NRC Form 366
(9-83)

U.S. NUCLEAR REGULATORY COMMISSION
APPROVED OMB NO. 3150-0104
EXPIRES: 8/31/85

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1)	DOCKET NUMBER (2)	PAGE (3)
DONALD C. COOK UNIT 2	0 5 0 0 0 3 1 6	1 OF 0 2

TITLE (4)
INOPERABLE FIRE DAMPER

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 8	2 9	8 4	8 4	0 2 3	0 1	1 0	2 4	8 4		0 5 0 0 0
										0 5 0 0 0

OPERATING MODE (9)	1
POWER LEVEL (10)	1 0 0

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

	20.402(b)		20.405(c)		50.73(a)(2)(iv)
	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)(x)

73.71(b)
73.71(c)
OTHER (Specify in Abstract below and in Text, NRC Form 366A)

LICENSEE CONTACT FOR THIS LER (12)

NAME	TELEPHONE NUMBER
	AREA CODE
R. L. DUDDING - MAINTENANCE SUPERINTENDENT	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 NPRDS		CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS	
X	K Q	D M P	A 3 4 0	N							

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)

THIS IS A REVISION TO LER 84-23 PREVIOUSLY SUBMITTED ON SEPTEMBER 28, 1984. THE PURPOSE OF THIS REVISION IS TO INCLUDE THE SAFETY ASSESSMENT OF THE INVOLVED EVENT.

ON AUGUST 29, 1984 AT 0505 HOURS, WHILE IN MODE 1 AND AT 100 PERCENT, FIRE DAMPER 2-HV-ACED-2, WAS OBSERVED TO BE INOPERABLE DURING A MANUAL ACTUATION OF THE LOW PRESSURE CO2 FIRE SUPPRESSION SYSTEM (CO2 PUFF TEST). UPON MANUAL ACTUATION OF THE CO2 SYSTEM, THE POP-OFF LATCH CAUGHT ON THE PROTECTIVE SCREEN PREVENTING COMPLETE CLOSURE OF THE DAMPER. ALSO OBSERVED IN THE DAMPER TRACK, WAS A ONE-HALF INCH UNISTRUT NUT WHICH WOULD HAVE PREVENTED COMPLETE DAMPER CLOSURE BY APPROXIMATELY ONE-HALF INCH. THIS NUT HAS BEEN REMOVED AND THE OPENING IN THE PROTECTIVE SCREEN HAS BEEN ENLARGED BY APPROXIMATELY ONE INCH TO OBTAIN PROPER CLEARANCE FOR THE POP-OFF LATCH.

TWO PREVIOUS PERIODIC FUNCTIONAL INSPECTIONS OF THE SUBJECT DAMPER, COMPLETED ON AUGUST 13, 1982, AND MAY 25, 1984, FAILED TO REVEAL ANY DISCREPANCIES.

POST REPAIR FUNCTIONAL TESTING HAS BEEN PERFORMED BY MANUALLY AND AUTOMATICALLY ACTUATING THE POP-OFF LATCH TO ENSURE PROPER DAMPER OPERATION. THE ACTIONS TAKEN AS DESCRIBED, CORRECTED THE DISCREPANCY AND SHOULD PREVENT RECURRENCE.

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NRC Form 366
(9-83)

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
DONALD C. COOK UNIT 2	0 5 0 0 0 3 1 6	8 4	0 2 3	0 1	0 2 OF 0 2

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

THIS IS A REVISION TO LER 84-023 SUBMITTED ON SEPTEMBER 28, 1984.

ON AUGUST 29, 1984 AT 0505 HOURS, WHILE IN MODE 1 AND AT 100 PERCENT REACTOR THERMAL POWER, FIRE DAMPER 2-HV-ACED-2, LOCATED IN THE UNIT 2 AUX CABLE VAULT WAS OBSERVED TO BE INOPERABLE DURING A MANUAL ACTUATION OF THE LOW PRESSURE CO2 FIRE SUPPRESSION SYSTEM (CO2 PUFF TEST). THE SUBJECT DAMPER IS A GUILLOTINE TYPE DAMPER WHICH HAS A THREE HOUR FIRE RATING AND IS 24 X 18 INCHES IN SIZE. UPON MANUAL ACTUATION OF THE CO2 SYSTEM, THE POP-OFF LATCH CAUGHT ON THE PROTECTIVE SCREEN PREVENTING COMPLETE CLOSURE OF THE DAMPER. A 175F QUARTZOID BULB LINK WHICH IS INSTALLED ON THE CABLE CONTAINING THE POP-OFF LATCH WOULD HAVE FREED THE DAMPER DURING AN ACTUAL FIRE. ALSO OBSERVED IN THE DAMPER TRACK, WAS A ONE-HALF INCH UNISTRUT NUT WHICH WOULD HAVE PREVENTED COMPLETE DAMPER CLOSURE BY APPROXIMATELY ONE-HALF INCH. THIS UNISTRUT NUT WAS DETERMINED TO HAVE BEEN LEFT BY PERSONNEL WORKING IN THE AREA DURING A RECENT INSTALLATION OF A DESIGN CHANGE. THIS NUT HAS BEEN REMOVED, AND PERSONNEL INVOLVED HAVE BEEN CAUTIONED ABOUT LEAVING SURPLUS MATERIAL IN AND AROUND OPERATING EQUIPMENT. THE OPENING IN THE PROTECTIVE SCREEN HAS BEEN ENLARGED BY APPROXIMATELY ONE INCH TO OBTAIN PROPER CLEARANCE FOR THE POP-OFF LATCH. POST REPAIR FUNCTIONAL TESTING HAS BEEN PERFORMED BY MANUALLY AND AUTOMATICALLY ACTUATING THE POP-OFF LATCH TO ENSURE PROPER DAMPER OPERATION.

