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Nuclear

December 1, 2009

10 CFR 50.73

SVPLTR # 09-0059

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

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

Subject: Licensee Event Report 249/2009-001-00, "Unit 3 Group I Isolation and Automatic Reactor Scram"

Enclosed is Licensee Event Report 249/2009-001-00, "Unit 3 Group I Isolation and Automatic Reactor Scram" for Dresden Nuclear Power Station, Unit 3. This event is being reported in accordance with 10 CFR 50.73(a)(2)(iv)(A), "Any event or condition that resulted in manual or automatic actuation of any of the systems listed in paragraph (a)(2)(iv)(B) of this section."

There are no regulatory commitments contained in this submittal.

Should you have any questions concerning this letter, please contact Ms. Marri Marchionda at (815) 416-2800.

Respectfully,



Tim Hanley
Site Vice President
Dresden Nuclear Power Station

Enclosure

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

IE22
NRR

NRC FORM 366 (9-2007)		U.S. NUCLEAR REGULATORY COMMISSION		APPROVED BY OMB: NO. 3150-0104		EXPIRES: 08/31/2010					
<h2 style="margin: 0;">LICENSEE EVENT REPORT (LER)</h2> <p style="margin: 5px 0;">(See reverse for required number of digits/characters for each block)</p>											
1. FACILITY NAME Dresden Nuclear Power Station, Unit 3				2. DOCKET NUMBER 05000249		3. PAGE 1 OF 4					
4. TITLE Unit 3 Group I Isolation and Automatic Reactor Scram											
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	
10	03	2009	2009	- 001 -	00	12	01	2009	N/A	N/A	
									FACILITY NAME	DOCKET NUMBER	
									N/A	N/A	
9. OPERATING MODE <div style="text-align: center; font-size: 1.2em;">1</div>		11. THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: <i>(Check all that apply)</i>									
10. POWER LEVEL <div style="text-align: center; font-size: 1.2em;">100</div>		<input type="checkbox"/> 20.2201(b) <input type="checkbox"/> 20.2203(a)(3)(i) <input type="checkbox"/> 50.73(a)(2)(i)(C) <input type="checkbox"/> 50.73(a)(2)(vii)									
		<input type="checkbox"/> 20.2201(d) <input type="checkbox"/> 20.2203(a)(3)(ii) <input type="checkbox"/> 50.73(a)(2)(ii)(A) <input type="checkbox"/> 50.73(a)(2)(viii)(A)									
		<input type="checkbox"/> 20.2203(a)(1) <input type="checkbox"/> 20.2203(a)(4) <input type="checkbox"/> 50.73(a)(2)(ii)(B) <input type="checkbox"/> 50.73(a)(2)(viii)(B)									
		<input type="checkbox"/> 20.2203(a)(2)(i) <input type="checkbox"/> 50.36(c)(1)(i)(A) <input type="checkbox"/> 50.73(a)(2)(iii) <input type="checkbox"/> 50.73(a)(2)(ix)(A)									
		<input type="checkbox"/> 20.2203(a)(2)(ii) <input type="checkbox"/> 50.36(c)(1)(ii)(A) <input checked="" type="checkbox"/> 50.73(a)(2)(iv)(A) <input type="checkbox"/> 50.73(a)(2)(x)									
		<input type="checkbox"/> 20.2203(a)(2)(iii) <input type="checkbox"/> 50.36(c)(2) <input type="checkbox"/> 50.73(a)(2)(v)(A) <input type="checkbox"/> 73.71(a)(4)									
<input type="checkbox"/> 20.2203(a)(2)(iv) <input type="checkbox"/> 50.46(a)(3)(ii) <input type="checkbox"/> 50.73(a)(2)(v)(B) <input type="checkbox"/> 73.71(a)(5)											
<input type="checkbox"/> 20.2203(a)(2)(v) <input type="checkbox"/> 50.73(a)(2)(i)(A) <input type="checkbox"/> 50.73(a)(2)(v)(C) <input type="checkbox"/> OTHER											
<input type="checkbox"/> 20.2203(a)(2)(vi) <input type="checkbox"/> 50.73(a)(2)(i)(B) <input type="checkbox"/> 50.73(a)(2)(v)(D)											
12. LICENSEE CONTACT FOR THIS LER											
FACILITY NAME Dresden Nuclear Power Station – Ali Abbasi									TELEPHONE NUMBER <i>(Include Area Code)</i> (815) 416-2811		
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		
N/A					N/A						
14. SUPPLEMENTAL REPORT EXPECTED						15. EXPECTED SUBMISSION DATE		MONTH	DAY	YEAR	
<input type="checkbox"/> YES <i>(If yes, complete 15. EXPECTED SUBMISSION DATE)</i>						<input checked="" type="checkbox"/> NO					
ABSTRACT <i>(Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines)</i> <p>On 10/03/2009 at approximately 1735 hours while at full power, Unit 3 experienced an automatic reactor scram and Group I primary containment isolation signal. Due to the Group I isolation signal, the inboard and outboard main steam isolation valves closed as designed. Prior to the reactor scram, operators were restoring the reactor water clean-up (RWCU) system per the applicable station procedure.</p> <p>The Probable Cause for the Group I isolation signal and reactor scram is attributed to a hydraulic pressure transient when restarting the RWCU system due to a latent procedure deficiency.</p> <p>The procedure for restarting the RWCU has been revised.</p> <p>During the reactor scram, the shared Unit 2/3 emergency diesel generator automatically started when auxiliary power transferred from the main to the reserve power source.</p> <p>The safety significance of this event is minimal as plant response and operator actions were consistent with the protection of public health and safety and personnel safety.</p>											

