



Carolina Power & Light Company

Brunswick Nuclear Plant
P.O. Box 10429
Southport, NC 28461-0429

MAY 06 1994

SERIAL: BSEP-94-0163
10CFR50.73

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

BRUNSWICK NUCLEAR PLANT UNIT 1
DOCKET NO. 50-325/LICENSE NO. DRP-71
LICENSEE EVENT REPORT 1-94-006

Gentlemen:

In accordance with the Code of Federal Regulations, Title 10, Part 50.73, Carolina Power & Light Company submits the enclosed Licensee Event Report. 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.

Please refer any questions regarding this submittal to Mr. Mark Turkal at (910) 457-3066.

Very truly yours,

J. Cowan, Director-Site Operations
Brunswick Nuclear Plant

JFM/jfm

Enclosures

1. Licensee Event Report
2. Summary of Commitments

cc: Mr. S. D. Ebnetter, Regional Administrator, Region II
Mr. P. D. Milano, NRR Project Manager - Brunswick Units 1 and 2
Mr. R. L. Prevatte, Brunswick NRC Senior Resident Inspector

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LICENSEE EVENT REPORT (LER)

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 50.0 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE INFORMATION AND RECORDS MANAGEMENT BRANCH (MNBB 7714), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555-0001; AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

FACILITY NAME (1)

Brunswick Steam Electric Plant, Unit 1

DOCKET NUMBER (2)

05000325

PAGE (3)

1 of 3

TITLE (4)

Reactor Manual Control System Design Discrepancy

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 NAME	DOCKET NUMBER
04	12	94	94	- 06 -	00	05	05	94	BSEP Unit 2	05000324
									FACILITY NAME	DOCKET NUMBER
										05000

OPERATING MODE (9)	1	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR 5: (Check one or more of the following)(11)								
		20.402(b)		20.405(c)		50.73(a)(2)(iv)		73.71(b)		
POWER LEVEL (10)	100	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)(vii)		OTHER		
		20.405(a)(1)(iii)		X 50.73(a)(2)(ii)		50.73(a)(2)(viii)(A)		(Specify in Abstract and Text)		
		20.405(a)(1)(iv)		50.73(a)(2)(iii)		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)

NAME

Jeanne F. McGowan, Regulatory Affairs Specialist

TELEPHONE NUMBER

(910) 457-2136

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

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS

SUPPLEMENTAL REPORT EXPECTED (14)

YES (If yes, complete EXPECTED SUBMISSION DATE)	X	NO	EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR

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

On April 12, 1994, Unit 1 was operating at 100% power. During a previous training session on the Reactor Manual Control System (RMCS) a discrepancy had been noted on the inputs for the Average Power Range Monitors (APRMs) and the Intermediate Range Monitors (IRMs). The schematic diagrams associated with the RMCS Continuous Rod Withdrawal Block did not agree with the conventions used in other portions of the system or with the Reactor Protection System (RPS) inputs. A procedure change request was submitted to the operations support staff requesting further investigation. Subsequent investigations revealed that the schematic drawing was correct and the design described in the Final Safety Analysis Report and the Design Base Documents was not consistent with actual plant configuration. The discrepancy exists in the original design of the system and is applicable to both Units. Due to the discrepancy, APRMs have been bypassed such that on at least three previous occasions Technical Specification Table 3.3.4-1 requirements for minimum operability of APRM channel inputs to the RMCS Continuous Rod Withdrawal Block were not met. The cause of the event was the failure to follow standard conventions for the RMCS APRM and IRM groupings. Corrective actions include issuing a Standing Instruction informing Operations of the discrepancy and modifying the applicable inputs to ensure consistency between RMCS and RPS groupings. The safety significance was minimal. The RMCS is not considered to be a safety system.

The cause classification for this event per the criteria of NUREG-1022 is design, manufacturing, construction/installation.

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LICENSEE EVENT REPORT (LER)
TEXT CONTINUATION

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Brunswick Steam Electric Plant Unit 1	05000325	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	2 of 3
		94	- 06 -	00	

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

TITLE

Reactor Manual Control System Design Discrepancy

INITIAL CONDITIONS

On April 12, 1994, Unit 1 was operating at 100% power.

