Commonwealth Edison Company
Dresden Generating Station
6500 North Dresden Road
Morris, IL 60450
Tel 815-942-2920

ComEd

October 25, 1996

JSPLTR #96-0199

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

Enclosed is Licensee Event Report 96-015, Docket 50-237, which is being submitted pursuant to 10CFR50.73(a)(2)(v), any event or condition that alone could have prevented the fulfillment of the safety function of structures or systems that are needed to mitigate the consequences of an accident.

This correspondence contains the following commitment:

1. Motor operated valve 2-2301-8 (HPCI pump discharge valve, AR #920002931/WR #920053722) and check valve 2-2301-7 (HPCI Testable Check Valve, AR #960065728/WR #960091325) will be inspected and repaired as necessary during refueling outage D2R15 or an earlier outage of sufficient duration. Results of the valve inspections will be evaluated by Plant Engineering to validate that valve seat degradation was the cause of leakage through valves 2-2301-7 and 2-2301-8. This evaluation will be documented in the Nuclear Tracking System. (2371809601501)

If you have any questions, please contact Pete Holland, Dresden Regulatory Assurance Supervisor at (815) 942-2920 extension, 2714.

Sincerely,

J. Stephen Perry FOR
Vice President
BWR Operations

Enclosure

IE22

cc: A. Bill Beach, Regional Administrator, Region III
NRC Resident Inspector's Office

NRC FORM 366 (5-92) U.S. NUCLEAR REGULATORY COMMISSION

APPROVED BY OMB NO. 3150-0104
EXPIRES 5/31/95

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 50.0 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE INFORMATION AND RECORDS MANAGEMENT BRANCH (MNBB 7714), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555-0001, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1)	DOCKET NUMBER (2)	PAGE (3)
Dresden Nuclear Power Station, Unit 2	05000237	1 OF 5

TITLE (4)
High Pressure Coolant Injection System Inoperable Due to High Pump Discharge Line Temperature From Feedwater System Backleakage Due To Isolation Valve Leakage.

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 NAME	DOCKET NUMBER
09	26	96	96	015	00	10	25	96	None	
									FACILITY NAME	DOCKET NUMBER

OPERATING MODE (9)	N
POWER LEVEL (10)	100

THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more) (11)

	20.2201(b)		20.2203(a)(3)(i)		50.73(a)(2)(iii)		73.71(b)
	20.2203(a)(1)		20.2203(a)(3)(ii)		50.73(a)(2)(iv)		73.71(c)
	20.2203(a)(2)(i)		20.2203(a)(4)	X	50.73(a)(2)(v)		OTHER
	20.2203(a)(2)(ii)		50.36(c)(1)		50.73(a)(2)(vii)		(Specify in Abstract below and in Text, NRC Form 366A)
	20.2203(a)(2)(iii)		50.36(c)(2)		50.73(a)(2)(viii)(A)		
	20.2203(a)(2)(iv)		50.73(a)(2)(i)		50.73(a)(2)(viii)(B)		
	20.2203(a)(2)(v)		50.73(a)(2)(ii)		50.73(a)(2)(x)		

LICENSEE CONTACT FOR THIS LER (12)

NAME	TELEPHONE NUMBER (Include Area Code)
Douglas S. Smith, System Engineer Ext. 3087	(815) 942-2920

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 15 single-spaced typewritten lines) (16)

During stable power operations, with Unit 2 in the Run Mode at 100% rated core thermal power, the High Pressure Coolant Injection (HPCI) pump discharge line temperature was observed to be 112 degrees Fahrenheit (F) and increasing at approximately 10 degrees F per hour by control room indication. The HPCI pump discharge line temperature exceeded limitations and was declared inoperable per Technical Specification 3.5.C.2. The HPCI pump discharge valves were cycled in an attempt to seat valve 2-2301-8 (HPCI pump discharge valve). Following valve cycling, the discharge line temperature increased to a maximum of 170 degrees F before starting to decrease. HPCI pump discharge line temperature then decreased to below 150 degrees F and HPCI was declared operable. The cause of this event was reactor feedwater backleakage through valve 2-2301-7 (HPCI discharge testable check valve) and valve 2-2301-8. Corrective actions include valve inspection and repair and procedural enhancements to require cycling of the HPCI pump discharge valves whenever the HPCI discharge line temperature increases towards 150 degrees F. The safety significance of this event was determined to be minimal.