LICENSEE EVENT REPORT
(LER)

1. FACILITY NAME	2. DOCKET	6. LER NUMBER			3. PAGE
Dresden Nuclear Power Station, Unit 3	05000249	YEAR	SEQUENTIAL NUMBER	REV NO.	2 OF 4
		2009	- 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: 10-03-2009	Event Time: 1735 hours
Reactor Mode: 1	Mode Name: Power Operation	Power Level: 100 percent

B. Description of Event:

On 10/03/2009 at approximately 1735 hours while at full power, Unit 3 experienced an automatic reactor scram and Group 1 primary containment isolation signal (PCIS) [JM]. Due to the Group I PCIS, the inboard and outboard main steam isolation valves closed as designed. In addition, PCIS Group 2 and Group 3 isolations were received and verified complete. Operators manually initiated the isolation condenser per the applicable procedure to control reactor pressure within limits.

Plant systems responded as expected with one exception: the Unit 2/3 EDG automatically started upon trip of the Unit 3 turbine at approximately 1736 hours on 10/03/2009 when auxiliary power transferred from the main to the reserve power source.

Prior to the reactor scram, operators were restoring the reactor water cleanup (RWCU) system [CE] per station procedure DOP 1200-03, "RWCU System Operation with the Reactor at Pressure." Per the procedure, RWCU was being filled and heated in the blowdown mode with a flow path from the reactor pressure vessel (RPV) to the main condenser. During this operation, the RWCU System Return to Reactor motor operated valve (MOV), 3-1201-7, was closed per DOP 1200-03. The Group I isolation occurred within a few seconds of opening the 3-1201-7 valve.

The RWCU system had tripped earlier on 10/02/09 at approximately 1100 hours. The 3-1201-7 valve remained closed for 30 hours and was opened after the system was filled and blowdown flow established. A root cause investigation determined that under these conditions, when the 3-1201-7 valve was opened, water upstream of the valve flashed to steam in the lower pressure region downstream of the valve and subsequently collapsed. The resulting pressure pulse was sensed by the RPV level transmitters, resulting in a Reactor Water Level Low SCRAM Signal and Reactor Water Level Low-Low Group I Isolation Signal.

The Group I Isolation and Automatic Reactor Scram event is reportable in accordance with 10 CFR 50.73(a)(2)(iv)(A), "Any event or condition that resulted in manual or automatic actuation of any of the systems listed in paragraph (a)(2)(iv)(B) of this section," as read in conjunction with item (1) of paragraph (a)(2)(iv)(B), "Reactor protection system (RPS) including: reactor scram or reactor trip."

