



Carolina Power & Light Company

August 23, 1993

SERIAL: BSEP 93-0134

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

BRUNSWICK STEAM ELECTRIC PLANT, UNIT NO. 1
DOCKET NO. 50-325 / LICENSE NO. DPR-71
ASME RELIEF REQUEST SERVICE WATER PIPING NON-CODE REPAIR

Gentlemen:

The purpose of this letter is to request relief for a temporary non-code repair to the Service Water System for Brunswick Unit 1. This request is applicable to the Unit 1 6" Class 3 Service Water elbow butt to inlet flange weld of valve 1-SW-V116. A through-wall leak was discovered on the elbow butt to inlet flange weld on the upstream side of valve 1-SW-V116.

ASME Section XI requires that leakage through a pressure boundary be repaired or replaced in accordance with IWA/D-4000 or IWA/D-7000, respectively. The basis for relief is that it is impractical to perform an ASME Section XI code repair per IWA-4000 and IWD-4000 while this system is in operation. This piping provides service water from the nuclear service water header to the unit vital header and requires a nuclear service water system header outage to accomplish this work. A Unit 1 nuclear service water header outage is scheduled following the ongoing fuel assembly inspections. Measures are being implemented to perform a code repair/replacement prior to Unit 1 startup. While the code replacement is being pursued, the system is operable with a temporary non-code repair, using the guidance from Generic Letter (GL) 90-05 for Class 3 moderate energy piping (Attachment 1).


Alternate requirements are provided in EER 93-0502 (Attachment 2). Code repair/replacement is to be performed prior to Unit 1 startup. The necessary measures specified in GL 90-05 for temporary non-code repairs have been implemented (Reference Attachment 2, Engineering Evaluation Report (EER) "Operability Assessment of Pinhole Leak in 6" Vital SW Header", No. 93-0502).

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Please refer any questions regarding this submittal to Mr. K. A. Harris at (919) 457-3312.

Yours very truly,

A handwritten signature in dark ink, appearing to be 'W. Levis' with a stylized flourish at the end.

W. Levis
Manager
Regulatory Affairs Section

SHC/shc (swrr10.001)

Attachment

cc: Mr. S. D. Ebnetter
Mr. P. D. Milano
Mr. R. L. Prevatte

ATTACHMENT 1

BRUNSWICK STEAM ELECTRIC PLANT, UNIT NO. 1 DOCKET NO. 50-325 / LICENSE NO. DPR-71 RELIEF REQUEST NO. RR-10, REV.0

The requirements of GL 90-05 are spelled out in the subparagraphs listed below with appropriate action by CP&L listed:

1. Document the character of the flaw cited.

An Ultrasonic (UT) Non-Destructive Examination (NDE) was performed on July 31, 1993. The actual through-wall leak is characterized as a 1/8" long, hair-line crack at the toe of the weld with localized wall thinning adjacent to it approximately 2" in length and 3" in length along the weld.

2. Assess the structural integrity of the flawed piping by flaw evaluation. Evaluate for the design loading conditions.

The visual and UT examinations were evaluated for structural integrity by the Nuclear Engineering Department (NED) utilizing the "Through-Wall-Flaw" approach as outlined in GL 90-05. NED concluded that the leak did not reduce the structural integrity of line 1-SW-117-6-157 and the line satisfied the criteria of the "Through-Wall-Flaw" approach.

3. Assess the overall system degradation by an augmented inspection (5 needed) based on root cause determination.

These augmented inspections have been completed and are acceptable by the minimum wall criteria as set forth in the minimum wall calculation found in EER 93-0502.

4. Assess the integrity of the affected piping at least every 3 months by suitable NDE method (UT or RT).

Code repair/replacement shall be performed on line 1-SW-117-6-157 prior to Unit 1 startup. Currently this repair/replacement is scheduled for September 15, 1993. In the event that an extension of the repair/replacement, prior to startup, is required, the additional examinations (i.e., UT) per Generic Letter 90-05 will be implemented.

5. Perform a periodic qualitative assessment of leakage through the temporary non-code repair.

A weekly surveillance has been scheduled to monitor for leakage from this pipe in accordance with GL 90-05.

6. Determine the impracticality of performing a code repair.

It is impractical to perform an ASME Section XI code repair per IWA-4000 and IWD-4000 while this system is in operation. This piping provides service water to the service water vital header, and if this vital header is removed from operation, then a shutdown of the operating unit would be required.

7. Perform a root cause determination.

The through-wall leak on line 1-SW-117-6-157 has been temporarily repaired using a soft rubber patch. Since the actual condition of the cement lined pipe cannot be determined, at this time, information contained in a previous CP&L Metallurgy Unit memorandum was used in the analysis. The previous memorandum addressed the cause of pipe joint leaks in cement lined service water piping, and concluded that leakage at the joint in cement lined service water piping is due to the improper condition of the cement lining. Based on previous experience it is believed that corrosion due to the area being exposed to salt water from a flaw in the cement lining is the cause of the through-wall leak. This will be either confirmed or disproved after the completion of the metallurgical examination.