

# CATEGORY 1

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 FACIL:50-400 Shearon Harris Nuclear Power Plant, Unit 1, Carolina      05000400  
 AUTH.NAME      AUTHOR AFFILIATION  
 ELLINGTON,M.      Carolina Power & Light Co.  
 CLARK,B.H.      Carolina Power & Light Co.  
 RECIP.NAME      RECIPIENT AFFILIATION

SUBJECT: LER 99-006-00:on 981124,failed to comply with TS 4.0.4 & TS 3/4.6.3, "CIV." Caused by post-maint testing that did not adequately test control circuitry & verify isolation time following maint.Procedure will be revised.With 990604 ltr. C  
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NOTES:Application for permit renewal filed. 05000400 G

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Serial: HNP-99-098  
10CFR50.73

SHEARON HARRIS NUCLEAR POWER PLANT UNIT 1  
DOCKET NO. 50-400  
LICENSE NO. NPF-63  
LICENSEE EVENT REPORT 1999-006-00

Sir or Madam:

In accordance with 10CFR50.73, the enclosed Licensee Event Report is submitted. This report describes a condition which resulted in exceeding the requirements of Technical Specifications for Containment Isolation Valves and Technical Specification 4.0.4 for generic requirements for surveillance testing.

Sincerely,

B.H. Clark  
General Manager  
Harris Plant

MSE/mse

Enclosure

- c: Mr. J. B. Brady (HNP Senior NRC Resident)
- Mr. R. J. Laufer (NRC - NRR Project Manager)
- Mr. L. A. Reyes (NRC Regional Administrator, Region II)

9906100064 990604  
PDR ADDCK 05000400  
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**LICENSEE EVENT REPORT (LER)**

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

FACILITY NAME (1) <b>Harris Nuclear Plant, Unit 1</b>	DOCKET NUMBER (2) <b>05000400</b>	PAGE (3) <b>1 OF 3</b>
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TITLE (4)  
**Containment Isolation Valve Technical Specification Noncompliance**

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	
11	24	1998	1999	006	00	06	04	1999	FACILITY NAME	DOCKET NUMBER <b>05000</b>	
OPERATING MODE (9) <b>4</b>			THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §. (Check one or more) (11)								
POWER LEVEL (10) <b>000</b>			20.2201(b)			20.2203(a)(2)(v)			x	50.73(a)(2)(i)	50.73(a)(2)(viii)
			20.2203(a)(1)			20.2203(a)(3)(i)				50.73(a)(2)(ii)	50.73(a)(2)(x)
			20.2203(a)(2)(i)			20.2203(a)(3)(ii)				50.73(a)(2)(iii)	73.71
			20.2203(a)(2)(ii)			20.2203(a)(4)				50.73(a)(2)(iv)	OTHER
			20.2203(a)(2)(iii)			50.36(c)(1)				50.73(a)(2)(v)	Specify in Abstract below
			20.2203(a)(2)(iv)			50.36(c)(2)				50.73(a)(2)(vii)	or in NRC Form 366A

LICENSEE CONTACT FOR THIS LER (12)

NAME <b>Mark Ellington, Senior Analyst - Licensing</b>	TELEPHONE NUMBER (Include Area Code) <b>(919) 362-2057</b>
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COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPIX	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPIX
D	CC	ISV	LIMITORQUE	Y					

SUPPLEMENTAL REPORT EXPECTED (14)

<input checked="" type="checkbox"/> YES (If yes, complete EXPECTED SUBMISSION DATE).	<input type="checkbox"/> NO	EXPECTED	MONTH <b>07</b>	DAY <b>07</b>	YEAR <b>1999</b>
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ABSTRACT (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines) (16)

At 16:39 on November 24, 1998, with the Harris Nuclear Plant (HNP) shutdown in Mode 4, HNP failed to comply with Technical Specifications (TS) 4.0.4 and TS 3/4.6.3 "Containment Isolation Valves."