LICENSEE EVENT REPORT
(LER)

1. FACILITY NAME	2. DOCKET	6. LER NUMBER			3. PAGE
Dresden Nuclear Power Station, Unit 3	05000249	YEAR	SEQUENTIAL NUMBER	REV NO.	3 OF 4
		2009	- 001	- 00	

NARRATIVE

The Unit 2/3 EDG automatic start is reportable in accordance with 10 CFR 50.73(a)(2)(iv)(A), "Any event or condition that resulted in manual or automatic actuation of any of the systems listed in paragraph (a)(2)(iv)(B) of this section."

Unit 3 was returned to the grid on 10/7/2009 after completion of the forced outage plan.

C. Cause of Event:

The Probable Cause for the pressure pulse initiating Reactor Water Level Low-Low Group I Isolation Signal and Unit 3 Reactor SCRAM is attributed to a latent procedural deficiency. DOP 1200-03 provided inadequate guidance for the 3-1201-7 valve position during system restoration with the RPV at pressure. In GEK-323399, "Dresden 3 Reactor Water Clean-Up Operation and Maintenance Instructions," Section 3-11, the reactor vendor, General Electric, recommended that the Return to Reactor line MOV be in the open position for RWCU system start-up when the reactor is at power. This recommendation was not incorporated into DOP 1200-03. The procedure deficiency is historical.

The Cause of the Unit 2/3 EDG automatic start when auxiliary power transferred to the reserve power source is due to breaker contact response timing. During the fast transfer between the main and reserve feed breakers to the 4 kilovolt (kV) Bus 33, the "b" contacts on both the breakers (which are connected in series) were closed simultaneously for approximately 74 milliseconds. This provided sufficient time for the auto start relay of the Unit 2/3 EDG to be activated. Even though the EDG autostart was not expected, it is possible as there is no delay mechanism built into the electrical circuitry to absolutely prevent the autostart during a fast power transfer. The potential for EDG actuation in a particular situation depends on the relative speed and timing of the "b" contacts for the main and the reserve feed breakers to go from "closed" to "open" and from "open" to "closed," respectively.

D. Safety Analysis:

The risk significance of the event was analyzed. The core damage probability (CDP) and Large Early Release probability (LERP) calculations, in conjunction with the plant response and appropriate Operator actions taken, showed the event to be of low risk significance.

The safety significance of this event is minimal. The RPS and the Unit 2/3 EDG responded in a manner consistent with the protection of public health and safety and personnel safety. Operator actions were appropriate and consistent with normal and emergency operating procedures.

LICENSEE EVENT REPORT (LER)

1. FACILITY NAME	2. DOCKET	6. LER NUMBER			3. PAGE
Dresden Nuclear Power Station, Unit 3	05000249	YEAR	SEQUENTIAL NUMBER	REV NO.	4 OF 4
		2009	- 001 -	00	

NARRATIVE

E. Corrective Actions:

Procedure DOP 1200-03 has been revised, requiring the 3-1201-7 valve to be open prior to initiating RWCU system fill and vent activities.

Planned corrective actions for the Group 1 isolation and automatic reactor scram event include:

- Review of Operations procedures for RWCU and Feed Water [SJ] systems line-ups and valve sequencing that could create precursors for a hydraulic transient and subsequent pressure pulse that could reach the RPV
- Engineering evaluation of existing RWCU fill and vent procedure for adequacy and potential enhancements
- Revision to Operations' Pre-Job Briefings to include the potential for hydraulic transient induced pressure pulse

Planned corrective actions for the EDG autostart event include:

- Inspection of the main feed breaker and auxiliary feed breaker actuation mechanisms by the end of the refueling outage in 2010 to evaluate if the actuations are occurring at the optimal points in relation to each other.

F. Previous Occurrences:

A review of DNPS Licensee Event Reports (LERs) for the last three years did not identify any LERs associated with a similar hydraulic transient event, or an EDG actuation caused by a similar electrical system lineup.

G. Component Failure Data:

N/A