

July 16, 2004

Mr. A. Christopher Bakken, III
President & Chief Nuclear Officer
PSEG Nuclear, LLC - X04
Post Office Box 236
Hancocks Bridge, NJ 08038

SUBJECT: SALEM NUCLEAR GENERATING STATION, UNIT NOS. 1 AND 2, REQUEST
FOR ADDITIONAL INFORMATION RE: REQUEST FOR CHANGE TO
TECHNICAL SPECIFICATIONS - RELAXATION OF REQUIREMENTS
APPLICABLE DURING MOVEMENT OF IRRADIATED FUEL (TAC NOS.
MB5710 AND MB5711)

Dear Mr. Bakken:

By letter dated July 29, 2002, PSEG Nuclear, LLC (PSEG) submitted a request for changes to the Salem Nuclear Generating Station, Unit Nos. 1 and 2, Technical Specifications (TSs). The proposed changes would allow relaxation of Containment Integrity and Containment and Control Room Ventilation requirements during the movement of irradiated fuel. By letter dated March 18, 2003, the U.S. Nuclear Regulatory Commission (NRC) forwarded a request for additional information (RAI) to PSEG in order to complete its review. By letter dated March 28, 2003 PSEG submitted a Correction of Information changing the X/Q factor for exclusion area boundary and to change the fuel decay time. By letter dated May 1, 2003, PSEG submitted its response to the questions in the NRC's March 18, 2003, letter.

The NRC staff is reviewing your request and RAI response, and has determined that additional information is necessary in order to complete its evaluation. On June 14, 2004, the NRC faxed the enclosed RAIs to PSEG in preparation for a conference call. Review of the RAI would allow PSEG to identify areas where clarification is needed as well as determine a schedule within which a response can be provided. In a subsequent phone call, PSEG stated that no further clarifications of the RAI questions are necessary and, hence, a conference call was not held. Please provide your response to the enclosed questions within 30 days of receipt of this letter. Meeting this target date is essential to timely completion of the NRC's review of this application.

Sincerely,

/RA/

Daniel Collins, Project Manager, Section 2
Project Directorate I
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket Nos. 50-272 and 50-311
Enclosure: As stated
cc w/encl: See next page

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REQUEST FOR ADDITIONAL INFORMATION

REQUEST FOR CHANGES TO TECHNICAL SPECIFICATIONS - RELAXATION OF

REQUIREMENTS APPLICABLE DURING MOVEMENT OF IRRADIATED FUEL

SALEM NUCLEAR GENERATING STATION, UNIT NOS. 1 AND 2

By letter dated July 29, 2002, PSEG Nuclear (the licensee) submitted a proposed amendment to the Technical Specifications for Salem Nuclear Generating Station, Units 1 and 2. The proposed amendment would revise the Technical Specifications based on a re-analysis of the design basis Fuel Handling Accident (FHA).

The Nuclear Regulatory Commission (NRC) staff has reviewed the information the licensee provided that supports the proposed Technical Specification changes. In order for the staff to complete its evaluation, the following additional information is requested:

1. The proposed Technical Specification change proposes changing the definition of CORE ALTERATIONS. As a result of the proposed change the applicability section of several technical specifications are proposed to be changed. The applicability is changed from: "During CORE ALTERATIONS or movement of irradiated fuel within the containment" to "During movement of irradiated fuel within the containment."

IN 90-77, "Inadvertent Removal of Fuel Assemblies from the Reactor Core," discusses events during removal of upper guide structures and upper internals. During these events fuel assemblies were inadvertently removed from the reactor creating the high potential for a fuel handling accident.

A review of the Salem licensing bases in UFSAR Section 15.4.6.1¹ does not specify how the spent fuel assembly is dropped inside of containment.

CORE ALTERATIONS, as presently defined in the Technical Specifications, is the movement or manipulation of any component within the reactor pressure vessel with the vessel head removed and fuel in the vessel. This definition would bound inadvertent movement of a single fuel assembly.

The combination of the proposed change in the definition of CORE ALTERATIONS and applicability statements appear to not bound the known potential for inadvertent movement of fuel assemblies. In light of these considerations please justify why the proposed technical specification change should not include applicability for a fuel handling accident occurring during the movement of other core components

¹ The Salem UFSAR Section 15.4.6.1 states:

"The accident is defined as dropping of a spent fuel assembly onto the spent fuel pit floor in the fuel handling building or inside containment resulting in the rupture of the cladding of all the fuel rods in the assembly despite many administrative controls and physical limitations imposed on fuel handling operations. All refueling operations are conducted in accordance with prescribed procedures under direct surveillance of a supervisor."

Enclosure

2. Proposed Technical Specification 3.9.4 proposes the following: "The equipment hatch inside door is capable of being closed and held in place by a minimum of four bolts, or an equivalent closure device installed and capable of being closed." Please define what criteria are used to determine whether a device is an equivalent closure device to the equipment hatch. Please define the devices to be used.
3. The staff has reviewed Salem's May 1, 2003 response (LR-N03-0136) to the staff's request for additional information related to the proposed license amendment. The response to question 5 does not appear to be responsive to the staff's question. Please describe the outage activities that could prevent the establishment of fuel handling building closure and the compensatory actions that would need to be taken. It would also be helpful for the staff to understand that in the event of a fuel handling accident that the fuel building would be closed promptly (or within a reasonable time frame) to limit the release of radioactivity.
4. Per page 6 of the July 29, 2002 amendment request, the ability to close the Salem equipment hatch is dependent on AC power. In the case of a loss of AC power coincident with a fuel handling accident, electrical power may not be available for closing the hatch. Please explain what measures are in place to promptly close the equipment hatch without AC power. NUREG-1449² also states that with four bolts installed that the Salem equipment hatch had gaps between the equipment hatch seals. How many bolts will be needed to close the equipment hatch to prevent the release of radioactivity?
5. The proposed amendment requires the Containment Purge or the Auxiliary Building Ventilation System with suction from the containment atmosphere to be available during fuel movement. Closure controls are in place for the personnel airlock and the containment equipment hatch along with a definition for closure time (defined as 1 hour). The flows out the Containment Purge or the Auxiliary Building Ventilation Systems are forced flow pathways and will likely release a much greater amount of radioactivity than either the containment equipment hatch or personnel airlock after a fuel handling accident. No provisions are made to close these dominant flow paths whereas time limiting provisions are made for closing the personnel airlock and the containment equipment hatch. Please explain why there are no defense-in-depth measures taken promptly to secure the Containment Purge or the Auxiliary Building Ventilation Systems after a fuel handling accident.
6. Provide the criterion used to decide if the containment personnel airlock and the containment equipment hatch are capable of being closed within 1 hour.
7. What criteria will be used to determine if closure of the containment is necessary in the event of adverse weather? Has the impact of wind on fuel handling been evaluated (for example, reduced pool visibility due to pool surface disruption)? What steps would be taken in the event of severe weather to minimize the impact of flying debris or missile hazards?

² NUREG-1449, "Shutdown and Low-Power Operation at Commercial Nuclear Power Plants in the United States," page B-5.

8. Will your Emergency Plan be updated to include an accident release through the equipment hatch? Will your Emergency Operating Procedures be updated to address the specific details needed to respond to this accident scenario?
9. Will you inform the State Emergency Response personnel about this accident scenario?
10. The proposed technical specification specifies that a "designated" crew is available to close the Containment Structure Equipment Hatch Shield Doors rather than a "dedicated" crew who would have no other duties. Specify what other duties the designated crew will have and where they will be stationed relative to the air lock doors.