

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) Davis-Besse Unit 1 DOCKET NUMBER (2) 05000346 PAGE (3) 1 OF 03

TITLE (4) Unidentified Reactor Coolant System Leakage in Excess of 1 GPM

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)
05	15	84	84	006	01	08	09	84			05000

OPERATING MODE (9) 1	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11)											
POWER LEVEL (10) 094	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 306A)								
	20.406(a)(1)(iii)	XX 50.73(a)(2)(i)	50.73(a)(2)(vii)(A)									
	20.406(a)(1)(iv)	50.73(a)(2)(ii)	50.73(a)(2)(vii)(B)									
	20.406(a)(1)(v)	50.73(a)(2)(iii)	50.73(a)(2)(x)									

LICENSEE CONTACT FOR THIS LER (12) NAME: G. E. Narus, Shift Technical Advisor TELEPHONE NUMBER: 419259-5000

COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)										
CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPD'S	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPD'S	
X	A B	F C V	R 3 4 4	N						

SUPPLEMENTAL REPORT EXPECTED (14) YES (if yes, complete EXPECTED SUBMISSION DATE) X NO EXPECTED SUBMISSION DATE (15)

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

At 2020 hours on May 15, 1984, the Control Room operator noted makeup tank level dropping at a rate of 3 GPM. This placed the unit in the Action Statement of Technical Specification 3.4.6.2(b). Attempts to isolate the leak were unsuccessful. A containment entry was made, and the leak was found to be in the vicinity of the pressurizer spray control valve. At 0020 hours on May 16, 1984, a reactor shutdown was initiated, and an Unusual Event was declared at 0130 hours. The unit entered Mode 3, Hot Standby, at 0600 hours. During the course of the Reactor Coolant System depressurization on May 16, the unit entered Reactor Protection System Shutdown Bypass without performing a required surveillance test which was then done later the same day after the error was confirmed. At 1515 hours on May 16, 1984, the unit was removed from the Unusual Event status after the determination that the leakage was not pressure boundary leakage. The leaking valve, RC49, the spray valve bypass, had a packing leak and was repacked and declared operable at 1115 hours on May 17, 1984. During the subsequent repressurization a Reactor Protection System actuation was received from Reactor Protection System Shutdown Bypass high pressure just prior to removing the unit from Reactor Protection System Shutdown Bypass. This was due to difficulties in pressure control at this point in the repressurization.

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		84	006	01	02	OF	03

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

Description of Occurrence: At 2020 hours on May 15, 1984, a Control Room operator noted makeup tank level decreasing at a rate of 3 GPM with the plant in Mode 1 at 94% power. This placed the unit in the action statement of Technical Specification 3.4.6.2(b) which allows up to 1 GPM of unidentified reactor coolant leakage, and the unit entered action item (b) of Technical Specification 3.4.6.2 which requires reduction of the leak rate to within limits within 4 hours, or Hot Standby within the next 6 hours, and in Cold Shutdown within the following 30 hours.

The Control Room began isolating portions of the Makeup System to try to isolate the leak, but the leak rate did not decrease. At 2323 hours on May 15, 1984, a containment entry was made at power to locate the leak. At 2330 hours, the containment entry crew reported that the leak was in the vicinity of the pressurizer spray valve (RC2).

A reactor shutdown was initiated at 0020 hours on May 16, 1984. At 0130 hours on May 16, 1984, the Shift Supervisor declared an Unusual Event since the containment entry crew could not determine that the leak was not from a pressure boundary and, therefore, could not be necessarily classified as identified leakage. At 0600 hours on May 16, 1984, the reactor was manually isolated which removed the unit from the Unusual Event and removed the unit from the action items of Technical Specification 3.4.6.2. It was discovered that the leakage was from the spray valve bypass valve (RC49) packing.

At 0740 hours on May 16, 1984, in the course of the reactor shutdown and depressurization, the unit went into Reactor Protection System (RPS) Shutdown Bypass without the surveillance requirements of Technical Specification 4.3.1.1 being met. This was confirmed later on May 16, 1984, and the Surveillance Test ST 5030.15 was begun and finished with Shift Supervisor approval at 0100 hours on May 17, 1984.

At 1245 hours on May 17, 1984, the unit received a RPS actuation due to reaching the RPS shutdown bypass high pressure trip setpoint prior to the point in the startup procedure where shutdown bypass is removed. This occurred when they were increasing pressure to clear the Safety Features Actuation System (SFAS) Reactor Coolant System (RCS) low pressure trips which were set high in the SFAS instrumentation allowable band at this time. That situation, plus the error inherent in the wide-range RCS pressure strip chart recorders that the operators were looking at for manually controlling pressure caused them to approach and reach the RPS shutdown bypass trip setpoint before they could stop the pressure increase and maintain pressure in order to remove the RPS shutdown bypass.

Designation of Apparent Cause of Occurrence: The apparent cause of this occurrence was a component failure of the packing of the mini-spray valve RC49. This valve is set in a throttled position so the packing is always exposed to system pressure.

The cause of the failure to perform the surveillance test on the RPS shutdown bypass channels was due to personnel error related to the fact that each RPS channel is

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tested monthly. However, previous to this event the monthly test didn't include the check on the bypass circuit that must be done prior to enabling shutdown bypass on a reactor shutdown.

The cause of the RPS actuation during the subsequent unit repressurization was due to operational difficulties concerning pressure control at this point in the startup.

Analysis of Occurrence: There was no danger to the health and safety of the public. All the leakage was internal to the containment vessel. No radioactive release occurred as a result of this occurrence. The unit was shutdown in an orderly, controlled manner.

Corrective Action: At 1515 hours on May 16, 1984, RC49 (mini-spray valve) was isolated, and the line was permitted to depressurize prior to maintenance. Maintenance personnel found about half of the packing blown out of RC49. The remaining packing was removed from RC49, and the valve was repacked under Maintenance Work Order 1-84-1602-00. The valve was manually cycled and relocked in its throttled position and declared operable at 1115 hours on May 17, 1984.

Toledo Edison is investigating the possible use of different types of packing and packing means for selected RCS valves.

The Surveillance Test, ST 5030.15, for the RPS shutdown bypass circuits was performed immediately after it was determined that it wasn't done as required earlier in the reactor shutdown process. We are now in the process of modifying the RPS Channel Check Monthly Surveillance Test, ST 5030.02, to perform the required sections of ST 5030.15 on a monthly basis, regardless of plant operating mode, such that it will always be current when needed during a plant shutdown.

Several corrective efforts are in progress to correct the pressure control difficulties prior to going off of RPS shutdown bypass during a repressurization in order to avoid tripping on shutdown bypass high pressure. Modifications to the startup procedure are being considered, and Engineering is reviewing Control Room pressure indication instrumentation. The Instrument & Control Department is also investigating the possibility of altering how the setpoints are set in their allowable band for SFAS low pressure block reset and the RPS shutdown bypass high pressure trip.

Failure Data: No similar occurrences have been reported.

Report No: NP-33-84-06

DVR No(s): 84-063, 84-066, 84-067



August 9, 1984

Log No. K84-1074  
File: RR 2 (NP-33-84-06)

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

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

Gentlemen:

LER No. 84-006  
Davis-Besse Nuclear Power Station Unit 1  
Date of Occurrence: May 15, 1984

Enclosed is Revision 1 to Licensee Event Report 84-006. The revisions to the report are indicated by a "1" in the left margin of each page.

Please replace your previous copy of this report with the attached revision.

Yours truly,

A handwritten signature in cursive script that reads "Stephen M. Quennoz".

Stephen M. Quennoz  
Acting Station Superintendent  
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

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