

# CP&L

Carolina Power & Light Company

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

June 9, 1984

FILE: B09-13510C

10CFR50.73

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 1-92-010

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. Spence* for  
J. W. Spence, General Manager  
Brunswick Nuclear Project

TMD/

Enclosure

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

9206150327 920609  
PDR ADOCK 05000225  
S PDR

*IF 22*  
11

EXPIRES: 4/30/92

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 60-9 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH (P-630), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20566, 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 1DOCKET NUMBER (2)  
05000325

PAGE (3)

1

TITLE (4) UNEXPECTED START OF 1B RHR PUMP INSTEAD OF 1D DUE TO A PROCEDURAL ERROR

EVENT DATE (5)			LER NUMBER (6)				REPORT DATE (7)			OTHER FACILITIES INVOLVED (8)	
MONTH	DAY	YEAR	YEAR	SEC. NO.	REV. NO.	MONTH	DAY	YEAR	FACILITY NAME	DOCKET NUMBER	
05	11	92	92	- 010	- 00	06	09	92			
OPERATING MODE (9)		THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR 3. (Check one or more of the following) (11)									
4		20.402(b)		20.406(e)		X		60.73(a)(2)(iv)		73.718-	
POWER LEVEL (10)		000									
		20.405(a)(1)(i)		60.36(c)(1)				60.73(a)(2)(iv)		73.716-	
		20.405(a)(1)(ii)		60.36(c)(2)				60.73(a)(2)(iv)		OTHER (Specify in Abstract and Text)	
		20.405(a)(1)(iii)		60.72(a)(2)(i)				60.73(a)(2)(viii)(A)			
		20.405(a)(1)(iv)		60.73(a)(2)(ii)				60.73(a)(2)(viii)(B)			
		20.405(a)(1)(v)		60.73(a)(2)(iii)				60.73(a)(2)(ix)			

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 NRPDS	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NRPDS

SUPPLEMENTAL REPORT EXPECTED (14)

EXPECTED SUBMISSION

MONTH

DAY

YEAR

YES (if yes, complete EXPECTED SUBMISSION DATE)

X

NO

DATE (15)

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

At 0855, on May 11, 1992, permission was given to perform 1MST-DG12R. At 0931, the 1D RHR pump did not start as anticipated. The 1B RHR pump started instead. The cause of this event was an error in the MST (i.e., the relay designated for the 1D RHR pump in the MST was actually the relay for the 1B RHR pump). Research determined that this error was introduced in April of 1991 when revision 9 of the MST was developed. The changes which required revision 9 to the MST did not affect the relay designation. The second technical reviewer did not review the affected page because it was not marked with a revision bar. An interview determined that the error was introduced as a result of inserting a Unit 2 drawing in place of the correct Unit 1 drawing. Insertion of the Unit 2 drawing was not detected. Each procedure had a package which consisted of a computer disk for the written portion and a disk for the drawing/graphics portion. In this case, the drawing/graphic disk of the procedure package for 2MST-DG14R was pulled instead of that for 1MST-DG12R. The exact cause of this error is indeterminate due to the year between the procedure revision which introduced the error and the event which detected it. The MST and sev. a similar to it have been incorporated into software with the words and drawing/graphics or one file. The involved individual was counselled and participated in this investigation. The remaining Maintenance Procedure Writing personnel will review this event. As a long-term corrective action a local area network (LAN) computer system is scheduled for installation which will make electronic links to the correct drawing/graphics for a procedure thereby minimizing the potential for people to retrieve the wrong drawing/graphics file on subsequent revisions. This event had minimal safety significance. The starting of the 1B RHR pump did not affect plant operations. Selection of the wrong drawing/graphic disk is considered an isolated event.

