Carolina Power & Light Company

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

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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. DRP-71 LICENSEE EVENT REPORT 1-92-014

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) Spancer, Geperal Mar Brunswick Nuclear Project Geperal Manager

TMJ/

Enclosure

cc: Mr. S. D. Ebneter Mr. R. H. Lo BSEP NRC Resident Office

150086 PDR ADOCK S

NRC FORM 386 U.S. NUCLEAR REGULATORY COMMISSION							SION A	APPROVED DMB NO. 3150-0104 EXPRES: 4/30/92 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 BY ANCH (P-530), U.S. NUCLEAR REQULATORY COMMISSION, WASHINGTON, DC 20555. AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.										
FACIL/TY NAME (1) Brunswick Steam Electric Plant DOCKET NUMBER (1) Unit 1								CKET NUMBER (2) 5000325					FAGE (3)					
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NAME Theresa M. Jones, Regulatory Compliance Specialist										TELEPHONE NUMBER								
						<u>.</u>								(919)	457	2039		_
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On May 4, 1992, Unit 1 was in COLD SHUTDOWN. Reactor level was being maintained by utilizing the Control Rod Drive (CRD) system and the Reactor Water Clean-up (RWCU) system. Two licensed reactor operators (ROs) and a RO candidate were on shift. At 0821, a RO sequentially placed the read/set switch to "read" for RWCU Room Ambient remperature switches N602A and C, and RWCU Room Differential (A) Temperature switches N600A and C. The RO heard annunciation in the main control room and returned to investigate. The second RO was responding to a RWCU inboard isolation valve (1-031-The first RO informed the second that he had caused the isolation, and F001) closure. at 0910 the RWCU system was returned to service. The primary cause of this event is the design of the Riley Model 86 temperature switches which make them susceptible to electrical noise whenever they are operated. A secondary cause was the belief by the first RO that only the "set" position of the module would induce the electrical noise and his failure to follow the direction of a caution label. Change out of the existing switches with NUMAC hardware is scheduled for the next refueling outage on each Unit. The involved caution label will be revised and each Operations Shift Supervisor will review this event with his personnel. During this event the RWCU inboard isolation valve isolated, per design, upon a spurious PCIS isolation signal. This event did not prevent injection of coolant nor the ability to maintain the core covered, this event had minimal safaty significance. Similar events involving spurious isolations caused by Riley Model 86 Temperature Switches have been reported in LERs 2-91-009, 2-91-06, 2-90-19, 1-89-05, 1-89-04, 2-88-20, and 1-88-02.

NRC FORM 366/

U. S. NUCLEAR REGULATORY COMMISSION

APPROVED OM8 NO. 3150-0104 EXPIRES: 4/30/92

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 2055, AND TO THE PAPERWORK NEDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6			9)		PAGE (3)		
Brunswick Steam Electric Plant Unit 1	05000325	YEAR		SEQ NO.		REV NO.	2		
		92		14		00			

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

TITLE:

Primary Containment Isolation System (PCIS), Group 3 Isolation of the Inboard RWCU Isolation (1-G31-F001) Valve Due to Electronic Noise in the Steam Leak Detection System.

INITIAL CONDITIONS

On May 4, 1992, Unit 1 was in COLD SHUTDOWN in the thirteenth day of an outage. Reactor level was being maintained by utilizing the Control Rod Drive (CRD) system to inject 10 gpm of coolant and the Reactor Water Clean-up (RWCU) system to reject coolant. Two licensed reactor operators, the Plant Monitor and the Balance of Plant reactor operator (PMRO and BOPRO respectively) had been on watch approximately one and a half hours on the last day of a three 12 hour day shift. A reactor operator (RO) candidate was also on shift for on-job-training (OJT) as part of license training.

EVENT NARRATIVE

At 0821, the PMRO was directing the RO candidate on the operation of the Steam Leak Detection (SLD) system Riley Model 86 Temperature Switch modules located in the backpanel area of the control room. The PMRO sequentially placed the read/set switch to "read" for RWCU Room Ambient Temperature switches N602A and C, and RWCU Room Differential (Δ) Temperature switches N600A and C. Coincident with this action the PMRO heard annunciation in the main control room and returned to investigate. The BOPRO was responding to a PCIS, RWCU inboard isolation valve (1-G31-F001) closure. The PMRO informed the BOPRO that he had caused the isolation.

