

# ACCELERATED DISTRIBUTION DEMONSTRATION SYSTEM

## REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)

ACCESSION NBR: 9202250309      DOC. DATE: 92/02/18      NOTARIZED: NO      DOCKET #  
 FACIL: 50-400 Shearon Harris Nuclear Power Plant, Unit 1, Carolina      05000400  
 -AUTH. NAME      AUTHOR AFFILIATION  
 VERILLI, M.      Carolina Power & Light Co.  
 HINNANT, C.S.      Carolina Power & Light Co.  
 RECIP. NAME      RECIPIENT AFFILIATION

SUBJECT: LER 92-002-00: on 920119, problems encountered w/plant process computer. Caused by failure to restart program that performs sump leak rate calculations & data transmission error. Computer sys will be upgraded. W/920218 ltr.

DISTRIBUTION CODE: IE22T      COPIES RECEIVED: LTR 1 ENCL 1 SIZE: 4  
 TITLE: 50.73/50.9 Licensee Event Report (LER), Incident Rpt, etc.

NOTES: Application for permit renewal filed. 05000400

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	AEOD/DOA	1 1	AEOD/DSP/TPAB	1 1
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	NRR/DLPQ/LHFB10	1 1	NRR/DLPQ/LPEB10	1 1
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EXTERNAL:	EG&G BRYCE, J.H	3 3	L ST LOBBY WARD	1 1
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Carolina Power & Light Company

P.O. Box 165 New Hill, N.C. 27562

C. S. HINNANT  
General Manager - Harris Plant

FEB 18 1992

Letter Number: HO-920048 (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 92-002-00

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

C. S. Hinnant  
General Manager  
Harris Nuclear Project

MV:dmw

Enclosure

cc: Mr. S. D. Ebnetter (NRC - RII)  
Ms. B. L. Mozafari (NRC - RII)  
Mr. R. B. Richey  
Mr. J. E. Tedrow (NRC - SHNPP)

9202250309 920218  
PDR ADOCK 05000400  
S PDR

MEM/LER92-002/1/OS1

240100

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-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) <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 3</b>
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TITLE (4) **Technical Specification violation due to undetected failure of Plant Process Computer**

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 NAMES		DOCKET NUMBER(S)
01	19	92	92	002	000	01	18	92			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>1 0 0</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"/> 20.405(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)(vii)	OTHER (Specify in Abstract below and in Text, NRC Form 366A)						
	<input type="checkbox"/> 20.405(a)(1)(iii)	<input checked="" type="checkbox"/> 50.73(a)(2)(i)	<input type="checkbox"/> 50.73(a)(2)(viii)(A)							
	<input type="checkbox"/> 20.405(a)(1)(iv)	<input type="checkbox"/> 50.73(a)(2)(ii)	<input type="checkbox"/> 50.73(a)(2)(viii)(B)							
<input type="checkbox"/> 20.405(a)(1)(v)	<input type="checkbox"/> 50.73(a)(2)(iii)	<input type="checkbox"/> 50.73(a)(2)(x)								

LICENSEE CONTACT FOR THIS LER (12)

NAME <b>Michael Verrilli Specialist - Regulatory Compliance</b>	TELEPHONE NUMBER <b>9 1 9 3 6 2 - 2 3 0 3</b>
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COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPROS	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPROS
B	I	D C   P U	G	1 8   2 N					

SUPPLEMENTAL REPORT EXPECTED (14)

YES (If yes, complete EXPECTED SUBMISSION DATE)  NO

EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR

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

**ABSTRACT:**

At 0600 on 1/19/92, problems were encountered with the plant process computer. A subroutine of this computer performs the containment sump leakrate calculation to satisfy Technical Specification 3.4.6.1.b. By 1100, control room personnel and a plant computer technician completed efforts that were thought to restore the sump leakrate function. With these efforts complete and indications of normal system operation, manual logging of sump level and the corresponding leakrate calculation was secured. At 0710, the following morning, the system engineer for the computer was informed of the problems from the previous day and began additional investigation. This investigation revealed that the program that performs the sump leakrate calculation, had not restarted as required. This prevented the program from operating properly. The Shift Supervisor was immediately informed of this condition. The program was declared inoperable and manual logging was commenced. This event had two causes. The first was a data transmission error that was sensed by the computer, as a disk failure on the "A" central processing unit. The second was a procedural inadequacy that allowed the program to be restored to service while it was not actually functional. The problem with the program was corrected by the system engineer and it was declared operable at 1115. Additional corrective actions will include procedure enhancements and improvements to the process computer.

