Commonwealth Edison
Dresden Nuclear Power Station
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September 7, 1994

EDELTR 94-0012

U.S. Nuclear Regulatory Commission
Document Control Desk
Washington, D. C. 20555

Licensee Event Report 94-024, Docket 50-237 is being submitted as required by Technical Specification 6.6, NUREG 1022 and 10CFR50.73(a)(2)(v).

Sincerely,

E. D. Eenigenburg
Unit 2 Station Manager
Dresden Station

EDE/ER/:cfq

Enclosure

cc: J. Martin, Regional Administrator, Region III
NRC Resident Inspector's Office
File/NRC
File/Numerical

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NRC FORM 366 (5-92) U.S. NUCLEAR REGULATORY COMMISSION

APPROVED BY OMB NO. 3150-0104
EXPIRES 5/31/95

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 50.0 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE INFORMATION AND RECORDS MANAGEMENT BRANCH (MNBB 7714), 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.

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1)	DOCKET NUMBER (2)	PAGE (3)
Dresden Nuclear Power Station, Unit 2	05000237	1 OF 4

TITLE (4)
HPCI Outboard Containment Isolation Valve Failure to Close Due to Corroded Contacts in Local Push Button Station

EVENT DATE (5)			LER NUMBER (6)			REPORT DATE (7)			OTHER FACILITIES INVOLVED (8)	
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	MONTH	DAY	YEAR	FACILITY NAME	DOCKET NUMBER
08	09	94	94	-- 024 --	00	09	01	94	None	
									FACILITY NAME	DOCKET NUMBER

OPERATING MODE (9)	N	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more) (11)							
POWER LEVEL (10)	000		20.2201(b)		20.2203(a)(3)(i)		50.73(a)(2)(iii)		73.71(b)
			20.2203(a)(1)		20.2203(a)(3)(ii)		50.73(a)(2)(iv)		73.71(c)
			20.2203(a)(2)(i)		20.2203(a)(4)	X	50.73(a)(2)(v)		OTHER
			20.2203(a)(2)(ii)		50.36(c)(1)		50.73(a)(2)(vii)	(Specify in Abstract below and in Text, NRC Form 366A)	
			20.2203(a)(2)(iii)		50.36(c)(2)		50.73(a)(2)(viii)(A)		
			20.2203(a)(2)(iv)		50.73(a)(2)(i)		50.73(a)(2)(viii)(B)		
			20.2203(a)(2)(v)		50.73(a)(2)(ii)		50.73(a)(2)(x)		

LICENSEE CONTACT FOR THIS LER (12)

NAME	TELEPHONE NUMBER (Include Area Code)
Ed Rowley, Site Engineer Ext. 3287	(815) 942-2920

COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS		CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS
X	JM	33	L200	Y						

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

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

On August 9, 1994, Dresden Unit 2 was being shutdown as part of a forced outage. As reactor pressure dropped below the High Pressure Coolant Injection (HPCI) containment isolation set point (80 psig decreasing), the outboard containment isolation valve failed to close. When the position switch in the control room also failed to close the valve, an Operator was dispatched to manually close the valve using the actuator handwheel.

An investigation revealed that there was an open circuit in the "Stop" push button of the local control push button station. The "Stop" button is wired such that it can prevent containment isolation logic and the remote control switch from actuating the Motor-Operated Valve (MOV). The apparent root cause of this failure is corrosion of the "Stop" push button contacts.

Immediate corrective actions included burnishing all contacts in this local control push button station, and, the contacts in the remaining 131 safety related local control push button stations. Steps will be added to an existing Environmental Qualification surveillance procedure to assure that these contacts are cleaned once every other refueling cycle.

EVENT IDENTIFICATION:

HPCI Outboard Containment Isolation Valve Failure to Close Due to Corroded Contacts in Local Push Button Station

A. PLANT CONDITIONS PRIOR TO EVENT:

Unit: 2 Event Date: 08/09/94 Event Time: 01:34

Reactor Mode: Shutdown Mode Name: N/A Power Level: 0%

Reactor Coolant System Pressure: 80 psig

B. DESCRIPTION OF EVENT:

On August 4, 1994 with Dresden Unit 2 at 99% power, the Operating Department was conducting Dresden Operating Surveillance (DOS) 2300-03; "High Pressure Coolant Injection System Monthly Operability Verification". During this surveillance the HPCI turbine tripped on high exhaust pressure. An investigation of this event identified that one of the HPCI turbine exhaust check valves had failed closed. It was determined that the repairs would require a unit shutdown.

