



Commonwealth Edison
Dresden Nuclear Power Station
R.R. #1
Morris, Illinois 60450
Telephone 815/942-2920

November 5, 1992

CWS LTR #92-655

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

Attached please find Licensee Event Report #92-13, Docket #050237. This revised report is being submitted to provide the conclusions of the root cause investigation and further clarifying information.

L. J. Deemer for 11/9/92
Charles W. Schroeder
Station Manager

CWS:jmt

Enclosure

cc: A. Bert Davis, Regional Administrator, Region III
NRC Resident Inspector's Office
File/NRC
File/Numerical

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LICENSEE EVENT REPORT (LER)

Form Rev 2.0

Facility Name (1) Dresden Nuclear Power Station, Unit 2 Docket Number (2) 0 5 0 0 0 2 3 7 1 of 0 4 Page (3)

Title (4) High Pressure Coolant Injection Supports Found Outside of FSAR Allowables Due to Water Hammer

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	1	9	2	9	2	0	5	0	2	3	7	1	of	0	4
None																

OPERATING MODE (9) N

THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10CFR (Check one or more of the following) (11)

POWER LEVEL (10) 0 9 9	<input type="checkbox"/> 20.402(b)	<input type="checkbox"/> 20.405(c)	<input type="checkbox"/> 50.73(a)(2)(iv)	<input type="checkbox"/> 73.71(b)
	<input type="checkbox"/> 20.405(a)(1)(i)	<input type="checkbox"/> 50.36(c)(1)	<input type="checkbox"/> 50.73(a)(2)(v)	<input type="checkbox"/> 73.71(c)
	<input type="checkbox"/> 20.405(a)(1)(ii)	<input type="checkbox"/> 50.36(c)(2)	<input type="checkbox"/> 50.73(a)(2)(vii)	<input type="checkbox"/> Other (Specify
	<input type="checkbox"/> 20.405(a)(1)(iii)	<input type="checkbox"/> 50.73(a)(2)(i)	<input type="checkbox"/> 50.73(a)(2)(viii)(A)	in Abstract
	<input type="checkbox"/> 20.405(a)(1)(iv)	<input checked="" type="checkbox"/> 50.73(a)(2)(ii)	<input type="checkbox"/> 50.73(a)(2)(viii)(B)	below and in
	<input type="checkbox"/> 20.405(a)(1)(v)	<input type="checkbox"/> 50.73(a)(2)(iii)	<input type="checkbox"/> 50.73(a)(2)(x)	Text)

LICENSEE CONTACT FOR THIS LER (12)

Name: Mark Churilla, Technical Staff System Engineer Ext. 2788

TELEPHONE NUMBER: AREA CODE 8 1 5 9 4 2 - 2 9 2 0

COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)

CAUSE	SYSTEM	COMPONENT	MANUFAC-TURER	REPORTABLE TO NPRDS	CAUSE	SYSTEM	COMPONENT	MANUFAC-TURER	REPORTABLE TO NPRDS	
X	B	J	S	P	T	B	2	1	0	Y

SUPPLEMENTAL REPORT EXPECTED (14)

Expected Submission Date (15) X NO

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

On April 11, 1992 at 1540 hours, with Unit 2 at 99% rated core thermal power, three supports on the High Pressure Coolant Injection (HPCI) Gland Seal Condenser (GSC) subsystem were determined to be outside of Final Safety Analysis Report (FSAR) allowable limits. An Engineering Evaluation determined, however, that the HPCI system remained within operable limits. It is believed the cause of the support damage is due to previous water hammer events during HPCI turbine overspeed testing. In order to repair the supports the HPCI System was taken out of service and a seven day Limiting Condition for Operation (LCO) was entered on April 14, 1992. The supports were repaired and the seven day LCO terminated on April 16, 1992. The safety significance of this event is minimal in that functional operability of HPCI was unaffected. A previous event involving Unit 3 HPCI GSC cooling water line support damage was reported by LER 92-11/050249.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

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TEXT Energy Industry Identification System (EIIIS) codes are identified in the text as [XX]

PLANT AND SYSTEM IDENTIFICATION:

General Electric - Boiling Water Reactor - 2527 Mwt rated core thermal power

Nuclear Tracking System (NTS) tracking code numbers are identified in the text as (XXX-XXX-XX-XXXXX)

EVENT IDENTIFICATION:

High Pressure Coolant Injection [BJ] Supports Found Outside FSAR Allowables Due to Water Hammer

