

## LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) D. C. COOK PLANT, UNIT - 1

DOCKET NUMBER (2)

0 5 0 0 0 3 1 5 1 OF 0 1

TITLE (4)

INOPERABLE FIRE BARRIER

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	6	1	3	8	5	8	5	-	0	2	0	-	0	0	0	7	1	2	8	5	D. C. COOK, UNIT 2	0 5 0 0 0 3 1 6
0	6	1	3	8	5	8	5	-	0	2	0	-	0	0	0	7	1	2	8	5		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)									
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)		50.38(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)		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 A. A. BLIND - ASSISTANT PLANT MANAGER

TELEPHONE NUMBER

AREA CODE

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 NPDOS	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPDOS

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 JUNE 13, 1985, AT APPROXIMATELY 1300 HOURS WITH UNIT 1 SHUTDOWN FOR REFUELING AND FUEL REMOVED FROM THE CORE, IT WAS DISCOVERED (DURING FIRE SEAL REPAIR ACTIVITIES) THAT THE FIRE BARRIER SEALS LOCATED ABOVE THE WALLS SEPARATING THE CONTROL ROOM CABLE VAULT (CRCV) AND THE HOT SHUTDOWN PANEL CABLE (HSDPC) ROOM WERE NOT INSTALLED IN ACCORDANCE WITH DESIGN SPECIFICATIONS. AN INSPECTION OF THE UNIT 2 HSDPC ROOM WALLS CONDUCTED ON JUNE 14, 1985, AT APPROXIMATELY 1400 HOURS, REVEALED A SIMILAR SEAL CONFIGURATION. IN BOTH CASES THE UNAPPROVED PENETRATION SEALS CONSTITUTED AN INOPERABLE FIRE BARRIER AS ADDRESSED IN TECHNICAL SPECIFICATION 3.7.10.

CONTINUOUS FIRE WATCH COVERAGE WAS ESTABLISHED AT THE TIME OF DISCOVERY AND WAS MAINTAINED UNTIL THE OPENINGS WERE TEMPORARILY SEALED ON JUNE 19 AND 20, 1985 (UNITS 2 AND 1, RESPECTIVELY). A PERMANENT SEAL WILL BE IN PLACE WITHIN 90 DAYS AS REQUIRED BY SPECIFICATION DCC-FP101-QCN.

THE HSDPC ROOM AND CRCV AREA EACH CONTAIN SAFE SHUTDOWN CABLES. A SINGLE FIRE RESULTING IN THE LOSS OF A HSDPC ROOM AND/OR THE OPPOSITE UNIT'S CRCV AREA HAS BEEN PREVIOUSLY EVALUATED BY THE PLANT'S RESPONSE TO APPENDIX A TO B.T.P.9.5-1, AND ADMINISTRATIVE CONTROLS ARE IN PLACE TO BRING THE PLANT TO A SAFE SHUTDOWN FROM EQUIPMENT LOCATED OUTSIDE OF THESE FIRE AREAS. THEREFORE, NO SIGNIFICANT IMPACT ON SAFE SHUTDOWN WOULD HAVE RESULTED FROM THE INSTALLATION OF THE UNAPPROVED PENETRATION SEALS.

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PDR ADOCK 05000315  
S PDR

## LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

APPROVED OMB NO. 3150-0104

EXPIRES: 8/31/86

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)		
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			
D. C. COOK PLANT, UNIT 1	0500031585-				00	02	OF 03

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

ON JUNE 13, 1985, AT APPROXIMATELY 1300 HOURS WITH UNIT 1 SHUTDOWN FOR REFUELING AND FUEL REMOVED FROM THE CORE, IT WAS DISCOVERED (DURING FIRE SEAL REPAIR ACTIVITIES) THAT THE FIRE BARRIER SEALS LOCATED ABOVE THE WALLS SEPARATING THE CONTROL ROOM CABLE VAULT (CRCV) AND THE HOT SHUTDOWN PANEL CABLE (HSDPC) ROOM WERE NOT INSTALLED IN ACCORDANCE WITH DESIGN SPECIFICATIONS. AN INSPECTION OF THE UNIT 2 HSDPC ROOM WALLS CONDUCTED ON JUNE 14, 1985, AT APPROXIMATELY 1400 HOURS, REVEALED A SIMILAR SEAL CONFIGURATION. IN BOTH CASES THE UNAPPROVED PENETRATION SEALS CONSTITUTED AN INOPERABLE FIRE BARRIER AS ADDRESSED IN TECHNICAL SPECIFICATION 3.7.10.

