Commonwealth Edison
Dresden Nuclear Power Station
R.R. #1
Morris, Illinois 60450
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September 17, 1991

EDE LTR #91-573

U.S. Nuclear Regulatory Commission
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Licensee Event Report #91-030-0, Docket #050237 is being submitted as required by Technical Specification 6.6, NUREG 1022 and 10 CFR 50.73(a)(2)(iv).

E. D. Eenigenburg
Station Manager
Dresden Nuclear Power Station

EDE/ade

Enclosure

cc: A. Bert Davis, Regional Administrator, Region III
NRC Resident Inspector's Office
File/NRC
File/Numerical

(ZDVR/313)

LICENSEE EVENT REPORT (LER)

Form Rev 2.0

Facility Name (1)	Docket Number (2)	Page (3)
Dresden Nuclear Power Station, Unit 2	0 5 0 0 0 2 3 7	1 of 0 3

Title (4) Spurious Closure of 2A Shutdown Cooling Pump Isolation Valve Due to Local Control Pushbutton Contact Failure

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 Names	Docket Number(s)
										N/A	
0 8	2 6	9 1	9 1	---	0 3 0	0 0	0 9	1 7	9 1	N/A	

OPERATING MODE (9)		THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10CFR (Check one or more of the following) (11)			
		___ 20.402(b)	___ 20.405(c)	X 50.73(a)(2)(iv)	___ 73.71(b)
POWER LEVEL (10)	0 0 0	___ 20.405(a)(1)(i)	___ 50.36(c)(1)	___ 50.73(a)(2)(v)	___ 73.71(c)
		___ 20.405(a)(1)(ii)	___ 50.36(c)(2)	___ 50.73(a)(2)(vii)	___ Other (Specify
		___ 20.405(a)(1)(iii)	___ 50.73(a)(2)(i)	___ 50.73(a)(2)(viii)(A)	in Abstract
		___ 20.405(a)(1)(iv)	___ 50.73(a)(2)(ii)	___ 50.73(a)(2)(viii)(B)	below and in
		___ 20.405(a)(1)(v)	___ 50.73(a)(2)(iii)	___ 50.73(a)(2)(x)	Text)

LICENSEE CONTACT FOR THIS LER (12)

Name	TELEPHONE NUMBER AREA CODE
Diego Estrella, Technical Staff System Engineer Ext. 2354	8 1 5 9 4 2 - 2 9 2 0

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	J E	3 3	L 2 0 0	Y					

SUPPLEMENTAL REPORT EXPECTED (14)

		Expected Submission Date (15)	Month	Day	Year
___ Yes (If yes, complete EXPECTED SUBMISSION DATE)	___ NO				

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

On August 26, 1991 at 1821 hours, following a Unit 2 shutdown, the Nuclear Station Operator (NSO) was attempting to place the 2A Shutdown Cooling (SDC) Loop in operation; however, the 2A SDC pump suction isolation motor-operated (MO) 2-1001-2A valve automatically cycled closed after the NSO placed it in the full open position. The NSO made several attempts to open the valve but it continued to close automatically after reaching its full open position. The Electrical Maintenance Department (EMD) performed continuity tests of the MO2-1001-2A control logic circuitry. As a result, the EMD discovered a short circuit in the local control station circuit. Further investigation revealed a failed "close" pushbutton contact as the cause of the spurious signal. The local control "close" pushbutton was electrically disabled, since replacement parts were not available. The safety significance for this event was minimal because the valve closed when given the spurious signal and a redundant isolation valve was operable. A previous spurious closure of this valve was reported by LER 91-016 (050237).

PLANT AND SYSTEM IDENTIFICATION:

General Electric - Boiling Water Reactor - 2527 MWt rated core thermal power

Nuclear Tracking System (NTS) tracking code numbers are identified in the text as (XXX-XXX-XX-XXXXX)

EVENT IDENTIFICATION:

Spurious Closure of 2A Shutdown Cooling [BO] Pump Isolation Valve [JM] Due to Local Control Pushbutton Contact Failure

