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FACIL:50-261 H.B. Robinson Plant, Unit 2, Carolina Power & Light C 05000261
AUTH.NAME AUTHOR AFFILIATION
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RECIP.NAME RECIPIENT AFFILIATION

SUBJECT: LER 88-018-00:on 880901,inoperable cable tray penetration seals due to inadequate installation procedure.

W/8 ltr.

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

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Enclosure to Serial: RNPD/88-4362

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)	DOCKET NUMBER (2)	PAGE (3)
H. B. Robinson Steam Electric Plant, Unit No. 2	0 5 0 0 0 2 6 1	1 OF 0 5

TITLE (4)

Inoperable Cable Tray Penetration Seals due to Inadequate Installation 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 NAMES	DOCKET NUMBER(S)
										0 5 0 0 0
0 9	0 1	8 8	8 8	— 0 1 8	— 0 0	1 0	0 1	8 8		0 5 0 0 0

OPERATING MODE (9)		THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11)			
	N	20.402(b)	20.405(c)	50.73(a)(2)(iv)	73.71(b)
POWER LEVEL (10)	0 0 0	20.405(a)(1)(i)	50.36(c)(1)	50.73(a)(2)(v)	73.71(c)
		20.405(a)(1)(ii)	50.36(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)(x)	

LICENSEE CONTACT FOR THIS LER (12)

NAME	TELEPHONE NUMBER
David Crook, Specialist - Regulatory Compliance	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 NPRDS		CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS	
D											

SUPPLEMENTAL REPORT EXPECTED (14)		EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR
YES (If yes, complete EXPECTED SUBMISSION DATE)	X NO				

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

On August 26, 1988, with Unit No. 2 at Cold Shutdown, a potential for a void in an electrical cable tray fire penetration seal was discovered. During repair of the penetration seal, air leakage through other penetrations in the vicinity was discovered. A comprehensive inspection of penetrations of similar configuration (cable trays with covers) was initiated, which resulted in the identification of 38 potentially inadequate seals. Compensatory action as required by Plant Technical Specifications was taken, and all penetrations were repaired to provide an adequate seal.

The results of the investigation revealed that inadequate installation procedures were utilized during the original sealing of the cable tray penetrations. The procedure for installation and inspection of cable tray penetration seals is being revised to assure a proper seal is maintained. This condition is being reported pursuant to 10CFR50.73(a)(2)(i)(B) as a condition prohibited by the Plants Technical Specifications.

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NRC Form 366A (9-83)

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

U.S. NUCLEAR REGULATORY COMMISSION
APPROVED OMB NO. 3150-0104
EXPIRES: 8/31/88

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H. B. Robinson Steam Electric Plant Unit No. 2	0 5 0 0 0 2 6 1	8 8	— 0 1 8	— 0 0	0 2 OF 0 5

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

I. DESCRIPTION OF EVENT

On Friday, August 26, 1988, with Unit No. 2 at Cold Shutdown, Licensee Operations and Construction personnel were performing an equipment walkdown in preparation for a planned modification. This walkdown included an inspection of a cable tray penetration between the E1/E2 and Computer Rooms. During this inspection, cool air was detected at the penetration area, and it was determined that the potential for a void in the through wall cable tray penetration existed. Licensee Fire Protection personnel examined the penetration, and determined the penetration should be removed from service and repaired.

On Thursday, September 1, 1988, during the QC inspection of the repaired penetration, the licensee QC inspector detected what appeared to be air leakage through other cable tray penetrations in the vicinity. The penetrations affected were those that contained a cable tray cover, as shown in the attached illustration, in the through-wall area of the penetration, resulting in a leak path between the cables and the cable tray cover. As a result, a comprehensive inspection was initiated to inspect all cable tray penetrations to determine the scope of the problem, and to formulate necessary corrective actions.

The inspection of the 101 cable tray penetrations was completed, and 38 inadequate seals were identified. Compensatory action as required by Technical Specification 3.14.7.2 was taken in each case where an inadequate seal was found. Repairs were made on all 38 seals. Of these, 32 were repaired to a 3-hour tested configuration. Due to location and congestion three cable tray covers could not be removed and three additional cable tray penetrations could could not be repaired to a 3-hour tested configuration. However, for each case an Engineering Evaluation was performed to ensure that the actual repair efforts provided an adequate seal for the fire hazard present. All 38 penetrations were returned to service within the seven-day LCO required by Technical Specification 3.14.7.2. This event is being reported pursuant to 10CFR50.73 (a)(2)(i)(B) as a condition prohibited by the Plants Technical Specifications.

II. CAUSE OF EVENT

Procedure CM-621 under which silicone foam seals were installed in fire barriers at electrical cable tray penetrations, did not specifically address cable trays with covers. Thus, the seal installers did not remove the tray covers and in some cases, no seal material was installed around the cables underneath the cover, or in the space between the cables and the cover. Verification that silicone foam was installed under the cable tray covers was not included in inspection procedures for these penetration seals.

The primary results of the investigation revealed that inadequate installation and inspection procedures were utilized during the original sealing of the cable tray penetrations for the period 1984 through 1985.

NRC Form 366A (9-83)

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

U.S. NUCLEAR REGULATORY COMMISSION
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TEXT (If more space is required, use additional NRC Form 366A's) (17)

III. ANALYSIS OF EVENT

This condition is reportable because 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 protecting safety related areas to be operable at all times. This action statement further requires that, with the penetration fire barrier inoperable, the operability of the fire detectors be verified within one hour. Although this action was taken upon ultimate discovery of each inoperable penetration, it was apparent the penetrations had been inoperable for a period of time since the original installation.

