

CATEGORY 1

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ACCESSION NBR: 9708060130 DOC. DATE: 97/08/01 NOTARIZED: NO DOCKET #
 FACIL: 50-261 H.B. Robinson Plant, Unit 2, Carolina Power & Light Co 05000261
 AUTH. NAME AUTHOR AFFILIATION
 CHERNOFF, H.K. Carolina Power & Light Co.
 MOYER, J.W. Carolina Power & Light Co.
 RECIP. NAME RECIPIENT AFFILIATION

SUBJECT: LER 97-009-00: on 970702, discovered inadequate existing
 procedures for testing of containment isolation valve
 leakage. Caused by personnel error. Performed leakage test,
 will revise procedures & conduct training. W/970801 ltr.

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**Carolina Power & Light Company**

Robinson Nuclear Plant
3581 West Entrance Road
Hartsville SC 29550

Robinson File No: 13510C

Serial: RNP-RA/97-0174

AUG 01 1997

United States Nuclear Regulatory Commission

Attn: Document Control Desk

Washington, DC 20555

H. B. ROBINSON STEAM ELECTRIC PLANT, UNIT NO. 2

DOCKET NO. 50-261/LICENSE NO. DPR-23

LICENSEE EVENT REPORT NO. 97-09-00

Gentlemen:

The attached Licensee Event Report is submitted in accordance with 10 CFR 50.73. Should you have any questions regarding this matter, please contact Mr. H. K. Chernoff at (803) 857-1437.

Very truly yours,

J. W. Moyer
Plant General Manager

9708060130 970801
PDR ADOCK 05000261
S PDR

Attachment

- c: Mr. L. A. Reyes, Regional Administrator, USNRC, Region II
Ms. B. L. Mozafari, USNRC Project Manager, HBRSEP
Mr. B. B. Desai, USNRC Senior Resident Inspector, HBRSEP



NRC FORM 366 U.S. NUCLEAR REGULATORY COMMISSION
(4-95)

APPROVED BY OMB NO. 3150-0104 EXPIRES 04/30/98

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS MANDATORY 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 (T-6 F33), 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)

FACILITY NAME (1)

H. B. ROBINSON STEAM ELECTRIC PLANT, UNIT NO. 2

DOCKET NUMBER (2)

50-261

PAGE (3)

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TITLE (4)

TECHNICAL SPECIFICATION VIOLATION DUE TO INADEQUATE SURVEILLANCE TEST PROCEDURE

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
07	02	97	97	--	09 -- 00	08	01	97	FACILITY NAME	DOCKET NUMBER
OPERATING		N	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more) (11)							
			20.2201(b)			20.2203(a)(2)(v)			<input checked="" type="checkbox"/> 50.73(a)(2)(i)	50.73(a)(2)(viii)
POWER		100	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 Appx. G(I)(b)
			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 or in NRC Form 366A
			20.2203(a)(2)(iv)			50.36(c)(2)			50.73(a)(2)(vii)	

LICENSEE CONTACT FOR THIS LER (12)

NAME

H. K. Chernoff, Supervisor, Licensing/Regulatory Programs

TELEPHONE NUMBER (Include Area Code)

(803) 857-1437

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).

☒ NO

EXPECTED

MONTH

DAY

YEAR

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

On July 2, 1997, during a self-assessment, plant engineering personnel discovered that existing procedures for periodic testing of containment isolation valve leakage was not adequate because a proper vent path to measure leakage from the valves had not been established. A second valve subject to this condition was discovered on July 3, 1997. Valve RC-553 was declared inoperable at 0948 hours on July 2, 1997, and valve WD-1794 was declared inoperable at 1435 hours on July 3, 1997. The Technical Specifications (TS) action statement for inoperable containment isolation valves was entered, and the affected containment penetrations were isolated. A proper vent path for each valve was established, and a leakage test was subsequently performed. The test results concluded that the leakage rates for the valves were within specified acceptance criteria. This condition was caused by personnel error. Previous reviews of procedures failed to identify the proper vent path for these containment isolation valves. An assessment of the containment isolation valve leakage rate testing program was conducted, and no similar testing deficiencies were identified. This condition did not have a significant impact on plant safety, since subsequent testing confirmed that the leakage rates for the valves were within their acceptance limits. Therefore, these valves would have performed their safety function if an event where maintaining containment integrity would be required had occurred. Procedures will be revised to establish the proper testing configuration by October 15, 1997. Training will be conducted by October 15, 1997, to emphasize the need to conduct adequate technical reviews of procedure changes.

