



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D.C. 20555-0001

October 29, 2015

Mr. Robert Braun  
President and Chief Nuclear Officer  
PSEG Nuclear, LLC-N09  
P.O. Box 236  
Hancocks Bridge, NJ 08038

SUBJECT: SALEM NUCLEAR GENERATING STATION, UNIT NOS. 1 AND 2 –  
SUPPLEMENTAL INFORMATION NEEDED FOR ACCEPTANCE OF  
REQUESTED LICENSING ACTION RE: AMENDMENT REQUEST  
REGARDING CHILLED WATER SYSTEM MODIFICATION (CAC NOS. MF6724  
AND MF6725)

Dear Mr. Braun:

By letter dated September 11, 2015 (Agencywide Document Access and Management System Accession No. ML15254A387), PSEG Nuclear LLC (PSEG) submitted a license amendment request for Salem Nuclear Generating Station, Unit Nos. 1 and 2. The proposed amendment would revise Technical Specification 3/4.7.10, "Chilled Water System – Auxiliary Building Subsystem," to support planned plant modifications to implement chiller replacements and for performing maintenance on common line components.

The purpose of this letter is to provide the results of the U.S. Nuclear Regulatory Commission (NRC) staff's acceptance review of this amendment request. The acceptance review was performed to determine if there is sufficient technical information in scope and depth to allow the NRC staff to complete its detailed technical review. The acceptance review is also intended to identify whether the application has any readily apparent information insufficiencies in its characterization of the regulatory requirements or the licensing basis of the plant.

Consistent with Section 50.90 of Title 10 of the *Code of Federal Regulations* (10 CFR), an amendment to the license (including the technical specifications) must fully describe the changes requested, and following as far as applicable, the form prescribed for original applications. Section 50.34 of 10 CFR addresses the content of technical information required. This section stipulates that the submittal address the design and operating characteristics, unusual or novel design features, and principal safety considerations.

The NRC staff has reviewed your application and concluded that the information delineated in the enclosure to this letter is necessary to enable the staff to make an independent assessment regarding the acceptability of the proposed amendment in terms of regulatory requirements and the protection of public health and safety and the environment.

In order to make the application complete, the NRC staff requests that PSEG supplement the application to address the information requested in the enclosure. A draft version of this request was discussed with your staff in a conference call on October 21, 2015. Please provide your response to this request by November 9, 2015 (i.e., within 13 business days of the date of the conference call). This will enable the NRC staff to begin its detailed technical review. If the

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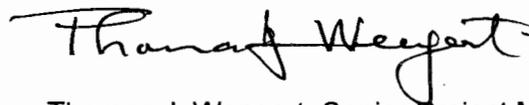
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response to the NRC staff's request is not received by the above date, the application will not be accepted for review pursuant to 10 CFR 2.101, and the NRC will cease its review activities associated with the application. If the application is subsequently accepted for review, you will be advised of any further information needed to support the staff's detailed technical review by separate correspondence.

As noted above, the information requested and associated timeframe in this letter were discussed with Mr. Paul Duke of your staff on October 21, 2015.

If you have any questions, please contact me at (301) 415-4037 or [Thomas.Wengert@nrc.gov](mailto:Thomas.Wengert@nrc.gov).

Sincerely,

A handwritten signature in black ink that reads "Thomas J. Wengert". The signature is written in a cursive style with a large, sweeping initial 'T'.

Thomas J. Wengert, Senior Project Manager  
Plant Licensing Branch I-2  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

Docket Nos. 50-272 and 50-311

Enclosure:  
Supplemental Information Needed

cc w/enclosure: Distribution via Listserv

SUPPLEMENTAL INFORMATION NEEDED

AMENDMENT REQUEST

PSEG NUCLEAR LLC

SALEM NUCLEAR GENERATING STATION, UNIT NOS. 1 AND 2

DOCKET NOS. 50-272 AND 50-311

By letter dated September 11, 2015 (Agencywide Document Access and Management System Accession No. ML15254A387), PSEG Nuclear LLC submitted a license amendment request for Salem Nuclear Generating Station, Unit Nos. 1 and 2. The proposed amendment would revise Technical Specification (TS) 3/4.7.10, "Chilled Water System – Auxiliary Building Subsystem," to support planned plant modifications to implement chiller replacements and for performing maintenance on common line components. The U.S. Nuclear Regulatory Commission (NRC) staff has reviewed your application and concluded that the supplemental information delineated below is necessary to enable the staff to make an independent assessment regarding the acceptability of the proposed amendment.