At 0910 the RWCU system was returned to service.

Electrical noise generated in the SLD system when the modules were read activated the Riley Temperature Switches causing the isolation. Similar events throughout the industry have resulted in two General Electric (GE) Service Information Letters (SLLs No. 416 and 443) and an Inspection Enforcement Notice (IEN 86-69) concerning the Riley Temperature Switches. As a result of the industry events and past similar occurrences at the Brunswick Units, change out of the existing Riley Model 86 Temperature Switchess with NUMAC hardware is scheduled for the next refueling outage on each Brunswick Unit (i.e., 1992 for Unit 1 and 1993 for Unit 2). Until installation of the NUMAC Equipment, caution labels were placed above each division of the SLD modules in the Control Room backpanel area. The caution directs personnel to obtain permission from the Shift Foreman (i.e., Shift Supervisor) before operating the module switches. In this case, the PMRO did not obtain permission because he believed that the electrical noise problem only occurred if the switches were taken to the "set" position, and that permission to show the RO candidate how to monitor various plant parameters from the control room was inherence in his OJT trainer responsibility.

CAUSE OF EVENT

The primary cause of this event is the design of the Riley Model 86 temperature switches which makes them susceptible to electrical noise whenever they are operated. This susceptibility effectively eliminates the use of the modules for monitoring purposes and results in extra work to prevent spurious isolations on the part of operations and maintenance personnel during SLD testing. NRC FORM 366A

U. S. NUCLEAR REGULATORY COMMISSION

APPROVED OM8 NO. 3150-0104 EXPIRES: 4/30/92

LICENSEE EVENT CONTINUATION

ESTIMATED 65-IDEN 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. WOLEAR REGULATORY COMMISSION, WASHINGTON, DC 2055 , AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFF CE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

FACILITY NAME (1)	DOCKET NUMBER (2)		LER	PAGE (3)		
Brunswick Steam Electric Plant Unit 1	05000325	YEAR		SEQ NQ.	REV NO.	3
		92		14	00	

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

A secondary cause was the belief that only the "set" position of the module would induce the electrical noise and the failure to follow the direction of the caution label by the PMRO. This effectively bypassed the Shift Foreman - an intended interim barrier to this event.

CORRECTIVE ACTIONS

As a long term corrective action, change out of the existing Riley Model 86 Temperature Switches with NUMAC hardware is scheduled for the next refueling outage on each Brunswick Unit (i.e., 1992 for Unit 1 and 1993 for Unit 2).

The caution label will be revised to clarify why it exists. (i.e., that operation of the read/set switch to either the "read" or the "set" position could cause a spurious isolation.)

To improve personnel awareness of the Riley Model 86 Temperature Switch's potential to cause isolations, each Operations Shift Supervisor will review this event with his personnel.

SAFETY ASSESSMENT

The objective of the PCIS is to provide protection against the release of radioactive material from the fuel and nuclear process barriers by automatically isolating the appropriate lines which penetrate the primary containment whenever monitored parameters exceed preselected operational limits. During this event the RWCU inboard isolation valve isolated, per design, upon a spurious PCIS isolation signal. This event did not prevent injection of coolant nor the ability to maintain the core covered. This event had minimal safety significance.

PREVIOUS SIMILAR EVENTS

Similar events involving spurious isolations caused by Riley Model 86 Temperature Switches have been reported in LERs 2-91-009, 2-91-06, 2-90-19, 1-89-05, 1-89-04, 2-88-20, 1-88-02, and 1-87-09.

EIIS COMPONENT IDENTIFICATION

System/Component	EIIS Code
RWCU	CE
CRD	AA
TDS Module	IJ/MOD
RWCU Inboard Isolation	CE/ISV
RWCU Annunciator	CE/ANN