

September 29, 2005

Mr. William Levis  
Senior Vice 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 –  
WITHDRAWAL OF AN AMENDMENT REQUEST (TAC NOS. MC3096 AND  
MC3097)

Dear Mr. Levis:

By letter dated April 15, 2004, PSEG Nuclear LLC (PSEG) requested amendments to Facility Operating License Nos. DPR-70 and DPR-75 for the Salem Nuclear Generating Station (Salem), Unit Nos. 1 and 2, respectively. Specifically, the amendments would have changed the fire protection program (FPP) to decrease the carbon dioxide (CO<sub>2</sub>) concentration, hold time, and number of discharges for the fire suppression systems in the 4160-volt switchgear rooms, 460-volt switchgear rooms, and lower electrical penetration area rooms. By letter dated September 26, 2005, PSEG withdrew the amendment request.

In the April 15, 2004, license amendment request, you indicated that the fire suppression system does not provide the CO<sub>2</sub> concentration specified in the current licensing basis. The current licensing basis CO<sub>2</sub> concentration is 50% with a hold time of 30 minutes. The proposed changes would require a CO<sub>2</sub> concentration of at least 27.6%, a hold time sufficient to allow the PSEG fire department to respond, and sufficient capacity for one full discharge plus an additional partial discharge to be used at the discretion of the responding PSEG fire department. Your April 15, 2004, letter states that PSEG evaluated the lower CO<sub>2</sub> concentration considering the types and species of combustible materials that are located in these rooms and concluded that sufficient CO<sub>2</sub> is available to suppress fires and allow the on-site PSEG fire department to respond and take proper action.

The Nuclear Regulatory Commission (NRC) staff has conducted a careful review of the information in your April 15, 2004, application. The staff also visited Salem on March 4, 2005, as part of its review. The staff has concluded that the ability of Salem to achieve and maintain a safe shutdown in accordance with the requirements of Title 10 of the *Code of Federal Regulations* (10 CFR), Part 50, Appendix R, may be adversely affected by the proposed change for the following reasons:

- Safe-shutdown equipment in these rooms is not separated by complete one-hour fire-rated barriers. Salem has received exemptions to Section III.G.2 of Appendix R to 10 CFR Part 50 to address this issue. The NRC staff approved these exemptions, in part, because these rooms were protected by a CO<sub>2</sub> system that had a design concentration of 50% and a hold time of 30 minutes. The April 15, 2004, letter implies that some of these exemptions may not be needed due to plant modifications, but the status of the exemptions is not clear.

- The design concentration of CO<sub>2</sub> in these rooms cannot be met, in part, because the CO<sub>2</sub> is migrating into adjacent areas of the plant. This was identified in Event Notification No. 41359, dated January 26, 2005. Some of these adjacent areas are required to be accessible by operators to perform manual actions to achieve and maintain safe shutdown.
- The National Fire Protection Association (NFPA) Standard NFPA 12, "Standard on Carbon Dioxide Extinguishing Systems," 1968 Edition, which is the code of record for the Salem CO<sub>2</sub> system, specifies a minimum CO<sub>2</sub> concentration of 50% for deep-seated fires. Also, later editions of NFPA 12 specify a minimum CO<sub>2</sub> concentration of 34% for surface fires.
- The information that PSEG provided to support the lower concentration of CO<sub>2</sub> is insufficient for the staff to conclude that a fire can be suppressed or extinguished in a reliable manner with the proposed change in place.

The staff notes that, as discussed in Event Notification No. 41359, dated January 26, 2005, related to CO<sub>2</sub> migration, PSEG has implemented compensatory measures to address the issues with the CO<sub>2</sub> fire protection system. This action is consistent with the Salem FPP when non-conforming conditions are identified. In accordance with the Salem FPP, the compensatory measures should remain in place while prompt corrective actions are taken.

Your September 26, 2005, letter stated that PSEG would like to continue discussions with the NRC staff on the proposed resolution of issues related to migration and system degradation. The staff supports your efforts in this regard. The staff would like to meet and discuss these issues within 30 days of receipt of this letter. At the meeting, please be prepared to discuss the status of the Salem FPP (i.e., the status of Appendix R exemptions, the causes of reduced CO<sub>2</sub> concentration, the effects of CO<sub>2</sub> migration, etc.) and your plans to return the Salem FPP to conformance with its licensing basis. Please contact me to set up the discussions. I can be reached at (301) 415-1321 or by e-mail at [snb@nrc.gov](mailto:snb@nrc.gov).

Sincerely,

*/RA/*

Stewart N. Bailey, Sr. Project Manager, Section 2  
Project Directorate I  
Division of Licensing Project Management  
Office of Nuclear Reactor Regulation

Docket Nos. 50-272 and 50-311

cc: See next page

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