March 16, 2001

MEMORANDUM TO: James W. Clifford, Chief, Section 2
Project Directorate I
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

FROM: Robert J. Fretz, Project Manager, Section 2 **/RA/**
Project Directorate I
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

SUBJECT: SALEM GENERATING STATION, FACSIMILE TRANSMISSION, ISSUES TO BE DISCUSSED IN AN UPCOMING CONFERENCE CALL (TAC NOS. MB0521 AND MB0522)

The attached information was transmitted electronically on March 12, 2001, to PSEG Nuclear LLC (the licensee). This information was transmitted to facilitate a upcoming conference call in order to determine an appropriate response time for the attached set of draft questions associated with the licensee's submittal dated date November 10, 2000. In the submittal, PSEG Nuclear requested a revision to the Salem Nuclear Generating Station (Salem), Unit Nos. 1 and 2, Facility Operating Licenses and Technical Specifications to increase the Salem licensed power levels by approximately 1.4%. This memorandum and the attachment do not convey or represent an NRC staff position regarding the Salem power uprate request.

Docket Nos. 50-272 and 50-311

Attachment: Issues for Discussion in Upcoming Telephone Conference

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DRAFT REQUEST FOR ADDITIONAL INFORMATION
PROPOSED AMENDMENT FOR POWER UPRATE
SALEM GENERATING STATION, UNITS 1 AND 2

1. Tables 2-1 and 2-2 of Attachment 1 to the reference transmittal provide the NSSS design parameters that are used as the basis for the 1.4 percent power uprate for Salem Units 1 and 2. Provide also the corresponding parameters that are used in the current Salem design basis analyses.

2. In Section 5.2.3, Discuss the potential for Fluid induced vibration (FIV) of the reactor internals for the power uprate. Provide a comparison of the maximum FIV load on the most critical component (i.e., guide tubes) at the uprated power level with the allowable FIV load at Salem.

3. In Sections 5.2.3, you evaluated the reactor internal components for the uprated power conditions including the baffle/barrel region components, core barrel, baffle plate, baffle/former bolts, and lower core plate. Provide a summary of analytical results including the maximum calculated stresses and CUFs for these components. Also provide the Code and Code Edition used for evaluation of the reactor internal components. If different from the Code of record, please justify and reconcile the differences.

4. In reference to Section 5.6.1, you stated that an evaluation confirmed that the existing fatigue usage factors for the RCS piping and nozzles remain bounding due to the conservative nature of the analysis (e.g., a conservative grouping of more several severe transients). Discuss your basis for the statement and conclusion. Provide a summary of the maximum calculated stresses and CUFs at the most critical locations for RCL piping, primary equipment supports and nozzles, RCL branch nozzles and pressurizer surge nozzles, allowable limits, the Code of record and Code edition used for the power uprate conditions for NSSS piping and supports. If different from the Code of record, justify and reconcile the differences.

5. In reference to Section 5.6.1, you stated that as part of the Model F steam generator replacement for Unit 1, the reactor coolant loop piping, components and supports were evaluated and the power uprate was found to have negligible effect on the resultant loads. It is noted that the Unit 1 SG replacement analysis has not been reviewed by the NRC. Provide a summry of the analysis method, assumptions, computer codes used for the analysis (if different from those specified in the FSAR), the results of analysis , and the Code and Code Edition used. If different from the Code of record, justify and reconcile the differences. The results of analyses should include RCL piping, major equipment supports and nozzles, RCL branch nozzles and pressurizer surge nozzles.

6. In Section 5.9.4, you indicated that you evaluated the U-bend tubes for the power uprate and found that some tubes would be susceptible to high cycle fatigue at the uprated conditions with the plant operating at lower steam pressures. Provide the basis for acceptability of these U-bend tubes following the power uprate. Also, provide an evaluation of the flow-induced vibration of the steam generator U-bend tubes due to power uprate that includes the analysis methodology, vibration level, computer codes used in the analysis and the calculated elastic-fluid instability ratio. If any computer codes used for the analysis are different from those specified in the Salem FSAR.

7. Discuss the functionality of safety-related mechanical components (i.e., all safety related valves and pumps, including air-operated valves (AOV) and power-operated relief valves) affected by the power uprate to ensure that the performance specifications and technical specification requirements (e.g., flow rate, close and open times) will be met for the proposed power uprate. Confirm that safety-related motor-operated valves (MOVs) in your Generic Letter 89-10 MOV program at Salem will be capable of performing their intended function(s) following the power uprate including such affected parameters as fluid flow, temperature, pressure and differential pressure, and ambient temperature conditions. Identify mechanical components for which functionality at the uprated power level could not be confirmed. Please discuss effects of the proposed power uprate on the pressure locking and thermal binding of safety-related power-operated gate valves for Generic Letter (GL) 95-07 and on the evaluation of overpressurization of isolated piping segments for GL 96-06.

8. In reference to Section 9, list the balance-of-plant (BOP) piping systems that were evaluated for the power uprate. Provide a summary of the methodology and assumptions used for evaluating BOP piping, components, and pipe supports, nozzles, penetrations, guides, valves, pumps, heat exchangers and anchorage for pipe supports. Provide a summary of the calculated maximum stresses for the critical BOP piping systems, the allowable limits, the Code of record and Code edition used for the power uprate conditions. If different from the Code of record, justify and reconcile the differences.

9. Discuss the potential for flow-induced vibration in the heat exchangers following the power uprate. Provide a summary of evaluation for power uprate effects on the high energy line break analysis, jet impingement and pipewhip loads for the power uprate condition.

10. Do you project modifications to piping or equipment supports for the proposed power uprate? If any, provide examples of pipe supports requiring modification and discuss the nature of these modifications

REFERENCE

PSEG Nuclear LLC Letter to the NRC, “Request for a License Amendment, Increase Licensed Power Level, Salem Generating Station, Units 1 and 2, Facility Operating Licenses DPR-70, And DPR-75, NRC Docket Nos. 50-272, And 50-311, Respectively," dated November 10, 2000.