

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) Davis-Besse Unit 1										DOCKET NUMBER (2) 0 5 0 0 0 3 4 6 1 OF 0 3										PAGE (3) 1 OF 0 3	
TITLE (4) Safety Features Actuation System Level 1 Actuation																					
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 4	3 0	8 5	8 5	0 1 0	0 0 0	0 5	3 0	8 5							0 5 0 0 0						
OPERATING MODE (9) 1		THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR 8: (Check one or more of the following) (11)																			
POWER LEVEL (10) 0 9 0		20.402(b)				20.405(e)				<input checked="" type="checkbox"/> 80.73(a)(2)(iv)				73.71(b)							
		20.405(a)(1)(i)				80.36(e)(1)				<input type="checkbox"/> 80.73(a)(2)(v)				73.71(a)							
		20.405(a)(1)(ii)				80.36(e)(2)				<input type="checkbox"/> 80.73(a)(2)(vii)				OTHER (Specify in Abstract below and in Text, NRC Form 388A)							
		20.405(a)(1)(iii)				80.73(a)(2)(i)				<input type="checkbox"/> 80.73(a)(2)(viii)(A)											
		20.405(a)(1)(iv)				80.73(a)(2)(ii)				<input type="checkbox"/> 80.73(a)(2)(viii)(B)											
		20.405(a)(1)(v)				80.73(a)(2)(iii)				<input type="checkbox"/> 80.73(a)(2)(ix)											
LICENSEE CONTACT FOR THIS LER (12)																					
NAME Bruce Hickman										TELEPHONE NUMBER AREA CODE 4 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 NRC		CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NRC											
B	J	E	D E T	V 1 1 5	N																
X	N	F	F S V	X 9 9 9	N																
SUPPLEMENTAL REPORT EXPECTED (14)												EXPECTED SUBMISSION DATE (15)				MONTH	DAY	YEAR			
<input type="checkbox"/> YES (If yes, complete EXPECTED SUBMISSION DATE)												<input checked="" type="checkbox"/> NO									

ABSTRACT (Limit to 1400 spaces, i.e., approximately fifteen single-space typewritten lines) (16)

On April 30, 1985, at 1125 hours and again at 2400 hours, the Station experienced a Safety Features Actuation System Level 1 actuation. The actuation isolates Containment atmosphere from the rest of the plant. There was no effect on the power operation of the plant. Previous to the actuation, the Station had removed one of the four Safety Features Actuation System containment radiation detectors for repair and modification. When one of the remaining three detectors (RE2007) spiked, the Level 1 actuation occurred. In both actuations, the spiked detector channel was reset within five minutes, and the actuated equipment restored to normal within thirty minutes. After the first actuation, it was noted that HA5716, ventilation damper to the Emergency Core Cooling System Room 105, failed to completely close. It was then fully closed and disabled in this position to satisfy the action statement of Technical Specification 3.3.2.1.

8506070463 850530
PDR ADOCK 05000346
S PDRIE 22
11

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

APPROVED OMB NO. 3150-0104

EXPIRES: 8/31/85

FACILITY NAME (1) Davis-Besse Unit 1	DOCKET NUMBER (2) 0 5 0 0 0 3 4 6	LER NUMBER (6)			PAGE (3)		
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			
		8 5	- 0 1 0	- 0 0 0	2	OF	0 3

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

Description of Occurrence: On April 30, 1985, the Station experienced a Safety Features Actuation System, SFAS, (JE), Level 1 actuation. The Station was in Mode 1 at 90 percent of rated thermal power. On April 29, 1985, at 2140 hours, SFAS Channel 1 Radiation Detector RE2004 had tripped and was left in the tripped condition and declared inoperable. Repairs to RE2004 had already started when Channel 4 Radiation Detector RE2007 spiked, which caused the SFAS Level 1 actuation.

The Level 1 actuation closed containment air sampling isolation valves, closed selected Auxiliary Building dampers, started the Emergency Ventilation System, EVS, (VC) fans, and stopped the Containment Purge Fans and the Control Room heating ventilation/air conditioning units. HA5716 (damper to Emergency Core Cooling System Room 105) failed to completely close.

By 1130 hours, the SFAS Channel 4 containment radiation detector was reset. By 1200 hours, all SFAS actuated equipment was restored to normal. However, HA5716 was closed and disabled in the closed position to satisfy Action 10 of Technical Specification 3.3.2.1.