**LICENSEE EVENT REPORT (LER)  
TEXT CONTINUATION**

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 60.0 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH (P-630), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20545, AND TO THE PAPERWORK REDUCTION PROJECT (3160-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

FACILITY NAME (1)  Brunswick Steam Electric Plant Unit 1	DOCKET NUMBER (2)  05000325	LER NUMBER (6)				PAGE (3)  2
		YEAR	SEQ NO.	REV NO.		
		92	010	00		

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

**TITLE** UNEXPECTED START OF 1B RHR PUMP INSTEAD OF 1D DUE TO A PROCEDURAL ERROR

INITIAL CONDITIONS

On May 11, 1992, the Unit 1 reactor was in COLD SHUTDOWN with Diesel Generators (DGs) 1, 2, 3, and 4, and the Emergency Core Cooling Systems (ECCS) inoperable because of seismic qualification concerns. The unit had been shutdown for 20 days. Division I of the Residual Heat Removal (RHR) system was being utilized for Shutdown Cooling (SDC). Maintenance Surveillance Test (MST) 1MST-DG12R (revision 12), DG-2 Loading Test, was in progress. 1MST-DG12R inserts an off-site (normal) power supply loss to Emergency (E) Bus E2 in conjunction with a Loss of Coolant Accident (LOCA) start signal for the Unit 1, Division II, ECCS loads.

EVENT NARRATIVE

At 0855, on May 11, 1992, permission was given for I&C personnel to perform 1MST-DG12R. At 0931, in accordance with the MST, bus E2 was de-energized to induce a loss of off-site power and a Unit 1 Division II LOCA signal was simulated. Bus E2 was re-energized by DG 2 and loads were shed/powering in response to the LOCA signal with the exception of the 1D RHR pump which did not start. The 1B RHR pump started instead.

An investigation revealed that the cause of this event was an error in the MST. 1MST-DG12R requires electrical jumpers be installed across relays associated with bus E2, Unit 1, Division II LOCA loads. The relay designated for the 1D RHR pump in the MST was actually the relay for the 1B RHR pump which is a Division II, LOCA load powered from bus E4, not bus E2.

The performance of this MST is required at least once every 550 days. The last successful performance of this MST was on 9-28-90 utilizing revision 8. Research determined that this error was introduced in April of 1991 when revision 9 of the MST was developed. The changes which required revision 9 to the MST did not affect the relay designation (i.e., the change was unintentional) therefore the changed relay designation was not noted by a revision bar in the right margin of the affected page by the originator/first technical reviewer. The second technical reviewer is required to review the changes and utilizes revision bars to determine where the changes have occurred. The second technical reviewer did not review the affected page because it was not marked with a revision bar.

An interview with the originator/first technical reviewer of revision 9 determined that the error was introduced as a result of inserting a Unit 2 drawing in place of the correct Unit 1 drawing showing where to install the jumpers. Inserting the Unit 2 drawing was not detected because word processing automatically changed the Unit 2 header and footer designation to the Unit 1 designation. This resulted in the Unit 2 panel designation within the drawing being the only indicator that the drawing was not the correct drawing. Given that the drawing was not intentionally changed and that it is nearly identical to the Unit 1 drawing (see attachment 1 and 2) the originator/first technical reviewer of revision 9 did not notice the error. It should be noted that during revision 10 to 1MST-DG12R the graphics were incorporated into the Display Write word processing software. During that revision the erroneous Unit 2 panel designator was identified, determined to be a typographical error, and changed to Unit 1 without a thorough investigation into the cause. This effectively removed the last "flag" which could have enabled personnel performing the MST to detect the

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(P-630), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20545,  
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FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)				PAGE (3)
		YEAR	SEQ NO.	REV NO.		
Brunswick Steam Electric Plant Unit 1	05000325				3	
		92	010	00		

TEXT (if more space is required, use additional NRC Form 866A's) (17)

error prior to the event. The procedure was subsequently revised two more times, prior to its use on 5-11-92, without any change to the drawing.

