

Exelon Generation Company, LLC  
Dresden Nuclear Power Station  
6500 North Dresden Road  
Morris, IL 60450-9765

www.exeloncorp.com

10 CFR 50.73

October 31, 2001

PSLTR: #01-0113

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

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

Subject: Licensee Event Report 2001-003-00, "Failure of Recirculation Pump Discharge Valve to close causing LPCI Inoperability"

Enclosed is Licensee Event Report 2001-003-00, "Failure of Recirculation Pump Discharge Valve to close causing LPCI Inoperability," for the Dresden Nuclear Power Station (DNPS). This condition is being reported per 10 CFR 50.73 (a)(2)(v)(B) and (D), which requires any event or condition that could have prevented the fulfillment of the safety function of structures or systems that are needed to remove residual heat, or mitigate the consequences of an accident.

The following actions were taken:

Immediate corrective actions were to troubleshoot and repair the failed auxiliary contact.

The appropriate station procedure was revised to clearly identify auxiliary contact parts, including the lock washer, verify the plunger post is tight and to include a diagram to further clarify the configuration for this type of auxiliary contact.

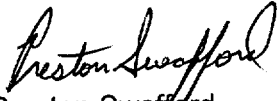
Any other actions described in the submittal represent intended or planned actions by DNPS. They are described for the NRC's information and are not regulatory commitments.

IE22

U.S. Nuclear Regulatory Commission  
October 31, 2001  
Page 2

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

Respectfully,

A handwritten signature in black ink, appearing to read "Preston Swafford". The signature is fluid and cursive, with the first name "Preston" being more prominent than the last name "Swafford".

Preston Swafford  
Site Vice President  
Dresden Nuclear Power Station

Enclosure

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

## 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 Failure of Recirculation Pump Discharge Valve to Close Causes LPCI Inoperability

## 5. EVENT DATE

MO	DAY	YEAR
09	02	2001

## 6. LER NUMBER

YEAR	SEQUENTIAL NUMBER	REV NO
2001	003	00

## 7. REPORT DATE

MO	DAY	YEAR
10	31	2001

## 8. OTHER FACILITIES INVOLVED

FACILITY NAME	DOCKET NUMBER
N/A	N/A
FACILITY NAME	DOCKET NUMBER
N/A	N/A

9. OPERATING  
MODE

4

10. POWER  
LEVEL

000

## 11. THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check all that apply)

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)	X 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
20.2203(a)(2)(iv)	50.73(a)(2)(i)(A)	X 50.73(a)(2)(v)(D)	NRC Form 366A
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	MANU-FACTURER	REPORTABLE TO EPIX	CAUSE	SYSTEM	COMPONENT	MANU-FACTURER	REPORTABLE TO EPIX
D	AD	BKR	G080	Y					

## 14. SUPPLEMENTAL REPORT EXPECTED

15. EXPECTED  
SUBMISSION  
DATE

MONTH DAY YEAR

YES (If yes, complete EXPECTED SUBMISSION DATE)

X

NO

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

On September 2, 2001, the 2B Recirculation Pump Discharge Valve, 2-0202-5B, did not close upon demand. Troubleshooting revealed a normally closed auxiliary contact stuck open, which prevented the valve from closing. In the event of a Loss Of Coolant Accident (LOCA), the Low Pressure Coolant Injection loop select logic determines the appropriate recirculation loop for injection based on differential pressure sensed between the "A" and "B" loops. If, during a LOCA, the "B" loop would be selected for injection, a signal would be sent to the "B" discharge valve to close, allowing the injection path to be completed through the jet pumps and into the core. Thus, with the "B" discharge valve open, full injection into the core would not be achieved. Therefore, this event is being reported pursuant to 10 CFR 50.73 (a)(2)(v)(B) and (D), any event or condition that could have prevented the fulfillment of the safety function of structures or systems that are needed to remove residual heat or mitigate the consequences of an accident. Maintenance freed the stuck contact and the valve was subsequently stroked twice. During repair, an auxiliary contact plunger arm was found to be off its normal plastic stop, which caused the contact to bind. A new auxiliary contact assembly including the lock washer on the plunger arm was installed and successfully tested with no evidence of binding. The cause of the failed plunger arm was a loosened plunger post due to a missing lock washer.

The root cause of this event was determined to be inadequate procedural guidance, which led to equipment failure. The auxiliary contact plunger post was found not to have a lock washer installed. The station procedure does not clearly direct that the plunger post be verified tight or to check for the installation of a lock washer.