On May 6, 1999, HNP determined that Containment Isolation Valve, ICC-176 was inoperable following preventive maintenance performed during the previous refueling outage. Post-maintenance Testing performed on ICC-176 was inadequate in that safety-related portions of the valve circuitry were not adequately tested following maintenance. Subsequent investigation determined that TS Surveillance 4.6.3.1 was not performed as required on ICC-202 and ICC-176 in that HNP failed to verify isolation time following maintenance on the valves control circuitry. Therefore, when HNP changed from Mode 5 to Mode 4 on November 24, 1998, HNP was in noncompliance with TS 4.0.4. In addition, with ICC-176 inoperable, HNP violated TS 3.6.3 due to not performing the required actions within the specified action time. On December 6, 1998, ICC-176 failed to automatically shut during an applicable slave relay test. The associated penetration was isolated within four hours as required by TS 3.6.3.b. ICC-176 was subsequently repaired and satisfactorily retested. ICC-202 was not restored to compliance until the isolation time was verified on December 22, 1998 during normal quarterly inservice testing. The investigation of the failure to recognize the applicability of TS 4.6.3.1 for the maintenance performed on ICC-176 and ICC-202 is currently ongoing.

Cause of this TS violation: (1.) Post-maintenance testing did not adequately test control circuitry and verify isolation time following maintenance. Corrective actions include: (1.) Revise the plant post-maintenance testing procedure to identify appropriate testing requirements for the preventive maintenance associated with this event. (2.) Perform training with applicable site personnel on identifying proper post-maintenance testing requirements for motor operated valves.

LICENSEE EVENT REPORT (LER)  
TEXT CONTINUATION

FACILITY NAME (1) Harris Nuclear Plant, Unit 1	DOCKET 05000400	LER NUMBER (8)			PAGE (3) 2 OF 3
		YEAR 1999	SEQUENTIAL NUMBER 006	REVISION NUMBER 00	

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

**I. DESCRIPTION OF EVENT**

At 16:39 on November 24, 1998, with the Harris Nuclear Plant (HNP) shutdown in Mode 4, HNP failed to comply with Technical Specifications (TS) 4.0.4 and TS 3/4.6.3 "Containment Isolation Valves."

On October 29, 1998, preventive maintenance was performed on the valve actuator for containment isolation valve ICC-202. On November 11, 1998, similar preventive maintenance was performed on containment isolation valve ICC-176 (EHS CC-ISV). The preventive maintenance performed on ICC-176 inadvertently misaligned contacts associated with the automatic isolation signal used to close the valve. The preventive maintenance for both ICC-176 and ICC-202 was performed in mode 5 when the valves were not required to be operable per TS 3/4.6.3. The post-maintenance test for the applicable valves consisted of a cycling test using the associated control switch on the main control board. Contrary to TS 4.6.3.1, a verification of isolation time was not performed. Additionally, adequate post-maintenance testing was not performed on the automatic portion of circuitry affected by the maintenance.

On November 21, 1998, HNP performed plant procedure OST-1825 "ESF Response Time Train A" which normally includes cycling of ICC-202 and ICC-176. During the performance of this test, ICC-176 failed to isolate as expected on an automatic signal. However, verification of ICC-176 was not part of the acceptance criteria for OST-1825 and therefore inoperability of ICC-176 was not identified at that time. ICC-202 automatically isolated during performance of OST-1825. Therefore, the automatic isolation circuitry for ICC-202 was verified by testing prior to entering a mode when it was required to be operable.

On November 24, 1998, HNP entered Mode 4. TS 3/4.6.3, Containment Isolation Valves, is applicable in Modes 1 - 4. Failure to perform TS 4.6.3.1 for ICC-176 and ICC-202 and subsequent entry into Mode 4 resulted in non-compliance with TS 4.6.3.1 and TS 4.0.4. In addition, with ICC-176 inoperable, HNP violated TS 3.6.3 due to not performing the required actions within the specified action time

On December 6, 1998, HNP performed plant procedure OST-1045 which partially implements the TS requirement to perform a quarterly slave relay test per TS 3/4.3.2 "Engineered Safety Features Actuation System Instrumentation". During performance of this test, plant personnel determined that ICC-176 would not isolate on an automatic signal. Plant personnel isolated the affected penetration within four hours of identifying ICC-176 inoperability as required by TS 3.6.3.b. On December 7, 1998, HNP repaired ICC-176 and restored operability by performance of a cycling test, a verification of automatic isolation upon receipt of an isolation test signal, and satisfactory verification of isolation time.