During the first quarter of 1991 approximately 150 procedures were revised by twelve personnel in response to a Technical Specification amendment. During March and April 1991, eight nearly identical procedures were being revised (i.e., four MSTs for Unit 1 and Unit 2 each). Each procedure has a package which consists of a computer disk for the written portion of a procedure and a disk for the drawing/graphics portion of a procedure. In this case, the drawing/graphic disk of the procedure package for 2MST-DG14R was pulled instead of that for 1MST-DG12R. The originator/first technical reviewer did not realize that the wrong Unit's jumper installation drawing had been inserted and therefore did not place revision lines in the right margin to initiate a review by the second technical reviewer.

In July of 1991 a word processing cloning event occurred and was reported in LER 1-91-19. As a result of that event, formal requirements were established to ensure procedure technical reviewers know which portions of a procedure have been electronically cloned via word processing. This event did not specifically involve cloning and the corrective actions put into place by LER 1-91-019 in September 1991 would not have prevented it. This event is analogous to an individual going to the wrong train or unit. The originator/first technical reviewer had incorporated the required "word" changes and then retrieved the wrong drawing/graphic disk. The exact cause of this error is indeterminate due to the year between the procedure revision which introduced the error and the event which detected it.

#### CAUSE OF EVENT

This event was caused by a procedural error introduced when the originator/first technical reviewer inserted a drawing intended for a different procedure during a revision. Factors contributing to this error included time pressure (i.e., the associated action item to revise the procedure was overdue) and a large number of procedures requiring revision during the first quarter of 1991.

#### CORRECTIVE ACTIONS

Since the time of the revision resulting in this event, the eight similar MSTs have been incorporated into the word processing software with the words and drawing/graphics on one file. The involved individual was counselled and participated in this investigation. The remaining Maintenance Procedure Writing personnel will review this event to emphasize the need for attention to detail when incorporating drawing/graphics from a separate disk and the need to investigate an error thoroughly prior to correcting it during a revision. As a long-term corrective action a local area network (LAN) computer system is scheduled for installation which will make electronic links to the correct drawing/graphics for a procedure thereby minimizing the potential for people to retrieve the wrong drawing/graphics file on subsequent revisions.

#### SAFETY ASSESSMENT

This event had minimal safety significance. The starting of the 1B RHR pump did not affect plant operations.

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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.	4	
		92	010	00		

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

PREVIOUS SIMILAR EVENTS

Selection of the wrong drawing/graphic disk is considered an isolated event. No previous LERs have been reported for this type of event and a discussion with the Maintenance procedure writer supervisor indicates that this is the first event of this type since 1986 when the group began their procedure word processing and drawing/graphics.

