

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) Dresden Nuclear Power Station, Unit 2						DOCKET NUMBER (2) 0 5 0 0 0 2 3 7 1			PAGE (3) 1 OF 04	
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TITLE (4)
Inoperable HPCI Room Cooler Due to Broken Drive Belts Caused By Normal Wear

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)
06	06	87	87	018	00	06	26	87	N/A		0 5 0 0 0
THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11) N/A											

OPERATING MODE (9) N	20.402(b)	20.406(c)	50.73(a)(2)(iv)	73.71(b)
POWER LEVEL (10) 0 8 8	20.406(a)(1)(i)	50.38(c)(1)	X 50.73(a)(2)(v)	73.71(c)
	20.406(a)(1)(ii)	50.38(c)(2)	50.73(a)(2)(vii)	OTHER (Specify in Abstract below and in Text, NRC Form 366A)
	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)(ix)	

LICENSEE CONTACT FOR THIS LER (12)

NAME Joseph Welch Technical Staff Engineer (X-422)						TELEPHONE NUMBER 8 1 5 9 4 2 2 9 2 0					
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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
X	B J	C L R	B 5 1 7	N					

SUPPLEMENTAL REPORT EXPECTED (14)						EXPECTED SUBMISSION DATE (15)		
<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)

At 1910 hours on June 6, 1987, with Dresden Unit 2 Operating at 88.7% rated thermal power, the High Pressure Coolant Injection (HPCI) system room cooler was found inoperative by an Operator performing rounds in the area. Since the room cooler is required to support long-term HPCI operation, the HPCI system was declared inoperative. An orderly reactor shutdown was initiated as a conservative measure because the Unit 2 emergency Diesel Generator was out of service for a routine maintenance inspection. Corrective action included replacing the broken drive belts. Safety significance was minimal due to availability of the Automatic Depressurization, Core Spray, and LPCI Systems. The Unit 2/3 Diesel Generator was also available.

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

PLANT AND SYSTEM IDENTIFICATION:

General Electric - Boiling Water Reactor - 2527 MWt rated core thermal power. Energy Industry Identification System (EIIS) codes are identified in the text as [XX].

EVENT IDENTIFICATION:

The Unit 2 High Pressure Coolant Injection (HPCI) System [BJ] room cooler was discovered inoperative as a result of broken cooler motor drive belts caused by normal wear.

A. PLANT CONDITIONS PRIOR TO EVENT:

Mode: N - Run Reactor Power: 88.7%

Reactor Pressure/Temperature: 988 psig/515°F

B. DESCRIPTION OF EVENT:

On June 6, 1987 at 1910 hours, Unit 2 was operating at a steady power level of 88.7% (2241 MWt) and a load of 705 MWe. While conducting normal unit rounds, the Equipment Attendant observed that there was no air emanating from the room cooler. The fan motor was "ON" as shown by Control Room indication. Further investigation revealed that the two drive belts connecting the fan to the motor had broken. The HPCI room cooler is a Buffalo Forge Size G-123 HV draw-through type cooler. It operates with a 3 hp motor connected by a v-belt drive to a 4950 scfm fan rotating at 1590 rpm. The cooler unit is rated at 200,000 total BTU/hour.

The HPCI room coolers are used to control the HPCI room area temperature in order to support long term operation of the HPCI System. Technical Specification Table 3.2.1 requires an automatic HPCI System isolation when the HPCI area temperature reaches 200°F. In 1983, in response to I.E. Information Notice No. 83-56 "Operability of Required Auxiliary Equipment", Dresden Station committed to declaring the HPCI System inoperable whenever the room cooler cannot perform its designed function. This requirement is implemented under Operating Order #8-87. This order requires that in the event either of the HPCI room coolers or the Low Pressure Coolant Injection (LPCI) [BO]/Core Spray [BM] room coolers becomes inoperable, their respective safety systems should also be declared inoperable.

Technical Specification 3.5.C.2 allows seven days of reactor operation with an inoperable HPCI System provided that during such seven days all active components of the Automatic Depressurization Subsystem (ADS), the Core Spray Subsystems [BM], the LPCI [BO] Subsystem, and Isolation Condenser [BL] System are operable. The emergency Diesel Generators are considered necessary to support Core Spray and LPCI operation under design basis loss of offsite power events. However, the Unit 2 Diesel Generator had been taken out of service on June 1, 1987 for a routine maintenance inspection. Therefore, an orderly reactor shutdown was initiated as a conservative measure.

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

C. CAUSE OF EVENT:

The cause of the belt failure has been attributed to wear and age of the belts. This conclusion was made, based on a review of completed work requests. The belts were last replaced on September 12, 1985; they were checked on December 3, 1986 during the Unit 2 refuel outage. The belts were found to be in satisfactory condition at that time and the belt tension was readjusted to ensure proper operation.

D. SAFETY SIGNIFICANCE:

Despite the fact that the HPCI System was declared inoperable, its functional operation was not degraded. Auto-initiation and operation of the system was not defeated. Although a high HPCI room temperature would cause an automatic HPCI System isolation, this function is intended to mitigate the consequences of a major steam leak within the room.

The HPCI System could thus operate for a significant period of time before the HPCI room ambient temperature rose to the automatic HPCI isolation setpoint. The fan belts are believed to have broken during the previous day as cooler operation is checked daily by an Equipment Attendant.

The ADS System was also available, in conjunction with Core Spray and LPCI components supported by the operable 2/3 Diesel Generator, to provide emergency core cooling for events requiring initiation of the HPCI System. For these reasons, the safety significance of this event was minimal.

E. CORRECTIVE ACTIONS:

Work Request D65782 was initiated to replace the room cooler belts. The sheave grooves that the belts are seated in were inspected for sharp edges and high spots such as burrs which could have caused belt damage. No abnormalities were found. The fan motor was loosened and moved in its base to permit installation of new V-belts. The motor was moved back to adjust belt tension until only a slight bow appears on the slack side of the belt when the fan is run at full speed.

Room cooler operability is verified once a day during the Equipment Attendant's normal unit rounds, and during periodic HPCI surveillances. The surveillance program is also being revised to require installation of new HPCI room cooler fan belts during each refueling outage.

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F. PREVIOUS OCCURRENCES:

1. Reportable Event No. 85-03 on Docket #050249, dated March 5, 1985

In this event, it was discovered that the HPCI room cooler belts had fallen off. As corrective action the belts were replaced and cooler fan operability verified. Also, verification of the operability of the room coolers was added to the HPCI operating surveillances.

2. Reportable Event No. 83-62 on Docket #050237, dated August 19, 1983

In this event the HPCI motor gear unit was observed to be moving between the high and low stops without operating action. The direct cause of this anomaly was due to the failure of a HPCI System controller operational amplifier. The amplifier failure was attributed to HPCI room high temperatures (about 120°F) caused by broken room cooler fan belts. The corrective action was to replace the fan belts.

G. COMPONENT FAILURE DATA:

Manufacturer: Optibelt
Nomenclature: Power Transmission V-Belt
Model Number: N/A
Part Number: B-51



Commonwealth Edison
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Morris, Illinois 60450
Telephone 815/942-2920

June 26, 1987

EDE LTR #87-413

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

Licensee Event Report #87-018-0, Docket #050237 is being submitted as required by
Technical Specification 6.6, NUREG 1022 and 10 CFR 50.73(a)(2)(v).

E.D. Eenigenburg

E.D. Eenigenburg
Station Manager
Dresden Nuclear Power Station

EDE/kjl

Enclosure

cc: A. Bert Davis, Regional Administrator, Region III
File/NRC
File/Numerical

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