



Carolina Power & Light Company

SERIAL: NLS-84-436

OCT 09 1984

Mr. Darrell G. Eisenhut, Director  
Division of Licensing  
United States Nuclear Regulatory Commission  
Washington, DC 20555

BRUNSWICK STEAM ELECTRIC PLANT, UNIT NO. 1  
DOCKET NO. 50-325/LICENSE NO. DPR-71  
SUPPLEMENTAL RESPONSE TO GENERIC LETTER 84-11  
INSPECTIONS OF BWR STAINLESS STEEL PIPE

Dear Mr. Eisenhut:

SUMMARY

By letter dated June 1, 1984 (Serial No. NLS-84-222), Carolina Power & Light Company (CP&L) responded to NRC Generic Letter 84-11 by providing our plans for performing inspections for intergranular stress corrosion cracking (IGSCC) on Brunswick Unit Nos. 1 and 2. The June 1, 1984 response referenced our letters of January 31, 1984 (Serial No. NLS-84-045) and February 27, 1984 (Serial No. NLS-84-081) for the scope and schedule of planned Brunswick-2 inspections. The purpose of this letter is to apprise you of the Company's latest plans for performing inspections for IGSCC during the upcoming Brunswick-1 outage, scheduled to begin on or before November 2, 1984.

DISCUSSION

In Generic Letter 84-11, the NRC staff stated that an acceptable response to the current IGSCC issue would be to initiate a re-inspection program of piping susceptible to IGSCC and to commence re-inspection within approximately two calendar years, adjusted to coincide with the next scheduled outage. In addition, Generic Letter 84-11 also provides criteria for performing future re-inspections.

Our January 31, 1984 and February 27, 1984 letters provide our plan to inspect 37 welds for possible IGSCC on Brunswick-1 during the upcoming November 1984 outage. Since the submittal of those inspection plans and the issuance of Generic Letter 84-11, CP&L has continued to assess possible pipe replacement versus future inspection of the existing piping. Based on our understanding of the technical criteria in Generic Letter 84-11, the Company has elected not to replace the Brunswick-1 piping during the March 1985 outage unless substantial defects are detected.

During the upcoming Brunswick-1 outage, scheduled to occur on or before November 2, 1984, the welds listed in Table 1 (enclosed) will be inspected. This inspection will include 100% of the welds not previously inspected. ASME Class I non-conforming stainless steel weld joints that are four inches or greater (except those that have been repaired by weld overlays) are included in the table.

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The performance capability of Level 2 and Level 3 UT examiners performing evaluations will be demonstrated in accordance with IE Bulletin 83-02. Level 1, 2, or 3 UT examiners performing operations other than evaluations (general scanning observations and discrete signal interpretation) will be required to demonstrate their field performance capability. Examiners performing evaluations will be able to view the CRT display for the entire time that the transducer is in contact with the pipe for scanning, either in real time, remotely, or on tape recordings. Examiners that perform final crack sizing measurements will have completed the EPRI crack sizing course.

In addition to the welds in Table 1, the inconel nozzle butter of the safe-end to welds identified in Table 2 (enclosed) will also be inspected during the November 1984 outage. This is in accordance with the recommendations of IE Notice 84-41. The remaining inconel butter of the safe-end to nozzle welds identified in Table 3 (enclosed) will be inspected during the next Brunswick-1 refueling outage (Reload 5) presently scheduled to begin on or before March 30, 1985.

The welds identified in Table 4 (enclosed) that have weld overlays will be inspected during the next Brunswick-1 refueling outage (Reload 5). Welds that are found to be cracked and are not repaired during the November 1984 outage will also be re-inspected and re-evaluated during the March 1985 outage.

As stated in our June 1, 1984 response to Generic Letter 84-11, the following special surveillance measures have been implemented at the Brunswick Plant:

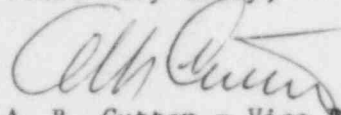
1. Plant shutdown shall be initiated for inspection, and corrective action shall be taken, when any leakage detection system indicates, within any period of 24 hours, an increase in the rate of unidentified leakage in excess of 2 gpm or its equivalent, whichever occurs first. For sump level monitoring systems with fixed-measurement interval method, the level shall be monitored at 4-hour intervals or less.
2. At least one of the leakage measurement instruments associated with each sump shall be operable, and the outage time for inoperable instruments shall be limited to 24 hours or an orderly shutdown will be immediately initiated.
3. A visual examination for leakage of the reactor coolant piping shall be performed during each plant outage in which the containment is deinerted. The examination shall be performed consistent with the requirements of IWA-5241 and IWA-5242 of the 1980 Edition of Section XI of the ASME Boiler and Pressure Vessel Code. The system boundary subject to this examination shall contain the susceptible welds inside the primary containment.

