

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) D. C. Cook Nuclear Plant, Unit 2										DOCKET NUMBER (2) 0 5 0 0 0 3 1 6				PAGE (3) 1 OF 0 4		
TITLE (4) Inoperable Fire Seals																
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 4	0 8	8 6	8 6	0 1 5	0 0	0 5	0 8	8 6	D. C. Cook, Unit 1				0 5 0 0 0 3 1 5			
OPERATING MODE (9) 6			THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR § (Check one or more of the following) (11)													
POWER LEVEL (10) 0 0 0			20.402(b)				20.405(c)				50.73(a)(2)(iv)				73.71(b)	
			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)(vi)				OTHER (Specify in Abstract below and in Text, NRC Form 366A)	
			20.405(a)(1)(iii)				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 A. A. Blind - Assistant Plant Manager										TELEPHONE NUMBER 6 1 6 4 6 5 - 5 9 0 1						
COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)																
CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NRC		CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NRC						
SUPPLEMENTAL REPORT EXPECTED (14)												EXPECTED SUBMISSION DATE (15)		MONTH	DAY	YEAR
☒ YES (If yes, complete EXPECTED SUBMISSION DATE)												☐ NO		0 6	0 9	8 6
ABSTRACT (Limit to 1400 spaces, i.e., approximately fifteen single-space typewritten lines) (16)																

During the period of April 8, 1986, to May 1, 1986, a contractor performed a walkdown of Plant fire barriers to review the implementation of 10 CFR 50 Appendix R requirements. During this walkdown, with Unit 1 at 90 percent reactor thermal power and Unit 2 in Mode 6 (Refueling), it was discovered that 24 fire seals were inoperable. Twenty-two of these penetrations had not been previously identified as fire barriers as defined in Technical Specification 3.7.10 while two seals were part of the Plant's Surveillance Program. Fire watches were posted upon discovery and maintained until the fire seals were installed.

Sixteen (16) of the penetrations have been analyzed from an engineering and safety standpoint. The evaluation concluded that there was no significant degradation of the fire barriers nor did they constitute an unreviewed safety question as defined in 10 CFR 50.59. The remaining eleven (11) penetrations are under review and the analysis of these seals will be submitted in a supplemental report. The cause for the failure to originally identify these penetrations as part of the fire barriers and for the missing sealant could not be determined.

The penetrations have been added to the Plant's Fire Seal Surveillance Data Base to insure the seals will be inspected during future surveillances.

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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		
D. C. Cook Nuclear Plant, Unit 2	05000316	86	015	010	02	OF 04

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

Conditions Prior to Event

Unit 1 operating at 90 percent reactor thermal power and Unit 2 in Mode 6 (Refueling).

Description of Event

During a walkdown of Plant Fire Barriers (inspecting approximately 3,000 penetrations) to verify compliance with 10 CFR 50 Appendix R, the following fire barrier penetrations were discovered without fire sealant:

<u>Fire Zone</u>	<u>Penetration</u>	<u>Discovered</u>	<u>Sealed</u>
51	F-4116, F-4117, F-4118, F-4119, F-4120, F-4121, F-4122, F-4123	April 8, 1986	April 9, 1986
17B	C-12031	April 8, 1986	April 9, 1986
91	W-7523, W-7522	April 8, 1986	April 9, 1986
29C	W-9742, W-9744, W-9745, W-9743	April 8, 1986	April 10, 1986
29D	W-9746, W-9747, W-9748	April 8, 1986	April 10, 1986
14	W-9490	April 8, 1986	April 10, 1986
96	W-7507, W-7508	April 9, 1986	April 10, 1986
49	F-8033	April 22, 1986	April 23, 1986
55	F-8144	April 22, 1986	April 23, 1986
6A	W-7341	May 1, 1986	May 1, 1986

In each case a fire watch was posted within 15 minutes of discovery. The penetrations listed were various piping, conduit and cable penetrations and all but F-8033 and F-8144 had not been previously identified as fire seals (IEEE/SEALS). It is believed that the penetrations listed (except for F-8033 and F-8144) have existed without fire sealant since the initial implementation of Appendix R as the penetrations were not incorporated into the Plant's Fire Seal Surveillance Program at that time. Fire Seals F-8033 and F-8144 have been part of the Surveillance Program and were last inspected on July 14, 1985, with no deficiencies noted.

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

Cause of Event

Twenty-two (22) of the deficient penetrations were not previously identified in the Plant's Fire Protection Surveillance Program. The cause for not identifying these penetrations during the implementation of the Appendix R Program and the cause for the missing sealant from F-8033 and F-8144 could not be determined.

