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FACIL:50-400 Shearon Harris Nuclear Power Plant, Unit 1, Carolina 05000400
AUTH.NAME AUTHOR AFFILIATION
VERRILLI,M. Carolina Power & Light Co.
ROBINSON,W.R. Carolina Power & Light Co.
RECIP.NAME RECIPIENT AFFILIATION

SUBJECT: LER 93-004-00:on 930413,discoverd that two CR ventilation dampers not tested within required surveillance interval due to personnel error.Operations Surveillance Test OST-1131 revised & event reviewed by ISI personnel.W/930511 ltr.

DISTRIBUTION CODE: IE22T COPIES RECEIVED:LTR 1 ENCL 1 SIZE: 5
TITLE: 50.73/50.9 Licensee Event Report (LER), Incident Rpt, etc.

NOTES:Application for permit renewal filed. 05000400

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HARRIS NUCLEAR PLANT
P.O. Box 165
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MAY 1 1 1993

Letter Number: HO-930103

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 93-004-00

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,

W. R. Robinson
General Manager
Harris Nuclear Plant

MV:kls

Enclosure

cc: Mr. S. D. Ebneter (NRC - RII)
Mr. N. B. Le (NRC - PM/NRR)
Mr. J. E. Tedrow (NRC - SHNPP)
Mr. G. E. Vaughn

170048

MEM/LER93-004/1/OS1

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NRC FORM 366 (5-92) U.S. NUCLEAR REGULATORY COMMISSION

APPROVED BY OMB NO. 3150-0104
EXPIRES 5/31/95

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.

LICENSEE EVENT REPORT (LER)

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

FACILITY NAME (1)	DOCKET NUMBER (2)	PAGE (3)
Shearon Harris Nuclear Plant-Unit #1	05000/400	1 OF 4

TITLE (4) Two Control Room Ventilation dampers were not tested within their required surveillance interval, which resulted in a Technical Specification violation.

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
4	13	93	93	-- 004 --	00	5	12	93		05000
									FACILITY NAME	DOCKET NUMBER 05000

OPERATING MODE (9)	1
POWER LEVEL (10)	100

THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more) (11)

	20.402(b)		20.405(c)		50.73(a)(2)(iv)		73.71(b)
	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)(i)		50.73(a)(2)(viii)(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)(viii)(B)		
	20.405(a)(1)(v)		50.73(a)(2)(iii)		50.73(a)(2)(x)		

LICENSEE CONTACT FOR THIS LER (12)

NAME	TELEPHONE NUMBER (Include Area Code)
Michael Verrilli	(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)			EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR
	YES (If yes, complete EXPECTED SUBMISSION DATE).	X NO				

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

On April 13, 1993 Technical Support personnel discovered that Control Room Ventilation System valves 1CZ-19 and 1CZ-20 had not been tested within their quarterly surveillance test interval as required by Technical Specifications (TS). On several occasions since plant startup, dampers CZ-D19 and CZ-D20 were mistakenly stroked instead of the valves. The cause of these occurrences was personnel error on the part of Operations personnel performing the quarterly tests and inadequate review and trending of test data results by ISI personnel in the past. An additional factor that contributed to the error was poor human factors considerations related to the numbering and labeling of ventilation system components on the main control board. Corrective actions included the development of two Operations Night Orders which outlined the error and re-emphasized the importance of strict procedure compliance and attention to detail. The test procedure was also revised to include a clarifying statement and training for Operations personnel will be conducted. An evaluation will be performed and appropriate enhancements will be made to the labeling scheme on the main control board. Recent improvements have been made to the ISI review process, including a more thorough evaluation of test data results and the incorporation of data point trending plots. These improvements contributed to the identification of this error. Additional improvements are being evaluated that will enhance the ISI program to ensure timely resolution of discrepancies identified during the review process.

EVENT DESCRIPTION:

On April 13, 1993, Technical Support In-Service-Inspection (ISI) personnel concluded an investigation into stroke time testing results for valves 1CZ-19 and 1CZ-20. It was determined during this investigation that on several occasions since plant startup, dampers CZ-D19 and CZ-D20 were mistakenly stroked instead of valves 1CZ-19 and 1CZ-20. This was evident due to the significantly shorter stroke time for the dampers as compared to the stroke time for the valves, (nominal stroke time for valves 20-26 sec./ dampers 6-8 sec.). All four of these components are in the Main Control Room Ventilation System. 1CZ-19 and 1CZ-20 are motor operated discharge valves for the R-2 Control Room Emergency Filtration Units and CZ-D19 and CZ-D20 are motor operated dampers in the return line for Control Room Normal Recirculation. The control switches and position indication status light boxes for each of these components are located in the same general location on the main control board.

