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)
Davis-Besse Unit 1	0 5 0 0 0 3 4 6	1 OF 0 3

TITLE (4)
Inadvertent Full Safety Features Actuation In Cold Shutdown

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 1	0 8	8 6	8 6	— 0 0 8	— 0 0					0 5 0 0 0
										0 5 0 0 0

OPERATING MODE (9)	5	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)	X 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)(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	TELEPHONE NUMBER
	AREA CODE
Jim Albert	4 1 1 9 2 4 9 - 5 0 0 0

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	

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 Jnuary 8, 1986 at 1055 hours, while in mode 5 (cold shutdown), the Station experienced a full Safety Features Actuation System, (SFAS) actuation. Prior to the actuation, SFAS Channel 1 had been denergized to permit a cabinet modification. At the time of the actuation testing was being conducted in inverter YV3, which supplies AC power to SFAS Channel 3. Although the testing should not have interrupted YV3 power, an error in performing a step in Maintenance Procedure MP 1410.71 opened the wrong switch which resulted in the loss of 120 VAC vital bus Y3 which deenergized SFAS Channel 3. With both Channels 1 and 3 deenergized, a full SFAS actuation occurred, as designed.

By 1110 hours the same day, the SFAS Channels were reset and actuated equipment returned to normal.

At 1210 hours, notification was made under 10CFR50.72 to the NRC via the Emergency Notification System (Red Phone).

This report is being submitted per 10CFR50.73 as the automatic actuation of an Engineered Safety Feature (ESF).

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☆U.S.GPO:1984-0-454-481/18759

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

Description of Occurrence: On January 8, 1986 at 1055 hours, while in mode 5 (cold shutdown), the Station experienced a full Safety Features Actuation System, (SFAS) actuation. Prior to the actuation, SFAS Channel 1 had been deenergized to permit a cabinet modification. As the result of testing scheduled for inverter YV3, it was deenergized, thus deenergizing SFAS Channel 3. Although the testing should not have interrupted YV3 power, an error in performing a step in Maintenance Procedure MP 1410.71 opened the wrong switch. With both Channels 1 and 3 deenergized, a full SFAS actuation occurred, as designed.

By 1110 hours the same day, the SFAS Channels were reset and actuated equipment returned to normal.

At 1210 hours, notification was made under 10CFR50.72 to the NRC via the Emergency Notification System (Red Phone).

This report is being submitted per 10CFR50.73 as the automatic actuation of an Engineered Safety Feature (ESF).

Designation of Apparent Cause of Occurrence: The apparent cause is the lack of procedural adherence by the personnel performing MP 1410.71. The personnel were relying on the steps of the data sheet included in the procedure. The data sheet did not contain the same level of detail as the body of the procedure. Had the steps in the body of the procedure been followed, only the 'normal' DC to the inverter would have been isolated, and the inverter would have continued to supply Y3 and its loads.

Analysis of Occurrence: This event presented no significant safety consequences since the Unit was in mode 5 (cold shutdown) at the time. Safety Injection flow was not established and decay heat removal remained recirculating the RCS with the exception of about five minutes. During that time, certain valves were being blocked and repositioned to return the decay heat pumps from the injection mode of operation to the decay heat removal mode.

Had the plant been in modes 1, 2, or 3, DH 2733 and DH 2734 would have been already positioned open and DH 1517 and DH 1518 positioned closed. The SFAS signals to DH 2733 and DH 2734 would have been only confirmatory, and the effect of an SFAS block would have had no consequence on the ability of these valves to perform their safety function.

Being in mode 5, the other SA pumps (Containment Spray Pumps and High Pressure Injection) were racked out per procedure to prevent their inadvertent actuation. Had the plant been in mode 1, 2, 3, or 4 these pumps would have been racked in and the pumps would have started. The HPI would have injected depending on RCS pressure, and CSPs would have sprayed down Containment.

Engineering has confirmed that the design of the seal-in circuit for the opening signal to the Borated Water Storage Tank isolation valves DH 2733 and DH 2734 causes the valves to stop moving when SFAS is blocked. This is not in compliance with IEEE Standard No. 279-Design of Protection Systems, which requires that once initiated that all actuated equipment go to their intended safety position.

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

Corrective Action: Subsequent testing confirmed that the events that occurred in the actuation were as designed. The incident was reviewed with the personnel involved with the test. The test procedure is being reviewed for human factors improvements and will be modified to add cautions to the data pages to direct the personnel back into the body of the procedure for details. This human factors review will be done on all test procedures as their annual review is required.

Engineering has initiated a Facility Change Request to change the design involving the seal-in circuit for DH 2733 and DH 2734. This FCR will be implemented before plant restart.

Failure Data: This is the first inadvertent full SFAS actuation since 1980.

REPORT NO: NP-33-86-03

DVR NO: 86-006

TOLEDO EDISON

February 6, 1986

Log No. KA86-56
File: RR 2 (NP-33-86-03)

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

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

Gentlemen:

LER No. 86-008
Davis-Besse Nuclear Power Station Unit 1
Date of Occurrence: January 8, 1986

Enclosed is Licensee Event Report 86-008 which is being submitted in accordance with 10CFR50.73, to provide 30 day written notification of the subject occurrence.

Yours truly,

L. F. Storz/DWB

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

LFS/syc

Enclosure

cc: Mr. James G. Keppler,
Regional Administrator
USNRC Region III

Mr. Walt Rogers
DB-1 NRC Resident Inspector

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