

# ACCELERATED DISTRIBUTION DEMONSTRATION SYSTEM

## REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)

ACCESSION NBR: 9002130035      DOC. DATE: 90/02/05      NOTARIZED: NO      DOCKET #  
 FACIL: 50-400 Shearon Harris Nuclear Power Plant, Unit 1, Carolina      05000400  
 AUTH. NAME      AUTHOR AFFILIATION  
 SCHWABENBAUER      Carolina Power & Light Co.  
 RICHEY, R.B.      Carolina Power & Light Co.  
 RECIP. NAME      RECIPIENT AFFILIATION

SUBJECT: LER 90-001-00: on 880918, Tech Spec violation due to improper response time test caused by error in implementation.

W/8      ltr.

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 TITLE: 50.73/50.9 Licensee Event Report (LER), Incident Rpt, etc.

NOTES: Application for permit renewal filed. 05000400

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**CP&L**

Carolina Power & Light Company

P. O. Box 165 • New Hill, N. C. 27562

R. B. RICHEY  
Manager  
Harris Nuclear Project

FEB - 5 1990

Letter Number: HO-900030 (0)

U.S. Nuclear Regulatory Commission  
ATTN: NRC Document Control Desk  
Washington, DC 20555

SHEARON HARRIS NUCLEAR POWER PLANT UNIT 1  
DOCKET NO. 50-400  
LICENSE NO. NPF-63  
LICENSEE EVENT REPORT 90-001-00

Gentlemen:

In accordance with Title 10 to 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 in accordance with the format set forth in NUREG-1022, September 1983.

Very truly yours,



R. B. Richey, Manager  
Harris Nuclear Project

RBR:dgr

Enclosure

cc: Mr. R. A. Becker (NRR)  
Mr. S. D. Ebner (NRC - RII)  
Mr. J. E. Tedrow (NRC - SHNPP)

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PDR ADOCK 05000400  
S PDC

MEM/LER-90-001/1/OS1

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11

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 RECORDS AND REPORTS MANAGEMENT BRANCH (P-630), 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) <b>SHEARON HARRIS NUCLEAR POWER PLANT - UNIT 1</b>	DOCKET NUMBER (2) <b>0 5 0 0 0 4 0 0</b>	PAGE (3) <b>1 OF 0 4</b>
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TITLE (4) **Technical Specification Violation Due to Improper Response Time Test Caused by an Error in the Implementation of the Temporary Procedure Change Process**

EVENT DATE (5)			LER NUMBER (8)			REPORT DATE (7)			OTHER FACILITIES INVOLVED (8)		
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	MONTH	DAY	YEAR	FACILITY NAMES		DOCKET NUMBER(S)
0 9	1 8	8 8	9 0	0 0 1	0	0 2	0 5	9 0	N/A		0 5 0 0 0
0 5 0 0 0											

OPERATING MODE (9) <b>1</b>	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11)										
POWER LEVEL (10) <b>0 7 5</b>	<input type="checkbox"/> 20.402(b)	<input type="checkbox"/> 20.405(c)	<input type="checkbox"/> 50.73(a)(2)(iv)	<input type="checkbox"/> 73.71(b)							
	<input type="checkbox"/> 20.406(a)(1)(i)	<input type="checkbox"/> 50.38(c)(1)	<input type="checkbox"/> 50.73(a)(2)(v)	<input type="checkbox"/> 73.71(c)							
	<input type="checkbox"/> 20.405(a)(1)(ii)	<input type="checkbox"/> 50.38(c)(2)	<input type="checkbox"/> 50.73(a)(2)(vi)	OTHER (Specify in Abstract below and in Text, NRC Form 366A)							
	<input type="checkbox"/> 20.406(a)(1)(iii)	<input checked="" type="checkbox"/> 50.73(a)(2)(i)	<input type="checkbox"/> 50.73(a)(2)(vii)(A)								
	<input type="checkbox"/> 20.406(a)(1)(iv)	<input type="checkbox"/> 50.73(a)(2)(ii)	<input type="checkbox"/> 50.73(a)(2)(viii)(B)								
	<input type="checkbox"/> 20.406(a)(1)(v)	<input type="checkbox"/> 50.73(a)(2)(iii)	<input type="checkbox"/> 50.73(a)(2)(ix)								

