

# CATEGORY 1

## REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)

ACCESSION NBR:9806030223      DOC.DATE: 98/05/29      NOTARIZED: NO      DOCKET #  
FACIL:50-261 H.B. Robinson Plant, Unit 2, Carolina Power & Light C      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 98-001-01:on 980311,open travel limit for CP valves was  
found to exceed requirements of TS 3.6.3.Caused by failure  
to perform verification of 70 degree open travel limit.  
Modified threaded shaft for CP valves.W/980529 ltr.

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

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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/98-0100

MAY 29 1998

United States Nuclear Regulatory Commission  
Attn: Document Control Desk  
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H. B. ROBINSON STEAM ELECTRIC PLANT, UNIT NO. 2  
DOCKET NO. 50-261/LICENSE NO. DPR-23  
LICENSEE EVENT REPORT NO. 1998-01-01

Gentlemen:

The attached supplement to Licensee Event Report 1998-01 is submitted in accordance with the requirements of 10 CFR 50.73. The revised information is identified by a right hand margin bar. Should you have any questions regarding this matter, please contact Mr. T. M. Wilkerson, Manager, Regulatory Affairs.

Very truly yours,

J. W. Moyer  
Plant General Manager

Attachment

c: Mr. L. A. Reyes, USNRC, Region II  
Mr. J. W. Shea, USNRC  
USNRC Resident Inspector, HBRSEP

9806030223 980529  
PDR ADOCK 05000261  
S PDR

IE221

NRC FORM 366 U.S. NUCLEAR REGULATORY COMMISSION  
(04-1998)**LICENSEE EVENT REPORT (LER)**(See reverse for required number of  
digits/characters for each block)

APPROVED BY OMB NO. 3150-0104 EXPIRES 04/30/1998

Estimated burden per response to comply with this mandatory information collection request: 50 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. If an information collection does not display a currently valid OMB control number, the NRC may not conduct or sponsor, and a person is not required to respond to, the information collection.

FACILITY NAME (1)

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

DOCKET NUMBER (2)

05000261

PAGE (3)

1 OF 4

TITLE (4)

OPEN TRAVEL LIMIT FOR CONTAINMENT PURGE VALVES FOUND TO EXCEED REQUIREMENTS OF TECHNICAL SPECIFICATION 3.6.3

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
03	11	1998	1998	01	01	05	29	1998	FACILITY NAME	DOCKET NUMBER
										05000
										05000

  

OPERATING MODE (9)	POWER LEVEL (10)	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more) (11)			
6	0	20.2201(b)	20.2203(a)(2)(v)	X	50.73(a)(2)(i)
		20.2203(a)(1)	20.2203(a)(3)(i)		50.73(a)(2)(ii)
		20.2203(a)(2)(i)	20.2203(a)(3)(ii)		50.73(a)(2)(iii)
		20.2203(a)(2)(ii)	20.2203(a)(4)		50.73(a)(2)(iv)
		20.2203(a)(2)(iii)	50.36(c)(1)		50.73(a)(2)(v)
		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)

(843) 857-1544

**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
B	JM	ISV	B237	N					

**SUPPLEMENTAL REPORT EXPECTED (14)**

YES (If yes, complete EXPECTED SUBMISSION DATE).	NO	EXPECTED	MONTH	DAY	YEAR
X					

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

On March 11, 1998, during plant refueling, the inside containment purge supply valve open travel limit was found to be set at approximately 79 degrees. On March 25, 1998, with the plant defueled, the inside containment purge exhaust valve open travel limit was found to be set at approximately 80 degrees.

These conditions are believed to have existed since a modification, completed on March 14, 1986, replaced the containment purge valves. The inside containment purge valves incorporated a travel limiter which was designed to prevent valve opening from exceeding 70 degrees. Post modification testing was inadequate in that the 70 degree open limit was not adequately verified following purge valve replacement.

The open travel limits have been adjusted to limit the inside containment purge valve from opening greater than 70 degrees.

This report is submitted pursuant to 10 CFR 50.73(a)(2)(i)(B) as a condition prohibited by Technical Specifications since this condition existed during plant operations in which Technical Specification 3.6.3 required the open travel limit for these valves to be less than or equal to 70 degrees.

# **LICENSEE EVENT REPORT (LER)** **TEXT CONTINUATION**

FACILITY NAME (1)	DOCKET	LER NUMBER (6)			PAGE (3)
H. B. ROBINSON STEAM ELECTRIC PLANT, UNIT NO. 2	05000261	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	2 OF 4
		1998	-- 01	-- 01	

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

## **I. DESCRIPTION OF EVENT**

On March 11, 1998, at approximately 1215, the mechanical travel limit (EIS System: ISV, EIS Component: 5) for the containment purge supply valve, V12-7, (EIS System: JM, EIS Component: ISV) located inside containment, was discovered to be set at a position of approximately 79 degrees which would allow an open position of greater than the 70 degree limit specified by Technical Specification 3.6.3, "Containment Isolation Valves." H.B. Robinson Steam Electric Plant (HBRSEP), Unit No. 2, was depressurized with reactor coolant system (RCS) (EIS System AB) temperature approximately 95 degrees F, with preparations in progress for reactor vessel head removal at the time the condition was discovered.