At 2400 hours on April 30, 1985, the Station again experienced a Level 1 actuation under the same circumstances. By 2405 hours, SFAS Channel 4 containment radiation detector was reset. By 2411 hours, the Level 1 actuated equipment was restored to normal (HA5716 was still disabled in the closed condition).

This is being reported under 10CFR50.73(a)(2)(iv) as an event that resulted in the automatic actuation of an engineered safety feature.

Designation of Apparent Cause of Occurrence: The Level 1 actuations at 1125 hours and at 2400 hours were caused by the SFAS Channel 4 Containment Radiation Detector RE2007 spiking high, while Channel 1 detector RE2004 was already in its tripped condition. RE2004 had been declared inoperable and left in its tripped condition since 2140 hours on April 29, 1985. With one channel already tripped, it takes only one additional channel trip to cause the Level 1 actuation.

The spiking of RE2007 is thought to be due to the way the detector is mounted to the Shield Building (NH) wall. The cabinet is not completely insulated from the mounting bolts, some of which make contact with steel rebar in the wall. It is possible that some charge momentarily affected the detector. A facility modification, FCR 85-042, was written to insulate the detector from this potential ground loop.

When RE2007 began spiking again some three days after the insulated mounting modification was implemented, the detector and string were monitored with test instrumentation. Information during additional spikes pointed again to the detector, and it was replaced. It is thought that the detector, which had not been changed out when the FCR modifications were made, was already degraded at that time due to previous spiking and was subject to failure.

The failure of HA5716 to fully close was due to a leaking solenoid valve SV5716 which allowed enough air to leak through to hold the damper slightly open.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

APPROVED OMB NO. 3150-0104

EXPIRES 8/31/85

FACILITY NAME (1) Davis-Besse Unit 1	DOCKET NUMBER (2) 500034685-010-003 OF 03	LER NUMBER (6)			PAGE (3)		
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			

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

Analysis of Occurrence: The Level 1 actuations did not cause a plant upset. Reactor power level was unaffected. Placing the Channel 1 radiation detector in a tripped condition makes the system logic more conservative by requiring only one of the remaining three detectors to trip to cause an actuation. The effect on the plant would have been the same at any power level.

HA5716 provides one of the redundant isolations on one end of the ventilation ductwork passing through the Emergency Core Cooling System, ECCS, Room 115. The redundant damper also isolates on an SFAS Level 1 actuation to protect against a single failure. The dampers are only needed in the event of a rupture of the ductwork inside the ECCS rooms since otherwise, the ductwork is not open to the room atmosphere.

Corrective Action: At 1130 hours on April 30, 1985, the SFAS Channel 4 containment radiation detector was reset and by 1200 hours, the actuated equipment was restored to normal. HA5716 was disabled in the closed position, and Maintenance Work Order 1-85-1526-00 was initiated for its repair. Work was already in progress to replace the Channel 1 detector under Maintenance Work Order 1-85-1507-02 and to implement the insulated mounting modification under Facility Change Request 85-042.

After the second actuation at 2400 hours on April 30, 1985, the Channel 4 detector was again reset. The actuated equipment was restored to normal (with the exception of HA5716) at 2411 hours on April 30, 1985.

At 1815 hours on May 1, 1985, work on Channel 1 RE2004 was completed. It was successfully tested under the Containment Radiation Monitor Inputs to SFAS Calibration Test, ST 5031.04, and the SFAS Monthly Test, ST 5031.01, and declared operable.

At 1125 hours on May 6, 1985, the insulated mounting slide modification under Facility Change Request 85-042 was completed on the Channel 4 RE2007.

On May 18, 1985, after the detector had started to spike again, troubleshooting efforts resulted in the replacement of the Channel 4 RE2007 detector under Maintenance Work Order 1-85-1703-00.

Failure Data: The previous SFAS Level 1 actuation was reported in Licensee Event Report 85-03 (NP-33-85-02). There have been numerous incidents of the spiking of RE2007.

Report No: NP-33-85-14

DVR No(s): 85-070 and 85-071



May 30, 1985

Log No. K85-827
File: RR 2 (NP-33-85-14)

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

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

Gentlemen:

LER No. 85-010
Davis-Besse Nuclear Power Station Unit 1
Date of Occurrence: April 30, 1985

Enclosed is Licensee Event Report 85-010 which is being submitted in accordance with 10CFR50.73, to provide 30 day written notification of the subject occurrence.

Yours truly,

Stephen M. Quennoz
Plant Manager
Davis-Besse Nuclear Power Station

SMQ/ljk

Enclosure

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

Mr. Walt Rogers
DB-1 NRC Resident Inspector

JCS/001

IE22
1/1