7 03/05/78

REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)
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CAROLINA PWR & LIGHT

DOCDATE: 03/20/78
DATE RCVD: 03/24/78

DOCTYPE: LETTER NOTARIZED: NO
SUBJECT:
LICENSEE EVENT REPT (RO 50-261/78-06) ON 03/05/78 CONCERNING INDICATIONS AT NINE LOCATIONS IN THE INLET AND OUTLET PIPING OF THE BORON INJECTION TANK WERE FOUND.

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LTR 1 ENCL 1

PLANT NAME: H B ROBINSON - UNIT 2

REVIEWER INITIAL: XJM
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(DISTRIBUTION CODE A002)

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7 03/25/78

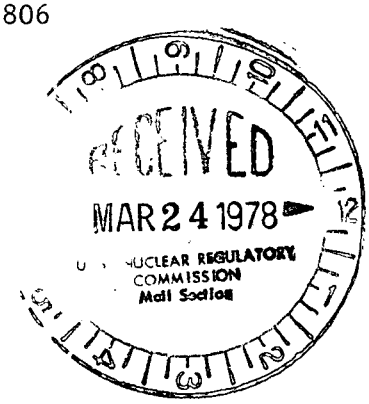
CP&L

Carolina Power & Light Company

March 20, 1978

REGULATORY DOCKET FILE COPY

FILE: NG-3516 (R) SERIAL: GD-78-806



Mr. James P. O'Reilly, Director
U. S. Nuclear Regulatory Commission
Region II, Suite 1217
230 Peachtree Street, N.W.
Atlanta, Georgia 30303

H. B. ROBINSON STEAM ELECTRIC PLANT, UNIT NO. 2
DOCKET 50-261
LICENSE NO. DPR-23
LICENSEE EVENT REPORT 78-06

Dear Mr. O'Reilly:

In accordance with Section 6.9.2 of the Technical Specifications for the H. B. Robinson Steam Electric Plant, Unit 2, the attached Licensee Event Report is submitted. This report fulfills the requirement for a written report within fourteen (14) days of a reportable occurrence and is in accordance with the format set forth in NUREG-0161, July, 1977.

Yours very truly,

Harold R. Banks

H. R. Banks
Manager
Nuclear Generation

DCS:mvp*

Attachment

cc: Messrs. R. A. Hartfield
E. Volgenau

A002
S 1/1

780830129

336 Fayetteville Street • P. O. Box 1551 • Raleigh, N. C. 27602

NRC FORM 366
(7-77)

U. S. NUCLEAR REGULATORY COMMISSION

LICENSEE EVENT REPORT

CONTROL BLOCK: (1) (PLEASE PRINT OR TYPE ALL REQUIRED INFORMATION)

0 1 Licensee Code (2)	S C H B R 2
License Number (3)	0 0 - 0 0 0 0 0 - 0 0
License Type (4)	4 1 1 1 1
CAT (5)	
CON'T 0 1 Report Source (6)	L
Docket Number (7)	0 5 0 0 0 2 6 1
Event Date (8)	0 3 0 5 7 8
Report Date (9)	0 3 2 0 7 8

EVENT DESCRIPTION AND PROBABLE CONSEQUENCES (10)

0 2 On March 5, 1978, while at refueling shutdown conditions, indications were found
0 3 during ultrasonic examination of the BIT inlet and outlet piping. Examination was
0 4 being conducted as a followup to the BIT failure (LER 77-25). This constitutes a
0 5 reportable occurrence per Technical Specifications Paragraph 6.9.2.a.9. (HBR-2 RO-78-06)
0 6
0 7
0 8

0 9 System Code (11)	I C
Cause Code (12)	E
Cause Subcode (13)	D
Component Code (14)	P I P E X X
Comp. Subcode (15)	B
Valve Subcode (16)	Z
(17) LER/RO Report Number — Event Year	7 8
	—
Sequential Report No.	0 0 6
	/
Occurrence Code	0 1
Report Type	T
	—
Revision No.	0
Action Taken (18)	C
Future Action (19)	X
Effect on Plant (20)	Z
Shutdown Method (21)	Z
Hours (22)	0 0 0 0
Attachment Submitted (23)	Y
NPRD-4 Form Sub. (24)	Y
Prime Comp. Supplier (25)	N
Component Manufacturer (26)	S 1 5 2