LICENSEE EVENT REPORT (LER)  
TEXT CONTINUATION

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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	SEQUENTIAL NUMBER	REVISION NUMBER		
		9   2	—   0   0   2	—   0   0	0   2	OF 0   3

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

EVENT DESCRIPTION:

At 0600 on 1/19/92, with the plant operating in mode-1 at 100% power, the "A" Central Processing Unit (CPU) of the plant Emergency Response Facility Information System (ERFIS) Computer failed. A subroutine of this computer performs the containment sump leakrate calculation required by Technical Specification (TS) 3.4.6.1.b. Automatic failover to the "B" CPU immediately took place, but due to problems that had recently occurred with the "B" CPU, the control room staff felt uncertain of the computers reliability and declared it inoperable. By 0620, the Shift Technical Advisor had successfully restored the "A" CPU to service and procedures were completed that verified the ERFIS computer's operability. Within the next two hours, additional problems occurred that again rendered the computers reliability questionable. A computer technician was called to the site at this time to investigate and assist the control room staff. At approximately 0900 it was determined that a system "re-boot" would be performed. This is a process that requires the computer to be taken out of service for about ten minutes. The computer was declared inoperable at 0918 and compensatory manual logging of sump level was commenced. The "re-boot" process was completed, but several ERFIS functions still failed to operate properly, including the display of "unknown" quality codes for the containment sump leakrate values. These quality codes were expected to return to "good" after the first half hour, but did not. At approximately 1030 hours the control room staff decided to perform Operations Surveillance Test OST-1026. This test determines total Reactor Coolant System Leakage and provides a baseline value for the containment sump leakrate program. When the test was completed and the new baseline value entered, all computer points associated with the containment sump leakrate program returned to their expected values and the quality codes indicated "Good". Operations Work Procedure (OWP-ERFIS) was then satisfactorily performed to verify the programs operability. With completion of these efforts and apparent proper operation of the program, manual logging of sump level was secured.

At 0710, the following morning, the system engineer for the ERFIS computer was informed of these problems and began additional investigation. This investigation revealed that regardless of the apparent proper operation of the program and satisfactory testing to verify operability, a portion of the leakrate calculation had not restarted as required. This condition would have prevented the leakrate program from detecting a one gallon per minute increase in containment sump inleakage, as required by Technical Specifications.

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

No previous LER's have been reported that have the same cause for this Technical Specification violation.

LICENSEE EVENT REPORT (LER)  
TEXT CONTINUATION

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		YEAR 9   2	SEQUENTIAL NUMBER -   0   0   2	REVISION NUMBER -   0   0	0   3	OF 0   3

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

CAUSE:

There were two causes for this event. The first was a data transmission error that occurred between the data disk and the "A" CPU. This error was sensed by the computer as a disk failure, which automatically shutdown the "A" CPU and caused the failover to the backup unit. During the re-boot process this transmission error prevented a portion of the leakrate program from restarting. This was verified by the system engineer during diagnostic testing on the morning of 1/20/92. The second cause was a procedural inadequacy. The procedure used to verify proper operation of the leakrate program did not contain adequate detail to detect a failure of the type previously described.

SAFETY SIGNIFICANCE:

The potential safety consequences of this event were minimal. Indication of RCS inventory (Volume Control Tank level) is monitored continuously and logged once per hour by control room personnel. Containment sump level is logged every six hours and a total RCS leak rate calculation is performed daily. A VCT low level alarm is also available that would alert operators of a potential lowering of RCS inventory and the associated increase in containment sump inleakage flow rate. If a leak had occurred in the RCS that was large enough to increase the containment sump in leakage flow rate by one gallon per minute, adequate means to detect this condition were available for control room personnel.

CORRECTIVE ACTIONS:

1. The problem with the leakrate program was corrected by the system engineer on 1/20/91. Testing was performed that verified proper operation and the program was declared operable at 1115 hours on 1/20/91.
2. Efforts are currently in progress that will increase the computers reliability. These include an upgrade that will be performed by the computer system vendor and the purchase and installation of new data disks.
3. The Operations Work Procedure for the process computer (OWP-ERFIS) will be enhanced to provide adequate detail to ensure the proper operation of the TS related functions that are performed by ERFIS.