

# ACCELERATED DISTRIBUTION DEMONSTRATION SYSTEM

## REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)

ACCESSION NBR:9002220099 DOC.DATE: 90/02/14 NOTARIZED: NO DOCKET #  
 FACIL:50-261 H.B. Robinson Plant, Unit 2, Carolina Power & Light C 05000261  
 AUTH.NAME AUTHOR AFFILIATION  
 CROOK,R.D. Carolina Power & Light Co.  
 MORGAN,R.E. Carolina Power & Light Co.  
 RECIP.NAME RECIPIENT AFFILIATION

SUBJECT: LER 90-003-00:on 900118,inoperable fire barrier penetration  
 seals due to installation deficiency.

DISTRIBUTION CODE: IE22T COPIES RECEIVED:LTR 1 ENCL 1 SIZE: 7  
 TITLE: 50.73/50.9 Licensee Event Report (LER), Incident Rpt, etc.

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INTERNAL:	ACRS MICHELSON	1 1	ACRS MOELLER	2 2
	ACRS WYLIE	1 1	AEOD/DOA	1 1
	AEOD/DSP/TPAB	1 1	AEOD/ROAB/DSP	2 2
	DEDRO	1 1	NRR/DET/ECMB 9H	1 1
	NRR/DET/EMEB9H3	1 1	NRR/DET/ESGB 8D	1 1
	NRR/DLPQ/LHFB11	1 1	NRR/DLPQ/LPEB10	1 1
	NRR/DOEA/OEAB11	1 1	NRR/DREP/PRPB11	2 2
	NRR/DST/SELB 8D	1 1	NRR/DST/SICB 7E	1 1
	NRR/DST/SPLB8D1	1 1	NRR/DST/SRXB 8E	1 1
	REG FILE 02	1 1	RES/DSIR/EIB	1 1
	RGN2 FILE 01	1 1		
EXTERNAL:	EG&G WILLIAMS,S	4 4	L ST LOBBY WARD	1 1
	LPDR	1 1	NRC PDR	1 1
	NSIC MAYS,G	1 1	NSIC MURPHY,G.A	1 1
	NUDOCS FULL TXT	1 1		

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AD-4



Carolina Power & Light Company

ROBINSON NUCLEAR PROJECT DEPARTMENT  
POST OFFICE BOX 790  
HARTSVILLE, SOUTH CAROLINA 29550  
**FEB 16 1990**

Robinson File No: 13510C

Serial: RNP/90-0618  
(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 NO. 90-003-00

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

RDC:dwm

cc: Mr. S. D. Ebnetter  
Mr. L. W. Garner  
INPO

9002220099 900214  
PDR ADOCK 05000261  
S PDC

LE27

## 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   6		
TITLE (4) INOPERABLE FIRE BARRIER PENETRATION SEALS DUE TO INSTALLATION DEFICIENCY																
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   1	1   8	9   0	9   0	0   0   3	0   0	0   2	1   4	9   0					0   5   0   0   0			
OPERATING MODE (9) N		THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11)														
POWER LEVEL (10) 1   0   0		20.402(b)				20.405(c)				50.73(a)(2)(iv)				73.71(b)		
		20.405(a)(1)(i)				50.38(c)(1)				50.73(a)(2)(v)				73.71(c)		
		20.405(a)(1)(ii)				50.38(c)(2)				50.73(a)(2)(vii)				OTHER (Specify in Abstract below and in Text, NRC Form 366A)		
		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 R. D. Crook, Senior Specialist, Regulatory Compliance										TELEPHONE NUMBER AREA CODE 8   0   3   3   8   3   -   1   1   7   9						
COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)																
CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPD		CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPD						
SUPPLEMENTAL REPORT EXPECTED (14)												EXPECTED SUBMISSION DATE (15)		MONTH	DAY	YEAR
<input type="checkbox"/> YES (If yes, complete EXPECTED SUBMISSION DATE)												<input checked="" type="checkbox"/> NO				
ABSTRACT (Limit to 400 spaces, i.e., approximately fifteen single-space typewritten lines) (16)																

On January 18 and January 25, 1990, with Unit No. 2 operating at full power, fire barrier electrical penetrations were found with no internal fire barrier seal. Compensatory actions as required by the Technical Specifications were taken, and the penetrations were repaired to provide an adequate seal.