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(4-95)

U.S. NUCLEAR REGULATORY COMMISSION

LICENSEE EVENT REPORT (LER)

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		97	-- 09	-- 00	

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

I. DESCRIPTION OF EVENT

On July 2, 1997, during an assessment of the H. B. Robinson Steam Electric Plant (HBRSEP), Unit No. 2, 10 CFR 50, Appendix J Containment Leakage Testing Program, plant engineering personnel identified that Operations Surveillance Test (OST)-933, "Containment Isolation Valve Leakage Test," did not establish a proper vent path to measure leakage from valve Reactor Coolant (RC)-553 (EIS System Code: AB; Component: ISV). Valve RC-553 was declared inoperable at 0948 hours. On July 3, 1997, this concern was identified to exist for valve Waste Disposal (WD)-1794 (EIS System Code: WD; Component: ISV). Valve WD-1794 was declared inoperable at 1435 hours. Valve RC-553, Pressurizer Relief Tank (PRT)(EIS Component Code: TK) to the Gas Analyzer, is a containment isolation valve for Containment Penetration No. 1 (EIS Component Code: PEN). It is a normally closed, fail closed, air operated valve that is automatically actuated by a signal from the Gas Analyzer controller. Valve WD-1794, Reactor Coolant Drain Tank (RCDT) (EIS Code: TK) to the Gas Analyzer, is a containment isolation valve for Containment Penetration No. 5. This valve is a normally open, air operated valve, that is automatically actuated by a signal from the Gas Analyzer controller. Both of these valves close on a containment isolation phase "A" trip signal. These valves are served by the Isolation Valve Seal Water (IVSW) (EIS System Code: BD) system, which assures the effectiveness of the containment isolation valves under certain accident conditions by injecting seal water between the seats of the valves, blocking leakage from the containment. The vent paths specified in OST-933 for valves RC-553 and WD-1794 are such that containment isolation valve leakage would be vented through a pressure regulator valve in the line to the tank associated with each valve (i.e., the PRT and the RCDT, respectively). The leakage flow paths through the pressure regulator valves is in the opposite direction of the normal flow paths. The investigation of this concern, which included a bench test where pressure was applied in the reverse direction to a valve of the same model number, determined that the pressure regulator valves will not pass flow in the reverse direction. Therefore, the previously established leakage rate test for both valves RC-553 and WD-1794 was determined to be invalid, since the actual leakage rate was unknown.

On July 11, 1997, Special Procedures (SP)-1405, "Containment Isolation Valve Leakage Test for RC-553," and SP-1406, "Containment Isolation Valve Leakage Test for WD-1794," were performed. Test results indicate that the leakage rates for both valves were within their acceptance criteria. Valves RC-553 and WD-1794 were returned to service at 1717 hours.

The assessment of the 10 CFR 50, Appendix J Program, which resulted in the identification of these concerns, was completed on June 27, 1997. This assessment included a review of plant procedures associated with the 10 CFR 50, Appendix J Program. No similar testing deficiencies were identified.

Technical Specifications (TS) Section 4.4.2, "Isolation Valve Tests," requires that isolation valves be tested for operability at each refueling. The purpose of OST-933 is to satisfy the requirements of 10 CFR 50, Appendix J, and TS Section 4.4.2 for valves RC-553 and WD-1794. Since OST-933 did not establish a proper testing configuration for containment isolation valves RC-553 and WD-1794, the requirements of TS Section 4.4.2, "Isolation Valve Tests," were not satisfied. Therefore, this is a condition that constitutes a violation of TS. HBRSEP, Unit No. 2 was operating at 100 percent power at the time this condition was discovered.

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II. CAUSE OF EVENT

This condition was caused by cognitive personnel error. Inadequate reviews of procedures resulted in the failure to identify a proper testing configuration for valves RC-553 and WD-1794.

