

Carolina Power & Light Company
Brunswick Nuclear Project
P. O. Box 10429
Southport, NC 28461-0429
July 3, 1990

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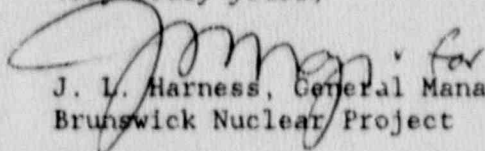
U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, DC 20555

BRUNSWICK STEAM ELECTRIC PLANT UNIT 2
DOCKET NO. 50-324
LICENSE NO. DPR-62
LICENSEE EVENT REPORT 2-90-06

Gentlemen:

In accordance with Title 10 to the Code of Federal Regulations, the enclosed Licensee Event Report is submitted. This report fulfills the requirement for a written report within thirty (30) days of a reportable occurrence and is in accordance with the format set forth in NUREG-1022, September 1983.

Very truly yours,


J. L. Harness, General Manager
Brunswick Nuclear Project

WDL/mcg

Enclosure

cc: Mr. S. D. Ebnetter
Mr. N. B. Le
BSEP NRC Resident Office

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PDR ADOCK 05000324
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LICENSEE EVENT REPORT (LER)

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 800 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH (P-30), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555, AND TO THE PAPERWORK REDUCTION PROJECT (3160-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

FACILITY NAME (1)

Brunswick Steam Electric Plant

DOCKET NUMBER (2)

0 8 0 0 0 3 2 4 1 0 0 5

PAGE 10

TITLE (3)

Hydraulic Perturbation of Reactor Vessel Level Instrumentation

EVENT DATE (4)

LER NUMBER (5)

REPORT DATE (7)

OTHER FACILITIES INVOLVED (8)

MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	MONTH	DAY	YEAR
06	04	90	90	006	0	03	09	90

FACILITY NAMES	DOCKET NUMBER(S)
Brunswick Unit 1	0 8 0 0 0 3 2 5
	0 8 0 0 0

OPERATING CODE (9)

THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR 1. (Check one or more of the following) (11)

POWER LEVEL (10)

0 0 1 0

DO 402(h)

DO 405(a)(1)(i)

DO 405(a)(1)(ii)

DO 405(a)(1)(iii)

DO 405(a)(1)(iv)

DO 405(a)(1)(v)

DO 403(i)

DO 501(c)(1)

DO 501(c)(2)

DO 704(a)(1)(i)

DO 704(a)(1)(ii)

DO 704(a)(1)(iii)

DO 704(a)(2)(i)

DO 704(a)(2)(ii)

DO 704(a)(2)(iii)

DO 704(a)(2)(iv)(A)

DO 704(a)(2)(iv)(B)

DO 704(a)(2)(i)

DO 701(b)

DO 701(c)

OTHER (Specify in Abstract below and in Text, NRC Form 305A)

LICENSEE CONTACT FOR THIS LER (12)

NAME

Wayne D. Link, Senior Generation Specialist

TELEPHONE NUMBER

AREA CODE

9 1 9 4 5 7 - 2 0 5 4

COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DISCLOSED IN THIS REPORT (13)

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NRC	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NRC

SUPPLEMENTAL REPORT EXPECTED (14)

EXPECTED SUBMISSION DATE (15)

MONTH	DAY	YEAR
11	08	90

☒ YES (If not, complete EXPECTED SUBMISSION DATE)

☐ NO

ABSTRACT (Limit to 1400 spaces, i.e., approximately fifteen single space typewritten lines) (16)

Unit 2 was in cold shutdown (Mode 4). At 1603 on 6-4-90, while venting a reactor pressure instrument following maintenance, a hydraulic perturbation of a shared reference leg resulted in isolation of the Reactor Water Cleanup system, an automatic initiation of the Standby Gas Treatment system, and an isolation of the Reactor Building Ventilation system.

This event poses no safety significance since the affected systems functioned as required and the unit was in cold shutdown. Maintenance has generated an interim policy which provides for a data gathering phase to determine long term corrective actions

Other perturbations have been reported in LERs 1-90-006, 2-89-017, 1-87-017, and 2-86-020.

LICENSEE EVENT REPORT (LER)
TEXT CONTINUATION

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 800 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH (P420), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20545, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0184), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

FACILITY NAME (1) Brunswick Steam Electric Plant	DOCKET NUMBER (2) 0 5 0 0 0 3 2 4	LER NUMBER (3)			PAGE (3)		
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			
		9 0	0 0 6	0 0	0 2	OF	0 5

TEXT (If more space is required, use additional NRC Form 255A's) (1.7)

EVENT

While performing maintenance activities on a Unit 2 reactor pressure transmitter on 6-4-90, a hydraulic perturbation resulted in an isolation of the Reactor Water Cleanup (RWCU) system, an automatic initiation of the Standby Gas Treatment (SBGT) system, and an isolation of the Reactor Building Ventilation (RB HVAC) system at 1603.

INITIAL CONDITIONS

Unit 2 was in cold shutdown (Mode 4) with Core Spray (CS) and Residual Heat Removal (RHR)/Low Pressure Coolant Injection (LPCI) loop A in standby readiness. RHR loop B was in shutdown cooling.

EVENT DESCRIPTION

A low level 2 (Tech. Spec. setpoint greater than or equal to 112") signal was generated when Instrumentation and Control (I&C) technicians were returning C32-PT-N008 (non-Tech.Spec. instrument), narrow range reactor pressure transmitter, to service following the replacement of the drain valve, C32-PT-N008-6. At the time of the event, one of three assigned company technicians was venting the air from the transmitter.