CAUSE DESCRIPTION AND CORRECTIVE ACTIONS (27)

1 0 Indications at nine locations in the inlet and outlet piping of the Boron Injection
1 1 Tank were found. The affected portions of piping are being replaced with type 316L
1 2 material during this refueling outage. Metallurgical analysis of the affected piping
1 3 material will be conducted.
1 4

1 5 Facility Status (28)	H
% Power (29)	0 0 0
Other Status (30)	NA
Method of Discovery (31)	C
Discovery Description (32)	Ultrasonic Inspection
1 6 Activity Released (33)	Z
Content of Release (34)	Z
Amount of Activity (35)	NA
Location of Release (36)	NA
1 7 Personnel Exposures Number (37)	0 0 0
Type (38)	Z
Description (39)	NA
1 8 Personnel Injuries Number (40)	0 0 0
Description (41)	NA
1 9 Loss of or Damage to Facility Type (42)	Z
Description (43)	NA
2 0 Publicity Issued (44)	N
Description (45)	NA

NRC USE ONLY

NAME OF PREPARER R. B. Starkey, Jr. [signature] PHONE: 803-332-1351

GPO 917-926

Supplemental Information For Reportable Occurrence 78-06

1. Report No: 50-261/78-06

2a. Report Date:

2b. Occurrence Date: March 5, 1978

3. Facility: H. B. Robinson Unit No. 2
Hartsville, South Carolina 29550

4. Identification of Occurrence:

On March 5, 1978, while at refueling shutdown conditions, sections of safety injection piping adjacent to the Boron Injection Tank were being ultrasonically examined as a followup to metallurgical analysis of portions of the failed Boron Injection Tank (Re: LER 77-25). Indications were found at nine locations; five on inlet piping and four on outlet piping. The locations were specifically on the pipe side in the heat affected zone (HAZ) of pipe to fitting welds and in the HAZ at pipe to pipe butt welds. This constitutes a Reportable Occurrence per Technical Specifications Paragraph 6.9.2.a.9.

5. Conditions Prior to Occurrence:

The plant was at refueling shutdown conditions during the scheduled 1978 refueling outage. Recent developments in the followup to the October, 1977 failure of the BIT indicated that further examination of the safety injection piping was warranted. Ultrasonic examination of the piping was being conducted at this time.

6. Description of Occurrence:

Referring to the attached isometric drawings of the BIT inlet and outlet piping, the ultrasonic examination revealed indications at pipe to fitting welds BA, BB, BC, BF, BH on the inlet piping and TA, TB, TC on the outlet piping. An indication at pipe to pipe butt weld TD was also discovered.

Ultrasonic investigation was being conducted based on results of the metallurgical investigation conducted on samples of the failed BIT. The conclusions of the BIT study showed intragranular corrosion in the presence of higher than normal concentrations of chloride ions, eg. levels of 600 micrograms per square decimeter present with a Westinghouse recommended maximum of 1.5 micrograms per square decimeter. These figures apply to the analysis of the failed thermowell coupling on the BIT. As a result, further examination of the safety injection system, in those portions subject to the same fluids as the BIT was being conducted. The piping segments associated with the recirculation of boric acid from the Boric Acid Storage Tank to the Boron Injection Tank were the first areas to be investigated. Testing began at the BIT and proceeded outward on the inlet and outlet lines. Testing was terminated when inspection of a reasonable number of welds in a direction away from the BIT revealed no indications.

It should be noted that the indications found were only on the pipe side of heat affected zones of weldments. The heavier bodied fittings of the same material do not show any indications.

7. Description of Apparent Cause of Occurrence:

Metallurgical analysis will be conducted on portions of the affected piping, as soon as the piping is removed, to determine the cause of the indications.

8. Analysis of Occurrence:

Safety implications of this occurrence are minimal in that no radioactive materials were released, no personnel were injured or detrimentally exposed and no plant systems other than the affected piping, were damaged as a result of the event. In fact, this piping had passed a hydrostatic test to 1950 psi on November 21, 1977.

