



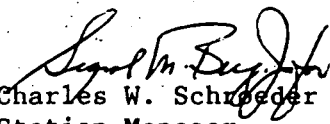
Commonwealth Edison
Dresden Nuclear Power Station
R.R. #1
Morris, Illinois 60450
Telephone 815/942-2920

November 9, 1992

CWS LTR #92-656

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

Licensee Event Report 92-20, Docket 050249 is being submitted as required
by Technical Specification 6.6, NUREG 1022 and 10 CFR 50.73(a)(2)(iv).


Charles W. Schroeder
Station Manager
Dresden Nuclear Power Station

CWS/glt

Enclosure

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

170052

(ZDVR/781)

9211170348 921109
DDB ADDCK 05000249

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LICENSEE EVENT REPORT (LER)

Form Rev 2.0

Facility Name (1) Dresden Nuclear Power Station, Unit 3
 Docket Number (2) 0 15 10 10 10 12 14 19
 Page (3) 1 of 0 4

Title (4) Unplanned Closure of Main Steam Line Drain Valve 3-0220-2 Caused by Blown Fuse Due to Procedure Deficiency

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)			
11	01	14	92	0210	00	11	01	92	N/A	0 15 10 10 10 10 10 10 10 10 10 10 10 10			
									N/A	0 15 10 10 10 10 10 10 10 10 10 10 10 10			

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

LICENSEE CONTACT FOR THIS LER (12)
 Name: Neil Spooner, Technical Staff System Engineer
 Ext. 2789
 TELEPHONE NUMBER: AREA CODE 8 1 5 9 4 2 1 - 2 19 12 10

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	

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 October 14, 1992, at 1937 hours with Unit 3 in Cold Shutdown, while performing Dresden Operating Surveillance (DOS) 250-3, Main Steam Isolation Valve (MSIV) Fail Safe Closure Test, the outboard Main Steam Line (MSL) drain valve 3-0220-2 spuriously isolated (closed) and all outboard MSIV AC pilot valve solenoids were de-energized. At the time of this event, Electrical Maintenance Department (EMD) personnel were installing jumpers across MSIV control relays, in accordance with DOS 250-3. The apparent cause of the event has been attributed to a procedure deficiency within DOS 250-3. The procedure did not require the MSIVs to be in the closed position prior to jumper installation. With the MSIVs in the open position, the jumpers were installed on terminal points energized with 120V AC. It is postulated that an instantaneous current surge occurred during jumper installation due to the momentary opening and subsequent making-up of the energized circuit. The current surge was large enough to open fuse 3-595-711B, causing the event described in this report. Corrective actions include a revision to DOS 250-3, requiring the MSIVs closed prior to jumper installation and removal. The safety significance of this event was considered minimal since Primary Containment Isolation logic is not required during Cold Shutdown conditions, and drain valve 3-0220-2 moved to its fail-safe (closed) position. Although not involving DOS 250-3, a previous unplanned ESF actuation caused by a blown fuse was reported by LER 92-23/0500237.

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TEXT Energy Industry Identification System (EIIS) codes are identified in the text as [XX]

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:

Unplanned Closure of Main Steam Line Drain Valve 3-0220-2 Caused by Blown Fuse Due to Procedure Deficiency

A. CONDITIONS PRIOR TO EVENT:

Unit: 3 Event Date: October 14, 1992 Event Time: 1937 Hours
 Reactor Mode: N Mode Name: Shutdown Power Level: 0%
 Reactor Coolant System (RCS) Pressure: 0 psig

B. DESCRIPTION OF EVENT:

On October 14, 1992, at 1937 hours with Unit 3 in Cold Shutdown, while performing Dresden Operating Surveillance (DOS) 250-3, Main Steam Isolation Valve (MSIV) Fail Safe Closure Test, the outboard Main Steam Line (MSL) [SB] drain valve 3-0220-2 spuriously isolated (closed) and all outboard MSIV AC pilot valve solenoids were de-energized. At the time of this event, Electrical Maintenance Department (EMD) personnel were installing jumpers across MSIV control relays, located in panel 903-3, in accordance with DOS 250-3.

The electrical jumpers installed by DOS 250-3 are used to keep the main AC pilot valve solenoid energized on each MSIV during fail-safe testing. In doing this, MSIV accumulator air pressure is blocked from reaching the 'above piston' area of the MSIV actuator, while allowing the 'below piston' area of the accumulator to be vented to atmosphere. This ensures that the MSIVs are closed by spring force alone, in order to show that the valve can meet its designed fail-safe objective.

DOS 250-3 instructs the jumpers to be placed across contact terminal points 3 and 4 of each MSIV control relay (relays CR1A through CR1D, and CR2A through CR2D). As EMD personnel were installing a jumper to contact terminal point 4 of control relay CR2C (part of MSIV 3-0203-2C control circuitry), fuse 3-595-711B opened, de-energizing relay 3-595-112B (located on panel 903-41), sending logic close signals to MSL drain valve 3-0220-2, and Isolation Condenser [BL] vent valves 3-1301-17, and -20. Prior to this event, both vent valves 1301-17 and -20 were out-of-service closed, and therefore did not actuate when the close signals were received. The open fuse also de-energized all outboard MSIV AC pilot valve solenoids; however, none of the MSIVs closed since the DC pilot valve solenoids were unaffected by the blown fuse, and remained energized (de-energization of both AC and DC solenoids is required to close a MSIV).