A. CONDITIONS PRIOR TO EVENT:

Unit: 2

Event Date: April 11, 1992

Event Time: 1540 Hours

Reactor Mode: N

Mode Name: Run

Power Level: 99%

Reactor Coolant System (RCS) Pressure: 1004 psig

B. DESCRIPTION OF EVENT:

On April 11, 1992 at 1540 hours, with Unit 2 at 99% rated core thermal power, three supports on the High Pressure Coolant Injection (HPCI) Gland Seal Condenser (GSC) subsystem were determined to be outside of Final Safety Analysis Report (FSAR) allowable stress limits. The supports were discovered following an event on Unit 3 involving GSC support damage. An Engineering Evaluation determined, however, that the HPCI system remained within operable limits. Work Requests 08463, 08489, and 08490 were written to repair supports M-1151D-54, M1151D-56, and M-1151D-62, respectively. The support damage is believed to have been caused by previous performance of Dresden Operating Surveillance (DOS) 2300-2, HPCI Overspeed Testing. The HPCI System was taken out of service on April 14, 1992 to complete the needed repairs. A seven day Limiting Condition for Operation was entered per Technical Specification (TS) 3.5. Following repairs, the HPCI System was tested satisfactorily and the seven day LCO was terminated at 2110 hours on April 16, 1992.

C. APPARENT CAUSE OF EVENT:

This report is being submitted in accordance with 10CFR50.73(a)(2)(ii)(B), which requires the reporting of any condition that is outside the design basis of the plant.

The GSC system condenses steam from the turbine's gland seals. The condenser is supplied by either an Auxiliary Cooling Water (ACW) pump or a discharge supply off of the HPCI Booster Pump. As part of the investigation into the April 8, 1992 Unit 3 event, the Unit 2 GSC system was inspected. The inspection determined three supports were outside of the Final Safety Analysis Report (FSAR) allowables, but within operability limits. The three supports and the identified deficiencies are as follows:

SupportDeficiency

M-1151D-54

Spherical bearing was partially dislodged from the paddle

M-1151D-56

Spherical bearing was partially dislodged from the paddle

M-1151D-62

Anchor bolts in baseplate were loose. Pipe within support was eroded.

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TEXT Energy11x/11x/y Identification System (EIIS) codes are identified in the text as [XX]

As part of a further investigation, testing was performed to determine the cause of the support degradation. The testing involved the monitoring of HPCI cooling water line 2-2314-4 during HPCI monthly testing. The results were reviewed by the Nuclear Engineering Department (NED) and the System Materials Analysis Department (SMAD); it was concluded that monthly HPCI testing did not cause the support degradation.

The investigation concluded that the degradation may have occurred during HPCI overspeed testing. During the performance of HPCI overspeed tests, the only cooling water supply to the GSC is from the Auxiliary Cooling Water Pump which also provides cooling water to the lube oil cooler. Prior to procedural changes to DOS 2300-2 that were made following the April 1992 Unit 3 cooling water line water hammer event (LER 92-11/050249), there were no controls for maintaining cooling water flow to the GSC. Consequently, cooling water flow may have been secured to the GSC during previous overspeed tests in order to maintain the proper oil temperatures specified by the procedure. Without cooling water flow, steam voids would form in the GSC tubes, and a water hammer would occur once the cooling water pump ACWP was restarted.

It is the conclusion of the investigation that the support degradation was caused by previous water hammer events. The water hammer events are believed to have occurred during previous HPCI Turbine Overspeed Tests.

D. SAFETY ANALYSIS OF EVENT:

In order to repair the supports, the HPCI system was taken out of service on April 14, 1992. All the necessary Emergency Core Cooling Systems were available per TS 3.5.C.2.a. during implementation of the repairs. The supports were repaired and the system was tested satisfactorily April 16, 1992. The safety significance is minimal in that degraded supports would not of prevented the HPCI from initiating and performing its intended function. Therefore, since HPCI functional operability was not affected by the degraded supports, and during the repairs the necessary safety systems were operable, the safety significance of this event is minimal.

E. CORRECTIVE ACTIONS:

Work Requests 08463, 08489, and 08490 were completed and the HPCI system was tested satisfactorily.

Procedure DOS 2300-2, HPCI Overspeed Test, has been changed to add caution statements to the procedure to prevent the securing of the cooling water pump during the procedure.

The Operations Department will add statements to procedures DOS 2300-3, DOS 2300-7, DOP 2300-3, and DOP 2300-4 to ensure that the cooling water pump is operated at low flow HPCI Pump conditions by September 1, 1993 (237-200-92-004).

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F. PREVIOUS OCCURENCES:

LER/Docket Numbers Title

92-011 050249 HPCI Surveillance Interval Exceeded Due to Turbine Oil Leakage

During turbine overspeed testing, a turbine oil leak developed along with steam leaks causing the test to be postponed. Investigation into the problems determined that the oil leak was caused by sealant clogging the shaft vent path. The steam leaks were the result of insufficient cooling water to the GSC. Subsequently, when cooling water was restored to the GSC a water hammer occurred causing minor support damage.

G. COMPONENT FAILURE DATA:

N/A.