



Carolina Power & Light Company

Brunswick Nuclear Project
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JUN 30 1989

FILE: B09-13510C
SERIAL: BSEP/89-0617

10CFR50.73

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 2-89-07

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

TH/srg

Enclosure

cc: Mr. S. D. Ebnetter
Mr. E. G. Tourigny
BSEP NRC Resident Office

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LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) Brunswick Steam Electric Plant Unit 2										DOCKET NUMBER (2) 0 5 0 0 0 3 2 4										PAGE (3) 1 OF 3	
TITLE (4) RWCU Group III Isolation While Calibrating The RWCU Reject Flow Indicator																					
EVENT DATE (5)			LER NUMBER (6)				REPORT DATE (7)			OTHER FACILITIES INVOLVED (8)											
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	MONTH	DAY	YEAR	FACILITY NAMES			DOCKET NUMBER(S)									
06	03	89	89	007	0	06	03	89				0 5 0 0 0									
OPERATING MODE (9)		THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR § (Check one or more of the following) (31)																			
1		20.402(b)				20.405(c)				☒ 50.73(a)(2)(iv)		73.71(b)									
POWER LEVEL (10)		20.405(a)(1)(i)				50.36(c)(1)				☐ 50.73(a)(2)(v)		73.71(c)									
1 0 0		20.405(a)(1)(ii)				50.36(c)(2)				☐ 50.73(a)(2)(vii)		OTHER (Specify in Abstract below and in Text, NRC Form 366A)									
		20.405(a)(1)(iii)				50.73(a)(2)(i)				☐ 50.73(a)(2)(viii)(A)											
		20.405(a)(1)(iv)				50.73(a)(2)(ii)				☐ 50.73(a)(2)(viii)(B)											
		20.405(a)(1)(v)				50.73(a)(2)(iii)				☐ 50.73(a)(2)(ix)											
LICENSEE CONTACT FOR THIS LER (12)												TELEPHONE NUMBER									
NAME												AREA CODE									
Tony Harris, Specialist - Regulatory Compliance												9 1 9 4 5 7 - 2 0 3 8									
COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)																					
CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPDs	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPDs												
SUPPLEMENTAL REPORT EXPECTED (14)										EXPECTED SUBMISSION DATE (15)		MONTH	DAY	YEAR							
☐ YES (If yes, complete EXPECTED SUBMISSION DATE)										☒ NO											

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

On 6/3/89 at 0132 while operating at 100% power, Unit 2 received a Group III isolation of RWCU inboard and outboard isolation valves during calibration of the RWCU reject flow indicator. The isolation occurred following I&C technicians lifting a lead for a RWCU flow indicator which disrupted a current input to the RWCU system high differential flow input summer. This gave a more positive input to the summer, producing an increased output above the alarm signal setpoints for the RWCU Reactor Water Leak Differential Flow, initiating the isolation.

The root cause of this event was the lack of a specific procedure for calibration of the indicating instruments. Maintenance will develop specific procedures/attachments for the calibration of these units and incorporate them into the EDBS data base for the instruments. Real-Time Training will be conducted on this event. The safety significance of this event was considered minimal.

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FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)		
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			
Brunswick Steam Electric Plant Unit 2	0500032489	—	007	—00	02	OF	03

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

Event

RWCU Group III isolation while calibrating the reject flow indicator.

Initial Conditions

Unit 2 was at 100% power. ECCS systems were operable and Reactor Water Clean-Up (RWCU) (EIIS/CE) was in service. Instrument and Calibration (I&C) technicians were calibrating the RWCU reject flow indicator, G31-FI-R602 (EIIS/CE/FI), per Maintenance Instruction (MI)-03-2B.

Event Description

On 6/3/89 at 0132, I&C technicians lifted the input signal positive lead for calibration of the R602 reject flow indicator instrument, per Step C2 of MI-03-2B. A Group III isolation signal causing the RWCU inboard and outboard isolation valves (G31-F001 and G31-F004) (EIIS/CE/ISV) to automatically close occurred when the lead was lifted. Upon recognition of the isolation, the Control Room Operator (CO) notified the technicians that an isolation had occurred, and that they were to return the equipment to service. The lead was immediately terminated. Total time from lead lifted to termination was approximately 3 minutes.

Upon reconnection of the lifted lead, the isolation input signals were removed, and the system was returned to service at 0145. Meter calibration activities were suspended until further investigation of the cause of the isolation.

Event Investigation

A review of the prints associated with the logic of the R602 flow indicator logic was made. It was noted that lifting the input lead for the indicator disrupted a current input to the RWCU system high differential flow input summer (G31-K604) (EIIS/CE/IQ). Because the R602 supplies a negative input to the summer, the disruption of the input produced a zero input from R602 and increased the overall summer output signal above the Hi and Hi Hi RWCU reactor water leak differential flow annunciator alarm signal setpoints. This caused the activation of the time delay agastat G31-R616C/D (EIIS/CE/2), initiating the RWCU Group III isolation.

The root cause of this event was an inadequate procedure, specifically, the lack of caution statements on possible RWCU isolations while performing calibrations on this indicator or requirements to perform the calibration with RWCU secured. The planned work request, 89-ALHX1, required the use of a generic calibration procedure MI-03-2B for indicators. The MI used is a generic calibration procedure for indicators using an electrical source. This MI contains no precautions against possible RWCU system isolations upon

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disruption of the input circuit for the R602 instrument. This MI was used because the planner had researched the Equipment Data Base System (EDBS), past work history and past calibration folders to determine which procedure has been used in the past to perform this calibration. EDBS showed no procedure reference. Historical files for trouble tickets and calibration folders referenced the use of MI-03-2B. No prints were researched.

Other barriers that failed to recognize the potential for isolation from this calibration were:

1. The I&C duty foreman reviewing the work request and technician performing the task failed to foresee the consequences of lifting the input signal lead.
2. The Maintenance planner planning the ticket was the duty planner who normally plans electrical tickets. The planner that normally plans RWCU tickets would have been more aware of the sensitivity of the summer instrument and its inputs, and would probably have known of the effects of breaking the circuit loop for the R602 indicating instrument.

Corrective Actions

In order to prevent recurrence of this event, Maintenance is developing instrument specific procedures/attachments for the calibration of each of the inputs to the K604 summer instrument with proper precautions added. These procedures will be referenced on the EDBS data base for the individual instruments to ensure that the appropriate procedures will be used when planning tickets for these instruments. In addition, this event will be reviewed during Real-Time Training. The corrective actions will be completed by October 15, 1989.

Event Assessment

The safety significance of this event is considered minimal. The isolation signal was proven to be from the lifting of the leads, and not from an actual line break. The system functioned (isolated) as expected. System unavailability was limited to the approximate 3-minute time frame of the lead lift/retermination. This is considered to be an isolated event.