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U. S. Nuclear Regulatory Commission  
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BRUNSWICK STEAM ELECTRIC PLANT, UNIT NO. 1  
DOCKET NO. 50-325/LICENSE NO. DPR-71  
CORE SHROUD EVALUATION FOR REFUELING OUTAGE 12

Gentlemen:

During Refueling Outage 12 for the Brunswick Steam Electric Plant (BSEP), Unit No. 1, Carolina Power & Light (CP&L) Company inspected core shroud horizontal welds H1 and H5, vertical welds V1 and V2, and three of the repair clamps for core shroud horizontal welds H2 and H3. The purpose of this letter is to submit, in accordance with the latest guidance by the Boiling Water Reactor Vessel and Internals Project (BWRVIP), the results of analytical evaluations of core shroud inspection results for BSEP, Unit No. 1 Refueling Outage 12.

The BWRVIP has issued "BWR Core Shroud Inspection and Flaw Evaluation Guidelines (BWRVIP-76)," dated November 1999. This report combines the core shroud inspection and evaluation guidance of the BWRVIP reports listed below, and also incorporates information from NRC reviews and safety evaluations:

- BWRVIP-01, "BWR Core Shroud Inspection and Flaw Evaluation Guidelines," Revision 2.
- BWRVIP-07, "Guidelines for Reinspection of BWR Core Shrouds," February 1996.
- BWRVIP-63, "Shroud Vertical Weld Inspection and Evaluation Guidelines," June 1999.

An NRC Safety Evaluation for the Report BWRVIP-76 has not yet been issued.

Section 4 of report BWRVIP-76 provides reporting recommendations applicable to the core shroud inspections and evaluations, including the requirement that the licensee provide, to the NRC, the results of analytical evaluations of the inspection data. The analytical evaluation results for the BSEP, Unit No. 1, core shroud are summarized below:

A001

<b>Results of BSEP, Unit 1 Core Shroud Weld Analytical Evaluations</b>						
<b>Weld</b>	<b>Last Inspection (Outage/Date)</b>	<b>Percentage of Weld Inspected</b>	<b>Percentage of Weld Found Cracked</b>	<b>Evaluation Method</b>	<b>Qualification Period (Years)</b>	<b>Next Inspection (Outage/Date)</b>
H1 Upper	B113R1 (3/2000)	100%	82.6%	Plant-Specific Analysis per BWRVIP-01 and BWRVIP-07	10	B118R1 (3/2010)
H1 Lower	B113R1 (3/2000)	85.5%	7.4%	BWRVIP-07, Table 1	10	B118R1 (3/2010)
H2/H3	Repaired with Clamps	N/A	N/A	N/A	N/A	N/A
H4	B111R1 (10/1996)	77.6%	8.1%	BWRVIP-07, Table 1	10	B116R1 (3/2006)
H5	B113R1 (3/2000)	89.8%	2.1%	BWRVIP-07, Table 1	10	B118R1 (3/2010)
H6A	B111R1 (10/1996)	76.6%	5.8%	BWRVIP-07, Table 1	10	B116R1 (3/2006)
H6B	B111R1 (10/1996)	77.8%	8.9%	BWRVIP-07, Table 1	10	B116R1 (3/2006)
H7	B111R1 (10/1996)	76.8%	1.6%	BWRVIP-07, Table 1	10	B116R1 (3/2006)
V1	B113R1 (3/2000)	100%	0%	BWRVIP-63	6	B116R1 (3/2006)
V2	B113R1 (3/2000)	100%	0%	BWRVIP-63	6	B116R1 (3/2006)

Based on analytical evaluation results, welds H1, H4, H5, H6A, H6B, and H7 are qualified for 10 years of operation without operational changes or restrictions. Based on the absence of indications in vertical welds V1 and V2, the reinspection interval is 6 years.

Three of 12 core shroud repair clamps were inspected during Refueling Outage 12. No degradation or misalignment of the repair clamps was identified. Twenty-five percent of the core shroud repair clamps are being reinspected during each refueling outage.

The evaluation methods contained in reports BWRVIP-01, BWRVIP-07, and BWRVIP-63 were used for the BSEP, Unit No. 1 Refueling Outage 12 inspection results. Although the

recommendations contained in report BWRVIP-76 supersede those in reports BWRVIP-01, BWRVIP-07, and BWRVIP-63, because the BWRVIP-76 evaluation guidelines are identical to those in the previously issued BWRVIP reports, the analytical evaluations for the BSEP, Unit No. 1 Refueling Outage 12 core shroud inspections also conform to the guidance contained in report BWRVIP-76.

As specified by report BWRVIP-76, the results of inspections recommended by the report will be reported to the BWRVIP. The BWRVIP will summarize the results of these inspections and provide the inspection summary to the NRC.

Please refer any questions regarding this submittal to Mr. Leonard R. Beller, Supervisor - Licensing, at (910) 457-2073.

Sincerely,

A handwritten signature in black ink, appearing to read "W. J. Dorman". The signature is fluid and cursive, with a long horizontal stroke extending to the right.

Warren J. Dorman  
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Brunswick Steam Electric Plant

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WRM/wrm

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