On August 9, 1994 at 01:34 Unit 2 reactor pressure dropped below 80 psig, which is the High Pressure Coolant Injection (HPCI) [BJ] containment isolation set point. The AC powered inboard HPCI steam supply containment isolation valve (2-2301-4) closed as expected, the DC power outboard containment isolation valve (2-2301-5) failed to close. The operator was unsuccessful in closing this valve using the control room position switch.

The immediate corrective action was to manually close the 2-2301-5 MOV using the actuator handwheel, which restored redundant containment isolation.

C. CAUSE OF EVENT:

This report is submitted in accordance with 10CFR 50.73(a)(2)(v) which requires that any event or condition that alone could have prevented the fulfillment of the safety function of structures or systems that are needed to mitigate the consequences of an accident.

A review of the wiring schematics identified that the "Stop" button in the local control push button station was the only component that could prevent the actuation of both the containment isolation logic and the control room position switch.

The Limitorque Type ALW push button station contains "Open", "Stop" and "Close" push buttons. The push buttons actuate Cuttler-Hammer Model 10250T contact blocks. The "Open and "Close" push buttons contact blocks are arranged so that their normal position is open. An internal spring holds the switch in the open position. Pressing the "Open" or "Close" push button overcomes the spring pressure pushes the switch together to complete the circuit.

The "Stop" push button contact blocks are arranged so that their normal position is closed. An internal spring holds the switch in the closed condition.

Pressing the "Stop" button overcomes the spring pressure and pushes the contacts apart to open the circuit. The push buttons are enclosed by a cover plate that has a glass window. The cover plate is locked to prevent inadvertent operation. These local control push button stations are use only for maintenance activities.

Testing and inspection identified that there was an open circuit in the "Stop" push button and corrosion on the push button contacts. Contact corrosion of the 2-2301-5 local control station "Stop" push button contacts is the apparent root cause of this containment isolation failure.

D. SAFETY ANALYSIS:

The safety consequences associated with the failure of the outboard containment isolation valve to close is minimal, because the redundant inboard containment valve was operable and accomplished the containment isolation function.

Generic Letter 89-10 modifications were implemented on the actuators of the HPCI containment isolation valves during the D2R13 outage to assure that they had sufficient thrust capability to close against a High Energy Line Break (HELB). The redundant in-board containment isolation valve is capable of performing this design function as well as closing against 80 psig reactor pressure.

E. CORRECTIVE ACTIONS:

The immediate corrective action for the failure of the HPCI steam supply containment isolation event was to manually close the out-board containment isolation valve which restored redundant containment isolation.

To prevent reoccurrence of this failure, the contacts for all three push buttons were burnished to assure circuit continuity (NWR D18506). The existence of corrosion on the contacts of this local control push button station raised concerns with the condition of other local control push button station contacts in the reactor building. Therefore, all contacts in the remaining 131 safety related local control push button stations for Units 2 and 3 are being burnished prior to start up.

In order to prevent the re-occurrence of local push button contact corrosion, preventative maintenance steps will be added to an existing Environmental Qualification surveillance procedure (DES 0040-17) to clean the local push button station contacts on a frequency of once every other refueling cycle.

F. PREVIOUS OCCURRENCES:

LER NUMBER	TITLE
12-2-91-016	Spurious closure of the 2-1001-2A SDC Pump Isolation Valve Due to Local Control Switch Failure

This failure was considered an isolated case and no further corrective actions were required. However, an Environmental Qualification procedure was generated in this time frame that required INTERNAL inspection of all safety related local push button stations on a frequency of once every other refueling

cycle. This inspection did not include examination of contact surfaces for corrosion.

This is the first occurrence of a local push button control station "Stop" button failure at Dresden Station.

G. COMPONENT FAILURE DATA:

Manufacturer	Nomenclature	Model Type
Limitorque	Control Station	ALW