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10 CFR 50.73

September 08, 2003

RHLTR: #03-0061

U. S. Nuclear Regulatory Commission  
ATTN: Document Control Desk  
Washington, DC 20555-0001

Dresden Nuclear Power Station, Unit 2  
Facility Operating License No. DRP-19  
NRC Docket No.50-237

Subject: Licensee Event Report 2003-002-00, "High Pressure Coolant Injection Room  
Cooler Bearing Degradation"

Enclosed is Licensee Event Report 2003-002-00 "High Pressure Coolant Injection Room Cooler Bearing Degradation," for the Dresden Nuclear Power Station Unit 2. This event is being reported in accordance with 10 CFR 50.73(a)(2)(v)(D), "Any event or condition that could have prevented the fulfillment of the safety function of structures or systems that are needed to mitigate the consequences of an accident."

Should you have any questions concerning this report, please contact Jeff Hansen, Regulatory Assurance Manager at (815) 416-2800.

Respectfully,



R. J. Hovey  
Site Vice President  
Dresden Nuclear Power Station

Enclosure

cc: Regional Administrator – NRC Region III  
NRC Senior Resident Inspector – Dresden Nuclear Power Station

IE22

## LICENSEE EVENT REPORT (LER)

Estimated burden per response to comply with this mandatory information collection request: 50 hours. Reported lessons learned are incorporated into the licensing process and fed back to industry. Send comments regarding burden estimate to the Records Management Branch (T-6 E6), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by internet e-mail to bjs1@nrc.gov, and to the Desk Officer, Office of Information and Regulatory Affairs, NEOB-10202 (3150-0104), Office of Management and Budget, Washington, DC 20503. If a means used to impose information collection does not display a currently valid OMB control number, the NRC may not conduct or sponsor, and a person is not required to respond to, the information collection.

1. FACILITY NAME Dresden Nuclear Power Station Unit 2				2. DOCKET NUMBER 05000237				3. PAGE 1 of 3			
4. TITLE High Pressure Coolant Injection Room Cooler Bearing Degradation											
5. EVENT DATE			6. LER NUMBER			7. REPORT DATE			8. OTHER FACILITIES INVOLVED		
MO	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REV NO	MO	DAY	YEAR	FACILITY NAME	DOCKET NUMBER	
7	10	2003	2003	002	00	09	08	2003	N/A	N/A	
9. OPERATING MODE		1		11. THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check all that apply)							
10. POWER LEVEL		100		20.2201(b)		20.2203(a)(3)(ii)		50.73(a)(2)(ii)(B)		50.73(a)(2)(ix)(A)	
				20.2201(d)		20.2203(a)(4)		50.73(a)(2)(iii)		50.73(a)(2)(x)	
				20.2203(a)(1)		50.36(c)(1)(i)(A)		50.73(a)(2)(iv)(A)		73.71(a)(4)	
				20.2203(a)(2)(i)		50.36(c)(1)(ii)(A)		50.73(a)(2)(v)(A)		73.71(a)(5)	
				20.2203(a)(2)(ii)		50.36(c)(2)		50.73(a)(2)(v)(B)		OTHER	
				20.2203(a)(2)(iii)		50.46(a)(3)(ii)		50.73(a)(2)(v)(C)		Specify in Abstract below or in NRC Form 366A	
				20.2203(a)(2)(iv)		50.73(a)(2)(i)(A)		X 50.73(a)(2)(v)(D)			
				20.2203(a)(2)(v)		50.73(a)(2)(i)(B)		50.73(a)(2)(vii)			
				20.2203(a)(2)(vi)		50.73(a)(2)(i)(C)		50.73(a)(2)(viii)(A)			
				20.2203(a)(3)(i)		50.73(a)(2)(ii)(A)		50.73(a)(2)(viii)(B)			
12. LICENSEE CONTACT FOR THIS LER											
NAME Timothy P. Heisterman						TELEPHONE NUMBER (Include Area Code) (815) 416-2815					
13. COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT											
CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPIX	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPIX		
14. SUPPLEMENTAL REPORT EXPECTED								15. EXPECTED SUBMISSION DATE		MONTH	DAY
YES (If yes, complete EXPECTED SUBMISSION DATE)								X NO			

16. ABSTRACT (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines)

On July 10, 2003, Operations personnel observed excessive noise and vibration from the Unit 2 High Pressure Coolant Injection (HPCI) room cooler. The room cooler was secured, restarted later for troubleshooting, secured again and taken out of service. On July 11, 2003, personnel replaced the inboard and outboard fan shaft bearings, performed post maintenance testing and declared the system operable. The rotating equipment component engineer examined the removed bearings. The outboard bearing was found to be in good condition. The inboard bearing, though still round, was severely worn and pitted on the entire surface of each ball indicating inadequate lubrication.

The root cause for the event was that the lubrication frequency for the HPCI room coolers was incorrectly changed in 1996 from quarterly to every two years, which resulted in inadequate bearing lubrication. The corrective action to prevent recurrence is to revise the frequency of bearing lubrication for the Unit 2 and Unit 3 HPCI room coolers back to quarterly from two years. Additionally, the root cause determined that at the time the frequency was changed, there were inadequate controls in place in the preventative maintenance program to prevent this event from occurring, whereas the current program has adequate controls in place to prevent this type of event.

