

February 18, 1988



EDISON PLAZA
300 MADISON AVENUE
TOLEDO, OHIO 43652-0001

Log No: KA88-0262
NP-33-88-03

Docket No. 50-346
License No. NPF-3

U. S. Nuclear Regulatory Commission
Document Control Desk
Washington, D. C. 20555

Gentlemen:

LER No. 88-003
Davis-Besse Nuclear Power Station Unit No. 1
Date of Occurrence January 13, 1988

Enclosed is Licensee Event Report 88-003, which is being submitted in accordance with 10CFR50.73 to provide 30 day written notification of the subject occurrence.

The late submittal of this LER was discussed with the site's Senior Resident Inspector on February 12, 1988.

Yours truly,

A handwritten signature in cursive script that reads 'Louis F. Storz'.

Louis F. Storz
Plant Manager
Davis-Besse Nuclear Power Station

LFS/ed

cc: Mr. A. Bert Davis
Regional Administrator
USNRC Region III

Mr. Paul Byron
DB-1 NRC Resident Inspector

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LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) Davis-Besse Unit 1	DOCKET NUMBER (2) 0 5 0 0 0 3 4 6	PAGE (3) 1 OF 0 3
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TITLE (4)
Fire Detection System Supervision Not Tested For Ground Fault Detection Due to An Inadequate 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		
0 1	1 3	8 8	8 8	0 0 3	0 0 0	2 1	8 8	8	DOCKET NUMBER(S) 0 5 0 0 0		
									0 3 0 0 0		

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

OPERATING MODE (9) 1	20.402(b)	20.406(a)(1)(i)	20.406(a)(1)(ii)	20.406(a)(1)(iii)	20.406(a)(1)(iv)	20.406(a)(1)(v)	20.406(a)(1)(vi)	20.406(a)(2)(i)	20.406(a)(2)(ii)	20.406(a)(2)(iii)	20.406(a)(2)(iv)	20.406(a)(2)(v)	20.406(a)(2)(vi)	20.406(a)(2)(vii)	20.406(a)(2)(viii)	20.406(a)(2)(ix)	73.71(b)	73.71(c)	OTHER (Specify in Abstract below and in Text, NRC Form 366A)
POWER LEVEL (10) 0 8 1 0																			

LICENSEE CONTACT FOR THIS LER (12)

NAME J. C. Stotz, Associate Nuclear Engineer, Technical Planning	TELEPHONE NUMBER 4 1 1 9 2 4 9 - 1 5 1 0 1 0
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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
D	IIC	GID/EIT	PI41315	N					

SUPPLEMENTAL REPORT EXPECTED (14)

<input type="checkbox"/> YES (If yes, complete EXPECTED SUBMISSION DATE) <input checked="" type="checkbox"/> NO	EXPECTED SUBMISSION DATE (15)	MONTH DAY YEAR
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ABSTRACT (Limit to 1400 spaces, i.e., approximately fifteen single-space typewritten lines) (16)

On January 13, 1988 during research to resolve Request for Assistance 87-0411-00, Fire Protection personnel determined that the supervised circuits supervision ground fault detection on Fire Detection Panel C-4720 was inoperable and the Technical Specification requirement to verify ground fault detection on the required instrumentation had not been met since 1980. A modification to the system was implemented in 1980 which included ground fault detection capability. The Surveillance Test revision implemented did not test for ground fault detection capabilities due to a lack of understanding of NFPA 72D Supervision Requirements. When this test was split into three new required Technical Specification separate procedures in March 1987, ground fault detection capability was included.

When the new procedure was performed in March 1987, and September 1987 a test deficiency related to ground fault detection was identified. This test deficiency was incorrectly evaluated as not affecting system operability due to an inadequate understanding of NFPA 72D requirements and a lack of specific acceptance criteria in the test procedure. Training of Fire Protection, Instrument and Control, and Operations personnel will occur.