Analysis of Event

Currently an engineering and safety analysis is being performed on Fire Seals F-8033, F-8144, F-4116 through F-4123, and W-7341. The results of this analysis will be submitted in a supplemental report. The following is an analysis of the remaining deficient fire seals. In summary, the evaluation concluded that the absence of fire rated seals on the penetrations has not resulted in any significant degradation of the fire barriers. The condition did not constitute an unreviewed safety question as defined in 10 CFR 50.59.

Penetrations W-9742 and W-9744 through W-9748 are conduit penetrations in a fire wall between the Screenhouse (FZ 142) and the Unit 2 ESW Pump Cubicles (FZ 29C and FZ 29D). There is a low fire loading in each of these zones. Smoke detectors are provided in Fire Zone 29C and Fire Zone 29D. The free space between the conduit and penetration opening is very small which would limit the passage of heat, smoke and combustible gases to an insignificant amount. Based on the preceding, it is unlikely a fire could develop to the magnitude necessary to breach the fire barrier through these penetrations.

Penetration W-9743 involves a non safety-related cable tray that runs vertically up the east wall of Fire Zone 29C then turns and penetrates the fire barrier into (and through) the Chemical Cleaning Tank Room of Fire Zone 84 in the Unit 2 Turbine Building. The cable tray penetration opening was found to be unsealed. Fire Zone 84 is protected with a wet pipe sprinkler system. A floor based fire originating in Fire Zone 84 would be controlled by the sprinkler system before igniting cable in this tray and breaching the barrier. If a floor based fire started in Fire Zone 29C, the detection system would provide an early warning alarm resulting in a response by the fire brigade to control the fire before igniting the cable in the tray. Finally, if a fire started in the tray, it could spread to both sides of the barrier but would not spread beyond the cable tray to other combustibles because of the sprinkler system in Fire Zone 84, the early warning detection system in Fire Zone 2 and rapid response of the fire brigade.

Penetration C-12031 involves an opening in the ceiling of the Motor Driven Auxiliary Feed Pump Room (FZ 17B). The opening communicates with the Unit 2 Turbine Building at elevation 591' (FZ 34) which is fully sprinklered. The underside of the opening had a one-half inch thick piece of plywood damming in place. Because Fire Zone 17B has virtually no combustibles, it is unlikely that any fire could have begun which would have ignited and thus penetrated

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D. C. Cook Nuclear Plant, Unit 2	05000316	86	015	00	04	OF	04

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the damming material. A fire starting above the opening would have activated the sprinkler system before igniting the damming material. Therefore, it is extremely unlikely that a fire could have spread in either direction through the subject penetration.

Penetrations W-7522, W-7523, W-7507 and W-7508 enter the wall between the Auxiliary Building and the Turbine Building at elevation 609'. In Unit 1, the barrier is between Fire Zone 44N and Fire Zone 91. In Unit 2, the barrier is between Fire Zone 44S and Fire Zone 96.

There are two penetrations in each unit. Each of the openings has a large pipe passing through it. Each pipe is insulated with fiberglass and covered with an aluminum skin. There is minimal, if any, open space between the penetration and the pipe configuration. The combustible loadings are low on both sides. Also, there are wet pipe sprinklers on the Turbine Building side and a dry pilot protection sprinkler system and ionization detection system on the Auxiliary Building Side of these penetrations.

Because of the minimal amount of opening at each penetration, the noncombustible material traversing the penetration, the thickness of the Turbine/Auxiliary Building wall (3 feet) and the fire protection provided on both sides of the penetration, it is unlikely that any fire could develop to the size necessary to spread from one side of the barrier to the other.

Penetration W-9490 involves a one and one-half inch unsealed penetration with a 1-inch conduit passing through a fire barrier on the 591' elevation separating the unit 1 Transformer Room (FZ-14) and the Unit 1 Northeast Turbine Room (Zone 9). Fire Zone 14 has an insignificant amount of combustibles and an ionization detection system. Fire Zone 79 has a very low fire loading and a wet pipe sprinkler system. Because of the fire protection provided,, low combustible loading, the very small amount of space between the conduit and penetration opening, and the thickenss of the Turbine/Auxiliary Building wall (3 feet) it is highly unlikely that a fire could spread from one side of the fire barrier to the other via this unsealed penetration.

Corrective Actions

A fire watch was posted upon discovery of each inoperable fire seal and the penetrations were then sealed. The penetrations have been added to the Fire Seal Surveillance Data Base to insure these seals are inspected during future surveillances.



INDIANA & MICHIGAN ELECTRIC COMPANY

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May 8, 1986

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

Operating License DPR-74
Docket No. 50-316

Document Control Manager:

In accordance with the criteria established by 10CFR50.73
entitled Licensee Event Reporting System, the following
report/s are being submitted:

86-015-0

Sincerely,

W.G. Smith, Jr.
W.G. Smith, Jr.
Plant Manager

/cbm

Attachment

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