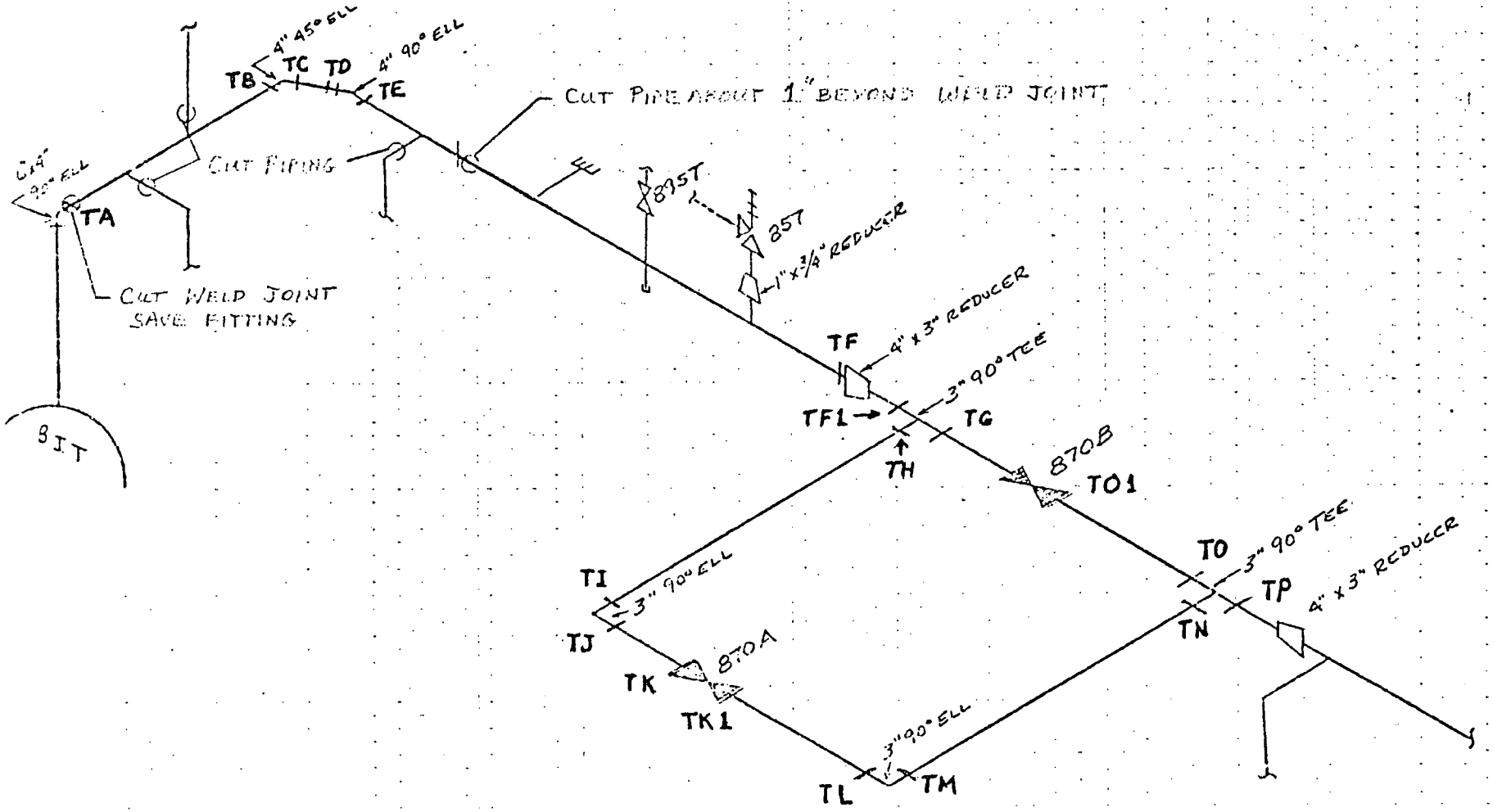
9. Corrective Action:

Immediate action taken was to replace the affected portion of the safety injection system piping. Type 316L stainless steel is being used to replace the type 316 material affected. The 316L material is less susceptable to the type of corrosion cracking found in other plants which has led to these type indications. The attached isometric piping drawings define the portion of the piping system being replaced. Replacement will be completed before the end of 1978 refueling outage and subsequent return to full power conditions.