Review of the surveillance history of each seal revealed that in one case, the condition was caused by an installation deficiency, and in the other, an inadequate design review. This condition is being reported pursuant to 10CFR50.73(a)(2)(i)(B) as a condition prohibited by the Plants Technical Specifications.

NRC Form 365A  
(9-83)

## LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

U.S. NUCLEAR REGULATORY COMMISSION

APPROVED OMB NO. 3150-0104

EXPIRES: 8/31/88

FACILITY NAME (1)

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

DOCKET NUMBER (2)

0 5 0 0 0 2 6 1

LER NUMBER (6)

YEAR

SEQUENTIAL

REVISION

PAGE (3)

NUMBER

NUMBER

9 0

- 0 0 3

- 0 0 0

2 OF

0 6

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

I. DESCRIPTION OF EVENT

On January 18, 1990, Unit No. 2 was operating at 100% power.' While performing scheduled surveillance test OST-623, "Fire Barrier Penetration Seal Inspection", EP 2132.02-FL-15, which is one of two one-inch conduits in a penetration, was found with no internal fire barrier seal. The penetration was declared inoperable at 1400 hours, and a work request was initiated for its repair. On January 25, 1990, at 0730 hours, an additional unsealed penetration was discovered. Penetration EP 6001.00-FL-18, which is a four-inch conduit, was removed from service in order to install new cable under a plant modification. During preparation to repair the penetration, licensee Maintenance and Quality Control personnel discovered a one and one-half inch flexible conduit containing electrical cables inside the four-inch conduit. This flexible conduit was not shown on the penetration drawing, was not assigned a fire barrier penetration number, and had never had an internal fire seal installed.

In each case, compensatory action as required by Technical Specification 3.14.7.2 was taken. Penetration EP 2132.02-FL-15 was returned to service on January 18, 1990, at 1705 hours. Penetration EP 6001.00-FL-18 was returned to service on January 29, 1990, at 1500 hours.

II. CAUSE OF EVENT

Upon notification of the inoperable penetrations, the licensee's Fire Protection staff initiated an investigation into the surveillance history of each affected penetration.

With regard to EP-2132.02-FL-15, as shown on the attached illustration, electrical penetrations EP-2132.01 and EP-2132.02 pass through the same core bore from zone 2 ("A" Emergency Diesel Room ceiling) into zone 15 (second floor Auxiliary Building, HVS-5&6 Fan Room). EP-2132.02-FL-15 is a one-inch conduit which on the zone 2 side has been sealed with foam approximately eight feet from the fire barrier. However, because this seal is not at the barrier, it must be sealed on both sides of the barrier. The investigation revealed that during performance of OST-623 on August 28, 1987, the EP-2132.02-FL-15 penetration had been found to be without an internal seal. At that time, the penetration was declared inoperable, and a repair effort was conducted. Following repair, the penetration was

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'H.B. Robinson Steam Electric Plant, Unit No. 2, is a 700 MW Pressurized Water Reactor nuclear power plant, in commercial operation since March, 1971.

NRC Form 385A  
(9-83)

## 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 (8)			PAGE (3)	
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER		
H. B. ROBINSON STEAM ELECTRIC PLANT UNIT NO. 2	0 5 0 0 0 2 6 1	9 0	0 0 3	0 0	0 3	OF 0 6

TEXT (If more space is required, use additional NRC Form 385A's) (17)

returned to service. Therefore, with this conflicting data, it is evident that the work performed in 1987 was inadequate in that, due to the close proximity of the conduits in the penetration area, EP2132.01 was sealed instead of EP-2132.02. This could have easily occurred if the individual locating the penetration for repair became misoriented within the fan room (turned south to north), which is believed to have occurred.

