July 17, 2007

MEMORANDUM TO: Harold K. Chernoff, Chief
Plant Licensing Branch I-2
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

FROM: Richard B. Ennis, Senior Project Manager ***/ra/***
Plant Licensing Branch I-2
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

SUBJECT: SALEM NUCLEAR GENERATING STATION, UNIT NOS. 1 AND 2, DRAFT REQUEST FOR ADDITIONAL INFORMATION (TAC NOS. MD4843 AND MD4844)

The attached draft request for information (RAI) was transmitted on July 17, 2007, to Mr. Jamie Mallon of PSEG Nuclear LLC (the licensee). This information was transmitted to facilitate an upcoming conference call in order to clarify the licensee's amendment request for Salem Nuclear Generating Station (Salem), Unit Nos. 1 and 2, dated March 16, 2007. The proposed amendment would add new Technical Specification (TS) requirements for the response times associated with a steam generator feedwater pump (SGFP) trip and feedwater isolation valve (FIV) closure. The amendment would also revise the TS requirements for the containment fan cooler unit (CFCU) cooling water flow rate. These changes are associated with a revised containment response analysis that credits a SGFP trip and FIV closure (on a feedwater regulator valve failure) to reduce the mass/energy release to the containment during a main steam line break (MSLB). The containment analysis also credits a reduced heat removal capability for the CFCUs, allowing a reduction in the required service water (SW) flow to the CFCUs.

This memorandum and the attachment do not convey or represent an NRC staff position regarding the licensee's request.

Docket Nos. 50-272 and 50-311

Attachment: Draft RAI

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Docket Nos. 50-272 and 50-311

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DRAFT REQUEST FOR ADDITIONAL INFORMATION

REGARDING PROPOSED LICENSE AMENDMENT

STEAM GENERATOR FEEDWATER PUMP TRIP,

FEEDWATER ISOLATION VALVE CLOSURE RESPONSE TIMES,

AND CONTAINMENT FAN COIL UNIT COOLING WATER FLOW RATE

SALEM NUCLEAR GENERATING STATION, UNIT NOS. 1 AND 2

DOCKET NOS. 50-272 AND 50-311

By letter dated March 16, 2007, PSEG Nuclear LLC (PSEG or the licensee) submitted an amendment request for Salem Nuclear Generating Station (Salem), Unit Nos. 1 and 2. The proposed amendment would add new Technical Specification (TS) requirements for the response times associated with a steam generator feedwater pump (SGFP) trip and feedwater isolation valve (FIV) closure. The amendment would also revise the TS requirements for the containment fan cooler unit (CFCU) cooling water flow rate. These changes are associated with a revised containment response analysis that credits a SGFP trip and FIV closure (on a feedwater regulator valve failure) to reduce the mass/energy release to the containment during a main steam line break (MSLB). The containment analysis also credits a reduced heat removal capability for the CFCUs, allowing a reduction in the required service water (SW) flow to the CFCUs.

The NRC staff has reviewed the information the licensee provided that supports the proposed amendment and would like to discuss the following issues to clarify the submittal.

SBPB-1: The proposed change would reduce the minimum cooling water flow rate to each CFCU from ≥ 2550 gallons per minute (gpm) to ≥1300 gpm. The reduction in required SW flow rate to the CFCUs would reduce its heat removal capability in the containment. The minimum flow rate requirements in the accident analyses for loss-of-coolant accident (LOCA) and MSLB are based on clean-tube flow rate. Explain how the accident analysis was performed with consideration of tube fouling, and what safety margin was assumed in the analysis for tube fouling.

SBPB-2: In considering the effects of surface fouling of the water side of the CFCUs and the residual heat removal heat exchangers, explain how you treat water side surface fouling of the CFCU in the analysis.

SBPB-3: Cooling water systems serving the containment air coolers may experience two-phase flow conditions during postulated LOCA and MSLB scenarios. However, the heat removal assumptions for design-basis accident scenarios were based on single-phase flow conditions. In Generic Letter 96-06, the NRC requested licensees to evaluate cooling water systems that serve containment air coolers to assure that the systems are not vulnerable to water-hammer and two-phase flow conditions. The staff has previously approved the licensee's evaluations and

corrective actions to resolve this issue in a letter dated June 2, 2003. Please provide additional evaluations on this issue based on new parameters in the proposed TS changes.