<b>NRC FORM 366A</b> <b>U.S. NUCLEAR REGULATORY COMMISSION</b>  <div style="text-align: center;"> <b>LICENSEE EVENT REPORT (LER)</b>          TEXT CONTINUATION       </div>		<b>APPROVED BY OMB NO. 3150-0104</b> <b>EXPIRES 07/31/2004</b>  <small>Estimated burden per response to comply with this mandatory information collection request: 50 hrs. Reported lessons learned are incorporated into the licensing process and fed back to industry. Forward comments regarding burden estimate to the information and Records Management Branch (1-6133), 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. If an information collection does not display a currently valid OMB control number, the NRC may not conduct or sponsor, and a person is not required to respond to, the information collection.</small>		
<b>FACILITY NAME (1)</b>	<b>DOCKET NUMBER (2)</b>	<b>LER NUMBER (6)</b>		<b>PAGE (3)</b>
Dresden Nuclear Power Station Unit 2	05000237	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER
		2003	002	00
				2 of 3

(If more space is required, use additional copies of NRC Form 366A)(17)

**A. Plant Conditions Prior to Event:**

Unit: 02	Event Date: 07-10-2003	Event Time: 1645 CDT
Reactor Mode: 1	Mode Name: Run	Power Level: 100 percent
Reactor Coolant System Pressure: 1000 psig		

**B. Description of Event:**

This event is being reported in accordance with 10 CFR 50.73(a)(2)(v)(D), "Any event or condition that could have prevented the fulfillment of the safety function of structures or systems that are needed to mitigate the consequences of an accident."

On July 10, 2003, Operations personnel observed excessive noise and vibration from the Unit 2 High Pressure Coolant Injection (HPCI) room cooler. The room cooler was secured, restarted later for troubleshooting, secured again and taken out of service. On July 11, 2003, personnel replaced the inboard and outboard fan shaft bearings and the system was declared operable. The rotating equipment component engineer examined the removed bearings. The outboard bearing was found to be in good condition. However, the inboard bearing, though still round, was severely worn and pitted on the entire surface of each ball, indicating inadequate lubrication.

**C. Cause of Event:**

The root cause for the event was that the lubrication frequency for the HPCI room cooler was incorrectly changed in 1996 from quarterly to every two years, which resulted in inadequate bearing lubrication. Quarterly lubrication of the bearings would have prevented this condition from developing. Additionally, the root cause determined that at the time the frequency was changed, there were inadequate controls in place to prevent this event from occurring. (NRC Cause Code E)

An extent of condition review was performed and determined that during the last two years there have been major revisions to the Performance Centered Maintenance (PCM) templates, including relays, turbine generators, emergency diesel generators, heating, ventilation and air conditioning, air operated valves, pumps, compressors, motor operated valves, and switchyard components. There were two areas that were considered to be applicable to the extent of condition for this issue. These areas were in oil and grease applications. The oil change and sampling program underwent a one hundred percent review in the second half of 2001 and early 2002. This effort rebaselined the oil program system by system, consistent with post-extended power uprate operation. This effort has not been applied to the grease preventative maintenance tasks. Although this level of review has not been performed specifically from a grease perspective, there have only been two grease related issues during the last two years. The two grease related issues were this issue and an issue with a misinterpreted preventative maintenance (PM) change request, which also originated from a 1994 vintage PM change.

<b>NRC FORM 366A</b> <b>U.S. NUCLEAR REGULATORY COMMISSION</b>  <div style="text-align: center;"> <b>LICENSEE EVENT REPORT (LER)</b>          TEXT CONTINUATION       </div>	<div style="text-align: right;"> <b>APPROVED BY OMB NO. 3150-0104</b>  <b>EXPIRES 07/31/2004</b> </div> <p style="font-size: small;">Estimated burden per response to comply with this mandatory information collection request: 50 hrs. Reported lessons learned are incorporated into the licensing process and fed back to industry. Forward comments regarding burden estimate to the Information and Records Management Branch (t-6 t33), 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. If an information collection does not display a currently valid OMB control number, the NRC may not conduct or sponsor, and a person is not required to respond to, the information collection.</p>				
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		2003	002	00	3 of 3

(If more space is required, use additional copies of NRC Form 366A)(17)

**D. Safety Analysis:**

The main function of the HPCI System is to provide make up coolant to the reactor in the event of a small-break loss of coolant accident. An inoperable HPCI room cooler fan would not have prevented the HPCI System from initiating and injecting to the reactor. Continued operation of the HPCI System under these conditions would result in a room temperature for which the equipment in the HPCI room is not designed to withstand. The potential for early loss of HPCI as a consequence of loss of the room cooler has been investigated. While room cooler mixing is necessary to support extended operation of the HPCI system, the HPCI turbine would operate for considerable time without the fan.

Had the HPCI System become unable to operate due to elevated room temperatures, the Isolation Condenser, Automatic Depressurization System, and Low Pressure Emergency Core Cooling Systems, (Low Pressure Coolant Injection, Core Spray) were available to provide reactor pressure and inventory control during any postulated Design Basis Accident. Therefore, the consequences of this event were minimal and the event had minimal impact on the health and safety of the public and reactor safety.

**E. Corrective Actions:**

The Unit 2 HPCI room cooler fan shaft bearings were replaced.

The Unit 3 HPCI room cooler was observed to verify that no abnormal condition associated with the room cooler was present and the Unit 3 HPCI bearings were greased.

The frequency of the bearing lubrication for the Unit 2 and Unit 3 HPCI room coolers was changed to quarterly from every two years.

The Component Maintenance Organization will review grease preventative maintenance items for critical components.

The preventative maintenance program has undergone extensive revision since the event resulting in a robust program requiring a multi-discipline review of all revisions prior to implementation. This program incorporates industry experience, vendor information, OPEX, and plant specific application of a system or component.

**F. Previous Occurrences:**

None

**G. Component Failure Data:**

N/A