Future action to be taken will consist of continued examination of the removed safety injection system piping to fully define the method of degradation and its extent. Further corrective action, as required, will be initiated pending results of the metallurgical examinations.

10. Failure Data:

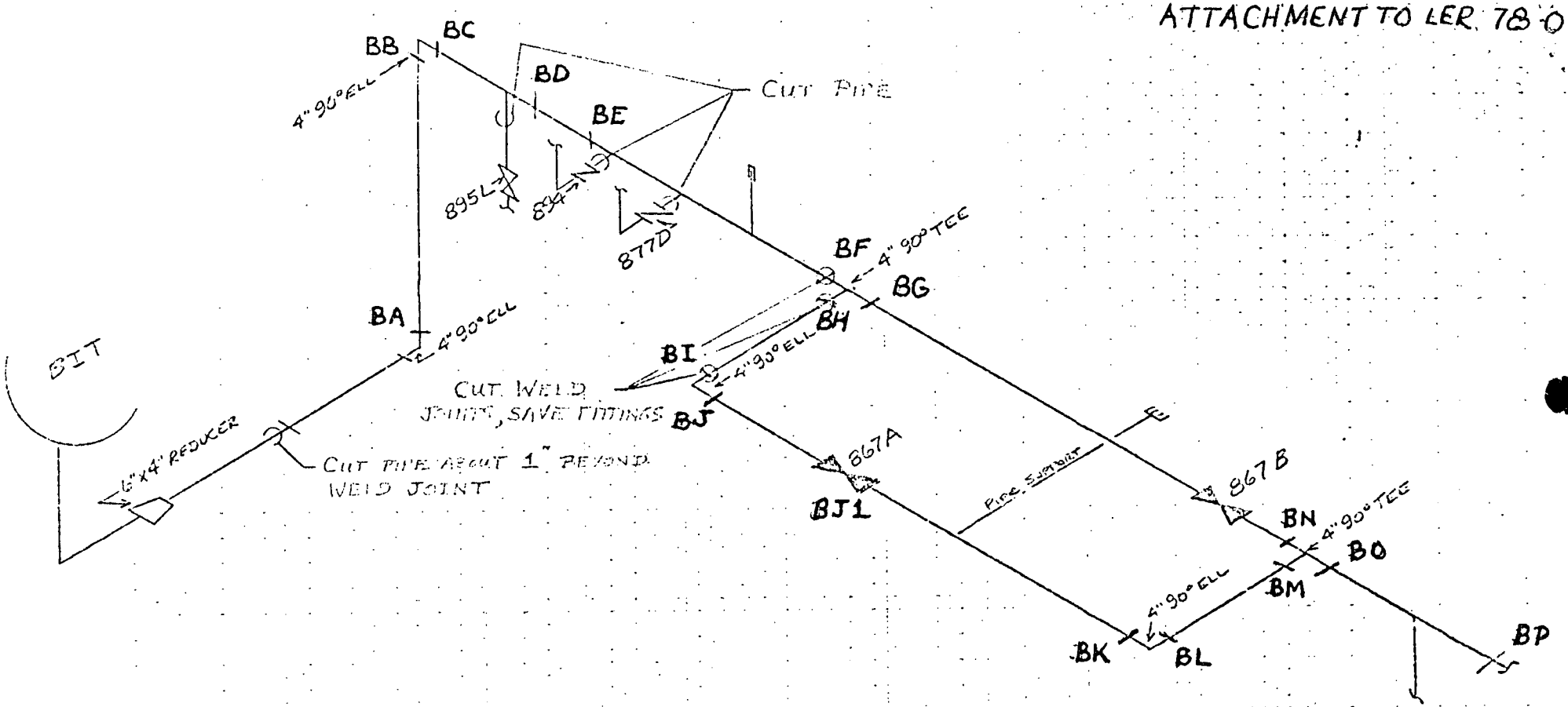
The only similar occurrence was the failure of the Boron Injection Tank (LER 77-25).



BORON INJECTION TANK OUTLET PIPING

TA – TP = INSPECTION POINTS . INDICATIONS ON TA, TB, TC, AND TD

ATTACHMENT TO LER 78-06



BORON INJECTION TANK INLET PIPING

BA - BP = INSPECTION POINTS

INDICATIONS ON BA, BB, BC, BF, BH