CP&L
Carolina Power & Light Company

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Brunswick Steam Electric Plant
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January 25, 1985

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SERIAL: BSEP/85-0106

Mr. James P. O'Reilly, Administrator
U.S. Nuclear Regulatory Commission
Region II, Suite 3100
101 Marietta Street N.W.
Atlanta, GA 30323

BRUNSWICK STEAM ELECTRIC PLANT UNITS 1 AND 2
DOCKET NOS. 50-325 AND 50-324
LICENSE NOS. DPR-71 AND DPR-62
RESPONSE TO INFRACTIONS OF NRC REQUIREMENTS

Dear Mr. O'Reilly:

The Brunswick Steam Electric Plant (BSEP) has received I&E Inspection Report 50-325/84-34 and 50-324/84-34 and finds that it does not contain information of a proprietary nature.

This report identified one item that appeared to be in noncompliance with NRC requirements. Enclosed please find Carolina Power & Light Company's response to that violation.

Very truly yours,

C. R. Dietz, General Manager
Brunswick Steam Electric Plant

RMP/mcg/LETCG2

Enclosure

cc: Mr. R. C. DeYoung
NRC Document Control Desk

Violation

Brunswick Unit 1 Technical Specification, paragraph 6.8.1.c, requires that written procedures be established, implemented, and maintained covering surveillance and test activities of safety-related equipment. 10CFR50, Appendix B, Criterion V, requires activities affecting quality to be prescribed by documented...procedures...and accomplished in accordance with these procedures. General Electric Procedure UT 1.30, Revision 5, the applicable ultrasonic (UT) procedure Inservice Inspection (ISI) of stainless steel pipe welds, specifies the following:

Paragraph 5.5 states that "Angle beam wedges shall be used that will produce a sound beam at a nominal 45° in the examination medium. In those cases where complete coverage of the examination volume cannot be obtained, other angles may be used." Further, paragraph 5.5.1 states, in part, "that when the examination is limited to the half-V examination, the distance from the center of the weld to the exit point of the transducer shall not be greater than 0.93T, for a 45° transducer to be used."

Paragraph 6.3.6.2 states, in part, that "when 1 1/2 V-path calibration is used, the transducer shall be positioned on the applicable calibration standard and the response adjusted from the 6/8 (or 5/8) V-path axial-drilled hole to 80% FSH. Mark this point on the CRT screen. Without changing the gain, obtain the peak signal from the 10/8 (or 11/8) V-path axial-drilled hole and mark this point on the CRT screen. Draw a line connecting these two points and extrapolate to cover the entire examination volume. This DAC curve represents the primary reference level."

Paragraph 8.33 requires that indications determined to be geometric be recorded. When the amplitude of an indication exceeds 50% DAC, the indication shall be recorded. The indication shall be recorded as "continuous 360°" if it is discernible from the noise for the length of the weld. If the indication is not observed 360°, the end points shall be determined by the points at which the signal is discernible from the noise.

Paragraph 9.2.1 requires that geometric plots be made of all recordable indications to show locations of indications with respect to the weld root.

Contrary to the above, UT inspection of Recirculation (RECIRC) System pipe welds was not performed in accordance with GE procedure UT 1.30 in that:

1. On several 28" Reactor Recirculation System welds with restrictive weld crown widths, 45°, 1/2 V-path examinations were performed. The distance from the center of these welds to the exit point of the transducer was compared to the formulas listed in the procedure, and the results revealed that a 60° transducer should have been used to obtain complete coverage of the volume under examination.

2. General Electric performed calibrations for 1/2 V-path examinations using the technically correct side-drilled holes in the calibration standard in lieu of the axial-drilled holes as required by the procedure.

3. Indications were observed with General Electric equipment which exceeded 50% DAC, and end points were readily discernible at the reference level. However, these indications were either not recorded or recorded incorrectly.

This is a Severity Level IV violation (Supplement I).

Response

A. Admission or Denial of the Alleged Violation

CP&L acknowledges that the violation occurred as stated.

B. Reason for the Violation

1. As part of the examination methodology, General Electric confirms adequate examination area coverage by confirming the presence of a root roll signal on the ultrasonic scope screen. A violation of the referenced procedural requirement was not anticipated as the ultrasonic scope screen presentation indicated sound being received from the entire examination area.

2. During the examination, it was determined that the full examination area coverage could not be obtained on the 22" recirculation manifold welds using the 1/2 V-path examination technique. In accordance with General Electric procedure UT 1.30, this would normally require a 1 1/2 V-path calibration which requires use of the axial-drilled calibration holes. However, the calibration standard for the recirculation manifold has interferences from other calibration reflectors that preclude use of the axial-drilled calibration holes. The examiner, in lieu of using the axial-drilled calibration holes, used the radial-drilled holes which permitted a 1 1/2 V-path calibration.

3. The example represents a procedural deficiency in that the procedure (UT 1.30) did not specify the instrument gain to be used in determining whether a geometric signal is 360°.

C. Corrective Actions Which Have Been Taken

1. As described in Inspection Report 84-34, paragraph 5b, CP&L and General Electric demonstrated that cracks in the 28" weld would have been detected.

2. As described in Inspection Report 84-34, paragraph 5b, the results of the General Electric examination were compared to other calibration and equipment techniques. This comparison showed that the indications were similar, irregardless of the equipment/technique used.

D. Corrective Actions to be Completed

1. General Electric is revising its procedure UT 1.30 to:

   a. Require the use of a 52° transducer as the normal inspection angle.

   b. Require the use of a 60° transducer when full coverage cannot be obtained with a 52° transducer.

   c. Require weld crown profiles and thickness measurements be taken prior to inspection. Using the worst-case measurements, calculations will be made to ensure the "A" dimension requirements are satisfied.

   d. Ensure that a 1 1/2 V-path examination is performed only with the approval of a CP&L Level III.

   e. Provide specific criteria on the recording level to be used and what information is to be recorded.

2. General Electric will review and upgrade, as appropriate, its QA/QC program as it pertains to in-service inspections.

3. Periodic field surveillances and data review of contract personnel will be performed by a CP&L Level III Examiner to assure proper inspection quality and documentation. In addition, Brunswick ISI personnel have been counseled on the importance of contractor management and controls.

E. Date for Full Compliance

The above items will be completed prior to General Electric performing further testing at the Brunswick site.