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ACCESSION NBR:8810310163 DOC.DATE: 88/10/21 NOTARIZED: NO DOCKET #
 FACIL:50-261 H.B. Robinson Plant, Unit 2, Carolina Power & Light C 05000261
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 LEGETTE,F.L. Carolina Power & Light Co.
 MORGAN,R.E. Carolina Power & Light Co.
 RECIP.NAME RECIPIENT AFFILIATION

SUBJECT: LER 88-021-00:on 880922,plant shutdown due to loss of
 containment vessel integrity.

W/8 ltr.

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 TITLE: 50.73 Licensee Event Report (LER), Incident Rpt, etc.

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NRC Form 366
(9-83)

U.S. NUCLEAR REGULATORY COMMISSION

APPROVED OMB NO. 3150-0104

EXPIRES: 8/31/88

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) H. B. ROBINSON STEAM ELECTRIC PLANT UNIT NO. 2	DOCKET NUMBER (2) 0 5 0 0 0 2 6 1	PAGE (3) 1 OF 0 4
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TITLE (4)
PLANT SHUTDOWN DUE TO LOSS OF CONTAINMENT VESSEL INTEGRITY

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)
0 9	2 2	8 8	8 8	0 2 1	0 0 1	0 2	1 8	8 8			0 5 0 0 0

THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §. (Check one or more of the following) (11)

OPERATING MODE (8) POWER LEVEL (10) 0 8 9	20.402(b)	20.405(c)	50.73(a)(2)(iv)	73.71(b) 73.71(c) OTHER (Specify in Abstract below and in Text, NRC Form 366A)
	20.405(a)(1)(i)	50.36(c)(1)	50.73(a)(2)(v)	
	20.405(a)(1)(ii)	50.36(c)(2)	50.73(a)(2)(vii)	
	20.405(a)(1)(iii)	X 50.73(a)(2)(i)	50.73(a)(2)(viii)(A)	
	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)(ix)	

LICENSEE CONTACT FOR THIS LER (12)

NAME F. L. Legette, Senior Reactor Operator	TELEPHONE NUMBER AREA CODE 8 0 3 3 8 3 1 2 5 3
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COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)

CAUSE	SYSTEM	COMPONENT	MANUFAC- TURER	REPORTABLE TO NPRDS	CAUSE	SYSTEM	COMPONENT	MANUFAC- TURER	REPORTABLE TO NPRDS
X	B D	I S V	P 3 0 4						

SUPPLEMENTAL REPORT EXPECTED (14)

<input type="checkbox"/> YES (If yes, complete EXPECTED SUBMISSION DATE) <input checked="" type="checkbox"/> NO	EXPECTED SUBMISSION DATE (15) MONTH DAY YEAR 1 2 5 3
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ABSTRACT (Limit to 1400 spaces, i.e., approximately fifteen single-space typewritten lines) (16)

Abstract

At 0320 hours, September 22, with Unit 2 at 89 percent power and stabilized for core flux mapping, it was discovered that the reactor Containment Vessel (CV) purge outer exhaust valve was leaking. The inner exhaust valve in Containment was inspected and also found to be leaking at 0415 hours. The discoveries were made via a seat leakage soap check of the valves during an investigation of high Penetration Pressurization System (PPS) header flow. This condition was conservatively assumed to represent uncontrolled Containment leakage exceeding the requirements of Technical Specification 4.4 which required the plant to be in Hot Shutdown within eight hours (Technical Specification 3.0). An Unusual Event was declared at 0721 hours, in accordance with the Plant Emergency Plan. The reactor was taken to Hot Shutdown at 1154 hours. The cause of the leakage was attributed to debris found on the valve seats which apparently originated from the CV ventilation ductwork. The seat and the seal rings for the valves were replaced and accessible portions of the upstream and downstream ductwork were inspected and cleaned. This LER is submitted pursuant to 10CFR50.73(A)(2)(i).

8810310163 881021
PDR ADOCK 05000261
S PDC

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

U.S. NUCLEAR REGULATORY COMMISSION

APPROVED OMB NO. 3150-0104

EXPIRES: 8/31/88

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)		
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			
H. B. ROBINSON S. E. PLANT UNIT NO. 2	0500026188	8	021	00	02	OF	04

TEXT (If more space is required, use additional NRC Form 365A's) (17)

I. Description of Event

At 0320 hours on September 22, 1988, with the plant at 89% power and stabilized for core flux mapping, seat leakage was identified on the reactor containment vessel (CV) purge exhaust outer isolation valve V12-8 resulting in the valve being declared inoperable.¹ The containment purge system had been in operation the day before and the Penetration Pressurization System (PPS) had never fully pressurized the penetration inner space (between V12-9 and V12-8) which prompted an investigation. Technical Specification 3.6.3 requires the inoperable valve to be returned to operable status or the affected penetration be isolated within four (4) hours or the plant be in cold shutdown within 36 hours. While leak testing the inner purge exhaust isolation valve (V12-9) in order to verify isolation of the penetration, V12-9 was noted also to be experiencing seat leakage. Being unable to eliminate seat leakage on either valve, and conservatively assuming that the leakage might represent uncontrolled containment leakage in excess of Technical Specification 4.4, the reactor was taken to hot shutdown at 1154 hours that morning. Repairs were immediately initiated and were expected to be completed within approximately twelve (12) hours. An Unusual Event was declared at 0721 since the four hour action statement of Technical Specification 3.6.3 could not be satisfied. Carolina Power & Light (CP&L) Company requested enforcement discretion from NRC Region II and received a one time twelve (12) hour extension to the action statement in H. B. Robinson Unit No. 2 Technical Specification 3.6.3.d. This extension would enable CP&L to complete repairs needed to correct the seat leakage problems on the containment purge exhaust inner and outer isolation valves (V12-9 and V12-8) without having to initiate a cooldown to cold shutdown conditions.