LICENSEE CONTACT FOR THIS LER (12)										
NAME <b>Richard Schwabenbauer - Regulatory Compliance Technician</b>							TELEPHONE NUMBER			
							AREA CODE			
							<b>9 1 9 3</b>	<b>6 2 - 2 6 6 9</b>		

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

ABSTRACT (Limit to 1400 spaces, i.e., approximately fifteen single-space typewritten lines) (18)

The plant was operating in Mode 1, POWER OPERATION, at 75 percent reactor power on January 5, 1990. Technical Specification (TS) 4.3.2.2 requires that the Engineered Safety Features (ESF) response time testing include one instrument channel per function every 18 months such that all channels be tested at least once per 54 months. The Auxiliary Feedwater (AFW) isolation logic (TS Table 3.3-3, item 6.g) specifies three such channels (II, III, and IV).

Testing for Channel III is done in accordance with Maintenance Surveillance Test (MST)-10645, Group 2 of 3 Channel RTS and ESFAS Response Time Test. During a review of MST-10645 on January 5, 1990, it was discovered that a Temporary Change (TC) issued during the Channel III testing in the 1988 outage was incorrect. The test recorded the reset time of 2 bistables and 2 slave relays instead of the actuation time as required. This discovery violates the requirement to test the channels in a specific rotation. However, the channel remains within its 54 month response time test requirement and is still operable.

The cause of the event was an error in the implementation of the temporary procedure change process.

Corrective actions include appropriate procedure revisions being completed to properly test the channels, Channel III will be tested prior to its 54 month requirement, and training for applicable personnel will be done.

Based on functional logic tests and completed response time testing there is no reason to believe any problems exist with the portion of the logic which was not tested properly, therefore no safety consequences resulted from this event.

This event is being reported in accordance with 10CFR50.73(a)(2)(i)(B) as a Technical Specification violation.

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) SHEARON HARRIS NUCLEAR POWER PLANT - UNIT 1	DOCKET NUMBER (2) 0   5   0   0   0   4   0   0	LER NUMBER (6)			PAGE (3)	
		YEAR 9   0	SEQUENTIAL NUMBER -   0   0   1	REVISION NUMBER -   0   0	0   2	OF 0   4

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

Description:

The plant was operating in Mode 1, POWER OPERATION, at 75 percent reactor power on January 5, 1990.

Technical Specification(TS) 4.3.2.2 requires the Engineered Safety Features (ESF) response time of each Engineered Safety Feature Actuation System (ESFAS) function be demonstrated to be within the required acceptance limit at least once per 18 months. Each test must include at least one train such that both trains are tested at least once per 36 months and one instrument channel per function such that all channels are tested at least once per N times 18 months where N is the total number of redundant channels in a specific ESFAS function. The Auxiliary Feedwater (AFW) isolation logic (TS Table 3.3-3 item 6.g) has three channels (II, III, and IV). Therefore each channel must be response time tested every 54 months (3x18). In order to meet this requirement, one of the three channels is tested every 18 months on a rotating basis.

Testing each channel consists of two separate tests. The first measures the response time of the sensor through its input into the respective Process Instrument Cabinet (PIC). The second measures the response time from the PIC input to the response of the slave relay at the output of the Solid State Protection System (SSPS). The response time of each train of actuated equipment is measured separately. Typically, it is done starting with the actuation of a slave relay and includes the time for the actuated equipment to reach the required condition. These separate times are totaled and compared with the required response time.

All three channels were tested in June 1986 prior to initial plant start-up, this started the clock for the 54 month required test for each channel. In subsequent testing, the first channel to be tested was channel II which was done in the 1987 maintenance outage. The second channel to be tested was channel III which was done in the 1988 refueling outage. Channel IV testing was completed during the 1989 refueling outage.