A. CONDITIONS PRIOR TO EVENT:

Unit: 2 Event Date: August 26, 1991 Event Time: 1821 Hours

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

Reactor Coolant System (RCS) Pressure: 94 psig

B. DESCRIPTION OF EVENT:

On August 26, 1991 at 1821 hours, following a Unit 2 shutdown, the Nuclear Station Operator (NSO) was attempting to place the 2A Shutdown Cooling (SDC) Loop in operation per Dresden Operating Procedure (DOP) 1000-3, Shutdown Cooling Mode of Operation. The NSO proceeded to open the 2A SDC pump suction isolation motor-operated (MO) 2-1001-2A valve. However, the valve automatically cycled closed after it had reached its full open position. Several attempts to open MO2-1001-2A were made, but the valve continued to automatically close. Work Request (WR) 03302 was issued for the Electrical Maintenance Department (EMD) to investigate the event. The Operations Department then proceeded to place the 2B SDC Loop in operation. In the interim, the EMD began troubleshooting the spurious signal by performing continuity tests of the closure logic control circuitry for the valve. A short circuit was identified in the local control station circuit. Further investigation at the local control station revealed a failed "close" pushbutton contact. Due to replacement part unavailability, the EMD and the Operations Department concurred that the local control "close" pushbutton be electrically disabled until a replacement could be obtained. MO2-1001-2A was then verified to operate properly from the control room.

C. APPARENT CAUSE OF EVENT:

This report is submitted to the NRC in accordance with 10 CFR 50.73 (a)(2)(iv), which requires the reporting of any manual or automatic actuation of an Engineered Safety Feature.

The apparent cause of the spurious isolation of MO2-1001-2A was attributed to a local control station pushbutton contact failure. EMD troubleshooting of the closure logic local control circuitry identified the movable pushbutton contact to have fallen onto the stationary pushbutton contact. This condition resulted in a short circuit across the "close" pushbutton. A search of the Total Job Management (TJM) database did not indicate any replacement of this "close" pushbutton within the past 5 years. A review of maintenance history records revealed that MO2-1001-2A was last worked on under WR 02417 in July, 1991 due to a spurious isolation signal (refer to LER 91-016/050237). Troubleshooting performed under this work request separated the wiring from the Control Room and the local control station. The close signal was determined to be originating from the Primary Containment Isolation relay located in the Control Room. A review of the Operation Department's log books show the SDC System 'A' Loop to have been last operated on July 10, 1991.

D. SAFETY ANALYSIS OF EVENT:

At the time of this event the SDC System was being started for removal of decay heat from the reactor coolant due to a reactor scram (refer to LER 91-024/050237). The MO2-1001-2A valve closed properly when challenged by the spurious isolation signal. Technical Specification 3.7.A.2 requires that primary containment integrity be maintained for conditions when the reactor water temperature is at or above 212 degrees F and fuel is in the vessel. During this attempt to initiate the SDC System, primary containment integrity was maintained and redundant isolation valves MO2-1001-1A and 1B, were operable. For this reason, this event was of minimal safety significance.

E. CORRECTIVE ACTIONS:

As immediate corrective action WR 03302 was issued to request an EMD investigation of the event. The local control "close" pushbutton was electrically isolated and WR 03334 was initiated to replace the local pushbutton upon availability of parts (237-200-91-15101). MO2-1001-2A was then returned to service.

F. PREVIOUS OCCURRENCES:

Review of maintenance and system history files for the past five years indicates one similar occurrence of this type on the SDC system.

LER/Docket Number	Title
91-016/050237	Spurious Closure of 2A SDC Pump Isolation Valve Due to Control Relay Contact Problem

While attempting to place the 2A SDC Loop in operation in conjunction with an orderly reactor shutdown, MO2-1001-2A automatically closed upon reaching its full open position. The EMD performed a continuity test across valve control logic relay contact 3/4, which required lifting of a connection wire off the contact's terminal. Upon verification that the contact was not short circuited, the connection wire was relanded and the isolation signal simultaneously cleared. Safety significance was minimal because the valve closed when given the spurious signal and a redundant isolation valve was operable. Under WR 02417, the EMD replaced the relay. Bench testing of the relay could not pin point the cause of the spurious signal. Review of system records indicates that this type of failure has not been a recurring problem.

G. COMPONENT FAILURE DATA:

Manufacturer	Nomenclature	Model Number	Mfg. Part Number
Limitorque Corp.	Local Control Pushbutton	ALW	N/A

An industry wide Nuclear Plant Reliability Data System (NPRDS) data base search under generic "Limitorque valve operator" revealed 2 records of local control pushbutton related failures. Both failures occurred at Commonwealth Edison Quad Cities Nuclear Power Plant. These failures were attributed to high moisture in the vicinity of the local control station.