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10 CFR 50.73

July 8, 2002

RHLTR: #02-0049

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

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

Subject: Licensee Event Report 2002-003-00, "Manual Valve Failures Prevent the Cooling Water Flow to Control Room Refrigeration Condensing Unit"

Enclosed is Licensee Event Report 2002-003-00, "Manual Valve Failures Prevent the Cooling Water Flow to Control Room Refrigeration Condensing Unit," for the Dresden Nuclear Power Station (DNPS). 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."

Corrective Actions include:

A temporary modification was implemented to remove the internals of the two valves, restoring flow to the heat exchangers.

The valves, 2/3-3999-332 and 2/3-3999-334 will be replaced with stainless steel valves.

Valves that are susceptible to conditions identified in the root cause in both the Diesel Generator Cooling Water and Control Room Train 'B' Heating Ventilation and Air Conditioning systems will be inspected to determine if similar conditions exist. The conditions observed during the inspection of these valves will be evaluated to verify that the appropriate corrective measures are in place to prevent recurrence.

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If you have any questions, please contact Bob Rybak, Regulatory Assurance Manager at (815) 416-2800.

Respectfully,

A handwritten signature in black ink, appearing to read 'R. J. Hovey', with a horizontal line extending to the right from the end of the signature.

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

<b>1. FACILITY NAME</b> Dresden Nuclear Power Station Unit 2	<b>2. DOCKET NUMBER</b> 05000237	<b>3. PAGE</b> 1 of 3
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**4. TITLE** Manual Valve Failures Prevent the Cooling Water Flow to Control Room Refrigeration Condensing Unit

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
05	09	2002	2002	- 003	- 00	07	08	2002	Dresden Unit 3	05000249
									FACILITY NAME	DOCKET NUMBER
									N/A	N/A

<b>9. OPERATING MODE</b> 1	<b>11. THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §:</b> (Check all that apply)										
<b>10. POWER LEVEL</b> 97	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
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**13. COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT**

CAUSE	SYSTEM	COMPONENT	MANU-FACTURER	REPORTABLE TO EPIX	CAUSE	SYSTEM	COMPONENT	MANU-FACTURER	REPORTABLE TO EPIX
E	BI	V	N383	Y					

<b>14. SUPPLEMENTAL REPORT EXPECTED</b>				<b>15. EXPECTED SUBMISSION DATE</b>		
YES (If yes, complete EXPECTED SUBMISSION DATE)	X	NO		MONTH	DAY	YEAR

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

On May 9, 2002, while performing the monthly surveillance requirement for the control room heating, ventilation and air conditioning (HVAC) system, the refrigeration condensing unit (RCU) compressor tripped due to high discharge pressure. A review of the system operating parameters by Operations determined that there was no cooling water flow through the RCU heat exchanger. Troubleshooting of the system determined that the disk from manual valve 2/3-3999-334 (inlet) was separated from the stem and became stuck in the closed position preventing any cooling flow to the Control Room Train B HVAC RCU heat exchanger. Additional investigation determined that manual valve 2/3-3999-332 (outlet) was also found separated from stem but did not block the flowpath. The failed disks of the valves were evaluated and found to be corroded over the entire surfaces. The cause of this event was determined to be a combination of using carbon steel material and frequently exercising the valves in a Service Water environment. Frequent exercising of the valves caused the protective corrosion layer on the ears to be removed, which accelerated the rate of corrosion. The valve internals were removed in accordance with a temporary modification, which allows flow to the heat exchanger. The valves will be replaced with stainless steel valves. The non-safety related Control Room HVAC System "A" Train was available and started during the unavailability of the "B" Train HVAC System RCU. The heat removal capability of the "A" Train System is equivalent to the "B" Train. At no time did this condition compromise the health and safety of the public.

(7-2001)

**LICENSEE EVENT REPORT (LER)**  
TEXT CONTINUATION

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 f33), 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.

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
Dresden Nuclear Power Station Unit 2	05000237	2002	003	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 (03)                                      Event Date: 05-09-2002                                      Event Time: 1750 CDT  
 Reactor Mode: 1(1)                                      Mode Name: Run (Run)                                      Power Level: 97 (100) percent  
 Reactor Coolant System Pressure: 1005 (1002) psig

**B. Description of Event:**

This event is being reported in accordance with 10 CFR 50.73 (a)(2)(v)(D), which requires reporting "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 May 9, 2002, while performing the Control Room train "B" HVAC and Air Filtration [VI] Surveillance for normal operability run, the refrigeration condensing unit (RCU) compressor tripped due to high discharge pressure. The "B" train of Control Room HVAC system was secured and the "A" train started in accordance with station procedures. A review of the system operating parameters by Operations determined that there was no cooling water flow through the RCU heat exchanger. Troubleshooting of the system determined that the disk from manual valve 2/3-3999-334 (inlet) was separated from the stem and became stuck in the closed position preventing any cooling flow to the Control Room Train B HVAC RCU heat exchanger. Additional investigation determined that manual valve 2/3-3999-332 (outlet) was also found separated from stem but did not block the flowpath. The failed disks of the manual valves were evaluated and found to be corroded over the entire surfaces. A temporary modification was implemented that removed the valve internals, which restored flow to the RCU.

**C. Cause of Event:**

The root cause of this event was determined to be the combination of using carbon steel material and frequently exercising the valves in a Service Water [BI] environment. (NRC Cause Code E)

Frequent exercising of the valves caused the protective corrosion layer on the ears to be removed, which accelerated the rate of corrosion. The immediate corrective actions were to remove the valve internals in accordance with a temporary modification, which allowed flow to the heat exchanger. Extent of condition revealed similar valves in the Diesel Generator Cooling Water System and the Control Room Train B HVAC RCU system. Corrective actions are in place to disassemble and inspect these valves.

**D. Safety Analysis:**

The non-safety related Control Room HVAC System "A" train was available and started during the unavailability of the "B" train HVAC system RCU. The "A" train system is the normal supply for the control room. The heat removal capability of the "A" train system is equivalent to the "B" train and the "A" train system can be used if "B" train fails to perform its design function. Station procedures provide instructions to power the "A" Train system via an alternate power source if required, in the event of a loss of offsite power. At no time did this condition compromise the health and safety of the public.

NRC FORM 366A U.S. NUCLEAR REGULATORY COMMISSION (7-2001)  <b>LICENSEE EVENT REPORT (LER)</b> TEXT CONTINUATION		APPROVED BY OMB NO. 3150-0104 EXPIRES 07/31/2004  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 f33), 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.					
<b>FACILITY NAME (1)</b>		<b>DOCKET NUMBER (2)</b>		<b>LER NUMBER (6)</b>		<b>PAGE (3)</b>	
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(If more space is required, use additional copies of NRC Form 366A)(17)

**E. Corrective Actions:**

A temporary configuration control package was implemented to remove the 2/3-3999-332 and 2/3-3999-334 valve internals, which restored flow to the heat exchangers.

Valves 2/3-3999-332 and 2/3-3999-334 will be replaced with stainless steel valves.

Valves that are susceptible to conditions identified in the root cause in both the Diesel Generator Cooling Water and Control Room Train 'B' Heating Ventilation and Air Conditioning systems will be inspected to determine if similar conditions exist. The conditions observed during the inspection of these valves will be evaluated to verify that the appropriate corrective measures are in place to prevent recurrence.

**F. Previous Occurrences:**

None

**G. Component Failure Data:**

Manufacturer Nomenclature:	Model Number:	Manufacture Part Number:
Nuclear Valve Div. / Borg-Warner	402HBD4-001	N/A