Electrical penetration EP 6001.00-FL-18 is a four-inch conduit installed by plant modification in May, 1985. In August, 1985, additional modification work was performed which pulled cable through the conduit. At that time, the process for modification development and implementation was not precise for installing a conduit within a conduit. No penetration number was assigned to the conduit, nor was it shown on a drawing. While a review of the modification infers that only cable was installed, the modification did in fact install a flexible conduit which was not recognized as a separate penetration within the four-inch conduit. An internal fire seal was installed on the four-inch conduit, but only covered the flexible conduit, and did not provide internal sealing. The flexible conduit is black and protrudes several inches beyond the four-inch conduit, and could have been mistaken for large cable during the initial penetration sealing process on August 28, 1985 as well as the scheduled penetration inspection on April 17, 1987, when it was determined to be satisfactory.

### III. ANALYSIS OF EVENT

This event is reportable in that, in each case, the plant would have had to enter an action statement of Technical Specification 3.14.7.1, which requires all penetration fire barriers to be operable at all times. This action statement further states that, with the penetration fire barrier inoperable, the operability of the fire protection system on both sides of the barrier be verified within one hour. Although this action was taken upon ultimate discovery of each inoperable penetration, it is apparent that the penetrations had been inoperable for a period of time.

Fire barrier penetration seals are a passive element in the facility fire protection program. Their operability is intended to minimize the probability of a single fire rapidly involving several areas of the facility prior to detection and extinguishment. During periods of time when the penetration seals are inoperable, verification of fire detection system operability within one hour as required by Technical Specification 3.14.7.2.a ensures that prompt detection capability exists in the vicinity of the penetration barrier. Should an area detection system be inoperable, a continuous fire watch would be established within one hour as required by Technical Specification 3.14.7.2.b to provide the required protection until the seal is restored to operable status.

NRC Form 364A  
(9-83)

## LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

U.S. NUCLEAR REGULATORY COMMISSION

APPROVED OMB NO. 3150-0104

EXPIRES: 8/31/88

FACILITY NAME (1)  H. B. ROBINSON STEAM ELECTRIC PLANT UNIT NO. 2	DOCKET NUMBER (2)  0 5 0 0 0 2 6 1	LER NUMBER (8)			PAGE (3)	
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER		
		9 0	0 0 3	0 0	0 4	OF 0 6

TEXT (If more space is required, use additional NRC Form 364A's) (17)

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NRC Form 364A  
(9-83)

## LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

U.S. NUCLEAR REGULATORY COMMISSION

APPROVED OMB NO. 3150-0104

EXPIRES: 8/31/88

FACILITY NAME (1)  H. B. ROBINSON STEAM ELECTRIC PLANT UNIT NO. 2	DOCKET NUMBER (2)  0 5 0 0 0 2 6 1 9 0 - 0 0 3 - 0 0 0 5 OF 0 6	LER NUMBER (6)			PAGE (3)		
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			

TEXT (If more space is required, use additional NRC Form 364A's) (17)

IV. CORRECTIVE ACTIONS

Penetration EP-2132.02 was repaired and returned to service on January 18, 1990, at 1705 hours. Penetration EP 6001.00-FL-18 was repaired and returned to service at 1500 hours on January 29, 1990. The licensee is currently performing an inspection of fire barrier penetration seals in accordance with Technical Specification 4.14.5.1. This inspection, which will include 100% of the penetration seals, is scheduled to be completed prior to startup from the 1990 refueling outage, and will identify any similar circumstances if they exist.

The implementation of the corporate Nuclear Plant Modification Program and the centralization of design activities have improved the development and review process for modifications and procedures that affect Appendix R compliance. These improvements will preclude recurrence of this condition.

V. ADDITIONAL INFORMATIONA. Failed Component Identification

The conditions are not attributed to an equipment failure.

