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10 CFR 50.73

SVPLTR # 16-0047

August 25, 2016

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

Dresden Nuclear Power Station, Unit 3
Renewed Facility Operating License Nos. DPR-25
NRC Docket No. 50-249

Subject: Licensee Event Report 249/2016-001-00, Alert Declared from Unit 3 HPCI Auxiliary Oil Pump Motor Fire

Enclosed is Licensee Event Report 249/2016-001-00, "Alert Declared from Unit 3 HPCI Auxiliary Oil Pump Motor Fire." This report describes events which are 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 ... systems that are needed to mitigate the consequences of an accident."

There are no regulatory commitments contained in this submittal.

Should you have any questions concerning this letter, please contact Mr. Bruce Franzen at (815) 416-2800.

Respectfully,

Peter J Karaba
Site Vice President
Dresden Nuclear Power Station

Enclosure Licensee Event Report 249/2016-001-00

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

IE22
NRR

NRC FORM 366 (06-2016) U.S. NUCLEAR REGULATORY COMMISSION

APPROVED BY OMB: NO. 3150-0104 EXPIRES: 10/31/2018

Estimated burden per response to comply with this mandatory collection request: 80 hours. Reported lessons learned are incorporated into the licensing process and fed back to industry. Send comments regarding burden estimate to the FOIA, Privacy and Information Collections Branch (T-5 F53), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by e-mail to Infocollects.Resource@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 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.

LICENSEE EVENT REPORT (LER)

(See Page 2 for required number of digits/characters for each block)

(See NUREG-1022, R.3 for instruction and guidance for completing this form http://www.nrc.gov/reading-rm/doc-collections/nuregs/staff/sr1022/r3/)

1. FACILITY NAME	2. DOCKET NUMBER	3. PAGE
Dresden Nuclear Power Station, Unit 3	05000249	1 OF 3

4. TITLE

Alert Declared from Unit 3 HPCI Auxiliary Oil Pump Motor Fire

5. EVENT DATE			6. LER NUMBER			7. REPORT DATE			8. OTHER FACILITIES INVOLVED	
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REV NO.	MONTH	DAY	YEAR	FACILITY NAME	DOCKET NUMBER
										05000
06	27	2016	2016	- 001	- 00	08	25	16	FACILITY NAME	DOCKET NUMBER 05000

9. OPERATING MODE	11. THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: *(Check all that apply)*			
1	☐ 20.2201(b)	☐ 20.2203(a)(3)(i)	☐ 50.73(a)(2)(ii)(A)	☐ 50.73(a)(2)(viii)(A)
	☐ 20.2201(d)	☐ 20.2203(a)(3)(ii)	☐ 50.73(a)(2)(ii)(B)	☐ 50.73(a)(2)(viii)(B)
	☐ 20.2203(a)(1)	☐ 20.2203(a)(4)	☐ 50.73(a)(2)(iii)	☐ 50.73(a)(2)(ix)(A)
	☐ 20.2203(a)(2)(i)	☐ 50.36(c)(1)(i)(A)	☐ 50.73(a)(2)(iv)(A)	☐ 50.73(a)(2)(x)
10. POWER LEVEL	☐ 20.2203(a)(2)(ii)	☐ 50.36(c)(1)(ii)(A)	☐ 50.73(a)(2)(v)(A)	☐ 73.71(a)(4)
	☐ 20.2203(a)(2)(iii)	☐ 50.36(c)(2)	☐ 50.73(a)(2)(v)(B)	☐ 73.71(a)(5)
	☐ 20.2203(a)(2)(iv)	☐ 50.46(a)(3)(ii)	☐ 50.73(a)(2)(v)(C)	☐ 73.77(a)(1)
100	☐ 20.2203(a)(2)(v)	☐ 50.73(a)(2)(i)(A)	☒ 50.73(a)(2)(v)(D)	☐ 73.77(a)(2)(i)
	☐ 20.2203(a)(2)(vi)	☐ 50.73(a)(2)(i)(B)	☐ 50.73(a)(2)(vii)	☐ 73.77(a)(2)(ii)
		☐ 50.73(a)(2)(i)(C)	☐ OTHER Specify in Abstract below or in NRC Form 366A	

12. LICENSEE CONTACT FOR THIS LER

LICENSEE CONTACT	TELEPHONE NUMBER *(Include Area Code)*
Bruce Franzen – Regulatory Assurance Manager	815-416-2800

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
B	BJ	MO	G080	Y					

14. SUPPLEMENTAL REPORT EXPECTED	15. EXPECTED SUBMISSION DATE	MONTH	DAY	YEAR
☐ YES *(If yes, complete 15. EXPECTED SUBMISSION DATE)* ☒ NO				

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

On 6/27/16 at approximately 1042 CDT, the High Pressure Coolant Injection (HPCI) Auxiliary Oil Pump (AOP) motor failed and was discovered on fire during the performance of the quarterly operability run of the HPCI system. The fire was extinguished manually at 1045 CDT with a carbon dioxide fire extinguisher. At 1050 CDT, an ALERT was declared. The fire did not adversely impact the operation of any system other than HPCI which was inoperable prior to the fire due to the operability run. At 1319 CDT, the ALERT was terminated. The unit remained at full power throughout the evolution.