EIIS COMPONENT IDENTIFICATION

System/Component

EIIS Code

RHR pump

BO/P

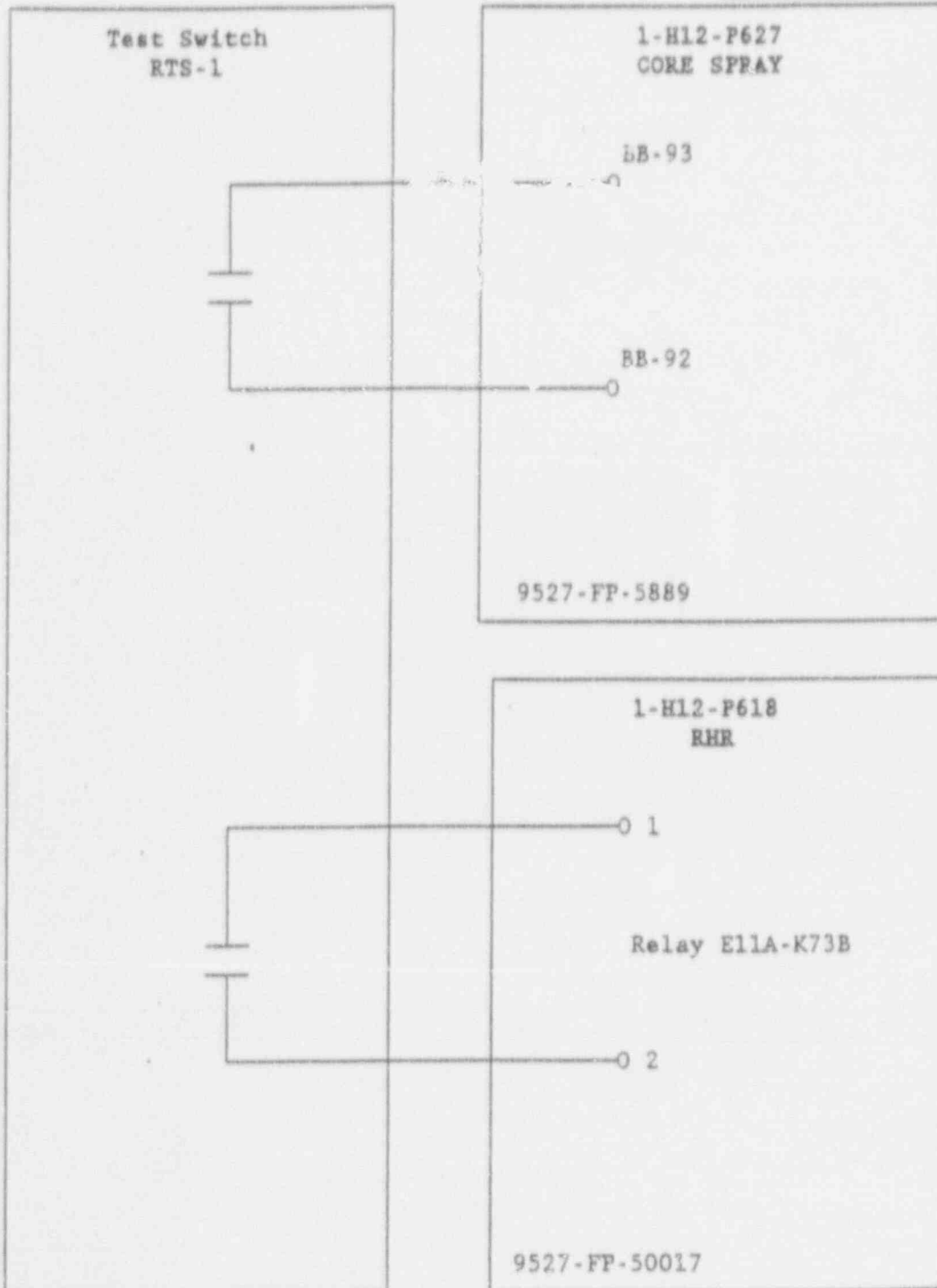
LICENSEE EVENT REPORT (LER)  
TEXT CONTINUATION

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COLLECTION REQUEST: 60.0 HRS. FORWARD COMMENTS REGARDING  
BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH  
(P-530), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20546,  
AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF  
MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

FACILITY NAME (1) <b>Brunswick Steam Electric Plant Unit 1</b>	DOCKET NUMBER (2) <b>05000325</b>	LER NUMBER (8)				PAGE (3) <b>5</b>
		YEAR	SEQ. NO.	REV. NO.		
		<b>92</b>	<b>010</b>	<b>00</b>		

TEXT: If more space is required, use additional NRC Form 386A's (17)