B. Previous Similar Events

None

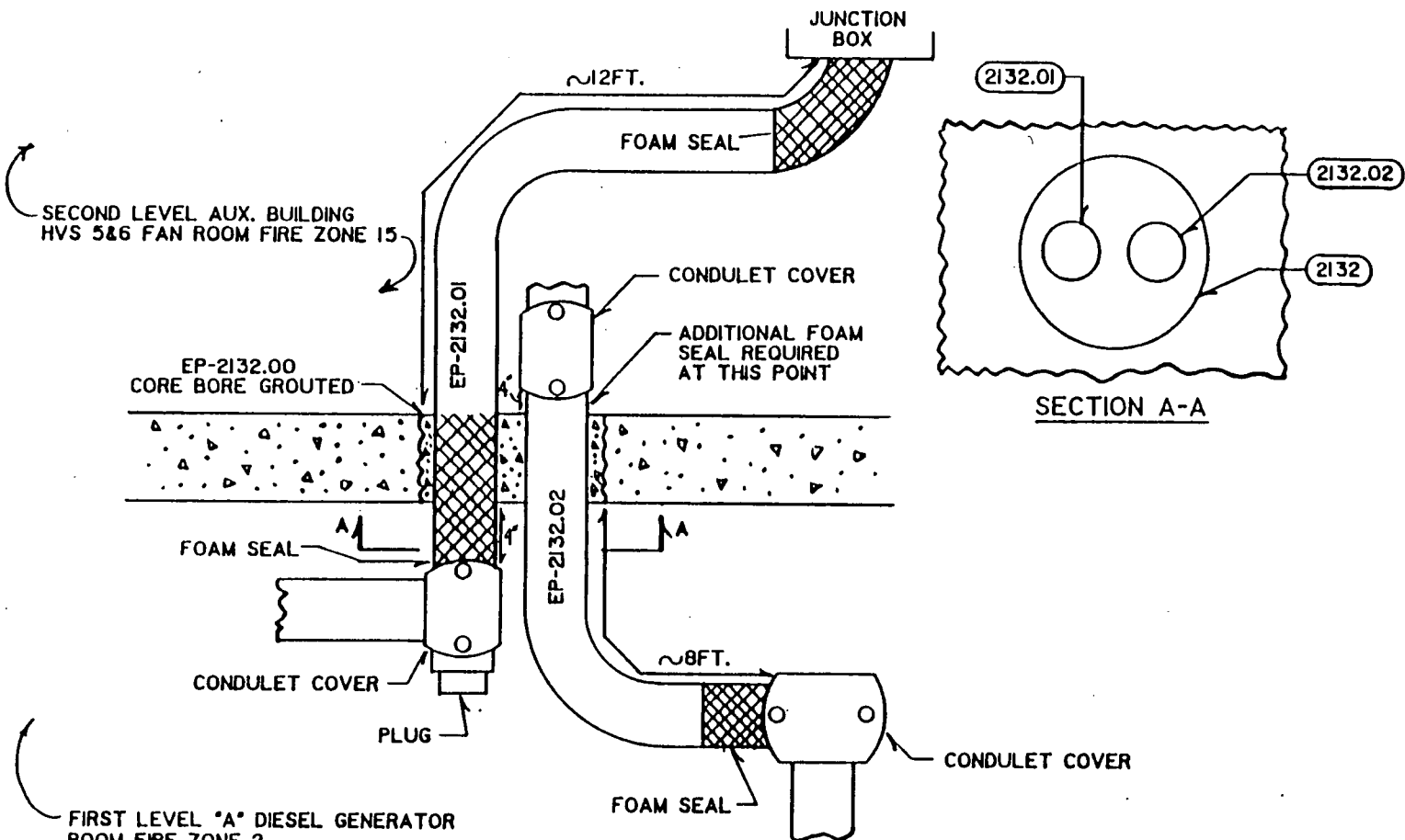
LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

U.S. NUCLEAR REGULATORY COMMISSION  
 APPROVED ONE NO 3150-0104  
 EXPIRES: 8/31/98

FACILITY NAME (1)  
 H. B. ROBINSON STEAM ELECTRIC PLANT  
 UNIT NO. 2

TEXT (If more space is required, use additional HNC Form 200A's (1/77))

DOCKET NUMBER (2)												LER NUMBER (8)		PAGE (3)	
0	5	0	0	0	2	6	1	9	1	0	—	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	OF
												19	0	3	0
															16



BOTH CONDUITS ARE ~ 1" DIA.  
THIS DRAWING IS NOT TO SCALE