

CP&L

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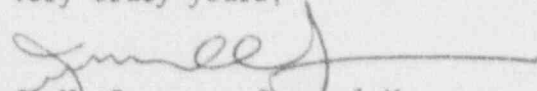
U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
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BRUNSWICK STEAM ELECTRIC PLANT UNIT 1
DOCKET NO. 50-325
LICENSE NO. DRP-71
LICENSEE EVENT REPORT 1-92-011

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

ST/

Enclosure

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

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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 (6)				PAGE (3)
Brunswick Steam Electric Plant Unit 1	05000325	YEAR	SEQ NO.	REV NO.	2	
		92	011	00		

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

INITIAL CONDITIONS

On April 6, 1992, Unit 1 was operating at 100% reactor power. Emergency Core Cooling Systems and the four Emergency Diesel Generators were operable.

EVENT NARRATIVE

On April 6, 1992, at 2058 hours, the Unit 1 control room annunciators "Containment Atmosphere Radiation Monitor Downscale/INOP" and "CAC Division I AT-4409 Trouble Power Failure" alarmed. Concurrent with the annunciation, a partial isolation of the Primary Containment Isolation System (PCIS) Group 6 valves occurred and the Containment Atmosphere Monitor Division I Isolation Override light extinguished. The partial Group 6 isolation resulted in the inoperability of all of the primary containment atmospheric radiation monitors and the Division I primary containment hydrogen/oxygen analyzer. Inoperability of the primary containment atmospheric radiation monitors is a condition in excess of those addressed in Technical Specification (TS) 3.4.3.1, Reactor Coolant System Leakage/Leakage Detection Systems. Consequently, TS 3.0.3 was invoked requiring the Unit 1 reactor to be placed in Hot Shutdown within six hours and Cold Shutdown within the following thirty hours. At 2130 hours, Unit 1 reactor shutdown commenced.

Troubleshooting identified that the partial Group 6 isolation was caused by the failure of the Outboard Loss of Coolant Signal Relay, 1-CAC-3B, relay coil. This relay is a normally energized relay in the Containment Atmospheric Control (CAC) system logic. The CAC logic is designed such that failure of the relay will result in a loss of power to various PCIS Group 6 isolation valves downstream of the relay. The isolation valves are fail safe by design and isolate when the relay coil fails.

On April 7, 1992, at 0006 hours, Maintenance completed replacement of the failed relay coil. The affected monitors were returned to service. TS 3.0.3 was exited and the Unit 1 shutdown was terminated. At 0052 hours with Unit 1 reactor power at 55%, reactor power increase commenced and by 0607 Unit 1 was operating at 100% reactor power.

CAUSE OF EVENT

The cause of the event is the failure of the normally energized 1-CAC-3B relay coil. The relay is manufactured by General Electric (GE) and is a model CR120A, 115 VAC relay. The failure of the relay coil is attributed to aging. A research effort based on site failure history and Nuclear Plant Reliability Data System information was performed to determine the useful life of normally energized CR120A relays. The results of this research indicate that, although normally energized relays installed at Brunswick currently do not have a high failure rate, it is suspected that some of these relays are at or near the "end of life".

CORRECTIVE ACTIONS

Corrective actions for the event include: (1) replacement of the failed 1-CAC-3B relay coil, (2) a comprehensive review of CR120A relay failures including those installed at Brunswick and those identified within the Nuclear Plant Reliability Data System (the results of this review indicate that other similar relays installed in the plant may be nearing the end of life), and (3) a corrective action plan to be developed to support replacement of the normally energized CR120A relays installed at Brunswick based on the end of their useful life.

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FACILITY NAME: (1) Brunswick Steam Electric Plant Unit 1	DOCKET NUMBER (2) 05000325	LER NUMBER (5)	PAGE (3) 3
		YEAR	SEQ NO.
		92	011
			REV NO.
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SAFETY ASSESSMENT

The safety significance of this event is minimal. The failure of the 1-CAC-3B relay resulted in a partial Group 6 PCIS isolation. This is in accordance with the system configuration "fail-safe" design; therefore, the failure of the relay coil would not have been more severe under other reasonable and credible scenarios. Additionally, during the event the primary containment sump flow integrator system was operable and capable of detecting Reactor Coolant System B primary leakage.

Isolation of the 1-CAC-4409 is of minimal safety significance in that the redundant monitor, 1-CAC-4410, was operable and capable of providing the post accident monitoring function.

PREVIOUS SIMILAR EVENTS

A review of similar Licensee Event Reports (LERs) identified three other failures of GE CR120A relays. LER 2-89-20 involved a failure of relay contacts, not the coil, in the Reactor Protection System B Motor Generator Set control panel. LER 1-90-23 reported a failed coil in the CAC system logic which resulted in a partial PCIS Group 6 isolation. LER 1-90-029 involved failure of a coil in the Area Radiation Monitoring system logic due to aging which resulted in an automatic actuation of the Control Building Emergency Air Filtration System.

EIIS COMPONENT IDENTIFICATION

<u>System/Component</u>	<u>EIIS Code</u>
Leak Monitoring System	IJ
Post Accident Monitoring System	IP
PCIS	JM
CAC	BB
1-CAC-3B	BB/RLY
1-UA-25-1-8	IJ/BE/ANN
1-UA-28-2-8	IP/BB/ANN