



Exelon Generation®

Dresden Nuclear Power Station

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10 CFR 50.73

SVPLTR # 15-0033

April 30, 2015

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

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

Subject: Licensee Event Report 237/2015-001-01, Unit 2 Scram due to Feedwater Level Control Issues

Enclosed is Licensee Event Report 237/2015-001-01, "Unit 2 Scram due to Feedwater Level Control Issues." This is an interim report which describes events which are 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).

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,

Shane M. Marik
Site Vice President
Dresden Nuclear Power Station

Enclosure Licensee Event Report 237/2015-001-01

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

IE22
NRK



LICENSEE EVENT REPORT (LER)
(See Page 2 for required number of digits/characters for each block)

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 internet 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.

1. FACILITY NAME Dresden Nuclear Power Station, Unit 2	2. DOCKET NUMBER 05000237	3. PAGE 1 OF 3
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4. TITLE
Unit 2 Scram due to Feedwater Level Control Issues

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
01	13	2015	2015	001	01	04	30	15	FACILITY NAME	DOCKET NUMBER

9. OPERATING MODE	11. THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check all that apply)			
1	<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)
10. POWER LEVEL 100	<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)	Specify in Abstract below or in NRC Form 366A

12. LICENSEE CONTACT FOR THIS LER

LICENSEE CONTACT Bruce Franzen – Regulatory Assurance Manager	TELEPHONE NUMBER (Include Area Code) 815-416-2800
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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
X	JB	CPU	B045	Y					

14. SUPPLEMENTAL REPORT EXPECTED <input type="checkbox"/> YES (If yes, complete 15. EXPECTED SUBMISSION DATE) <input checked="" type="checkbox"/> NO	15. EXPECTED SUBMISSION DATE	MONTH	DAY	YEAR

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

On January 13, 2015, operators inserted a manual scram on Unit 2 due to increasing reactor water level. It was determined that the Feedwater Level Control (FLWC) system had failed. All control rods inserted, all systems responded as expected. The FWLC system was repaired and the unit was returned to operation on January 16, 2015

On February 6, 2015, during maintenance activities to continue troubleshooting FWLC alarms, a reactor water level transient was induced. An automatic scram occurred due to low reactor vessel water level. During the transient, High Pressure Coolant Injection (HPCI) was initiated, but proceduralized operator response actions prevented injection. The Unit 2 and 2/3 Emergency Diesel generators started but did not load on to their respective busses as offsite power was not lost.

During both events, main feedwater was maintained in accordance with station operating procedures. These events are being reported under 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)... "

The cause of these events has been determined to be spurious power interruption on a historically improperly landed power supply ribbon cable connection for the digital FWLC system. These events are considered of very low safety significance. Corrective actions include repairs to the ribbon cable connection and improvements to the troubleshooting process implementation.



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

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 internet 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.

1. FACILITY NAME	2. DOCKET	6. LER NUMBER			3. PAGE
		YEAR	SEQUENTIAL NUMBER	REV NO.	
Dresden Nuclear Power Station, Unit 2	05000237	2015	- 001	- 01	2 OF 3

NARRATIVE

PLANT AND SYSTEM IDENTIFICATION

Dresden Nuclear Power Station (DNPS), Unit 2, 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: 02 Event Date: 01/13/15 and 02/16/15 Event Time: 1903 and 1227 CST
 Reactor Mode: 1 Mode Name: Power Operation Power Level: 100 percent

B. Description of Event:

On January 13, 2015, operators inserted a manual scram on Unit 2 due to increasing reactor water level. It was determined that the Feed Water Level Control [JB] (FWLC) system had failed. All control rods inserted, all system responded as expected. The FWLC system processor cards were replaced and the unit was returned to operation on January 16, 2015

On February 6, 2015, during maintenance activities to continue troubleshooting additional FWLC alarms, the reactor water level increased as a result of a momentary interruption in the FWLC power supply. Feedwater regulating valves were manually operated to control reactor water level, however the transient resulted in an automatic scram due to low reactor vessel water level. During the transient, High Pressure Coolant Injection [BJ] (HPCI) was initiated, but proceduralized operator response actions prevented injection. The Unit 2 and 2/3 Emergency Diesel generators [EK] started but did not load on to their respective busses as offsite power was not lost.

During both events, main feed water [SJ] flow was maintained in accordance with station operating procedures.

These events are being reported under 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)..."

C. Cause of Event:

The cause of these events was a spurious power interruption on a historically improperly landed power supply ribbon cable connection for the digital FWLC system, which caused a momentary 5Vdc power supply loss to the FWLC Multi-Function Processors (MFP). The loss of power resulted in a runback of the 2A Reactor Recirculation [AD] pump and a reactor level transient. The runback signal from FWLC was caused by mis-positioned DIP switches on another FWLC digital circuit board.

A second root cause for the scram on 02/06/15 was less than rigorous organizational challenge of troubleshooting activities, and less than rigorous troubleshooting that allowed the conditions to remain undetected following the scram on 01/13/15. The troubleshooting was focused upon a pre-conceived assumption of the issue and did not fully validate all potential causes nor challenge their disposition.

**LICENSEE EVENT REPORT (LER)
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		2015	- 001	- 01		

NARRATIVE

D. Safety Analysis:

Following the actuations, all other systems responded as expected, therefore, this event is of low safety significance.

E. Corrective Actions:

1. The degraded five-ribbon cable was replaced per WO 01805706-03, with five single-ribbon cables per the vendor's recommendations.
2. Develop and present a Case Study from this RCR that specifically highlights the level of challenge needed to ensure that a troubleshooting problem is thoroughly understood to the Senior Management Team, Engineering, and Maintenance.
3. Improve the formality and rigorous use of the troubleshooting process by performing the following:
 - Brief lessons learned from RCR 2437067-02 at an Engineering All-Hands Meeting.
 - Brief the troubleshooting process with the Engineering management team.
 - Perform training on the Troubleshooting process emphasizing the correct mindset, being open-minded about other potential causes, and comprehensive. Train the engineering population on the troubleshooting issues associated with this root cause.
 - Increase oversight of the troubleshooting teams for the next six months with senior manager observations of troubleshooting activities and troubleshooting briefs.
4. Revise Unit 2 and Unit 3 Preventive maintenance Model WOs to document as-found/as-left positions of DIP switches and other positionable components if circuit cards are removed.
5. Correct Unit 2 DIP Switch Positions.
6. Perform a review of 100% of open Complex Troubleshooting Support/Refute Matrices and review 100% of the matrices closed within last year.
7. Station Manager/Site VP to review root cause with site senior management and emphasize the challenges missed.
8. Review existing event response procedures checklist for team initiation and review of roles and responsibilities.

F. Previous Occurrences:

No previous occurrences of this event were determined through the investigation.

G. Component Failure Data:

Manufacturer	Model	S/N	Type
Bailey	YIMMFP12	PTJED11391 and PTJED11487	Module Assembly