CP&L
Carolina Power & Light Company

AUG 1 5 1985

SERIAL: NLS-85-283

Director of Nuclear Reactor Regulation
Attention: Mr. D. B. Vassallo, Chief
Operating Reactors Branch No. 2
Division of Licensing
United States Nuclear Regulatory Commission
Washington, DC 20555

BRUNSWICK STEAM ELECTRIC PLANT, UNIT NO. 2
DOCKET NO. 50-324/LICENSE NO. DPR-62
DEFERRAL OF FEEDWATER SPARGER REPLACEMENT

Dear Mr. Vassallo:

By letter dated October 7, 1981, Carolina Power & Light Company (CP&L) committed to perform the feedwater sparger replacement and nozzle cladding removal recommended by NUREG-0619 during Reload 5 for Brunswick-2. On June 1, 1984, the Company requested deferral of this work until Reload 6. Your staff granted this deferral on June 29, 1984. Carolina Power & Light Company has further investigated the sparger cracking issue and determined that replacement is not justified at this time. In lieu of performing this work CP&L proposes to continue inspections of the spargers under the guidance of Table 2 of NUREG-0619. If adverse indications are discovered during the course of these inspections, the NRC will be notified and a clad removal/sparger replacement schedule will be submitted.

Our June 1, 1984 deferral request proposed to perform the feedwater sparger replacement contingent upon satisfactory resolution of the sparger cracking issue at Northern States Power Company's Monticello Nuclear Generating Plant. A metallurgical analysis, performed by General Electric Company, determined the cause of the Monticello nozzle cracks to be thermal fatigue produced by thermal cycling during low flow operating conditions and high residual weld stresses induced by the sparger fabrication process. However, the Brunswick operating conditions and replacement sparger geometry are not identical with Monticello and thus cracking of the Brunswick sparger nozzles is not predictable based on performance of the Monticello spargers.

A direct visual examination of the existing Brunswick-2 feedwater spargers was completed during the last refueling outage. This examination revealed only minor flow hole cracks. In addition, liquid penetrant examinations were performed on the accessible portions of the feedwater nozzle internal blend radii, and ultrasonic testing was performed on the internal blend radii and safe end forgings with no adverse indications detected.

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In lieu of performing the feedwater sparger replacement and nozzle cladding removal, the following non-destructive examinations will be performed during subsequent refueling outages:

1. Visual examinations of spargers.

2. Liquid penetrant testing of the accessible portions (approximately 80%) of the feedwater nozzle internal blend radii. The accessible area includes the lower portion of the blend radius which has the highest susceptibility to cracking. This test is performed every other refueling outage. The next test is scheduled to be performed during the Reload 7 outage.

3. External ultrasonic testing of the feedwater nozzle internal blend radii.

4. Ultrasonic testing of the feedwater nozzle safe end forgings.

These inspections will be in accordance with the guidance and schedule provided in Table 2 of NUREG-0619.

Based on the satisfactory results of previous inspections and the Company's commitment to perform future inspections, we have determined that replacement of the Brunswick-2 feedwater spargers does not warrant the radiation exposure (the industry average for performing this work is approximately 300 man-rem) or the resource commitment required to complete the work. Therefore, CP&L proposes to defer this work, until such time that inspections indicate its necessity.

Carolina Power & Light Company requests written concurrence with this action within 45 days of receipt of this letter. Please refer questions concerning this matter to Mr. Sherwood R. Zimmerman at (919) 836-6242.

Yours very truly,

A. B. Cutter - Vice President
Nuclear Engineering & Licensing

MAT/ccc (1781MAT)

cc: Mr. W. H. Ruland (NRC-BNP)
Dr. J. Nelson Grace (NRC-RII)
Mr. M. Grotenhuis (NRC)