EVENT NARRATIVE

In preparation for a training session on the Reactor Manual Control System (RMCS) operations and training personnel were reviewing the elementary diagrams associated with the RMCS Continuous Rod Withdrawal Block circuits. During the review, it was noted that the groupings on the schematic did not agree with the conventions used in other portions of the system. Specifically, the groupings for the RMCS Average Power Range Monitors (APRMs) and the Intermediate Range Monitors (IRMs) did not agree with the respective groupings in the Reactor Protection System (RPS). The grouping discrepancy is as follows:

Reactor Protection System Groupings (follows convention)

APRMs

IRMs

RPS Channel A	RPS Channel B	RPS Channel A	RPS Channel B
APRM A	APRM B	IRM A	IRM B
APRM C	APRM D	IRM C	IRM D
APRM E	APRM F	IRM E	IRM F
		IRM G	IRM H

Reactor Manual Control System Rod Withdrawal Block Groupings

RMCS Channel A	RMCS Channel B	RMCS Channel A	RMCS Channel B
APRM A	APRM B	IRM A	IRM C
APRM D	APRM C	IRM B	IRM D
APRM E	APRM F	IRM E	IRM G
		IRM F	IRM H

A procedure change request was submitted to the operations support staff to investigate the discrepancy and incorporate any required changes. Subsequent investigations verified that the schematic was correct and that the groupings for the RMCS APRM and IRM inputs were inconsistent with the respective groupings on the Rod Block Bypass switches and the associated RPS inputs. The discrepancy exists in the original design of the system and is applicable to both Units. The Design Base Document and the Final Safety Analysis Report for the APRM and IRM systems describe the groupings as consistent with the RMCS and RPS.

Brunswick Nuclear Plant Technical Specifications Table 3.3.4-1 requires two inputs to the RMCS Rod Withdrawal Block to be operable per channel. Due to the discrepancy, combinations of APRM bypasses have existed which resulted in operation outside Technical Specifications. A search of the Limiting Condition for Operation (LCO) database found three incidents during the past five years on Unit One. The review found no incidents Unit 2 for the five year period; however, it is probable that similar situations have also occurred on Unit 2.

This event is being reported in accordance with 10 CFR 50.73(a)(2)(i), as operation

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prohibited by the plant's Technical Specifications.

CAUSE OF EVENT

The cause of the event was the failure to follow standard conventions for the RMCS APRM and IRM groupings. The basis for the discrepancy between actual plant configuration and the descriptions on the Final Safety Analysis Report and the Design Base Document cannot be determined. Based on discussions with the vendor, it was determined that the discrepancy existed in the original design of the plant. However, no explanation for the groupings or the failure to notify CP&L of the non-conventional arrangement was provided.

CORRECTIVE ACTIONS

1. A Standing Instruction was issued to ensure Operations is aware of the discrepancy between the RMCS and RPS groupings for APRMs and IRMs.
2. The affected circuitry will be modified to ensure RMCS and RPS groupings are consistent.

Corrective actions will be completed on Unit 2 prior to start-up and on Unit 1 during the next Refuel Outage.

SAFETY ASSESSMENT

The safety significance was minimal. The Reactor Manual Control System is not considered a safety-related system. The RMCS logic requires only one input from one channel to initiate a Continuous Rod Withdrawal Block. The record review indicates that at least one input to each RMCS APRM channel was operable during each of the three incidents when Technical Specification Table 3.3.4-1 requirements were not met. There was no operation outside Technical Specifications regarding the IRMs for either Unit.

PREVIOUS SIMILAR EVENTS

None

EIIS COMPONENT IDENTIFICATION

<u>System/Component</u>	<u>EIIS Code</u>
APRM/IRM	IG

Enclosure
List of Regulatory Commitments

The following table identifies those actions committed to by Carolina Power & Light Company in this document. Any other actions discussed in the submittal represent intended or planned actions by Carolina Power & Light Company. They are described to the NRC for the NRC's information and are not regulatory commitments. Please notify the Manager-Regulatory Affairs at the Brunswick Nuclear Plant of any questions regarding this document or any associated regulatory commitments.

Commitment	Committed date or outage
1. Modify the affected circuitry on Unit 2 to ensure RMCS and RPS groupings are consistent.	B211R1
2. Modify the affected circuitry on Unit 1 to ensure RMCS and RPS groupings are consistent.	B110R1