Specific acceptance criteria will be incorporated into the test procedures. The test deficiency in Fire Detection Panel C-4720 was an actual ground fault module failure and a wiring error. The module has been replaced and the wiring corrected.

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LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

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		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			
		8 8	0 0 3	0 0	0 2	OF	0 3

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

Description of Occurrence:

Technical Specification Surveillance Requirement 4.3.3.8.2 requires that "NFPA 72D Class A supervised circuits supervision...shall be demonstrated operable at least once per 6 months." NFPA 72D-1975 states that supervision must indicate the occurrence of a break or a ground fault on the supervised circuit. Therefore, testing must include both the break and the ground fault conditions. However the surveillance test ST 5016.06 which was used to verify Surveillance Requirement 4.3.3.8.2 did not test for these ground fault detection capabilities.

On January 13, 1988, during research to resolve Request for Assistance (RFA) 87-0411-00, Fire Protection personnel determined that the supervised circuits supervision ground fault detection on Fire Detection Panel C-4720 was inoperable. This condition had existed since 1980 when the fire protection systems (PC) were upgraded to include ground fault detection.

In March 1987, ST 5016.06 was replaced by three new Technical Specification required Surveillance Test Procedures (ST 5016.46, ST 5016.47, and ST 5016.48), one for each Technical Specification required fire detection panel. These three procedures did contain the requirements to test ground fault detection.

In March 1987 and again in September 1987, ST 5016.46 was performed on Fire Detection Panel C-4720. In each test the ground fault detection did not function properly and a test deficiency was written. RFA 87-0411-00 was written to resolve this deficiency. Meanwhile the test deficiency was evaluated to not affect system operability since the system was considered to provide an alarm on a fire signal. In March 1987, ST 5016.47 and ST 5016.48 were performed on the other two Technical Specification required fire detection panels with satisfactory results.

This is reported as a condition prohibited by Technical Specifications under 10CFR50.73(a)(2)(i)(B).

Designation of Apparent Cause of Occurrence:

The addition of ground fault detection in 1980 was not reflected in the revision of ST 5016.06 following implementation of the modification. This deficiency is attributed to a lack of understanding of NFPA 72D supervision requirements.

The test deficiencies written in March 1987 and September 1987 for ST 5016.47 were incorrectly evaluated as not affecting operability. It had been generally accepted that a successful test of the ability to sense a break met the surveillance requirement that the supervised circuits supervision were operable. In addition, the acceptance criteria in ST 5016.46 did not specifically address those portions of the test which must be satisfactorily completed to declare the supervised circuits supervision operable.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

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

The March and September 1987 test deficiencies were caused by an actual ground module failure and a wiring error in the circuit supervision for panel C4720.

Analysis of Occurrence:

The ability of required instrumentation to transmit fire detection signals has been functionally tested. The lack of ground fault indication testing, however, prohibited assurances that fire detection signals could have been transmitted with certain ground fault conditions existing.

Corrective Action:

The inoperable ground fault module and the wiring error were corrected under Maintenance Work Order MWO 1-87-3859-00 on December 21, 1987. Surveillance Test ST 5016.46 was performed and the ground fault portions of the test were satisfactory.

Appropriate personnel in the Fire Protection Group, Instrument and Controls Maintenance, and Operations will have this event reviewed with them. The review/training of the lessons learned from the event will be completed by April 10, 1988.

The process for procedure revision in place since April 1986 improves the technical review process for procedure revisions. The three new Technical Specification required procedures written when ST 5016.06 was split did contain the correct NFPA 72D Class A circuits testing requirements. These procedures will have their acceptance criteria revised prior to March 30, 1988 to specifically address which procedure steps must be satisfactorily completed in order to declare NFPA 72D Supervised Circuits Supervision operable.

Failure Data:

This is the first report of not meeting the NFPA 72D Class A supervision surveillance requirements.

REPORT NO: NP-33-88-03

PCAO NO(s): 88-0022