These special surveillance measures are consistent with those given in Attachment 1 to Generic Letter 84-11 and with CP&L's ALARA program. Based on the criteria given in Generic Letter 84-11 for re-inspecting piping susceptible to IGSCC, the next Brunswick-1 inspection following the March 1985 outage inspections will be scheduled for the Reload 6 outage for Brunswick-1.

The Company is continuing to assess various long-term countermeasures, including hydrogen water chemistry, IHSI, and pipe replacement. We will also continue to support and monitor industry efforts to improve ultrasonic inspection techniques.

Should you have any questions concerning this matter, please contact Mr. Sherwood R. Zimmerman at (919) 836-6242.

Yours very truly,



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

MAT/ccc (70011AT)

Enclosures

cc: Mr. D. O. Myers (NRC-BNP)  
Mr. J. P. O'Reilly (NRC-R11)  
Mr. M. Grotenhuis (NRC)

TABLE 1

Welds to be Inspected  
During November 1984 Outage

1-B32-RECIRC-28"-A-2	Safe-end to Pipe
1-B32-RECIRC-28"-A-3	Pipe to Elbow
1-B32-RECIRC-28"-A-4	Elbow to Pipe
1-B32-RECIRC-28"-A-5	Pipe to Tee
1-B32-RECIRC-28"-A-6	Tee to Pipe
1-B32-RECIRC-28"-A-7	Pipe to Elbow
1-B32-RECIRC-28"-A-8	Elbow to Valve
1-B32-RECIRC-28"-A-9	Valve to Pipe
1-B32-RECIRC-28"-A-9BC	Branch Connection
1-B32-RECIRC-28"-A-10	Pipe to Elbow
1-B32-RECIRC-28"-A-11	Elbow to Pump
1-B32-RECIRC-28"-A-12	Pump to Pipe
1-B32-RECIRC-28"-A-12BC	Pipe to Weld Olet
1-B32-RECIRC-28"-A-13	Pipe to Valve
1-B32-RECIRC-28"-A-15BC	Weld Olet to Pipe
1-B32-RECIRC-28"-A-16	Pipe to Tee
1-B32-RECIRC-28"-A-17	Tee to Cross
1-B32-RECIRC-28"-A-18	Cross to Reducer
1-B32-RECIRC-28"-B-2	Safe-end to Pipe
1-B32-RECIRC-28"-B-3	Pipe to Elbow
1-B32-RECIRC-28"-B-4	Elbow to Pipe
1-B32-RECIRC-28"-B-5	Pipe to Tee
1-B32-RECIRC-28"-B-6	Tee to Pipe
1-B32-RECIRC-28"-B-7	Pipe to Elbow
1-B32-RECIRC-28"-B-9	Valve to Pipe
1-B32-RECIRC-28"-B-9BC	Branch Connection
1-B32-RECIRC-28"-B-10	Pipe to Elbow
1-B32-RECIRC-28"-B-11	Elbow to Pump
1-B32-RECIRC-28"-B-12	Pump to Pipe
1-B32-RECIRC-28"-B-12BC	Pipe to Weld Olet
1-B32-RECIRC-28"-B-13	Pipe to Valve
1-B32-RECIRC-28"-B-14	Valve to Elbow
1-B32-RECIRC-28"-B-15	Elbow to Pipe
1-B32-RECIRC-28"-B-15BC	Weld Olet to Pipe
1-B32-RECIRC-28"-B-16	Pipe to Tee
1-B32-RECIRC-28"-B-17	Tee to Cross
1-B32-RECIRC-28"-B-18	Cross to Reducer
1-B32-RECIRC-22"-AM-1	Valve to Pipe
1-B32-RECIRC-22"-AM-2	Pipe to Valve
1-B32-RECIRC-22"-AM-3	Valve to Pipe
1-B32-RECIRC-22"-AM-3BCA	Pipe to Sweep Olet
1-B32-RECIRC-22"-AM-3BCb	Pipe to Sweep Olet
1-B32-RECIRC-22"-AM-4	Cross to Pipe
1-B32-RECIRC-22"-AM-5	Cross to Pipe
1-B32-RECIRC-22"-AM-5BCA	Pipe to Sweep Olet
1-B32-RECIRC-22"-AM-5BCB	Pipe to Sweep Olet
1-B32-RECIRC-22"-AM-6	Pipe to Cap
1-B32-RECIRC-22"-BM-1	Pipe to Cap

