

# PRIORITY 1

(ACCELERATED RIDS PROCESSING)

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ACCESSION NBR:9510050206 DOC.DATE: 95/09/28 NOTARIZED: NO DOCKET #  
 FACIL:50-400 Shearon Harris Nuclear Power Plant, Unit 1, Carolina 05000400 P  
 AUTH.NAME AUTHOR AFFILIATION  
 VERRILLI,M. Carolina Power & Light Co. R  
 DONAHUE,J.W. Carolina Power & Light Co.  
 RECIP.NAME RECIPIENT AFFILIATION I

SUBJECT: LER 95-007-00:on 950901,inadvertant start of turbine driven  
 AFW pump/unplanned ESF actuation occurred due to inadequate  
 test procedures.Revised appropriate procedures.W/950928 ltr. O

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Carolina Power & Light Company  
Harris Nuclear Plant  
PO Box 165  
New Hill NC 27562

SEP 28 1995

Letter Number: HO-950704

U.S. Nuclear Regulatory Commission  
ATTN: NRC Document Control Desk  
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SHEARON HARRIS NUCLEAR POWER PLANT UNIT 1  
DOCKET NO. 50-400  
LICENSE NO. NPF-63  
LICENSEE EVENT REPORT 95-007-00

Gentlemen:

In accordance with Title 10 to the Code of Federal Regulations, the enclosed Licensee Event Report is submitted. This report concerns an inadvertant Auxiliary Feedwater Pump start which constitutes an unplanned Engineered Safety Feature actuation. The report also includes an additional surveillance test deficiency that was identified during the investigation.

Sincerely,

J. W. Donahue  
General Manager  
Harris Plant

MV

Enclosure

c: Mr. S. D. Ebnetter (NRC - RII)  
Mr. N. B. Le (NRC - PM/NRR)  
Mr. S. A. Elrod (NRC - SHNPP)

9510050206 950928  
PDR ADCK 05000400  
S PDR

State Road 1134 New Hill NC

JE22/1

**LICENSEE EVENT REPORT (LER)**

(See reverse for required number of digits/characters for each block)

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 50.0 HRS. REPORTED LESSONS LEARNED ARE INCORPORATED INTO THE LICENSING PROCESS AND FED BACK TO INDUSTRY. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE INFORMATION AND RECORDS MANAGEMENT BRANCH 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) **Shearon Harris Nuclear Plant-Unit #1** DOCKET NUMBER (2) **50-400** PAGE (3) **1 of 3**

TITLE (4) **Inadvertant start of the Turbine Driven AFW pump/unplanned ESF actuation and identification of an additional related test deficiency.**

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
09	01	95	95	-- 007 --	00	09	28	95	FACILITY NAME	DOCKET NUMBER 05000
									FACILITY NAME	DOCKET NUMBER 05000

OPERATING MODE (9)	1	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more) (11)								
		20.402(b)		20.405(c)		X	50.73(a)(2)(iv)		73.71(b)	
POWER LEVEL (10)	75%	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)(vi)		OTHER	
		20.405(a)(1)(iii)	X	50.73(a)(2)(i)			50.73(a)(2)(vii)(A)		(Specify in Abstract below and in Text, NRC Form 366A)	
		20.405(a)(1)(iv)		50.73(a)(2)(ii)			50.73(a)(2)(vii)(B)			
		20.405(a)(1)(v)		50.73(a)(2)(iii)			50.73(a)(2)(x)			

LICENSEE CONTACT FOR THIS LER (12)

NAME **Michael Verrilli Sr. Analyst - Licensing** TELEPHONE NUMBER (Include Area Code) **(919) 362-2303**

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
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ABSTRACT (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines) (16)

On September 1, 1995, during the performance of surveillance testing on the 1A-SA 6.9kV Safety Bus, a signal was generated that caused the steam supply valve (IMS-70) for the Turbine Driven Auxiliary Feedwater (TDAFW) Pump to stroke open. This caused the TDAFW Pump to inadvertently start and provide AFW flow to the Steam Generators, prior to being secured by Operations personnel in the main control room. This test procedure had been performed on previous occasions during plant shutdown periods, but during these shutdown periods steam was not available in the steam generators. This condition constitutes an unplanned Engineered Safety Feature (ESF) actuation. The cause of this event was inadequate test procedures. Corrective actions will include revising the appropriate procedures.

During the investigation of this event, on September 5, 1995, an additional TDAFW Pump test deficiency was identified related to the performance of the Trip Actuating Device Operational Test. This test is specified in Technical Specification Table 4.3-2 as a monthly requirement, but had only been adequately tested on an 18-month frequency. This condition was also caused by a procedural deficiency and corrective actions will include revisions to the applicable test procedures.

LER's 94-001, 95-001 & 95-003 are similar reports that have been submitted.

