

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) Davis-Besse Unit 1	DOCKET NUMBER (2) 05000346	PAGE (3) 1 OF 4
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TITLE (4)  
Inoperable Fire Barrier With Inoperable Fire Detection

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)
01	21	88	88	005	01	04	15	88			050000
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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(e)	50.73(a)(2)(iv)	73.71(b)
	20.406(a)(1)(i)	50.36(e)(1)	50.73(a)(2)(v)	73.71(e)
	20.406(a)(1)(ii)	50.36(e)(2)	50.73(a)(2)(vi)	OTHER (Specify in Abstract below and in Text, NRC Form 365A)
	20.406(a)(1)(iii)	50.73(a)(2)(i)	50.73(a)(2)(viii)(A)	
	20.406(a)(1)(iv)	50.73(a)(2)(ii)	50.73(a)(2)(viii)(B)	
20.406(a)(1)(v)	50.73(a)(2)(iii)	50.73(a)(2)(x)		

LICENSEE CONTACT FOR THIS LER (12)

NAME J. C. Stotz, Associate Nuclear Engineer, Technical Planning	TELEPHONE NUMBER	
	AREA CODE 419	249-15010

COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPROS	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPROS

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 21, 1988, at 2000 hours, the Shift Supervisor was notified that an inoperable fire barrier, 426-N/427-S, did not have operable fire detection on either side. This condition had existed for approximately 45 hours. This is a violation of Technical Specification 3.7.10 because a continuous fire watch had not been established within 1 hour. The Shift Supervisor reset the alarms, which returned the fire detection zones to an operable status.

Operations personnel did not recognize that fire detectors were inoperable on both sides of an inoperable fire barrier. A list of fire detection zones and their corresponding fire barriers will be developed for Operations personnel. Until the list is developed, a continuous fire watch will be established when a fire detection alarm can not be cleared within 1 hour. During development of this list it was discovered that one inoperable fire barrier which was believed to have fire detection on one side, did not. This was a result of an incorrect drawing following implementation of Facility Change Request (FCR) 81-0100. This modification will be reviewed to ensure all design drawings affected have been updated appropriately. Since the completion of FCR 81-0100 the modification process has been revised to include a more thorough review. This should identify this type of oversight prior to completion of design packages.

The Technical Specifications fire watch procedure does not require setting the fire alarm if the cause of the alarm has cleared. This procedure will be revised to include this requirement.

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

Description of Occurrence:

In September 1986, an hourly fire watch patrol had been established for inoperable fire barrier 426-N/427-S due to ongoing modification work. On January 15, 1988, at 0135 hours, Fire Detection Zone (IC) FDZ-412A came into alarm, and an hourly fire watch patrol was established by Operations on its Alarm Panel (C-4720). On January 19 at 1057 hours, Fire Detection Zone FDZ-427 came into alarm on the same panel. On January 21, 1988 with the Reactor in Mode 1 and 80 percent Reactor Thermal Power, Fire Protection Compliance group personnel making a tour of the Auxiliary Building (NF) noted that Fire Detection Zones FDZ-412A and FDZ-427 were in alarm.

Fire Barrier 426-N/427-S, which separates Fire Zones FDZ-427 and FDZ-412A, was inoperable. With fire detectors inoperable on both sides of an inoperable fire barrier, Technical Specification 3.7.10 requires a continuous fire watch for that barrier. At 2000 hours on January 21, 1988, the Shift Supervisor determined that the requirements of Technical Specification 3.7.10 had not been met.

By 2050 hours on January 21, 1988, Operations personnel reset the alarms which returned the two fire detection zones to an operable status. Therefore, a continuous fire watch at the inoperable fire barrier was no longer required. This allowed the hourly fire watch patrol to satisfy the action statement of Technical Specification 3.7.10.

While completing the corrective action for this event, another condition prohibited by the same Technical Specification was identified. An hourly fire watch had been established on January 29, 1986, due to fire damper (FD) 1143 being declared inoperable (ref. LER 86-010). The implementation of an hourly fire watch was based on a review of design documents which indicated that there was a detector installed on at least one side of the barrier containing the inoperable Fire Damper. On March 16, 1988 at 1840 hours, during verification of a compilation matching fire detection zones to fire barriers, it was determined that Room 603A had the detection removed by FCR 81-0100. This modification was implemented on January 13, 1986. The documentation for FCR 81-0100 was not completed at the time the engineering evaluation for establishing the hourly fire watch was made on January 29, 1986. Since the barrier which contained the inoperable fire damper did not have detection on either side, a continuous fire watch should have been implemented when the fire damper (FD 1143) was declared inoperable.

A continuous fire watch for this area was established at 1910 hours on March 16, 1988.