Attachment 1  
**TEST SWITCH INSTALLATION**



**NOTE:** Install Test Switch RTS-1 in the "Contacts-Open" position.

LICENSEE EVENT REPORT (LER)  
TEXT CONTINUATION

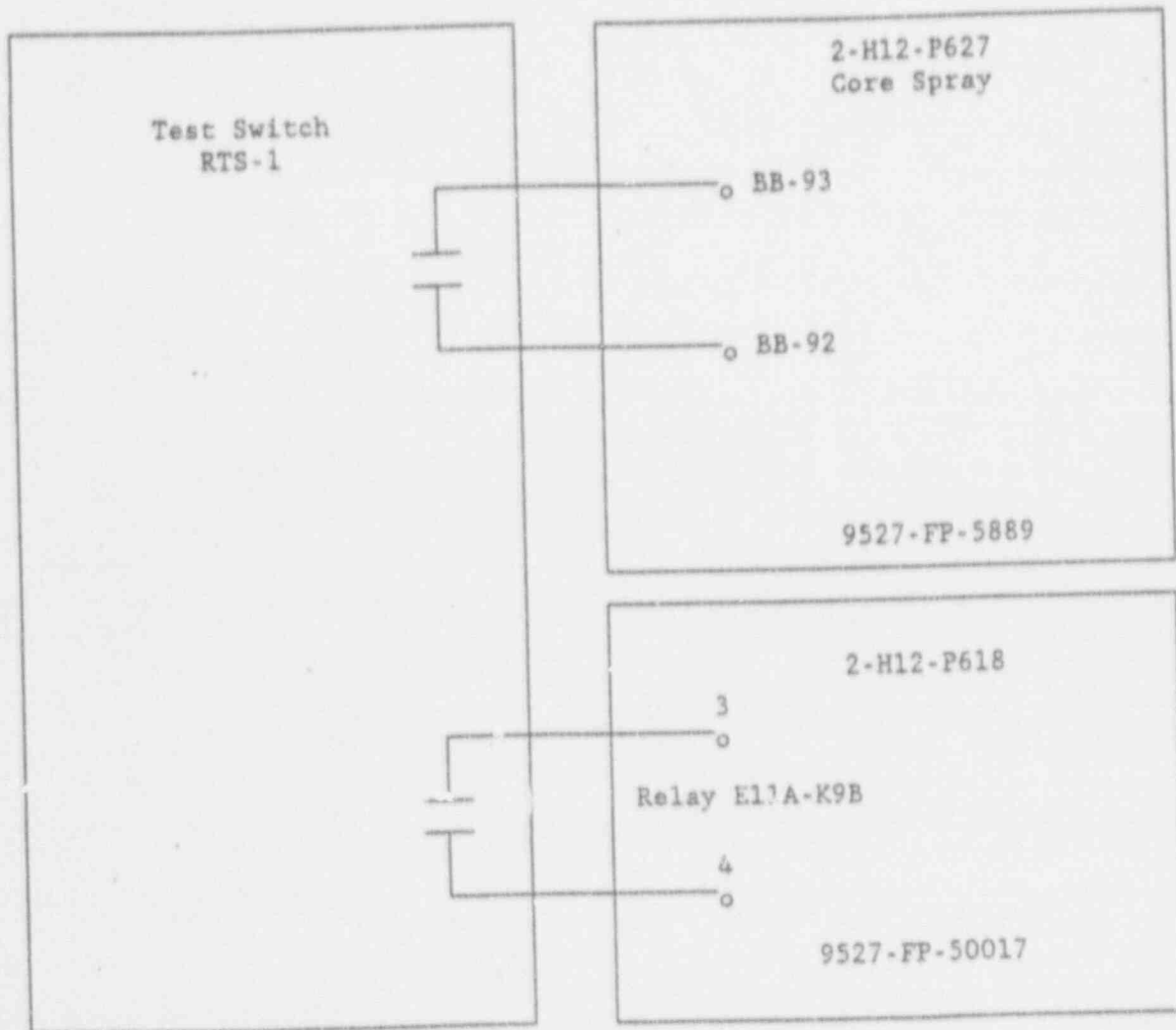
ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION  
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FACILITY NAME (1)  Brunswick Steam Electric Plant Unit 1	DOCKET NUMBER (2)  05000325	LER NUMBER (8)				PAGE (3)  6
		YEAR  92	SEQ NO.  010	REV NO.  00		

TEXT: If more space is required, use additional NRC Form 886A's (17)

Attachment 2

TEST SWITCH INSTALLATION



NOTE: Install Test Switch RTS-1 in the "Contacts-Open" position.