



Carolina Power & Light Company

Brunswick Nuclear Project
P. O. Box 10429
Southport, N.C. 28461-0429

June 6, 1991

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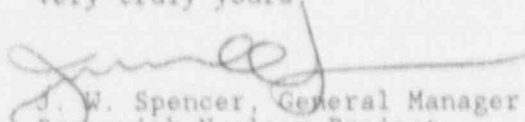
U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, D. C. 20555

BRUNSWICK STEAM ELECTRIC PLANT UNIT 1
DOCKET NO. 50-325
LICENSE NO. DPR-71
LICENSEE EVENT REPORT 1-91-013

Gentlemen:

In accordance with Title 10 of 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 submitted in accordance with the format set forth in NUREG-1022, September 1983.

Very truly yours,


J. W. Spencer, General Manager
Brunswick Nuclear Project

SFT/

Enclosure

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

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LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) Brunswick Steam Electric Plant
Unit 1DOCKET NUMBER (2)
05000325

PAGE (3)

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TITLE (4) Coincident HPCI/RCIC Inoperability Due To RCIC Instrumentation Sensing Line Leakage

EVENT DATE (5)			LER NUMBER (6)				REPORT DATE (7)			OTHER FACILITIES INVOLVED (8)	
MONTH	DAY	YEAR	YEAR	SEQ. NO.	REV. NO.	MONTH	DAY	YEAR	FACILITY NAME	DOCKET NUMBER	
05	07	91	91	- 013	- 00	06	06	91			

OPERATING MODE (9)	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11)
1	20.402(b) 20.405(c) 50.73(a)(2)(iv) 73.71(b)
POWER	20.405(a)(1)(i) 50.36(c)(1) 50.73(a)(2)(v) 73.71(c)
LEVEL (10) 100	20.405(a)(1)(ii) 50.36(c)(2) 50.73(a)(2)(vi) OTHER (Specify in Abstract and Text)
	20.405(a)(1)(iii) X 50.73(a)(2)(i) 50.73(a)(2)(vii)(A)
	20.405(a)(1)(iv) 50.73(a)(2)(ii) 50.73(a)(2)(vii)(B)
	20.405(a)(1)(v) 50.73(a)(2)(iii) 50.73(a)(2)(ix)

LICENSEE CONTACT FOR THIS LER (12)

NAME Steve F. Tabor, Regulatory Compliance Specialist

TELEPHONE NUMBER

(919) 457-2178

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

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NRRDS	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NRRDS

SUPPLEMENTAL REPORT EXPECTED (14)

EXPECTED SUBMISSION

MONTH

DAY

YEAR

YES (If yes, complete EXPECTED SUBMISSION DATE)

X

NO

DATE (15)

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

On 5/7/91 with the Unit 1 reactor at 100% power, Technical Specification (TS) Limiting Condition for Operation (LCO) 3.0.3 was entered when both the High Pressure Coolant Injection (HPCI) and Reactor Core Isolation Cooling (RCIC) systems were inoperable. The coincidence of inoperable systems occurred as a result of in progress testing of the HPCI system and the inoperability of the RCIC High Steam Flow instrumentation. The capability of terminating HPCI testing in support of timely system restoration in conjunction with the ability to utilize operable reactor vessel depressurization and low pressure injection systems significantly reduced the impact to nuclear safety.

The cause of this event was due to the loss of the RCIC High Steam Flow transmitter 1-E51-PDT-N017 sensing line level. This condition was caused by a loose 1-E51-PS-N019A isolation valve fitting. The void created from the loss of level increased the volume of turbulent steam and gases within the 1-E51-PDT-N017 sensing line affected by the leak. The additional turbulence increased the transmitter's electronic noise signal to a level which caused the associated master trip unit indicator to fluctuate and the cycling of the master and slave trip unit trip indicating lights. The subject transmitter and analog trip units responded properly to the abnormal condition imposed by the loss of sensing line level. Consequently the cause of this event is not attributed to component failure. A review of past Maintenance work history and recent applicable plant modifications did not identify contributing factors for the loose condition of the valve fitting.

The loose sensing line fitting was tightened and the affected sensing line filled and vented. No further corrective action is being taken at this time. This is considered an isolated occurrence based on a review which did not reveal any similar events.

LICENSEE EVENT REPORT (LER) **TEXT CONTINUATION**

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 50.0 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH (P-530), 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 (5)				PAGE (3)
Brunswick Steam Electric Plant Unit 1	05000325	YEAR		SEQ NO.		2
		91		013	00	

TEXT (If more space is required, use additional NRC Form 365A's) (17)

INITIAL CONDITIONS

The Unit 1 reactor was operating at 100% power. The HPCI system was removed from service in support of TS surveillance testing under LCO T1-91-0821. The RCIC system, the Automatic Depressurization System (ADS), the A and B Core Spray (CS) system and the A and B Residual Heat Removal/Low Pressure Coolant Injection (RHR/LPCI) systems were operable in standby readiness.

EVENT NARRATIVE

On 5/7/91 at 1645 (EST), Operations personnel started performance of the HPCI System Operability Periodic Test (PT)-09.2 in support of TS surveillance testing requirements. HPCI was declared inoperable to support PT-09.2 under LCO T1-91-0821.