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 (MIRB 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)		DOCKET NUMBER (2)		LER NUMBER (6)			PAGE (3)
Shearon Harris Nuclear Plant - Unit #1		05000/400		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	2 OF 3
				95	007	00	

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

**EVENT DESCRIPTION:**

On September 1, 1995, the plant was in Mode-1 at approximately 75 percent power. At approximately 1335, during the performance of the Under Voltage Calibration Maintenance Surveillance Test (MST-E0034) on the 1A-SA 6.9 KV Safety Bus, the steam supply valve (1MS-70) for the Turbine Driven Auxiliary Feed Water (TDAFW) Pump, unexpectedly opened, resulting in a start of the TDAFW Pump. This condition constitutes an unplanned Engineered Safety Feature actuation. The maintenance electricians had completed performing the calibrations on each of the 6.9kV bus 1A-SA undervoltage relays, 27-1-SA, 27-2-SA, and 27-3-SA in accordance with MST-E0034. Upon completion of the relay calibrations, the procedure required performance of an undervoltage relay logic test as the Post-Maintenance Test (PMT). The PMT was accomplished by pressing a local test push-button on Cubicle 10 of 6.9 KV bus 1A-SA. Actuation of this relay by the operator caused the 1A-SA bus undervoltage test lockout relay 86T and the bus undervoltage lockout relay 86UV to actuate. The 86T and its associated relays, as designed, block the signals from the 86UV and its associated relays, except for the 86UVX signal to 1MS-70. Since this signal is not blocked, the logic for opening valve 1MS-70 on a bus undervoltage was satisfied and it stroked open. When the unit is in Modes 1-4, opening 1MS-70 valve will cause the TDAFW Pump to start due to the availability of steam in the steam generators. The procedure did not contain information on the operator prerequisite sheet or in the procedure body to indicate that the TDAFW pump would start when this procedure was performed.

During the investigation of the above described condition, which was performed by an Event Review Team, an additional TDAFW Pump testing deficiency was identified. The monthly Trip Actuating Device Operational Test (TADOT) requirements for the 6.9kV safety busses apply to both the Motor Driven AFW pumps and the TDAFW pump. Since the originating signal for the Motor Driven AFW pumps is the respective train's 86UV relay, the performance of OST-1124 (Emergency Bus Undervoltage TADOT) has satisfied the requirement for the Motor Driven AFW pumps, via visual observation that the relays have rolled. It was believed that this test also satisfied the Technical Specification requirement for the TDAFW pump. However, since the function of the 86UVX relay, which must actuate to complete the circuit for the TDAFW Pump, was not fully understood, the test procedures did not contain guidance to verify the 86UVX relay's actuation. Hence there has been no monthly testing to verify its actuation during the TADOT for the TDAFW Pump. Since there are no local indications that the 86UVX relay has rolled to its actuate position, the only way to verify operability is to check the output of the 86UVX relay contacts. This output is an open demand signal to 1MS-70 on the 1A-SA safety bus and 1MS-72 on the 1B-SB safety bus. Although this feature was tested during each refueling outage (by OST-1823 and OST-1824), the monthly requirement for the TDAFW pump was never realized.

**CAUSE:**

The cause of both events was procedural deficiency. In the case of the unplanned TDAFW Pump start, adequate guidance was not contained in the test procedure to ensure that personnel were made aware of the signal generated to open 1MS-70. For the TADOT condition, the requirement to verify the operability of the open signal the TDAFW Pump Steam Supply Valves (1MS-70 & 72), was never realized and subsequently was not included in the test procedure.

**LICENSEE EVENT REPORT (LER)**

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FACILITY NAME (1)		DOCKET NUMBER (2)		LER NUMBER (6)			PAGE (3)
Shearon Harris Nuclear Plant - Unit #1		05000/400		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	3 OF 3
				95	007	00	

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

**SAFETY SIGNIFICANCE:**

There were no safety consequences as a result of this event. The unplanned TDAFW Pump start caused no adverse affects to safe plant operation, nor did it render any additional safety components inoperable. AFW flow to the Steam Generators was secured by Operations personnel in the control room.

Although the TADOT testing of OST-1124 did not properly verify the presence of an open signal to TDAFW Steam Supply Valves 1MS-70 & 72, or the actuation of these valves on a monthly basis, the feature was satisfactorily tested during each refueling outage by deenergizing the safety bus during the performance of Emergency Diesel Generator Operability Testing (OST-1823 & 1824).

**PREVIOUS SIMILAR LERs:**

LER's 94-001, 95-001 and 95-003 are cases of recent similar Technical Specification surveillance testing deficiencies. As a result of these LER's a comprehensive review of the implementation of Technical Specification surveillance requirements will be completed. The heightened level of awareness resulting from the previous LER's contributed to the identification of the TDAFW Pump TADOT deficiency.

There have been no previous LER's submitted related to an unplanned AFW pump start with a similar root cause.

**CORRECTIVE ACTIONS PLANNED:**

1. Procedure revisions will be made to OST-1124, MST-E0034 and MST-E0044 to correct the surveillance testing deficiencies.
2. A comprehensive review of the implementation of Technical Specification surveillance requirements will be completed.

**EIIS INFORMATION:**

System Name/Code:

Auxiliary Feedwater System - BA

Component Code:

TDAFW Pump - P

Relay - RLY