1. Confirm whether the replacement of the six existing safety-related chillers is in the scope of this license amendment request. If the new chillers are in scope for replacement, provide the following information, as compared to the existing chillers. The information provided should include a form (shape, size, dimensions, etc.), fit (physical interface, connections, etc.) and function (designed to perform) evaluation. This should include, but not be limited to, the following:
  - Safety classification
  - Design and construction codes (American Society of Mechanical Engineers, Institute of Electrical and Electronics Engineers, etc.)
  - Seismic classification
  - British thermal units per hour (BTU/hr) design rating (tonnage)
  - Outlet temperature requirement of chilled water (range)
  - Inlet temperature requirement of the service water (range)
  - Chiller design pressure and temperature
  - Chiller design flow rates
  - Instrumentation and controls (alarm, permissives, and trips) - digital controllers versus analog
  - Horsepower requirements of compressor (emergency diesel generator (EDG) loading differences)
  - Cooling water requirements, pressure, flow
  - Refrigerant type (address hazards)
  - Refrigerant purge unit design (if utilized)

Enclosure

- Field modification for installation of the new chillers related to safety-related systems, structures, and components
- Control room habitability requirement and evaluation for the new refrigerant
- Fire protection evaluation for the new refrigerant
- Evaluation of the existing chiller water pumps/system relative to the new chillers
- Evaluation of the existing service water pumps/system relative to the new chillers
- Performance testing (shop/vendor)

In addition, provide a discussion related to testing of each replacement chiller following installation. Provide information describing testing of the new chillers to meet the design function as described in Appendix A to Title 10 of the *Code of Federal Regulations*, Generic Design Criteria (GDC)-45 and GDC-46, "Inspection of cooling water system," as applicable. Information on testing should verify that the chillers can perform their safety-related design function before returning to Operable status.

2. Provide a detailed description of the auxiliary building chilled water (AB CH) system, describing how the AB CH system is currently designed, and how it operates during normal and accident conditions. Also, provide a discussion of the system design and operation for the proposed modified system, specifically noting the differences from the current system. The NRC staff requires this information to fully understand and evaluate the proposed changes to the AB CH system and the associated TS revisions.
3. Provide a detailed explanation of how the current AB CH system heat loads/components currently interface with the AB CH system, how the system is designed, how the system operates during normal operations, and how the system operates during accident conditions. Also, provide a discussion of the system design and operation for the proposed modified system, specifically noting the differences from the current system. The NRC staff requires this information to fully understand and evaluate any proposed changes to the heat loads/components that are served by the AB CH system and any associated TS revisions.
4. GDC-5, "Sharing of structures, systems, and components," states the following:

Structures, systems, and components important to safety shall not be shared among nuclear power units unless it can be shown that such sharing will not significantly impair their ability to perform their safety functions, including, in the event of an accident in one unit, an orderly shutdown and cooldown of the remaining units.

Provide a failure modes and effect analysis or suitable summary table, applicable to GDC-5, to describe the analysis and conclusions for the effects of the cross-tie between units. In addition, provide a discussion describing the interactions during a design-basis accident (loss of off-site power, loss-of-coolant accident) related to electrical power, and EDG loading sequencing that supports both units, when the units are in the cross-tied configuration.

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If you have any questions, please contact me at (301) 415-4037 or [Thomas.Wengert@nrc.gov](mailto:Thomas.Wengert@nrc.gov).

Sincerely,

*/RA/*

Thomas J. Wengert, Senior Project Manager  
Plant Licensing Branch I-2  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

Docket Nos. 50-272 and 50-311

Enclosure:  
Supplemental Information Needed

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**ADAMS Accession No.: ML15299A383**

\*by e-mail

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