Four hours later at approximately 2055 during performance of shift surveillance checks, Operation's on-shift Control Operator observed the RCIC Hi Steam Flow analog trip unit /indicator 1-E51-PDTM-N017-1 to be fluctuating. Additionally, the RCIC Hi Steam Flow master and slave trip units 1-E51-PDTM-N017-1 and 1-E51-PDTS-N017-2 trip indicating lights were cycling on and off. Isolation of the RCIC steam supply valves, RCIC turbine trip actuation and trip annunciation did not result from the cycling of the master and slave trip units. This is due to RCIC system design incorporation of a five (5) second isolation actuation time delay. Technical Support and Maintenance personnel were notified of the problem by the Operation's Shift Supervisor and requested to assist in the assessment of equipment operability. Based on general consensus, the 1-E51-PDTM-N017-1 instrument was declared inoperable at 2115 under LCO A1-91-0832.

At 2300 in accordance with Primary Containment Isolation System (PCIS) TS, the RCIC Steam Supply Isolation Valves 1-E51-F007 and 1-E51-F008 were closed and the RCIC system was declared inoperable under LCO A1-91-0833. With HPCI inoperable as a result of the in-progress performance of PT-09.2, the plant entered into the actions required by TS 3.0.3. Efforts to complete PT-09.2 within the six (6) hour constraint required by TS 3.0.3 commenced immediately. Unit shutdown was not initiated at this time due to the ability to complete the in progress HPCI testing and restore HPCI system operability within the time allowed by Technical Specification. On 5/8/91 at 0110 PT-09.2 was completed satisfactorily. At 0120 the HPCI system was restored to the operable condition. The six (6) hour to hot shutdown constraint was lifted. At this time as allowed by TS, the RCIC system operability LCO was modified to a 31 day requirement.

During the time needed to complete PT-09.2, WKJO 91-AIUT1 was generated to support the repair of 1-E51-PDTM-N017-1. The repair effort involved verification of the master/slave trip unit and the master trip unit indicator operability in accordance with TS surveillance procedure 1-MST-RCIC21M. The trip units and associated indicator were verified to be operating satisfactorily. Additional checks were then made to determine the integrity of the 1-E51-PDT-N017 output signal. The transmitter output signal was verified to be fluctuating. Based on a review of the data, observed conditions and the Technical Support personnel knowledge of similar experiences, the decision was made by Technical Support to vent and fill the 1-E51-PDT-N017 sensing lines to ensure a solid water column existed and to eliminate entrapped air within the 1-E51-PDT-N017 sensing lines. During the venting and filling process, the involved Maintenance personnel noted a small leak (approximately 1 drop per 4 minutes) from the 1-E51-PS-N019A instrument isolation valve 1-E51-PS-N019A-3 located down stream of the 1-E51-PDT-N017 transmitter. The loose fitting was tightened and the leak eliminated. Following the venting and filling of the subject instrument lines, the transmitter output

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signal was verified to be within acceptable limits. On 5/8/91 LCOs A1-91-0832 and A1-91-0833 were canceled at 1852 and 2040 respectively and the RCIC system was returned to the standby condition.

CAUSE OF EVENT

The cause of this event was due to the loss of the RCIC High Steam Flow transmitter 1-E51-PDT-N017 sensing line level. This condition was caused by a loose 1-E51-PS-N019A isolation valve fitting. The void created from the loss of level increased the volume of turbulent steam and gases within the 1-E51-PDT-N017 sensing line affected by the leak. The additional turbulence increased the transmitter's electronic noise signal to a level which caused the RCIC master trip unit indicator to fluctuate and the cycling of the master and slave trip unit indicating lights. The subject transmitter and analog trip units responded properly to the abnormal condition imposed by the loss of sensing line level and consequently the cause of this event is not attributed to component failure. A review of past Maintenance work history and recent applicable plant modifications did not identify contributing factors for the loose condition of the valve fitting.

CORRECTIVE ACTIONS

Actions taken to date including the tightening of the leaking fitting and venting and filling of the 1-E51-PDT-N017 sensing lines resolved the concern leading to this event. No further corrective action is being taken at this time.

SAFETY ASSESSMENT

No credit is taken for the RCIC system in the accident analysis developed within the Final Safety Analysis Report. Although HPCI was in the test mode, HPCI could have been manually aligned for operation if required for emergency operation. At the time of the coincident inoperability of the HPCI and RCIC systems, the ADS and low pressure cooling systems (i.e., CS and RHR/LPCI) were operable in the event that the restoration of HPCI system operability was delayed as a result of surveillance testing in progress at the time of an event.

PREVIOUS SIMILAR EVENTS

A review of past events reveals no similar events have occurred.

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TEXT (If more space is required, use additional NRC Form 366A's) (17)

ELIS COMPONENT IDENTIFICATION

<u>System/Component</u>	<u>Code</u>
HPCI	BJ
RCIC	BN
ADS	*
RHR/LPCI	BO
CS	BM
PCIS	JM
1-E51-F007/8	BN/ISV
1-E51-PDTM-N017-1	BN/FI
1-E51-PDTS-N017-2	BN/PDS
1-E51-PDT-N017	BN/FT
1-E51-PS-N019A	BN/PS