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AUG 17 1995

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910 457-2496

SERIAL: BSEP 95-0094

United States Nuclear Regulatory Commission
ATTENTION: Document Control Desk
Washington, DC 20555

BRUNSWICK STEAM ELECTRIC PLANT, UNIT NO. 2
DOCKET NO. 50-324 / LICENSE NO. DPR-62
REVISED PLANS FOR REPLACEMENT OF FEEDWATER SPARGERS

Gentlemen:

The purpose of this letter is to advise the Nuclear Regulatory Commission (NRC) of Carolina Power & Light Company's (CP&L) revised plans for the replacement of the feedwater spargers for the Brunswick Steam Electric Plant, Unit No. 2. Based on the results of previous inspections of the Unit 2 feedwater spargers, CP&L no longer plans to replace the feedwater spargers. Instead, CP&L will continue performing feedwater sparger examinations in accordance with the examination schedule in NUREG-0619 using an alternate examination method previously accepted by the NRC (e.g., visual examination using a high resolution remote camera).

The Company plans to address plans for continued inspections of the feedwater nozzle blend radii as a separate issue in future correspondence.

Please refer any questions regarding this submittal to Mr. George Honma at (910) 457-2741.

Sincerely,

John Paul Cowan

WRM/wrm

Enclosures:

1. Revised Plans for Feedwater Sparger Replacement
2. Summary of Commitments

cc: Mr. S. D. Ebnetter, NRC Region II - Regional Administrator
Mr. D. C. Trimble, NRR Project Manager - Brunswick
Mr. C. A. Patterson, NRC Senior Resident Inspector - Brunswick
The Honorable H. Wells, Chairman - North Carolina Utilities Commission

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ENCLOSURE 1

BRUNSWICK STEAM ELECTRIC PLANT, UNIT NO. 2 NRC DOCKET NO. 50-324 OPERATING LICENSE NO. DPR-62 REVISED PLANS FOR REPLACEMENT OF FEEDWATER SPARGERS

SUMMARY:

The purpose of this letter is to advise the Nuclear Regulatory Commission of Carolina Power & Light Company's (CP&L) revised plans for the replacement of the feedwater spargers for the Brunswick Steam Electric Plant, Unit No. 2. Carolina Power & Light Company previously submitted similar information for the Brunswick Plant, Unit 1 by letters dated January 16, 1995 (Reference 1) and February 3, 1995 (Reference 2). The results of the NRC review of the Unit 1 information is provided in the NRC's letter dated March 16, 1995 (Reference 3).

DISCUSSION:

By letter dated June 8, 1992 (Reference 4), CP&L submitted the results of non-destructive examinations of the feedwater nozzles and spargers for the Brunswick Plant, Unit 2. These examinations were performed during Unit 2 Refueling Outage 9. Additional information pertaining to these examinations was submitted by letter dated July 27, 1992 (Reference 5).

The June 8, 1992 submittal included an evaluation prepared by General Electric for circumferentially oriented flaws that were found in the sparger arm-to-tee circumferential welds. In this letter, CP&L stated its intention to replace the feedwater spargers during Refueling Outage 11 (then scheduled to begin in September 1994).

The June 8, 1992 letter also requested NRC staff concurrence with a change to a requirement for continued monitoring of crack growth using a liquid penetrant (LP) technique. Instead, CP&L proposed to monitor crack growth during the Refueling Outage 10 using a high resolution remote camera. The NRC staff subsequently approved this request in a letter dated June 24, 1993 (Reference 6).

In a letter dated December 21, 1994 (Reference 7), CP&L submitted the results of non-destructive examinations of the Unit 2 feedwater nozzles and spargers performed during Refueling Outage 10. The December 21, 1994 submittal describes the cracks previously identified in the circumferential welds connecting the feedwater sparger arms to the tees. No appreciable increase in crack length or the number of cracks was identified since the previous inspection. The longest existing crack found was 2.0 inches in length. General Electric Company's analysis has shown that the critical crack size is 14.1 inches on the outside diameter of the pipe and that the largest allowable crack which would reach the critical flaw size in one cycle is 10.9 inches. Under bounding crack growth predictions, the spargers will remain within design allowables for at least a minimum of two fuel cycles.