CONTINUOUS FIRE WATCH COVERAGE WAS ESTABLISHED AT THE TIME OF DISCOVERY AND WAS MAINTAINED UNTIL THE OPENINGS WERE TEMPORARILY SEALED ON JUNE 19 AND 20, 1985 (UNITS 2 AND 1, RESPECTIVELY). A PERMANENT SEAL WILL BE IN PLACE WITHIN 90 DAYS AS REQUIRED BY SPECIFICATION DCC-FP101-QCN.

THE UNAPPROVED PENETRATION SEAL WAS CONSTRUCTED OF STYROFOAM WITH A THIN LAYER OF CONCRETE ON THE CRCV SIDE. THE PENETRATION IS ONE (1) INCH IN HEIGHT AND CONTINUOUS ALONG THE TOP OF THREE OF THE WALLS. THE DEPTH OF THE SEAL AREA VARIES FROM APPROXIMATELY 6 TO 12 INCHES. ALTHOUGH THE SEALING METHOD WAS NOT IN ACCORDANCE WITH SPECIFICATION DCC-FP101-QCN, IT WOULD HAVE PROVIDED A CERTAIN MEASURE OF PROTECTION. THE PENETRATION WAS NOT USED FOR THE PASSAGE OF CABLE, CONDUITS, OR PIPING.

THE FOLLOWING IS A SUMMARY OF THE IMPACT OF THE SUBJECT PENETRATION ON SAFE SHUTDOWN OF THE PLANT. THE SUMMARY TRACES THE FIRE PATH, ASSUMING IT SPREADS THROUGH THE UNAPPROVED PENETRATION SEAL, AND SHOWS THAT THERE IS NO SIGNIFICANT IMPACT ON SAFE SHUTDOWN.

#### FIRE PROTECTION EVALUATION

EACH HSDPC ROOM IS CONSTRUCTED OF 3 HOUR REINFORCED CONCRETE WALLS WHICH EXTEND FROM FLOOR TO CEILING, WITH THE EXCEPTION OF THE ONE (1) INCH GAP AS EXPLAINED ABOVE. A 3 HOUR FIRE DOOR IS PROVIDED FOR ENTRY INTO EACH OF THESE ROOMS FROM THE OPPOSITE UNIT'S CONTROL ROOM CABLE VAULT. THE CRCV'S SURROUND THE RESPECTIVE HSDPC ROOM ON THREE SIDES (THE SAME SIDES WHICH CONTAIN THE ONE (1) INCH GAP).

WITH THE EXCEPTION OF THE UNIT 1 HSDPC ROOM, EACH AREA AFFECTED CONTAINS CROSS ZONED IONIZATION DETECTION SYSTEMS FOR AUTOMATIC ACTUATION OF A HALON 1301 SUPPRESSION SYSTEM ALTHOUGH CURRENTLY INOPERABLE FOR MODIFICATION. AS A BACKUP, A MANUAL CO<sub>2</sub> SUPPRESSION SYSTEM IS PROVIDED FOR SECOND SHOT CAPABILITY OR FOR TIMES SUCH AS THIS WHEN THE PRIMARY HALON SYSTEM IS INOPERABLE. ADMINISTRATIVE PROCEDURES ARE IN PLACE FOR OPERATION OF THE MANUAL CO<sub>2</sub> SYSTEM. THE DETECTION SYSTEMS PROVIDE ALARM ANNUNCIATION IN THE CONTROL ROOMS. THE UNIT 2 HSDPC ROOM AND UNIT 1 CRCV AREA ARE MONITORED/PROTECTED BY COMMON DETECTION AND GASEOUS SUPPRESSION SYSTEMS.

A FIRE STARTING IN THE UNIT 2 HSDPC ROOM OR EITHER OF THE CRCV ROOMS WOULD BE DETECTED BY THE IONIZATION DETECTION SYSTEM DURING ITS EARLY STAGES RESULTING IN THE AUTOMATIC DISCHARGE OF THE HALON SUPPRESSION SYSTEMS WHEN OPERABLE OR RAPID RESPONSE IN MANUALLY DISCHARGING THE CO<sub>2</sub> SYSTEM.

## LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

APPROVED OMB NO. 3150-0104

EXPIRES: 8/31/85

FACILITY NAME (1)  D. C. COOK PLANT, UNIT 1	DOCKET NUMBER (2)  0 5 0 0 0 3 1 5 8 5 -	LER NUMBER (6)			PAGE (3)		
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			

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

A FIRE STARTING IN THE UNIT 1 HSDPC ROOM WOULD NOT DEVELOP RAPIDLY AND WOULD HAVE DIFFICULTY BREACHING THE UNAPPROVED SEAL. THE ROOM IS NOT VENTILATED AND IS SMALL IN PHYSICAL DIMENSIONS. A DEVELOPING FIRE IN SUCH A ROOM WOULD SOON BE AN OXYGEN STARVED TYPE OF FIRE. OXYGEN STARVED TYPES OF FIRES ARE CHARACTERISTICALLY SMOKEY AND WITH LITTLE OR NO FLAMES. THE UNAPPROVED SEAL IS PHYSICALLY ARRANGED IN SUCH A MANNER THAT FIRE PROGRESS THROUGH THE SEAL WOULD HAVE TO BE IN A HORIZONTAL DIRECTION THROUGH AT LEAST 6 INCHES OF MATERIAL. HORIZONTAL PROPAGATION OF A FIRE THROUGH THE DESCRIBED 1 INCH GAP WOULD BE RELATIVELY SLOW AND MORE DIFFICULT THAN VERTICAL PROPAGATION. IT WOULD NOT HAVE BEEN LIKELY FOR A POSTULATED FIRE TO PROPAGATE THROUGH THE 1 INCH GAP PRIOR TO DETECTION BY THE UNIT 2 CRCV IONIZATION DETECTION SYSTEM. A FIRE STARTING IN THE UNIT 1 HSDPC ROOM WOULD HAVE BEEN DETECTED WHEN SMOKE HAD ACCUMULATED IN SUFFICIENT QUANTITIES TO EXIT THROUGH THE ALLOWED CLEARANCE BETWEEN THE FIRE DOOR AND ITS FRAME AND SILL OR THROUGH PASSAGES IN THE UNAPPROVED PENETRATION SEAL. ONCE THE SMOKE WOULD HAVE BEGUN ACCUMULATING IN THE UNIT 2 CRCV, IT WOULD HAVE BEEN DETECTED BY THE CRCV DETECTION SYSTEM RESULTING IN DISCHARGE OF A GASEOUS SUPPRESSION SYSTEM IN BOTH THE UNIT 1 HSDPC ROOM AND THE UNIT 2 CRCV BEFORE ANY DAMAGE WOULD OCCUR TO CABLES IN THE UNIT 2 CRCV.

MANUAL FIRE FIGHTING EQUIPMENT IN THE FORM OF PORTABLE FIRE EXTINGUISHERS AND FIRE HOSE STATIONS WAS AVAILABLE FOR USE BY THE FIRE BRIGADE.

SAFE SHUTDOWN ANALYSIS

THE HSDPC ROOM AND CRCV AREA EACH CONTAIN SAFE SHUTDOWN CABLES. A SINGLE FIRE RESULTING THE LOSS OF A HSDPC ROOM AND/OR THE OPPOSITE UNIT'S CRCV AREA HAS BEEN PREVIOUSLY EVALUATED BY THE PLANT'S RESPONSE TO APPENDIX A TO B.T.P.9.5-1, AND ADMINISTRATIVE CONTROLS ARE IN PLACE TO BRING THE PLANT TO A SAFE SHUTDOWN FROM EQUIPMENT LOCATED OUTSIDE OF THESE FIRE AREAS. THEREFORE, IN CONCLUSION, NO SIGNIFICANT IMPACT ON SAFE SHUTDOWN WOULD HAVE RESULTED FROM THE INSTALLATION OF THE UNAPPROVED PENETRATION SEALS.

LICENSEE EVENT REPORT REVIEW/EVALUATION FORM

CONDITION REPORT NO.: 1-06-85-1155 + 2-06-85-1157

LER NO.: \_\_\_\_\_

RESPONSIBLE DEPARTMENT: MGR.