Operations Surveillance Test, OST-1131 (Control Room HVAC ISI Test Quarterly Interval) requires 1CZ-19 and 1CZ-20 to be stroke time tested once per 92 days to satisfy the surveillance requirements of Technical Specification (TS) 4.0.5 / ASME Code Section XI In-Service-Testing. An additional 25% margin is also allowed by TS, therefore each valve must be tested at least once per 115 days. This test interval was exceeded a total of four times (1 time for 1CZ-19 and 3 times for 1CZ-20) since commercial operation began in 1987, due to the above described mistake. This condition constitutes a TS surveillance requirement violation and is being reported in accordance with 10CFR50.73 (a)(2)(i)(B). Previous missed TS surveillance requirement reports have been submitted, but none with a similar root cause.

CAUSE:

This event was caused by personnel error on the part of Operations personnel performing Surveillance Test OST-1131. Adequate self-checking techniques and attention to detail were not applied by control room operators to prevent manipulating the wrong components during testing. An additional cause was inadequate review and trending of test data results by ISI personnel. Following testing, it is the responsibility of the ISI group to analyze the test data results to ensure that valve stroke times are within the acceptable band and to trend these results to identify potential problems. If adequate trending, analysis and timely resolution of identified discrepancies had been performed in the past, this problem may have been identified earlier and would have resulted in proper retesting of the Control Room HVAC System, which would have prevented the surveillance interval from being exceeded. Current review mechanisms used by the ISI group did facilitate the identification, documentation and resolution of this problem.

CAUSE: (cont.)
An additional element that significantly contributed to this event were human factors deficiencies on the Main Control Board. The numerical designations and labels for Control Room HVAC System components on this portion of the control board are similar and increased the potential for error, i.e., the numbering sequences "1CZ-19" and "CZ-D19". Additionally, the fact that the fan control "T" switches tend to cover the noun name on the component label plates and the inconsistent conversion of numeric designations to simplified flow diagram component numbers were also contributors. This combination of deficiencies has resulted in a total of fourteen improper component malfunctions during OST-1131 testing, four of which exceeded the TS interval, by multiple individuals, since commercial operation began in 1987.

SAFETY SIGNIFICANCE:
There were no significant safety consequences as a result of this event. After each exceeded testing interval, valves 1CZ-19 and 1CZ-20 successfully passed the subsequent surveillance test and displayed stroke times nearly identical to the stroke time obtained during the previous properly performed test (see table below). This demonstrates that even though the 92 day, plus 25% margin was exceeded, the valves were functional and would have been fully capable of performing their design function had an accident occurred.

CORRECTIVE ACTIONS:
1. Guidance in the form of two Operations Night Orders was developed and disseminated to personnel for review. This guidance outlines the event and re-emphasizes the need for increased attention to detail and strict procedure compliance.

2. Operations Surveillance Test OST-1131 was revised to include a clarification and caution note to alert Operations personnel of the numbering similarities between Control Room HVAC dampers and valves.

3. Real Time Training will be conducted for Operations personnel which will include a walk through of OST-1131 to demonstrate proper identification of system components.

4. This event has been reviewed by ISI personnel to ensure that a thorough understanding of review and trending requirements exists. Additional improvements are being evaluated to provide enhancements to the ISI program, to ensure timely resolution of discrepancies identified during the review process.

5. An additional evaluation will be performed and needed enhancements will be made to correct similar problems on the Main Control Board.

EIIS INFORMATION:

Control Room Environmental Control System - VI

OST-1131 Test Intervals That Exceeded 115 days:

1CZ-19		1CZ-20	
Date	Stroke Time	Date	Stroke Time
3/15/92	24.33 sec.	12/29/88	26.71 sec.
8/30/92	24.45 sec. (168 days)	06/08/89	26.43 sec. (161 days)
		01/18/91	26.59 sec.
		06/10/91	26.41 sec. (143 days)
		03/15/92	26.27 sec.
		08/30/92	26.86 sec. (168 days)