II. Cause of Event

Recent Condensate Measuring System (CMS) hydrolaze cleaning inside the CV Air Handling units HVH 1-4 created a large amount of debris. The cleaning was necessary because of CMS drain plugging. These drains are located downstream of the system filters, designed for debris removal. The high pressure cleaning apparently resulted in some debris entering the CV ventilation distribution header. Since the Containment Purge Outlet takes suction on this header, debris is believed to have entered the purge outlet ductwork. Some debris collected on the seating surface for the purge valves which prevented the development of a complete seal.

III. Analysis of Event

The containment purge exhaust valves are automatic containment isolation valves required to be closed during accident conditions. Being unable to eliminate seat leakage on either valve represented uncontrolled containment leakage that, although immeasurable with existing installed equipment, may have been in excess

¹/H. B. Robinson Steam Electric Plant, Unit No. 2 is a Westinghouse 2300 megawatt thermal pressurized water reactor power plant, in commercial operation since March 1971.

NRC Form 365A
(9-83)

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

U.S. NUCLEAR REGULATORY COMMISSION

APPROVED OMB NO. 3150-0104

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FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)		
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			
H. B. ROBINSON S. E. PLANT UNIT NO. 2	0 5 0 0 0 2 6 1 8 8	—	0 2 1	— 0 0	0 4	OF	0 4

TEXT (If more space is required, use additional NRC Form 365A's) (17)

B. Previous Similar Events

There have been previous LERs issued on the Containment purge valves because of excessive PPS leakage, however none were issued for excessive leakage caused by debris fouling via the ductwork.

1. LER-79-15
2. LER-78-25
3. LER-77-7
4. LER-77-10
5. LER-77-11

NRC Form 388A
(9-83)

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

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APPROVED OMB NO. 3150-0104

EXPIRES: 8/31/88

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H. B. ROBINSON S. E. PLANT UNIT NO. 2	0 5 0 0 0 2 6 1	8 8	— 0 2 1	— 0 0	0 3	OF	0 4

TEXT (If more space is required, use additional NRC Form 388A's) (17)

Containment integrity (Technical Specification 3.6.3) and the reactor was appropriately shut down within eight hours as required by Technical Specification 3.0.

IV. Corrective Action

The initial leak detection process found evidence of seat leakage approximately 180° around the seating surface of both valves. Both seats were cleaned and the leakage was stopped except at locations near the two disc pivot points for both valves (these are butterfly valves). Based on discussions with the valve vendor, this area of the valve is most susceptible to leakage.² The decision was made to replace the seats and "O" rings in both valves which stopped the leakage. Accessible portions of the upstream and downstream ductwork were inspected and cleaned. Other systems that have a containment isolation function and that could potentially be affected by debris in the ductwork were reviewed. The Vacuum Relief and the Pressure Relief Valves, and the PACV System were inspected.³ No debris was found in the ductwork for these valves. The ventilation ring header (i.e., Purge Suction) is scheduled to be inspected during the Refueling Outage.

V. Additional InformationA. Failed Component Identification

The 42 inch diameter purge supply and exhaust lines penetrating the containment are each equipped with two quick-closing, tight-seating, air-operated, butterfly containment isolation valves. The isolation valves, one inside and one outside the containment, are closed during normal plant operation, except as required for purging. The sections of these lines between the two closed containment isolation valves are pressurized to a pressure (46 psig) slightly higher than the containment design pressure by the Penetration Pressurization System (PPS). Interlocks automatically prevent admission of pressurization air to the inner spaces unless the two containment isolation valves are closed.

1. V12-9 300# 42 inch valve PSI-Reference 35685
2. V12-8 150# 42 inch valve PSI-Reference 35685

²/Containment Purge Isolation Valves EIIS Codes: System-BD; Component-ISV; Manufacturer-P304

³/PACV - Post Accident Containment Venting

IE22 1/11



Carolina Power & Light Company

ROBINSON NUCLEAR PROJECT DEPARTMENT
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OCT 24 1988

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(10 CFR 50.73)

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 88-021-00

Gentlemen:

The enclosed Licensee Event Report (LER) is submitted in accordance with 10 CFR 50.73 and NUREG-1022 including Supplements No. 1 and 2.

Very truly yours,

R. E. Morgan
General Manager
H. B. Robinson S. E. Plant

Enclosure

cc: Dr. J. N. Grace
Mr. L. W. Garner
INPO

IE22
1/1