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 seals are inoperable, verification of fire detection system operability within one hour as required by Technical Specification 3.14.7.2a insures 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 3.14.7.2b to provide the required protection until the seal is restored to operable status.

IV. CORRECTIVE ACTIONS

All cable tray penetration seals have been repaired and restored to operable status. Where possible, cable tray covers were removed to allow proper sealing. For the six (6) penetrations where cable tray covers could not be removed or the penetration seal could not otherwise be repaired to a (3) hour tested configuation in accordance with Plant Procedures, an Engineering Evaluation was performed, which included a technical evaluation by a Fire Protection Engineer, that an adequate fire barrier seal was provided for the fire hazard present. Throughout the time when the seals were declared inoperable and being repaired, the fire detection systems covering the areas on either side of the penetrations were verified operable in accordance with Technical Specification 3.14.7.2a. or appropriate compensatory action was taken.

Procedures for installation and inspection of cable tray penetration seals will be revised by December 31, 1988, to clarify the process necessary to assure a proper seal is constructed and maintained. Penetrations will continue to be inspected in accordance with TS requirements.

V. ADDITIONAL INFORMATION

A. Failed Component Identification

This condition was caused by an installation deficiency and is not attributed to an equipment failure.

*U.S.GPO:1986-0-624-538/455

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(9-83)

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EXPIRES: 8/31/88

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TEXT *(If more space is required, use additional NRC Form 366A's)* (17)

B. Previous Similar Events

In January, 1987, an inspection program was implemented which included a visual inspection of 100% of the fire barrier penetrations (RNPD/87-676). The intent of this inspection was to verify the existence of penetration seals, and not to inspect for voids within penetrations.

Any penetration found degraded at that time was repaired in accordance with approved Plant procedures.

★U.S.GPO:1988-0-624-538/455

NRC Form 366A
(9-83)

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

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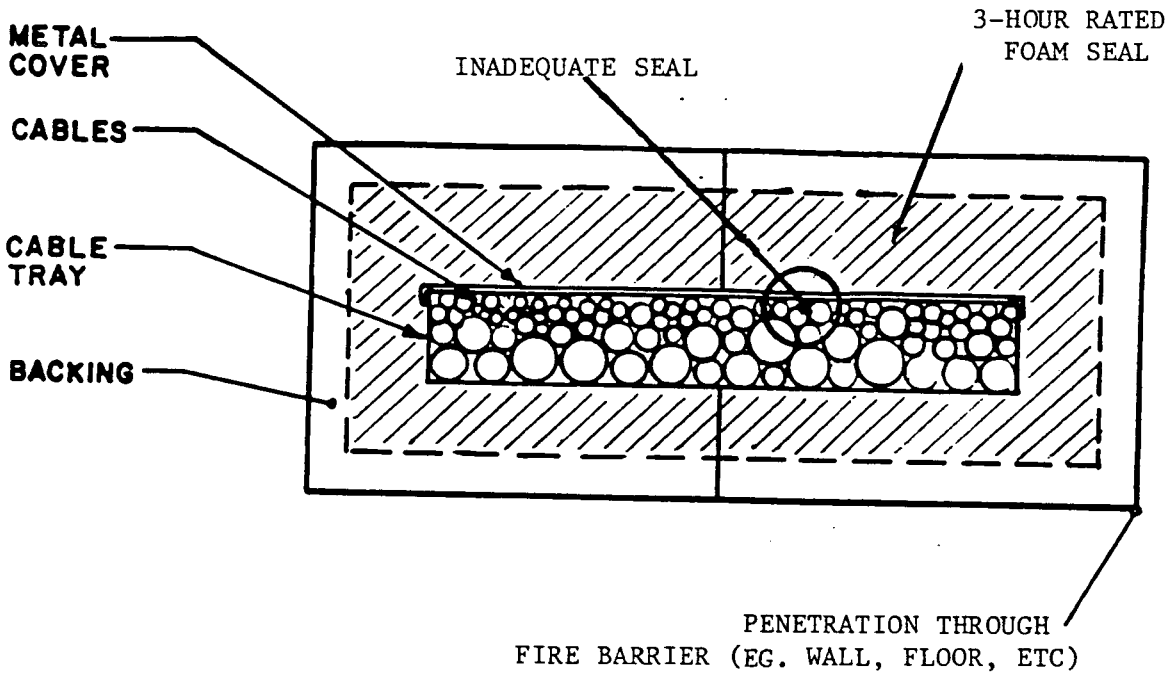
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
H. B. Robinson Steam Electric Plant Unit No. 2	0 5 0 0 0 2 6 1	8 8	— 0 1 8	— 0 0	0 5 OF 0 5

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

ELECTRICAL CABLE TRAY PENETRATION
WITH TRAY COVER



*U.S.GPO:1986-0-624-538/455

CP&L
Carolina Power & Light Company

ROBINSON NUCLEAR PROJECT DEPARTMENT
POST OFFICE BOX 790
HARTSVILLE, SOUTH CAROLINA 29550

SEP 30 1988

Robinson File No: 13510C

Serial: RNPD/88-4362
(10 CFR 50.73)

United States Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, D. C. 20555

H. B. ROBINSON STEAM ELECTRIC PLANT, UNIT NO. 2
DOCKET NO. 50-261
LICENSE NO. DPR-23
LICENSEE EVENT REPORT 88-018-00

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

RDC:lko

Enclosure

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

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