1-B32-RECIRC-22"-BM-1BCA	Pipe to Sweep Olet
1-B32-RECIRC-22"-BM-1BCB	Pipe to Sweep Olet
1-B32-RECIRC-22"-BM-2	Cross to Pipe
1-B32-RECIRC-22"-BM-3	Cross to Pipe
1-B32-RECIRC-22"-BM-3BC	Pipe to Sweep Olet
1-B32-RECIRC-22"-LA-4	Pipe to Pipe
1-B32-RECIRC-22"-BM-4BC	Pipe to Sweep Olet
1-B32-RECIRC-22"-BM-5	Pipe to Valve
1-B32-RECIRC-12"-AR-A-1	Sweep Olet to Pipe
1-B32-RECIRC-12"-AR-A-2	Pipe to Elbow
1-B32-RECIRC-12"-AR-A-3	Elbow to Pipe
1-B32-RECIRC-12"-AR-A-4	Pipe to Extension
1-B32-RECIRC-12"-AR-B-1	Sweep Olet to Pipe
1-B32-RECIRC-12"-AR-B-2	Pipe to Elbow
1-B32-RECIRC-12"-AR-B-3	Elbow to Pipe
1-B32-RECIRC-12"-AR-B-4	Pipe to Extension
1-B32-RECIRC-12"-AR-C-1	Sweep Olet to Pipe
1-B32-RECIRC-12"-AR-C-2	Pipe to Elbow
1-B32-RECIRC-12"-AR-C-3	Elbow to Pipe
1-B32-RECIRC-12"-AR-C-4	Pipe to Extension
1-B32-RECIRC-12"-AR-D-1	Sweep Olet to Pipe
1-B32-RECIRC-12"-AR-D-2	Pipe to Elbow
1-B32-RECIRC-12"-AR-D-3	Elbow to Pipe
1-B32-RECIRC-12"-AR-D-4	Pipe to Extension
1-B32-RECIRC-12"-AR-E-1	Sweep Olet to Pipe
1-B32-RECIRC-12"-AR-E-3	Elbow to Pipe
1-B32-RECIRC-12"-AR-E-4	Pipe to Extension
1-B32-RECIRC-12"-BR-F-1	Sweep Olet to Pipe
1-B32-RECIRC-12"-BR-F-2	Pipe to Elbow
1-B32-RECIRC-12"-BR-F-3	Elbow to Pipe
1-B32-RECIRC-12"-BR-F-4	Pipe to Extension
1-B32-RECIRC-12"-BR-G-1	Sweep Olet to Pipe
1-B32-RECIRC-12"-BR-G-2	Pipe to Elbow
1-B32-RECIRC-12"-BR-G-3	Elbow to Pipe
1-B32-RECIRC-12"-BR-G-4	Pipe to Extension
1-B32-RECIRC-12"-BR-H-1	Sweep Olet to Pipe
1-B32-RECIRC-12"-BR-H-2	Pipe to Elbow
1-B32-RECIRC-12"-BR-H-3	Elbow to Pipe
1-B32-RECIRC-12"-BR-J-1	Sweep Olet to Pipe
1-B32-RECIRC-12"-BR-J-2	Pipe to Elbow
1-B32-RECIRC-12"-BR-J-3	Elbow to Pipe
1-B32-RECIRC-12"-BR-J-4	Pipe to Extension
1-B32-RECIRC-12"-BR-K-1	Sweep Olet to Pipe
1-B32-RECIRC-12"-BR-K-2	Pipe to Elbow
1-B32-RECIRC-12"-BR-K-3	Elbow to Pipe
1-B32-RECIRC-12"-BR-K-4	Pipe to Extension
1-B32-RECIRC-4"-A-1	Sweep Olet to Pipe
1-B32-RECIRC-4"-A-10	Pipe to Sweep Olet
1-B32-RECIRC-4"-B-1	Sweep Olet to Pipe
1-B32-RECIRC-4"-B-10	Pipe to Sweep Olet
1-E11-RHR-24"-A-DISCH-12**	Valve to Tee
1-E11-RHR-20"-A-SUCT-1	Tee to Pipe
1-E11-RHR-20"-A-SUCT-1BC	Branch Connection
1-E11-RHR-20"-A-SUCT-2	Pipe to Valve