This event is reportable under 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."

LICENSEE EVENT REPORT (LER) CONTINUATION SHEET

1. FACILITY NAME	2. DOCKET NUMBER	3. LER NUMBER		
		YEAR	SEQUENTIAL NUMBER	REV NO.
Dresden Nuclear Power Station, Unit 3	05000-249	2016	- 001	- 00

NARRATIVE

PLANT AND SYSTEM IDENTIFICATION

Dresden Nuclear Power Station (DNPS), Unit 3, is a General Electric Company Boiling Water Reactor with a licensed maximum power level of 2957 megawatts thermal. The Energy Industry Identification System codes used in the text are identified as [XX].

A. Plant Conditions Prior to Event:

Unit: 03 Event Date: 06/27/16 Event Time: 1042 CDT
Reactor Mode: 1 Mode Name: Power Operation Power Level: 100 percent

B. Description of Event:

On 6/27/16 at approximately 1042 CDT, the High Pressure Coolant Injection (HPCI) [BJ] Auxiliary Oil Pump (AOP) motor failed during the performance of the quarterly operability run of the HPCI system. HPCI was the only system inoperable at the time. Alarms were received in the Main Control Room (MCR), and the HPCI turbine was immediately tripped. The HPCI steam inlet inboard isolation valve (3-2301-4) and HPCI main pump torus discharge minimum flow valve were closed (3-2301-14). The AOP motor was secured, and Equipment Operators standing by in an adjacent room were dispatched to investigate the AOP. Upon opening the door, active flames were visible at the top and bottom of the AOP motor along with light smoke in the room. This observation was immediately communicated to the MCR, and the fire was extinguished manually at 1045 CDT with a carbon dioxide fire extinguisher.

At 1046 CDT, the Incident Commander and the fire brigade were contacted to report to the Unit 3 HPCI Room, and the Unit 2/3 Diesel Fire Pump automatically started due to the HPCI Room Fire Protection [KP] piping filling with water in anticipation of initiating the sprinkler system. However, initiation of the sprinkler system was not required since the fire was quickly extinguished. At 1050 CDT, an ALERT was declared. At 1319 CDT, the ALERT was terminated. The unit remained at full power throughout the evolution. On 7/7/16 at 1625 CDT, HPCI was returned to service.

This event is reportable under 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."

C. Cause of Event:

The Root Cause of the HPCI AOP motor failure is inadequate control of critical parameters when installing a DC shunt wound motor. The Failure Mechanism was high armature current with a stalled rotor. The Contributing Cause of the HPCI AOP motor failure is historical motor procurement evaluation standards were not rigorous enough.

NARRATIVE

D. Safety Analysis:

The safety significance of this condition was low as it did not adversely impact the health and safety of the public. The fire did not cause a plant transient and did not impact any systems or equipment other than the HPCI system which was already declared inoperable for surveillance testing at the time of the event.

During the evolution redundant safety systems remained capable of performing each of the functions required by the safety analysis. The Isolation Condenser [BL] and Automatic Depressurization System [JE] remained in service and were capable of removing heat from containment while the vessel is at high pressure and lowering vessel pressure to allow for the low pressure Emergency Core Cooling Systems to inject. Both divisions of Low Pressure Coolant Injection (LPCI) [BO] remained capable of injection along with both divisions of Core Spray [BM]. Additionally, the Torus Cooling function of LPCI remained available as the primary method of heat removal from primary containment. The torus cooling function of LPCI provides the connection to the ultimate heat sink which was available throughout the evolution.

E. Corrective Actions:

The Unit 3 HPCI AOP motor was replaced and tested satisfactorily. Procedural controls will be enhanced for the installation of Shunt Wound DC motors with external variable shunt field resistors. An Extent of Condition review will be performed on all DC Shunt Field motors where the shunt field resistor range was determined for each motor and it will be verified that each were set appropriately. Additional training will also be conducted on DC motor operation.

Additionally, the list of DC electric motors requiring motor heaters will be validated and thermography will be performed on the listed motors to verify proper operation.

F. Previous Occurrences:

In 2015, the U3 HPCI AOP motor failed during planned maintenance due to carbon dust buildup inside the motor as a result of inadequate cleaning and inspection of the motor and commutator.

G. Component Failure Data:

Manufacturer	Model	S/N	Type
General Electric	5CD173XD817A800-NM245	N/A	DC Shunt Wound Motor, 40 HP, 250 VDC, 3500 RPM