TWO PREVIOUS PERIODIC FUNCTIONAL INSPECTIONS OF THE SUBJECT DAMPER FAILED TO REVEAL ANY DISCREPANCIES. THESE INSPECTIONS WERE COMPLETED ON AUGUST 13, 1982, AND MAY 25, 1984. THE CONDITION DESCRIBED ABOVE WAS IMMEDIATELY RECTIFIED UPON DISCOVERY. CO2 PUFF TESTS PERFORMED IN OTHER AREAS FAILED TO REVEAL ANY ABNORMALITIES OF A SIMILAR NATURE WITH THEIR ASSOCIATED FIRE DAMPERS. A JOB ORDER HAS BEEN INITIATED TO INSPECT OTHER LOCATIONS TO ENSURE SIMILAR CONDITIONS DO NOT EXIST.

THE ACTIONS DESCRIBED ABOVE CORRECTED THE DISCREPANCY AND SHOULD PREVENT RECURRENCE.

A SAFETY EVALUATION (COPY ATTACHED) WAS PERFORMED THAT ADDRESSES THE OBSTRUCTION OF FIRE DAMPER 2-HV-ACED-2. THIS EVALUATION CONCLUDED THAT ADEQUATE FIRE PROTECTION EXISTED IN SPITE OF DAMPER CLOSURE PROBLEMS. ON THE BASIS OF THE EVALUATION, PUBLIC HEALTH AND SAFETY WERE NOT AFFECTED.

LER 84-023
CONDITION REPORT 2-08-84-1773

PROBLEM: Unit 2 Auxiliary Cable Vault return air fire damper 2-HV-ACED-2 was found half closed with the CO_2 pop-off cable caught on the protective screen. This problem occurred during a CO_2 Puff Test. If an actual fire had occurred, the quartzoid bulb would have allowed the damper to close, however, in this case, there was a second problem in that the damper had a half-inch unistrut nut located at the bottom of the damper track which would have prohibited complete closure. The following is a synopsis of the impact of the problem.

1. Fire Detection
   Inside the Vault - Ionization smoke detectors which signal the control room and activate the CO_2 System.

   Outside the Vault - (Area beyond damper) Location is the 609' El. of the Auxiliary Building (Fire Zone 44). Ionization smoke detectors are installed throughout the area.

2. Fire Suppression
   Inside the Vault - CO_2 suppression system which is activated by the ionization detection system. With the damper blocked half open, calculations indicate a minimum concentration of 50% CO_2 could be maintained for 15 minutes based on the discharge time settings in the System Description, Pre Op Test, and present settings.

   Outside the Vault - Since June, 1984, automatic sprinklers have been installed throughout the area outside the vault, adjacent to the wall containing damper 2-HV-ACED-2, to contain any fire in that area. Average fire loading in this area is 10 minutes.

3. Fire Barrier

The quartzoid bulb on the damper was not blocked. Therefore, in a fire condition (heat buildup), the bulb could break and the damper operate as designed. The damper could close to within approximately 1/2 inch (because of the unistrut nut) which would minimally degrade the fire barrier from the design rating.

CONCLUSION

Based on a review of the available reports and calculations, the CO_2 level in the Auxiliary Cable Vault would remain at 50% or above for approximately 15 minutes. This would meet the original acceptance criteria for the system. Based on the automatic operation of the system, fires would be detected and contained in the vault.

The barrier penetration would not be a major concern as the quartzoid bulb would be able to operate in time of fire and the damper would close to within 1/2 inch of complete closure because of the unistrut nut. Suppression inside the vault would contain a fire to the vault based on the original acceptance criteria. Should products of combustion from an external fire enter the damper opening, the CO_2 system in the vault would be activated by the smoke detector. This actuation would occur before sufficient heat to ignite any combustible could spread through the small opening. Addition of the suppression system outside the area (June 1984) further reduced any chance of fire spread from the adjacent area.

American Electric Power System
INDIANA & MICHIGAN ELECTRIC COMPANY
DONALD C. COOK NUCLEAR PLANT
P.O. Box 458, Bridgman, Michigan 49106
(616) 465-5901

October 24, 1984

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:

RO 84-023-1

Sincerely,

W.G. Smith, Jr.
Plant Manager

/cbm

Attachment

cc: John E. Dolan
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