On December 22, 1998, plant personnel performed a scheduled quarterly inservice test. During performance of this test, containment isolation valve, ICC-202, successfully passed an isolation time test restoring ICC-202 to compliance with TS 4.6.3.1.

On May 6, 1999 during evaluation of the performance of OST-1825, it was determined conclusively that ICC-176 had been inoperable from November 24, 1998 until December 7, 1998. Subsequent evaluation determined that isolation time testing had not been performed in accordance with TS 4.6.3.1 following maintenance on the control circuits for ICC-176 and ICC-202.

ICC-176 is the Component Cooling Water (CCW) containment isolation valve to the Reactor Coolant Drain Tank Heat Exchanger and Excess Letdown Heat Exchanger. ICC-202 is the Component Cooling Water containment isolation valve from the Reactor Coolant Drain Tank Heat Exchanger and Excess Letdown Heat Exchanger. These valves are used to isolate separate penetrations and are therefore not redundant. CCW to and from the Reactor Coolant Drain Tank Heat Exchanger and the Excess Letdown Heat Exchanger are considered General Design Criteria 57 type penetrations which rely on the closed system inside of containment to provide redundancy to the containment isolation valves located outside containment. ICC-176 and ICC-202 are designed to shut upon the receipt of a Containment Isolation Phase "A" signal to isolate CCW to non-essential heat exchangers located in containment.

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TEXT CONTINUATION

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Harris Nuclear Plant, Unit 1	05000400	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	3	OF 3
		1999	-- 006	-- 00		

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

The preventive maintenance (PM) activity associated with this event was a Motor Operated Valve (MOV) Limitorque Lubrication and Inspection procedure. A Limitorque base plate was inadvertently misaligned during this PM for ICC-176 resulting in contacts associated with the automatic closure signal being misaligned. Previous to this event, plant personnel considered that the Limitorque valve automatic closure circuitry was common to the Limitorque main control board (MCB) switch manual closure circuitry. Investigation has determined following this event that certain Limitorque MOVs have a separate circuitry associated with automatic valve closure. A test using the MCB switch for these certain Limitorque MOVs would not verify automatic valve closure operability. Plant personnel performed a visual check of Limitorque base plate alignment following maintenance. This visual check did not identify the misalignment of the base plate for ICC-176. The base plate for ICC-202 was not misaligned as a result of the specified PM activity. However, HNP failed to perform TS 4.6.3.1 for isolation time verification. Subsequent testing of automatic closure capability and isolation time verification determined that the specified PM did not affect the ability of ICC-202 to perform its safety function. The investigation of the failure to recognize the applicability of TS 4.6.3.1 for the maintenance performed on ICC-176 and ICC-202 is currently ongoing. The results of this ongoing investigation will be reported in a revision to this LER.

II. CAUSE OF EVENT

1. Post-maintenance testing did not adequately test control circuitry and verify isolation time following maintenance.

III. SAFETY SIGNIFICANCE

There were no actual safety consequences as a result of this event. ICC-202 remained capable of performing its required safety function as demonstrated through subsequent testing following maintenance. Redundant containment isolation capability was provided for ICC-176 and ICC-202 by the intact closed CCW system inside containment. Additionally, manual isolation capability was available to close ICC-176.

This is being reported per 10 CFR 50.73(a)(2)(i) as a operation or condition prohibited by Technical Specifications.

IV. CORRECTIVE ACTIONS

1. Revise the plant post-maintenance testing procedure to identify appropriate testing requirements for the preventive maintenance associated with this event.
2. Perform training with applicable site personnel on identifying proper post-maintenance testing requirements for motor operated valves.

V. SIMILAR EVENTS

There were no HNP events identified where maintenance on Limitorque valves and subsequent inadequate testing caused a TS required valve to be inoperable.