1-E11-RHR-24"-B-DISCH-13**	Valve to Cross
1-G31-RWCU-6"-SUCT-1	Tee to Pipe
1-G31-RWCU-6"-SUCT-2	Pipe to Valve
1-G31-RWCU-6"-SUCT-3	Valve to Pipe
1-G31-RWCU-6"-SUCT-4	Pipe to Elbow
1-G31-RWCU-6"-SUCT-5	Elbow to Pipe
1-G31-RWCU-6"-SUCT-6	Pipe to Elbow
1-G31-RWCU-6"-SUCT-7	Elbow to Pipe
1-G31-RWCU-6"-SUCT-8	Pipe to Elbow
1-G31-RWCU-6"-SUCT-9	Elbow to Pipe
1-G31-RWCU-6"-SUCT-10	Pipe to Elbow
1-G31-RWCU-6"-SUCT-11	Elbow to Pipe
1-G31-RWCU-6"-SUCT-12	Pipe to Valve
1-G31-RWCU-6"-SUCT-13	Valve to Pipe
1-G31-RWCU-6"-SUCT-14	Pipe to Elbow
1-G31-RWCU-6"-SUCT-15	Elbow to Pipe
1-G31-RWCU-6"-SUCT-16	Pipe to Pipe
1-G31-RWCU-6"-SUCT-17	Pipe to Elbow
1-G31-RWCU-6"-SUCT-18	Elbow to Pipe
1-G31-RWCU-6"-SUCT-19	Pipe to Valve
1-G31-RWCU-4"-DISCH-2	Valve to Pipe
1-G31-RWCU-4"-DISCH-3	Pipe to Valve

\*\* Indicates Bimetallic

TABLE 2

INCONEL NOZZLE WELDS TO BE INSPECTED  
DURING NOVEMBER 1984 OUTAGE

1-B32-RECIRC-28"-A-1	Nozzle to Safe-end Inconel Battering
1-B32-RECIRC-12"-AR-E-6	Nozzle to Safe-end Inconel Battering
1-B32-RECIRC-12"-BR-J-6	Nozzle to Safe-end Inconel Battering
1-B11-JPI-4"-N8A	Nozzle to Safe-end Inconel Battering

TABLE 3

INCONEL BUTTER WELDS TO BE INSPECTED  
DURING MARCH 1985 OUTAGE

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1-B32-RECIRC-28"-B-1	Nozzle to Safe-end Inconel Butter
1-B32-RECIRC-12"-AR-A-6	Nozzle to Safe-end Inconel Butter
1-B32-RECIRC-12"-AR-B-6	Nozzle to Safe-end Inconel Butter
1-B32-RECIRC-12"-AR-C-6	Nozzle to Safe-end Inconel Butter
1-B32-RECIRC-12"-AR-D-6	Nozzle to Safe-end Inconel Butter
1-B32-RECIRC-12"-BR-F-6	Nozzle to Safe-end Inconel Butter
1-B32-RECIRC-12"-BR-G-6	Nozzle to Safe-end Inconel Butter
1-B32-RECIRC-12"-BR-H-6	Nozzle to Safe-end Inconel Butter
1-B32-RECIRC-12"-BR-K-6	Nozzle to Safe-end Inconel Butter
1-B11-JPI-4"-N8B	Nozzle to Safe-end Inconel Butter



TABLE 4

WELD OVERLAYS TO BE INSPECTED  
DURING MARCH 1985 OUTAGE

1-B32-12"-AR-E2	Riser Pipe to Elbow
1-B32-12"-BR-H4	Riser Pipe to Safe-end Extension
1-B32-28"-A-15	Discharge Elbow to Piping
1-B32-28"-A-14	Discharge Valve to Elbow
1-B32-28"-B-8	Valve to Elbow