Operations personnel responded to annunciator alarms which were received on A-06 1-6 and 2-6 (Reactor Vessel Low-Low Water Level System A and System B) coincident with the event. The Control Operator verified that the automatic actions (RWCU isolation, SBGT initiation, and RB HVAC isolation) occurred. Plant response to this event was as expected. Affected systems were restored to service by 1710.

LICENSEE EVENT REPORT (LER)
TEXT CONTINUATION

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 200 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH (P-20), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20541 AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104) OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503

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		9 0	0 0 6	0 0	0 3	OF 0 5

TEXT (if more space is required, use additional NRC Form 5804 a) (17)

EVENT INVESTIGATION

The drain valve for C32-PT-N008 was being replaced since it had been identified on Work Request/Job Authorization (WR/JO) 88-ALUQ1 as leaking by. WR/JO 88-ALUQ1 had originally been assigned and planned by the Unit 2 Reactor Building I&C group. The WR/JO was subsequently reassigned to the I&C Periodic Test (PT) crew since they were more familiar with the equipment and the precautions that needed to be exercised when working around sensitive instrument racks. The original repair instructions were changed to reflect the change in modes of operation (Mode 1-power to Mode 4-cold shutdown). To provide the additional flexibility of being able to use the process flow path to vent the transmitter and reduce the potential for air entrapment, the I&C Foreman determined that a clearance would not be required. Positive valve control was ensured by adhering to the administrative procedure (Volume 1, Book 1) provided for those times when a clearance is not being used.

A senior technician was placed in charge of the maintenance. After the drain valve was replaced, the senior I&C technician vented the transmitter to remove any possible trapped air by loosening the tubing fitting at the bottom of the transmitter and cracking open the previously shut instrument isolation valve. During the venting process, a hydraulic perturbation occurred on the reference leg of instrument rack H21-P005 located on the 50' elevation of the Reactor Building. The following reactor vessel level instruments were affected by the perturbation: B21-LT-N025A-1, B21-LT-N025B-1, B21-LT-N025A-2, B21-LT-N025B-2, B21-LT-N031B, and B21-LT-N031D. These instruments were affected because C32-PT-N008 is tied into the reference leg for these instruments.

The Engineered Safety Feature (ESF) actuation was caused by B21-LT-N025A-1 and B21-LT-N025B-1 (setpoint 118" plus or minus 6"). B21-LT-N031B and B21-LT-N031D (setpoint 118" plus or minus 6") did not generate an isolation signal. The Emergency Response Facility Information system (ERFIS) computer indicated that the transient was over in less than one second and the lowest indicated level reached was 122.27" on B21-LT-N031B and 118.35" on B21-LT-N031D. A low level 2 initiation of the High Pressure Coolant Injection (HPCI) and Reactor Core Isolation Cooling (RCIC) systems did not occur because both of these instruments (B21-LT-N031B and B21-LT-N031D) were calibrated in January of this year and were left at a setpoint of 112". B21-LT-N025A-2 and B21-LT-N025B-2 did not generate an isolation signal since their setpoint is 45" plus or minus 6" (low level 3). The setpoints being referred to are inches

LICENSEE EVENT REPORT (LER)
TEXT CONTINUATION

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 500 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH (P-430), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

FACILITY NAME (1)

DOCKET NUMBER (2)

LER NUMBER (6)

PAGE (3)

Brunswick Steam Electric Plant

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TEXT (If more space is required, use additional NRC Form 305A's) (17)

above the top of active fuel.

EVENT CAUSE

The hydraulic perturbation of the reference leg was caused by a pressure spike of the reference leg when the tubing that had been loosened for venting was suddenly tightened and flow stopped which resulted in an increased differential pressure (low level) being sensed by the level instruments. Instrumentation sensitivity became a secondary consideration with the unit in cold shutdown. The technician was primarily concerned with the possibility of air being entrapped in the transmitter and connecting lines since the plant had recently experienced a hydraulic perturbation on Unit 1 involving some of the same level instruments (LER 1-90-06). From the available venting options, the technician chose the process flow path since this would substantially reduce the possibility of air entrapment.

CORRECTIVE ACTIONS TAKEN

The technician restored C32-PT-N008 to service and Operations personnel restored affected systems to service by 1710.

On an interim basis, maintenance has established a Maintenance Policy Notice 90-009 (expires 9-1-90). This requires the presence of either quality control personnel or, in their absence, an I&C Foreman to witness valving evolutions on wide range reference leg instruments. The purpose of this policy is to serve as a data gathering phase to determine what long term corrective actions will be appropriate. A supplement to this LER will be completed by 10-8-90 describing corrective actions to be taken on a long term basis.

EVENT ASSESSMENT

This event poses no safety significance since the affected systems functioned as required and the unit was in cold shutdown. Other perturbations have been reported under LERs 1-90-006, 2-89-017, 1-87-017, and 2-86-020.

LICENSEE EVENT REPORT (LER)
TEXT CONTINUATION

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST 600 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATES TO THE RECORDS AND REPORTS MANAGEMENT BRANCH (P-620), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555 AND TO THE PAPERWORK REDUCTION PROJECT (3150-0184), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503

FACILITY NAME (1)

SECRET NUMBER (2)

LER NUMBER (3)

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Brunswick Steam Electric Plant

YEAR SEQUENTIAL NUMBER REVISION NUMBER

0 5 0 0 0 3 2 4 9 0 - 0 0 6 - 0 0 0 5 OF 0 5

NOTE: If more space is required, use additional NRC Form 253A's (117)

EIIIS CODE

Reactor Water Cleanup
Standby Gas Treatment
Reactor Building Ventilation
Level Transmitter
ERFIS
Nuclear Boiler (B21)
Drain Valve
Annunciator
HPCI
RCIC
RHR/LPCI
Core Spray

CE
BH
VA
LT
IQ
BLR
DRN V
ANN
BJ
PN
BO
BM