Prior to 1987, the integrity of these penetrations was verified by monitoring IVSW manifold pressure. In 1987, Engineering Surveillance Test (EST)-004, "Isolation Valve Seal Water," was revised to require testing of each containment penetration to provide a method of adequately verifying the operability of the IVSW valves. Reviews for this procedure change were inadequate since the reviewers failed to recognize that an improper testing configuration existed. For the two penetrations in question (i.e., Penetration No's. 1 and 5), EST-004 specified the same vent paths that are listed in OST-933, the current test procedure.

In 1991, during a 10 CFR 50, Appendix J, Program Review, it was noted that a specific differential pressure should be achieved for both the inboard and outboard containment isolation valves, and recommendations on how to properly align the penetrations were made. As a result, EST-004 was revised in 1992 to add steps to ensure that a vent path was aligned for both the inboard and outboard containment isolation valves. The improper use of the testing configuration was not identified during this review. In addition, two reviews of EST-004 performed in 1994 and the conversion of this procedure to OST-933 in 1995 failed to identify the inadequate testing configuration.

The self-assessment performed in 1997, resulted in a detailed review of the testing configuration including discussions with the pressure regulator valve vendor and bench testing of a valve of the same type. This review identified that the pressure regulator valves being relied on were not capable of allowing the reverse flow path needed to assure a leakage pathway.

III. ANALYSIS OF EVENT

This condition did not have a significant impact on plant safety. Based on the determination that an inadequate testing configuration was used during testing of the containment penetrations that serve valves RC-553 and WD-1794, and the leakage rate for these valves was unknown, operability of these valves could not be assured. TS Section 3.6.1, "Containment Integrity," states, "The containment integrity (as defined in 1.7) shall not be violated unless the reactor is in the cold shutdown condition" TS Section 3.6.3, "Containment Automatic Isolation Trip Valves," states, "with one or more of the automatic containment isolation trip valves inoperable, either (a.) Restore the inoperable valve(s) to operable status within 4 hours, or (b.) Isolate the affected penetration(s) within 4 hours by use of a deactivated automatic valve(s) secured in the isolation position(s). When each inadequate testing configuration was identified, each valve was declared inoperable, and its outboard containment isolation valve was closed and deactivated to meet the requirements of TS Section 3.6.3.

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III. ANALYSIS OF EVENT (Continued)

TS Section 4.4, "Containment Tests," applies to containment leakage and structural integrity. TS Section 4.4.2, "Isolation Valve Tests," requires that isolation valves be tested for operability at each refueling. The purpose of OST-933 is to satisfy the requirements of 10 CFR 50, Appendix J, and TS Section 4.4.2. Since OST-933 did not establish a proper vent path to measure leakage from containment isolation valves RC-553 and WD-1794, the requirements of TS Section 4.4.2, "Isolation Valve Tests," were not satisfied.

Testing conducted on July 11, 1997, confirmed that the leakage rates for valves RC-553 and WD-1794 were within their acceptance limits. Although previous performance capability of these valves cannot be conclusively determined, these valves were confirmed to be currently capable of performing their safety function during an event where maintaining containment integrity would be required.

This condition is being reported in accordance with 10 CFR 50.73(a)(2)(i) as an operation or condition prohibited by the plant's TS.

IV. CORRECTIVE ACTIONS

Valves RC-553 and WD-1794 were declared inoperable on July 2 at 0948 hours, and on July 3 at 1435 hours, respectively. TS Section 3.6.3 was entered, and the respective containment penetrations were isolated.

On July 3, 1997, a review of OST-933 was performed to determine if similar problems existed. In addition, other procedures covering TS Section 4.4.2 testing were reviewed. No similar deficiencies were identified.

On July 11, 1997, SP-1405 and SP-1406 were performed. Test results indicate that the leakage rates for both valves were within their acceptance criteria. Valves RC-553 and WD-1794 were returned to service at 1717 hours.

The assessment of the 10 CFR 50, Appendix J Program and its implementing procedures, which resulted in the identification of these concerns, was completed on June 27, 1997. This assessment included a review of plant procedures associated with the 10 CFR 50, Appendix J Program.

OST-933 will be revised by October 15, 1997, to specify the proper vent path for leakage measurement.

Real time training will be provided to engineering personnel by October 15, 1997, to emphasize the need to conduct adequate technical reviews of procedure changes.

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V. ADDITIONAL INFORMATION**A. Previous Similar Events**

None

B. Failed Component Information

None