The examinations of the feedwater sparger flow holes indicate that slow crack growth continues, with some new cracking being seen around the flow holes. The new cracks, however, are not as long as existing cracks. Due to the size and orientation of the new cracks, CP&L has previously determined that their size and orientation do not significantly increase the probability of loose sparger pieces being generated in the reactor vessel. The sparger flow hole cracks were initially

predicted to grow to approximately 1/2-inch in length, after which their growth slows significantly during subsequent operating cycles. The engineering evaluation submitted as Enclosure 2 of the December 21, 1994 submittal (i.e., EER No. 94-0182) provides the basis for CP&L's conclusion that the size and orientation of these sparger flow hole cracks do not increase the probability of loose sparger pieces being generated inside the reactor pressure vessel.

CONCLUSIONS:

Based on the results of previous inspections and planned future inspections, CP&L no longer plans to replace the Unit 2 feedwater spargers. Instead, CP&L plans to continue performing feedwater sparger examinations in accordance with the examination schedule in NUREG-0619 using an alternate examination method previously accepted by the NRC (e.g., visual examination using a high resolution remote camera).

REFERENCES:

1. Letter from R. P. Lopriore (CP&L) to NRC Document Control Desk dated January 16, 1995, "Brunswick Steam Electric Plant, Unit No. 1 Inspection of Feedwater Nozzles and Safe Ends, Submittal of Non-Proprietary Version of Fracture Mechanics Analysis," Serial: BSEP 94-0520.
2. Letter from R. A. Anderson (CP&L) to NRC Document Control Desk dated February 3, 1995, "Brunswick Steam Electric Plant, Unit Nos. 1 and 2 Feedwater Sparger Inspections," Serial: BSEP 95-0014.
3. Letter from David C. Trimble (USNRC) to R. A. Anderson (CP&L) dated March 16, 1995, "Examination of Feedwater Spargers and N4D Feedwater Nozzle, Brunswick Steam Electric Plant, Units 1 & 2 (TAC No. M85922)."
4. Letter from R. B. Starkey, Jr. (CP&L) to NRC Document Control Desk dated June 8, 1992, "Brunswick Steam Electric Plant, Unit No. 2 NUREG-0619 Feedwater Nozzle and Sparger Examination Results," Serial: NLS-92-134.
5. Letter from D. C. McCarthy (CP&L) to NRC Document Control Desk dated July 27, 1992, "Brunswick Steam Electric Plant, Unit No. 2 NUREG-0619 Feedwater Nozzle and Safe End Examination Results," Serial: NLS-92-194.
6. Letter from Patrick D. Milano (USNRC) to R. A. Anderson (CP&L) dated June 24, 1993, "Remote Camera Examination of Feedwater Sparger, Brunswick Steam Electric Plant, Unit 2 (TAC No. M85922)."
7. Letter from R. P. Lopriore (CP&L) to NRC Document Control Desk dated December 21, 1994, "Brunswick Steam Electric Plant, Unit No. 2 NUREG-0619 Feedwater Nozzle and Safe End Examination Results," Serial: BSEP 94-0520.

ENCLOSURE 2

BRUNSWICK STEAM ELECTRIC PLANT, UNIT NO. 2
NRC DOCKET NO. 50-324
OPERATING LICENSE NO. DPR-62
REVISED PLANS FOR REPLACEMENT OF FEEDWATER SPARGERS

LIST OF REGULATORY COMMITMENTS

The following table identifies those actions committed to by Carolina Power & Light Company in this document. Any other actions discussed in the submittal represent intended or planned actions by Carolina Power & Light Company. They are described to the NRC for the NRC's information and are not regulatory commitments. Please notify the Manager-Regulatory Affairs at the Brunswick Nuclear Plant of any questions regarding this document or any associated regulatory commitments.

Commitment	Committed date or outage
1. Perform feedwater sparger examinations in accordance with the examination schedule in NUREG-0619 using an alternate examination method previously accepted by the NRC (e.g., visual examination using a high resolution remote camera).	B213R1
2. Address plans for continued inspections of the feedwater nozzle blend radii as a separate issue in future correspondence.	N/A