The safety significance of this event has been determined to be minimal.

NRC FORM 366A U.S. NUCLEAR REGULATORY COMMISSION  (7-2001)  <div style="text-align: center;"><b>LICENSEE EVENT REPORT (LER)</b></div> <div style="text-align: center;">TEXT CONTINUATION</div>		<div style="text-align: center;"> <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 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.</p>		
<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
		2001	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: 2	Event Date: 09-02-2001	Event Time: 0236
Reactor Mode: 4	Mode Name: Cold Shutdown	Power Level: 0%
Reactor Coolant System Pressure: 0 psig		

**B. Description of Event:**

On September 2, 2001, at 0236 hours during a controlled plant shutdown for Dresden Nuclear Power Station, Unit 2, Operations began securing the 2B Recirculation Pump [AD] per station operating procedure. During this evolution, the procedure step following the securing of the 2B Recirculation Pump is to close the recirculation pump discharge motor operated valve (MOV). At the step to close the MOV, the control switch was manipulated but the MOV did not close. Troubleshooting revealed that the normally closed auxiliary contact was stuck open, which prevented the MOV from closing. Electrical Maintenance Department (EMD) personnel were able to free the stuck contact and the MOV was subsequently successfully stroked closed twice. During the investigation, it was identified that the left auxiliary contact plunger arm was off its normal plastic stop, which caused the contact to bind. This was caused by a missing lock washer on the auxiliary contact. A new auxiliary contact assembly, including the plunger assembly with the lock washer, was installed and successfully tested with no evidence of binding.

In the event of a Loss Of Coolant Accident (LOCA), the Low Pressure Coolant Injection [BO] loop select logic determines the appropriate recirculation loop for injection based on differential pressure sensed between the "A" and "B" loops. If, during a LOCA, the "B" loop would be selected for injection, a signal would be sent to the "B" discharge valve to close, allowing the injection path to be completed through the jet pumps and into the core. Thus, with the "B" discharge valve open, full injection into the core would not be achieved. Therefore, this event is being reported pursuant to 10 CFR 50.73 (a)(2)(v)(B) and (D), any event or condition that could have prevented the fulfillment of the safety function of structures or systems that are needed remove residual heat or mitigate the consequences of an accident.

**C. Cause of Event:**

The 2B Recirculation Pump Discharge valve did not close upon demand due to a binding auxiliary relay contact in the 480 volt motor control center circuitry due to a missing lock washer on the auxiliary contact. The root cause of this event was determined to be inadequate procedure guidance, which led to the equipment failure. The station procedure does not clearly direct that the plunger be verified tight or to check for the installation of a lock washer. A contributing cause to the event was inadequate vendor instructions. The vendor instructions that are provided with each auxiliary contact kit do not show the lock washer in the diagram and do not address the lock washer in the written instructions. Corrective actions included revising the station procedure, "DES 7300-05, Maintenance and Surveillance of E.Q. and Safety Related 480 Volt MCC," to clearly identify contact parts including the lock washer, verify the plunger post is tight, and include a picture to further clarify parts configuration. (NRC Cause Code D)

(7-2001) NRC FORM 366A U.S. NUCLEAR REGULATORY COMMISSION  <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.		
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Dresden Nuclear Power Station Unit 2	05000237	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER
		2001	003	00
				3 of 3

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

**D. Safety Analysis:**

A Significance Determination Process (SDP) evaluation was conducted for this event. Based on the results of the SDP, this event did not challenge reactor core fuel temperature limits. Additional Emergency Core Cooling Systems were available during this event (Core Spray). The core remained covered at all times, no fuel failure occurred and no offsite dose concerns were created by this event. The reactor was in mode 4, at zero percent reactor power and pressure. Therefore the safety significance of this event has been determined to be minimal.

**E. Corrective Actions:**

Immediate corrective actions were to troubleshoot and repair the failed auxiliary contact. (Complete)

The appropriate station procedure was revised to clearly identify auxiliary contact parts, including the lock washer, verify the plunger post is tight, and to include a diagram to further clarify the configuration for this type of auxiliary contact. (Complete)

**F. Previous Occurrences:**

A review was conducted via a search of previous condition reports generated. No previous occurrences were identified associated with this type of failure.

**G. Component Failure Data**

General Electric Series 7700 Motor Control Center Auxiliary Contact