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] and are obtained from IEEE Standard 805-1984, IEEE Recommendation Practice for System Identification in Nuclear Power Plants and Related Facilities.

EVENT IDENTIFICATION:

High Pressure Coolant Injection System inoperable due to high pump discharge line temperature from feedwater system backleakage due to isolation valve leakage.

A. PLANT CONDITIONS PRIOR TO EVENT:

Unit: 2 Event Date: 09/26/96 Event Time: 0155

Reactor Mode: N Mode Name: Run Power Level: 100%

Reactor Coolant System Pressure: 1000 psig

B. DESCRIPTION OF EVENT:

This report is being submitted in accordance with 10CFR50.73(a)(2)(v), which requires the reporting of any event or condition that alone could have prevented the fulfillment of the safety function of structures or systems that are needed to mitigate the consequences of an accident. The HPCI system having remained functionally operable along with the fact that all other Emergency Core Cooling Systems required by Technical Specification 3.5.C.2.a were operable throughout this event makes the safety significance of this event minimal. Notification of the event was performed pursuant to 10CFR50.72(b)(2)(iii)(D) at 0318 (CDT) on September 26, 1996, through Emergency Notification System (ENS) number 31061.

On September 25, 1996, at 2106, the High Pressure Coolant Injection (HPCI) [BJ] system quarterly In Service Testing (IST) and warm fast initiation testing was performed. This activity is controlled by Dresden Operating Surveillance (DOS) 2300-03 "High Pressure Coolant Injection System Operability Verification." During this test the HPCI pump discharge line upstream of valve 2-2301-8 (HPCI pump discharge valve) is pressurized while the HPCI pump is operated in a recirculation mode, taking suction from and discharging back to a condensate storage tank. The HPCI pump was operating in this mode during the testing for approximately 80 minutes. Operations secured the HPCI turbine at 2106 and completed the surveillance at 2220. Valve 2-2301-8 was cycled at approximately 0500 on September 25, 1996, for a monthly surveillance per DOS 2300-01 "High Pressure Coolant Injection Motor Operated Valve (MOV) Operability Verification." The testing and valve cycling are directly related to the subject reportable event since the increased pressure and turbulence created upstream of valve 2-2301-8 during the test combined with recent reseating of the valve may have adversely affected the proper seating of valve 2-2301-8 and contributed to the cause of the event. No other maintenance activities or operations were in progress that are related to the subject reportable event.

On September 26, 1996, at 0100, with Unit 2 in the Run Mode at 100% rated core thermal power the High Pressure Coolant Injection (HPCI) [BJ] pump discharge line temperature at the elbow near the entrance to the X-area (the area where the outboard Main Steam Isolation Valves are located) was noted to be 112 degrees F and increasing at approximately 10 degrees per hour by control room indication. Operations personnel verified that the local HPCI pump discharge line temperature confirmed the control room indication by use of a portable hand held pyrometer.

At 0135 preparations were made to cycle motor operated valves 2-2301-8 (HPCI pump discharge, normally closed) and 2-2301-9 (HPCI pump discharge, normally open) while operators were sent to verify the actual discharge line temperature in the torus catwalk area. During this time the acceptability of cycling valves 2-2301-8 and 2-2301-9 was evaluated since no procedural guidance existed that directed valve cycling as a corrective action for backleakage.

At 0155 the HPCI pump discharge line temperature exceeded 150 degrees F by local indication and HPCI was declared inoperable per Technical Specification 3.5.C.2 as required by section H.4 of DOS 2300-08 "HPCI Pump Discharge Line Temperature Monitoring." HPCI pump discharge line control room temperature indication was 142 degrees F at this time.

At 0205 motor operated valves 2-2301-8 and 2-2301-9 were cycled per DOS 2300-01 "High Pressure Coolant Injection Motor Operated Valve (MOV) Operability Verification" in an attempt to seat 2-2301-8. Following valve cycling, the discharge line temperature increased to a maximum of 170 degrees F before starting to decrease. At 0305 the HPCI pump discharge line temperature had decreased to below 150 degrees F and HPCI was declared operable.

No inoperable structures, systems, or components contributed to the cause of this event.