Testing for Channel III is done in accordance with Maintenance Surveillance Test (MST)-I0645, Group 2 of 3 Channel RTS and ESFAS Response Time Test. During the review of MST-I0645 on January 5, 1990, it was discovered that a temporary change (TC) issued during the Channel III testing in the 1988 outage was incorrect. The test recorded the reset time of 2 SSPS bistables, PS-01MS-0495BW Circuit 1 and Circuit 2, and the reset time of two slave relays, K615 and K617, instead of the actuation time of these items. However, other portions of MST-I0645 properly tested the K615 and K617 slave relays using other logic combinations from other bistables.

LICENSEE EVENT REPORT (LER)  
TEXT CONTINUATION

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 500 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) SHEARON HARRIS NUCLEAR POWER PLANT - UNIT 1	DOCKET NUMBER (2)  0   5   0   0   0   4   0   0	LER NUMBER (6)			PAGE (3)	
		YEAR 9   0	SEQUENTIAL NUMBER -   0   0   1	REVISION NUMBER -   0   0	0   3	OF 0   4

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

This discovery violates the requirement to test the channels in a specific rotation. However, the channel remains within its 54 month response time test requirement and is still operable.

Cause:

The invalid test was discovered at 0830 hours on January 5, 1990, by the maintenance procedure writers while incorporating changes into MST-I0645 required by an unrelated Plant Change Request (PCR)-4497. While preparing the changes, an entire review of the procedure was performed including a review of TCs for incorporation into the procedure. It was discovered that the TC had corrected errors in the original procedure but had created a new problem. The result was an invalid test for AFW isolation relays K615 and K617 in that it tested the reset time rather than the actuation time of the tested bistables and relays.

The cause of the event was an error in the implementation of the temporary procedure change process. Separately, the TC received a safety review by 2 separate individuals on September 19, 1988. This second review also failed to identify the fact that the test had been changed to result in measurement of the channels reset time rather than the response time.

A similar event occurred in the 1989 refueling outage. During Channel IV testing in accordance with MST-I0646, Group 3 of 3 Channel RTS and ESFAS Response Time Test, it was discovered that several steps in the procedure were incorrect and a TC was issued to correct the procedure deficiencies. A similar error resulted in that the reset time was measured rather than the actuation time. During the required review of the TC, the TC was found to be in error. The TC was corrected and the test was reperformed with acceptable results.

Analysis:

Based on functional logic tests and completed response time testing there is no reason to believe that there is an actual problem with the portion of the logic which was not properly tested. Therefore, there were no safety consequences as a result of this event. The original test of the relays, which was satisfactorily completed on June 20, 1986, is still valid until February 1, 1992, in compliance with the 54 month TS requirement, plus a 25 percent allowable extension per TS 4.0.2, for each channels response time test.

This event is being reported in accordance with 10CFR50.73(a)(2)(i)(B) as a Technical Specification violation. There have not been any previous similar events reported on improper response time testing.

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-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)

SHEARON HARRIS NUCLEAR POWER  
PLANT - UNIT 1

DOCKET NUMBER (2)

0 5 | 0 0 | 0 4 | 0 0 | 9 0 | - 0 | 0 1 | - 0 | 0 0 | 4 OF 0 4

LER NUMBER (6)

PAGE (3)

YEAR	SEQUENTIAL NUMBER	REVISION NUMBER
90	01	00

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

Corrective Action:

1. MST-I0645 has been revised to measure the response time for AFW isolation bistable to slave relays K615 and K617.
2. MST-I0644 and MST-I0646 have been reviewed and revised to ensure they would also test the circuit properly. These procedures are for the other two channels, II and IV, in the logic.
3. The applicable sections of MST-I0645 will be performed no later than February 1, 1992, to ensure that the surveillance time limit of 54 months, plus a 25 percent allowable extension per TS 4.0.2 will not be exceeded based on the fact the relays were initially tested on June 20, 1986.
4. This event will be incorporated into the training program for personnel responsible for writing and approving TCs.

EIIS Code Information:

Engineered Safety System	JE
Auxiliary Feedwater System	BA
Process Instrument Cabinet	IO
Solid State Protection System	JG