating on duct work is included in the component category "Fire Barriers (Wraps)" in LRA Tables 2.3.3-12 and 3.3.2-12 and is in the scope of license renewal and is subject to aging management review.

RAI 2.3.3.12-3

Section 4.0 and 5.0 of the Safety Evaluation Report dated June 17, 1983, states that fire protection is provided in Fire Zone P1E, Elevation 84' Auxiliary Building Electrical Penetration Area, in part, by a manually operated total flooding carbon dioxide extinguishing system and in Fire Area P1B 4 kV line. Switchgear Room by a manual total flooding carbon dioxide fire suppression system.

The staff requests that the applicant verify whether the fire suppression systems in Fire Zone P1E Elevation 84', Auxiliary Building Penetration Area and in the Fire Area P1B – 4 kV line. Switchgear Room are in the scope of license renewal in accordance with 10 CFR 54.4(a) and subject to an AMR in accordance with 10 CFR 54.21(a)(1). If they are excluded from the scope of license renewal and not subject to an AMR, the staff requests that the applicant provide justification for the exclusion.

PSEG Response:

A plant modification was completed in 2008 that replaced carbon dioxide fire suppression systems located in the Auxiliary Building Penetration Areas and in the 4 kV Switchgear Rooms with closed head dry pipe pre-action type sprinkler systems. These sprinkler systems serve the Auxiliary Building Electrical Penetration Areas at elevation 78', the 4 kV Switchgear Rooms at elevation 64', and also the 460 Volt Switchgear Rooms at elevation 84' for Salem Units 1 and 2.

The sprinkler systems are in the scope of license renewal and are subject to aging management review. The Unit 1 sprinkler systems are shown on drawing LR-205222, sheet 1 at H-3 and H-4. The Unit 2 sprinkler systems are shown on drawing LR-205222, sheet 2 at B-2 and B-3. These systems are designated as green on the drawings indicating that they are in the scope of license renewal and are subject to aging management review.

RAI 2.3.3.12-4

The Safety Evaluation Report dated July 20, 1989, states on page 4 of Section 1.3:

...Where non-rated hatches exist, either the area below is protected by an automatic fire suppression system or potential fire spread up through the hatch will not affect redundant shutdown systems.

and on page 16 of Section 6.2:

... the licensee proposed to implement the following modifications:

- Expand the existing wet-piping sprinkler system in the charging pump area to provide full coverage around the pump;
- Enhance the sprinkler systems which protect the auxiliary feedwater pumps...

The staff requests that the applicant verify whether the fire suppression systems associated with non-rated steel hatches, the wet-pipe sprinkler system in the charging pump area, and the sprinkler systems which protect the auxiliary feedwater pumps are in the scope of license renewal in accordance with 10 CFR 54.4(a) and subject to an AMR in accordance with 10 CFR 54.21(a)(1). If they are excluded from the scope of license renewal and not subject to an AMR, the staff requests that the applicant provide justification for the exclusion.

PSEG Response:

Automatic fire suppression systems do not exist in areas below non-rated steel hatches at Salem Unit 1 and Unit 2. Engineering evaluation of the non-rated steel hatch configurations has determined that, under credible fire scenarios, and with proper control of combustible loading, fires will not spread up through hatches and affect redundant shutdown equipment. Plant areas near the subject hatch locations have been designated as combustible control zones for controlling the plant configuration relative to maintenance of low combustible loads. Implementation of these combustible control zones ensures the integrity of the non-rated steel hatches during a fire and eliminates the need for automatic fire suppression systems in areas below the hatches.

The expanded wet-piping sprinkler systems in the charging pump area and the enhanced sprinkler systems that protect the auxiliary feedwater pumps are in the scope of license renewal and are subject to aging management review. These systems are designated as green on drawings LR-205222, Sheet 1 at F-4, C-4 (charging pump area) and Sheet 2 at D-6, D-8 (auxiliary feedwater pumps).