REVISION NO.: 0

UNIT NO.: 1

- X 1. A brief abstract describing the major occurrences during the event, including: a) all component or system failures that contributed to the event and b) significant corrective action taken or planned to prevent recurrence.
- X 2. A clear, specific, narrative description within the text of what occurred so that knowledgeable readers conversant with the design of commercial nuclear power plants, but not familiar with the details of a particular plant, can understand the complete event. The narrative description must include the following specific information as appropriate for the particular event:
  - X (A) Plant operating conditions before the event.
  - NA (B) Status of structures, components, or systems that were inoperable at the start of the event and that contributed to the event.
  - X (C) Dates and approximate times of occurrences.
  - NA (D) The cause of each component or system failure or personnel error, if known.
  - NA (E) The failure mode, mechanism, and effect of each failed component, if known.
  - X (F) The Energy Industry Identification System component function identifier and system name of each component or system referred to in the LER. The Energy Industry Identification System is defined in: IEEE Std. 803-1983 (May 16, 1983) Recommended Practices for Unique Identification Plants and Related Facilities - Principles and Definition.
  - NA (G) For failure of components with multiple functions, include a list of systems or secondary functions that were also affected.
  - NA (H) For failure that rendered a train of a safety system inoperable, an estimate of the elapsed time from the discovery of the failure until the train was returned to service.
  - X (I) The method of discovery of each component or system failure or procedural error.
  - NA (J) (1) Operator actions that affected the course of the event, including operator errors, procedural deficiencies, or both, that contributed to the event.  
 (2) For each personnel error, the licensee shall discuss:
    - NA (a) Whether the error was a cognitive error (e.g., failure to recognize the actual plant condition, failure to realize which systems should be functioning, failure to recognize the true nature of the event or a procedural error;
    - NA (b) Whether the error was contrary to an approved procedure, was a direct result of an error in an unapproved procedure, or was associated with an activity or task that was not covered by an approved procedure;
    - NA (c) Any unusual characteristics of the work location (e.g., heat, noise) that directly contributed to the error; and
    - NA (d) The type of personnel involved (i.e., contractor personnel, utility-licensed operator, utility non-licensed operator, other utility personnel).
  - NA (K) Automatically and manually initiated safety system responses.
  - NA (L) The manufacturer and model number (or other identification) of each component that failed during the event.
- X 3. An assessment of the safety consequences and implications of the event. This assessment must include the availability of other systems or components that could have performed the same function as the components and systems that failed during the event.
- NA 4. A description of any corrective/preventive actions planned as a result of the event, including those to reduce the probability of similar events occurring in the future.
- NA 5. Reference to any previous similar events at the same plant that are known to the licensee.
- X 6. The name and telephone number of a person within the licensee's organization who is knowledgeable about the event and can provide additional information concerning the event and the plant's characteristics.

NOTE: Item Nos. 1 through 6 are written as described in NUREG-1022.

X indicates that the item was included in the LER.

NA indicates that the item is not applicable to the LER.



7. Was proper notification made to offsite agencies? Yes ☐ No ☐ N/A ☒
8. If the event was attributable to component failure specify reason for failure: N/A ☒
- ☐ Personnel Error
- ☐ Design, Manufacturing, Construction/Installation
- ☐ External Cause
- ☐ Defective Procedure
- ☐ Management/Quality Assurance Program Deficiency
- ☐ Other: \_\_\_\_\_
9. Could the event directly apply to:
- A) Similar Items in Same Unit? Yes ☒ No ☐
- B) Similar Items in Other Unit? Yes ☒ No ☐
10. Should the event be considered for:
- 10 CFR 21 Yes ☐ No ☒
- Environmental Qualification Yes ☐ No ☒
- Electrical Component Aging Evaluation Yes ☐ No ☒
11. Followup reports or future commitments were identified Yes ☒ No ☐
- If Yes, identify the applicable department(s)/group(s) - A copy of this form and the report must be sent to those identified below:
- ☐ Administrative ☐ Operations ☐ Maintenance ☐ Stores
- ☐ I&M Construction ☐ Document Control ☐ Technical-Physical Science
- ☒ Quality Control ☐ Technical-Engineering ☐ AEPSC: \_\_\_\_\_
12. Comments/Recommendations: COMMITMENT MADE TO HAVE PERMANENT  
SEAL INSTALLED WITHIN TIME LIMITATIONS OF DEC-FP101-QCN.

LER Review/Evaluation Form Prepared By:

ME Barfoly  
STA or Responsible Department Head

LER Checklist Reviewed By:

A. Ann Blum  
PNSRC Subcommittee on Operations Chairman or PNSRC Secretary  
or Alternates

Subcommittee on Operations or PNSRC Meeting No.:

1759



**INDIANA & MICHIGAN ELECTRIC COMPANY**

DONALD C. COOK NUCLEAR PLANT  
P.O. Box 458, Bridgman, Michigan 49106  
(616) 465-5901

July 12, 1985

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

Operating License DPR-58  
Docket No. 50-315

Document Control Manager:

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

RO 85-028-0

Sincerely,

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

/cbm

Attachment

cc: John E. Dolan  
J.G. Keppler, RO:III  
M.P. Alexich  
R.F. Kroeger  
H.B. Brugger  
R.W. Jurgensen  
NRC Resident Inspector  
R.C. Callen, MPSC  
G. Charnoff, Esq.  
J.M. Hennigan  
INPO  
PNSRC  
J.F. Stietzel  
A.A. Blind  
Dottie Sherman, ANI Library

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