Since both of these conditions existed for more than one hour, they are being reported as a condition prohibited by Technical Specifications under 10CFR50.73(a)(2)(i)(B).

Designation of Apparent Cause of Occurrence:

The Operations personnel who were performing the hourly watch of the fire panel C-4720 notified the Shift Supervisor when FDZ-427 came into alarm. The Shift Supervisor acknowledged the alarm inoperable, but did not recognize that both FDZ-427 and FDZ-412A were inoperable in conjunction with Fire Barrier 426-N/427-S being inoperable. A contributing factor to the duration of this occurrence is that the procedure for Technical Specification Fire Watches (AD 1810.05) does not require periodic determination that the cause of the alarm has been eliminated.

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TEXT (if more space is required, use additional NRC Form 368A's) (17)

The condition discovered on March 16, 1988, was not discovered earlier because FCR 81-0100 did not identify and change all of the drawings affected. The initial fire watch determination, made when FD 1143 was declared inoperable, was based on design drawings A-225F and E-434 Sheet 2, which indicated the presence of a detector in Room 603A. Recent reviews of fire watch patrols utilized the A-221F through A-230F series of drawings which were not identified as requiring a revision by FCR 81-0100 and therefore were incorrect. The modification procedures have been revised to require a more thorough review of the design package prior to implementation. This should prevent this type of oversight from recurring.

Information on which detection zones are associated with which fire barriers is available in the Fire Strategies documents in the control room. However, these Fire Strategies are unwieldy to use in determining which fire detectors are associated with which fire barriers.

Analysis of Occurrence:

Hourly fire watch patrols routinely pass through Fire Detection Zones FDZ-412A and FDZ-427. Personnel entering the Radiation Control Area pass through an area where the Fire Detection Zone FDZ-412A can be observed. Even though a continuous fire watch was not established on one side of the inoperable fire barrier, the Fire Detection FDZ-412A side of the barrier is a heavily traveled area. These frequent observations would have provided early detection of fire. Therefore, this event has no actual or potential safety significance.

On February 18, 1988 it was determined that no identified inoperable fire detection zones had inoperable fire barriers associated with them which did not have a continuous fire watch established. However, the lack of continuous watches on inoperable fire barriers with inoperable fire detection zones may have previously occurred. The March 16, 1988 condition was discovered as part of an effort to re-verify that inoperable barriers had detection installed on at least one side.

Room 603A is identified in design documents as a Records Storage area located off of Room 603 (A/C Equipment Room). Room 603A is not used as a records storage area at the present time. A minimal amount of combustibles were in the room at the time the deficiency was discovered and they have been removed. It would not be credible to postulate a fire of sufficient intensity and duration to spread through the ductwork attached to the damper and into the adjacent area, in either direction, based upon the configuration of the area and the minimum amount of combustibles in the vicinity.

Corrective Action:

The Fire Protection Compliance group will provide Operations with a concise list of fire detection zones and their corresponding fire barriers. This list will serve to address the use of unwieldy Fire Strategies for fire barrier and detector relationships. By May 9, 1988 this list will be prepared and subsequently, Operations personnel provided training on the use of this list to improve their response to inoperable fire detection alarms. Until this list is issued, a continuous fire watch will be established when a fire zone alarm is not cleared within one hour. This watch will be maintained until the condition is evaluated as not requiring a continuous watch. Procedure AD 1810.05 will also be revised by May 9, 1988 to require periodic determination if the fire alarm can be cleared.

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

The continuous fire watch implemented for the condition discovered on March 16, 1988, has been discontinued based on a Safety Evaluation (SE 88-0153) and a non-rated opening justification. FCR 81-0100 will be reviewed by June 30, 1988 to ensure the design drawings affected by this modification are changed.

The Fire Protection Compliance group has created a data base of fire barriers and their associated fire detectors. The data base was compiled using a combination of design drawings. The discrepancy identified herein was identified while creating the data base. The majority of the data base has been as-built verified during a code compliance review of NFPA 72E. The concise list of fire detection zones and their corresponding fire barriers, identified in revision 0 of this LER, was created from this data base.

Failure Data:

Failure to establish continuous fire watches had been previously reported in LER 87-005. The causes surrounding LER 87-005 are not related to the conditions reported in this event.

REPORT NO: NP-33-88-05

PCAQ NO(s): 88-0054, 88-0190

April 15, 1988



Log No. KA88-0270  
NP-33-88-05 Rev. 1

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

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

Gentlemen:

Enclosed is Revision 1 to Licensee Event Report 88-005. The revisions to the report are indicated by a "1" in the left margin of each page.

Please destroy or mark superseded your previous copy of this report and replace with the attached revision.

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

Enclosure

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

Mr. Paul Byron  
DB 1 NRC Resident Inspector

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