On March 25, 1998, at approximately 0125, the mechanical travel limiter, (EIS System: JM, EIS Component: ISV) for the containment purge exhaust valve, V12-9, (EIS System: JM, EIS Component: ISV) located inside containment, was discovered to be set at a position of approximately 80 degrees which would allow an open position of greater than the 70 degree limit specified by Technical Specification 3.6.3. HBRSEP, Unit No. 2, was defueled at the time this condition was discovered.

On March 14, 1986, a plant modification replaced the containment purge valves. The design of the purge valves, located inside containment, incorporated a travel limiter designed to prevent valve opening from exceeding 70 degrees. On November 13, 1997, HBRSEP, Unit No. 2, implemented Improved Technical Specifications (ITS) which specified a surveillance requirement to verify V12-7 and V12-9 would not open greater than 70 degrees. The 70 degree limit for these valves had previously been contained in the Bases of Technical Specification 3.6.4, "Containment Purge and Vent Valves." in accordance with Amendment 99 issued on July 3, 1986. Non-compliance with the Technical Specification 70 degree open travel limit is believed to have existed since July 3, 1986, when Technical Specification Amendment 99 was issued.

## **II. CAUSE OF EVENT**

The originally installed containment purge valves and their actuators, were replaced on March 14, 1986. These containment purge valves are butterfly valves. A shaft connected to the butterfly disc is rotated by a shaft actuator which uses air pressure to open, and spring pressure to close the valves. The design of the inside containment purge valves, V12-7 and V12-9, due to installation orientation, relies on a mechanical travel limiter to prevent the valves from opening greater than 70 degrees (90 degrees indicates full open). Limiting open travel is an anti-rotation measure to assure proper valve closure during dynamic conditions. The design of the travel limiter consists of a threaded shaft installed through the actuator housing to limit valve actuator shaft travel. Valve travel limit is determined by the depth of insertion of the threaded shaft. A hole is drilled through the threaded shaft at a position

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(04-98)

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## **II. CAUSE OF EVENT (Continued)**

designed to correspond to a valve position of 70 degrees. A pin is then inserted through the drilled hole to prevent movement of the travel limiter.

The plant modification that installed the containment purge valves in 1986 did not contain a requirement to perform a verification of the 70 degree open travel limit. Prior to Improved Technical Specification implementation on November 13, 1997, there was no Technical Specification Surveillance requirement to verify the open travel limit. Maintenance and refurbishment of these valves were performed by a contract certified valve technician in accordance with HBRSEP procedures. Prior to implementation of Improved Technical Specifications these procedures did not reference the 70 degree open limit.

The cause of this event was failure to perform verification of the 70 degree open travel limit following plant modification.

## **IV. ANALYSIS OF EVENT**

The containment purge system provides a 42 inch containment penetration for a ventilation supply duct and a separate 42 inch containment penetration for a ventilation exhaust duct. The 42 inch containment purge system is normally closed during plant operation but may be placed in service when needed for safety-related considerations to support plant operations and maintenance activities within containment. Each penetration is provided redundant isolation by one valve located inside containment and another located outside containment. These valves are air operated and are designed to fail closed on loss of air or control signal. The containment atmosphere is monitored for gamma particulate and radioactive gas activity and if either exceeds pre-set levels, an automatic closure signal is provided to each valve. In addition, these valves receive a closure signal from the Emergency Core Cooling System (ECCS) containment isolation signal. This containment isolation signal is initiated by safety injection, containment high radiation, or manually. In the event the inside containment purge valves (V12-7 and V12-9) failed to close, redundant containment penetration isolation would be provided by the containment purge valves located outside of containment. The outside containment purge valves are installed in an orientation in which purge flow assists valve closure, therefore these valves do not have a requirement for an open travel limit.

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IV. ANALYSIS OF EVENT (Continued)

Since the open travel limit of the inside containment purge valves was in excess of the design limit, the design closure stroke time may have been exceeded during a design basis accident. Containment penetration isolation within the design time frame would have relied upon closure of the outside containment isolation valve. No operability issues were identified for the outside containment purge valves during the time period between March 14, 1986 (date containment purge valves replaced) and March 25, 1998 (date second inside containment purge valve open travel limit found to exceed design limit). For the time period in which the open travel limit of the inside containment purge valves was exceeded, containment penetration isolation would have been provided by the redundant outside containment isolation valves.

V. CORRECTIVE ACTIONS

The threaded shaft has been modified for the containment purge valves located inside containment to limit valve opening 70 degrees or less. This action was completed on April 8, 1998, prior to entry into MODE 4 following the refuel outage.

A surveillance procedure to periodically verify the open travel limit for the inside containment purge valves is 70 degrees or less was implement on November 13, 1997, coincident with the implementation of Improved Technical Specifications.

VI. ADDITIONAL INFORMATION

## A. Failed Component Information

This LER is not the result of a failed component but rather due to an incorrectly set valve travel limit. The valve is manufactured by Posi Seal International under model number 35685-01 (42 inch). The valve actuator is manufactured by GHBETTIS under model number NT416-SR4-S.

## B. Previous Similar Events

No previous similar LERs were identified.