C. APPARENT CAUSE OF EVENT:

This event is being reported in accordance with 10CFR50.73(a)(2)(iv) which requires the reporting of any event that results in an unplanned actuation of an Engineered Safety Feature (ESF) [JE], including the unplanned isolation of MSL drain valve 3-0220-2.

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TEXT Energy Industry Identification System (EIIS) codes are identified in the text as [XX]

APPARENT CAUSE OF EVENT: Cont'd.

The apparent cause of the event has been attributed to a procedure deficiency within DOS 250-3. The procedure assumes that all MSIVs are closed prior to jumper placement without any prerequisites, precautions, or actions to ensure that the valves are actually closed. DOS 250-3 then gives instructions to open the MSIVs after jumper installation is complete. Review of procedure history files indicated that the procedure was initially written with the understanding that it would be performed during refuel outages when the MSIVs are normally closed. Currently however, DOS 250-3 is performed whenever a unit is in the Cold Shutdown or Refuel modes. At the time of the event, the unit was in Cold Shutdown with all MSIVs in the open position. With an MSIV open, the jumper termination points (contact terminals 3 and 4 of the control relay) were energized in order to maintain the AC pilot valve solenoid energized. EMD personnel reported seeing a small spark when landing a jumper to contact terminal point 4 of relay CR1D (part of MSIV 3-0203-1D control circuitry) prior to this event; however, no unexpected actuations or alarms occurred, so jumper installation was continued.

EMD personnel assigned to install the jumpers were adequately prepared for the task and understood that nearby circuit points were energized. Since EMD personnel were acquainted with the affected circuitry, took the proper actions while installing the jumpers, and no evidence of arcing (consistent with a potential short or ground to other components) could be found, personnel error in placement of the jumper has been ruled-out as a contributing factor to this event. It is postulated that while loosening contact termination point 4 of relay CR2C to install a jumper across the energized contact, a momentary open circuit occurred. When the circuit made-up, it is believed an instantaneous current surge took place which was large enough to cause fuse 3-595-711B to open. It is also postulated that the small spark witnessed by EMD personnel while installing a jumper to relay CR1D was also an instantaneous surge, due to the breaking and making-up of the circuit at the contact terminal point; however, the surge at that time was apparently not large enough to cause its corresponding fuse (3-595-112A) to open. If the MSIVs had been closed prior to jumper installation, the contact terminal points on the control relays would have been de-energized, and the jumpers could have been installed without the possibility of an instantaneous current surge. In addition, with the MSIVs closed, fewer neighboring terminal points on the control relays would be energized, decreasing the possibility for inadvertent shorts or grounds to other components during jumper installation and removal.

D. SAFETY ANALYSIS OF EVENT:

The unplanned closure of MSL drain valve 3-0220-2 and de-energization of outboard MSIV AC pilot valve solenoids were consistent with the circuit interruption that took place. The unplanned ESF actuation was in the conservative (isolated) direction and had no effect on plant status. In addition, operability of Primary Containment Isolation logic is not required when the Unit is in Cold Shutdown. For these reasons, the safety significance of this event was minimal.

E. CORRECTIVE ACTIONS:

As immediate corrective action, jumper installation was stopped until open fuse 3-595-711B had been identified and determined as the cause for the unplanned ESF actuation. The open fuse was verified to have the correct current and voltage ratings required for the application, and jumper installation was completed under DOS 250-3, with the circuit de-energized. Fuse 3-595-711B was then replaced, and MSL drain valve 3-0220-2 was reopened at 1947 hours. DOS 250-3 was then successfully completed.

DOS 250-3 will be revised to require all MSIVs being tested to be in the closed position prior to jumper installation and removal (249-180-92-13101). This will prevent the event described in this report, and also lessen the possibility for inadvertent shorts or grounds to other components during the jumper installation/removal process.

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TEXT Energy Industry Identification System (EIIS) codes are identified in the text as [XX]

F. PREVIOUS OCCURENCES:

LER/Docket Numbers Title

92-23/0500237 Reactor Recirculation Sample Valve 2-220-45 Closure and Loss of Outboard MSIV Indication Due to a Blown Fuse

During normal operation at 77% power, the 2-220-45 sample valve spuriously closed and outboard MSIV position indication was lost. The apparent cause of the event was determined to be a blown fuse; however, the root cause for the blown fuse could not be found. Corrective actions included current measurements of the circuit to verify the proper fuse rating required, and subsequent replacement of the fuse.

G. COMPONENT FAILURE DATA:

No component failures were identified as contributors to this event; therefore, this section is not applicable, and a Nuclear Plant Reliability Data System (NPRDS) search was not performed.