C. CAUSE OF EVENT:

C.1 The cause of this event was reactor feedwater backleakage through valve 2-2301-7 (HPCI discharge testable check valve) and valve 2-2301-8. Valves 2-2301-7 and 2-2301-8 exhibited backleakage due to valve seat degradation (NRC Cause Code X) that will be confirmed and evaluated during the scheduled overhaul and repair of the valves. Contributing to this condition was the adverse effect of the increased pressure and turbulence present upstream of valve 2-2301-8 during HPCI system testing combined with having cycled this valve earlier the same day.

D. SAFETY ANALYSIS:

The HPCI discharge line reached a maximum temperature of approximately 152 degrees F prior to cycling valves 2-2301-8 and 2-2301-9 and momentarily reached a maximum temperature of 170 degrees F after valve cycling before temperatures started to decrease. Considering these temperatures, it is not likely that a steam void would have formed in the HPCI pump discharge piping. Therefore, the HPCI system remained functionally operable throughout this event and would have been capable of performing its safety function under more limiting conditions if initiation of the HPCI system was required.

The HPCI system having remained functionally operable along with the fact that all other Emergency Core Cooling Systems required by Technical Specification 3.5.C.2.a were operable throughout this event makes the safety significance of this event minimal.

E. CORRECTIVE ACTIONS:

E.1 Motor operated valve 2-2301-8 (HPCI Pump Discharge valve, AR #920002931/ WR #920053722) and check valve 2-2301-7 (HPCI Pump Testable Check Valve, AR #960065728/WR #960091325) will be inspected and repaired as necessary during refueling outage D2R15 or an earlier outage of sufficient duration. Results of the valve inspections will be evaluated by Plant Engineering to validate that valve seat degradation was the cause of leakage through valves 2-2301-7 and 2-2301-8. This evaluation will be documented in the Nuclear Tracking System. (C.1/2371809601501)

E.2 DOS 2300-08 "HPCI Pump Discharge Line Temperature Monitoring" has been revised to allow provisions for cycling valves 2(3)-2301-8 and 2(3)-2301-9 when increasing temperatures are observed on the HPCI pump discharge line. (C.1/Complete)

F. PREVIOUS OCCURRENCES:

LER/Docket Number Title

96-002/05000237 Unit 2 Shutdown Performed Because of Inability to Meet Allowed LCO Time for High Pressure Coolant Injection System Testing.

During unit startup it was determined that the temperature of the HPCI discharge line would not decrease to less than 150 degrees F as required in DOS 2300-03 "High Pressure Coolant Injection System Operability Verification" and Unit 2 commenced a shutdown. The cause of the elevated HPCI discharge piping temperatures was due to a steam leak from the Main Steam (MS) drain bypass line orifice plate which impinged on the HPCI discharge line piping, in conjunction with some minor leakage past check valve 2-2301-7 into the HPCI discharge line due to a modified valve lineup (valve 2-2301-8 open and valve 2-2301-9 closed during unit startup). Corrective actions included temporary repair of the MS drain line orifice plate steam leak, addition of capability to monitor the discharge line temperature in the control room, and planned modification of the HPCI 2-2301-8 valve, eliminating the need for the modified valving configuration. The 2-2301-8 valve has not been modified yet, but is not applicable to the event of this LER since valve 2-2301-8 was shut during this event. The addition of the temperature monitoring recorder in the control room helped identify and limit the consequences of the event of this LER.

89-029/05000237 Elevated HPCI Discharge Piping Temperature Due to Reactor Feedwater System Backleakage.

Previous HPCI discharge piping high temperatures due to reactor feedwater system backleakage occurred on both Units 2 and 3 in October of 1989 and on Unit 2 in March of 1990. Corrective actions were to temporarily revise the system valve lineup for valve 2(3)-2301-9 (normally open) to a closed position, and valve 2(3)-2301-8 (normally closed) to an open position. Numerous inspections were performed on valve internals and piping supports on the HPCI piping. Valve 2-2301-8 and check valve 2-2301-7 were inspected and repaired during refueling outage D2R12. Lastly, a permanent procedure revision to DOS 2300-8 "HPCI Pump Discharge Line Temperature Monitoring" required the performance of temperature surveys of the HPCI pump discharge line on a monthly basis or when directed by other HPCI procedures. This corrective measure created the 150 degree F conservative temperature limit that was implemented during the event of this LER.

G. COMPONENT FAILURE DATA:

There is no component failure identified with this event; therefore, this section is not applicable.