

CP&L

Carolina Power & Light Company

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

November 21, 1990

FILE: B09-13510C
SERIAL: PSEP/90-0780

10CFR50.73

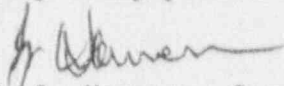
U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, D. C. 20555

BRUNSWICK STEAM ELECTRIC PLANT UNIT 2
DOCKET NO. 50-324
LICENSE NO. DPR-62
SUPPLEMENTAL LICENSEE EVENT REPORT 2-90-014

Gentlemen:

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

Very truly yours,


J. L. Harness, General Manager
Brunswick Nuclear Project

TMJ/

Enclosure

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

9012050148 901121
PDR ADCK 05000324
S PDC



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.

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) Brunswick Steam Electric Plant Unit 2	DOCKET NUMBER (2) 05000324	PAGE (3) 01 OF 03
--	--------------------------------------	-----------------------------

TITLE (4) **ESF Actuation - RWCU Isolation when Fuse Blew in Power Supply to Differential Flow Instrument**

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
09	08	90	90	- 014	- 01	11	21	90		

OPERATING MODE (9)	1	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11)								
			20.402(b)		20.405(c)	<input checked="" type="checkbox"/>	50.73(a)(2)(iv)		73.71(b)	
		POWER LEVEL (10)	095		20.405(a)(1)(i)		50.36(c)(1)		50.73(a)(2)(v)	73.71(c)
					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)		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)(x)			

LICENSEE CONTACT FOR THIS LER (12)

NAME THERESA M. JONES, REGULATORY COMPLIANCE SPECIALIST	TELEPHONE NUMBER
	(919) 457-2039

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

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPROS	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPROS

SUPPLEMENTAL REPORT EXPECTED (14)

YES (If yes, complete EXPECTED SUBMISSION DATE)	<input checked="" type="checkbox"/>	NO	EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR

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

On September 8, 1990, the Unit 2 reactor was at 95% power. The Emergency Core Cooling Systems (ECCS) were operable in standby readiness. The RWCU differential flow instrument had failed to channel check. Trouble shooting efforts involved readings which required the movement of RWCU square root converters in and out of their associated control room back panel. At 1711, the RWCU system inboard and outboard isolation valves automatically closed on a differential flow high, high signal coincident with the removal of square root converter 2-G31-K603 from its panel. I&C personnel investigated the cause of the isolation signal and found fuse 2-G31-ES-K600 blown. This fuse feeds 2-G31-FY-K603, RWCU differential flow summer. On September 9, 1990, technicians attempted to duplicate the test conditions. The event could not be recreated, the cause of the fuse failure was not determined. Further investigation did not reveal any circuit faults which caused the fuse to blow. The fuse was replaced. A review of past RWCU isolations revealed no other events caused by fuse failure, however, on September 20, 1990, while sliding square root converter 2-G31-FY-K605 out to take voltage readings a fuse in 2-G31-ES-K600 blew again. A second effort to duplicate the event was unsuccessful. As a preventative measure, the three remaining fuses in power supply 2-G31-ES-K600 and its associated ribbon cable were replaced. This event had minimal safety significance.

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) Brunswick Steam Electric Plant Unit 2	DOCKET NUMBER (2) 05000324	LER NUMBER (6)				PAGE (3) 02 of 03
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER		
		90	- 014	- 01		

TEXT (IF MORE SPACE IS REQUIRED, USE ADDITIONAL NRC FORM 366A'S) (17)

EVENT

Automatic closure of the Unit 2 inboard and outboard reactor water clean-up (RWCU) isolation valves on a differential flow high, high signal.

INITIAL CONDITIONS

On September 8, 1990, the Unit 2 reactor was at 95% power. The Emergency Core Cooling Systems (ECCS) were operable in standby readiness. Instrumentation and Control (I&C) personnel were assisting Operations trouble shoot the cause of the RWCU differential flow indication reading less than zero, which had been found on the previous nightshift.

EVENT DESCRIPTION/INVESTIGATION

During the nightshift on September 7, 1990, the RWCU differential flow instrument had failed to channel check. Work request/job order (WR/JO) 90-APUA1 was initiated to investigate and repair the problem. Special Procedure (SP) 86-090, RWCU System Operability Determination Using a Millivoltmeter on the Differential Flow Instrumentation Loop Sumner, was performed, with unsatisfactory results. The system was subsequently shutdown and isolated. I&C personnel calibrated the differential flow transmitter, but the differential flow indication was again downscale on the dayshift of September 8, 1990. I&C was notified and requested to continue trouble shooting the problem. To continue trouble shooting efforts, I&C personnel requested that the system be pressurized. Operations scheduled 1230 as the time to begin. At 1645, pressurization was near completion and I&C was requested to come to the control room for authorization to fill and vent the transmitters. After authorization, an I&C technician began to take voltage readings on the differential flow square root converters, in accordance with the repair instructions on WR/JO 90-APUA2. Taking the readings required the movement of the square root converters in and out of their associated control room back panel. At 1711 on September 8, 1990, the RWCU system inboard and outboard isolation valves automatically closed on a differential flow high, high signal coincident with the removal of square root converter 2-G31-K603 from its panel. Prior to the event, the I&C technician had taken voltage readings from square root converter 2-G31-K602. The technician stated that he continued to square root converter 2-G31-K603 and read 0.00 millivolts. At that time, he glanced up and saw that the differential flow indicator was reading 95-100 gallons per minute differential flow. He learned that RWCU had isolated but he had not heard any relays pick up in the back panel area. I&C personnel investigated the cause of the isolation signal and found fuse 2-G31-ES-K600 blown. This fuse feeds 2-G31-FY-K603, RWCU differential flow sumner, and was determined to be the cause of the false high, high differential flow signal.

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) Brunswick Steam Electric Plant Unit 2	DOCKET NUMBER (2) 05000324	LER NUMBER (6)			PAGE (3) 03 of 03	
		YEAR	-	SEQUENTIAL NUMBER	-	REVISION NUMBER
		90	-	014	-	01

TEXT (IF MORE SPACE IS REQUIRED, USE ADDITIONAL NRC FORM 368A'S) (17)

On September 9, 1990, technicians attempted to duplicate the test conditions to determine if the test equipment had caused the fuse to blow. The event could not be recreated, the cause of the fuse failure was not determined. Further investigation did not reveal any circuit faults which could have caused the fuse to blow. The fuse was replaced. A review of past RWCUs isolations revealed no other events caused by fuse failure, however, on September 20, 1990, while sliding square root converter 2-G31-FY-K605 out to take voltage readings a fuse in 2-G31-ES-K600 blew again. A second effort to duplicate the event was unsuccessful and the cause of the fuse failure has not been determined. As a preventative measure, the three remaining fuses in power supply 2-G31-ES-K600 and its associated ribbon cable were replaced.

ROOT CAUSE

The event was caused when a fuse blew in the RWCU power supply 2-G31-ES-K600. The cause of the fuse failure has not been determined.

CORRECTIVE ACTIONS/EVENT ASSESSMENT

This event had minimal safety significance. The equipment involved functioned as designed on a loss of power and no actual high differential flow condition existed. The fuses and ribbon cable in power supply 2-G31-ES-K600 were replaced and the equipment is functioning properly.

EIIS CODES

RWCU
RWCU Power Supply Fuse

CE
CE/FU