



Commonwealth Edison
Dresden Nuclear Power Station
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Telephone 815/942-2920

October 15, 1991

EDE LTR: #91-632

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

Licensee Event Report # 91-011-00, Docket # 050249 is being submitted voluntarily in accordance with NUREG 1022 due to its significance and NRC interest. It concerns loss of Unit 3 Control Room Annunciator power during the current refuel outage.


E.D. Eenigenburg
Station Manager
Dresden Nuclear Power Station

EDE/dwh

Enclosure

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

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Handwritten initials/signature

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 3
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Title (4)
Loss of Main Control Room Annunciator Power Due to Design 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)
0	9	2	3	9	1	9	1	1	N/A	
0	9	2	3	9	1	9	1	1	N/A	

OPERATING MODE (9) **N**

THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10CFR (Check one or more of the following) (11)

<input type="checkbox"/> 20.402(b)	<input type="checkbox"/> 20.405(c)	<input type="checkbox"/> 50.73(a)(2)(iv)	<input type="checkbox"/> 73.71(b)
<input type="checkbox"/> 20.405(a)(1)(i)	<input type="checkbox"/> 50.36(c)(1)	<input type="checkbox"/> 50.73(a)(2)(v)	<input type="checkbox"/> 73.71(c)
<input type="checkbox"/> 20.405(a)(1)(ii)	<input type="checkbox"/> 50.36(c)(2)	<input type="checkbox"/> 50.73(a)(2)(vii)	<input checked="" type="checkbox"/> Other (Specify
<input type="checkbox"/> 20.405(a)(1)(iii)	<input type="checkbox"/> 50.73(a)(2)(i)	<input type="checkbox"/> 50.73(a)(2)(viii)(A)	in Abstract
<input type="checkbox"/> 20.405(a)(1)(iv)	<input type="checkbox"/> 50.73(a)(2)(ii)	<input type="checkbox"/> 50.73(a)(2)(viii)(B)	below and in
<input type="checkbox"/> 20.405(a)(1)(v)	<input type="checkbox"/> 50.73(a)(2)(iii)	<input type="checkbox"/> 50.73(a)(2)(x)	Text) Voluntary

LICENSEE CONTACT FOR THIS LER (12)

Name John O'Neill Technical Staff Group Leader	TELEPHONE NUMBER
Ext. 2783	AREA CODE 8 1 5 9 4 2 - 2 19 2 10

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

CAUSE	SYSTEM	COMPONENT	MANUFAC-TURER	REPORTABLE TO NPRDS	CAUSE	SYSTEM	COMPONENT	MANUFAC-TURER	REPORTABLE TO NPRDS

SUPPLEMENTAL REPORT EXPECTED (14)

<input type="checkbox"/> Yes (If yes, complete EXPECTED SUBMISSION DATE)	<input checked="" type="checkbox"/> NO	Expected Submission Date (15)
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ABSTRACT (Limit to 1400 spaces, i.e., approximately fifteen single-space typewritten lines) (16)

On September 23, 1991, during the Unit 3 refuel outage with all fuel removed from the reactor vessel, audible and visual alarms were received indicating a loss of power to Main Control Room (MCR) Panels 903-3, -4, -5, -6, -7 and -8. Operations personnel determined fuse F-25 in Annunciator Input Cabinet 903-34 had opened. At 1100 an Alert was declared in accordance with the Dresden Emergency Action Levels. At 1113, fuse F-25 was replaced and proper annunciator operation was restored. All work in the MCR and the Auxiliary Electric Equipment Room (AEER) was stopped pending further investigation. A review of the circuitry revealed that the negative 125 VDC to all annunciator chassis commons was fed from fuse F-25. A copper link was installed in place of F-25, with Nuclear Engineering Department concurrence, and the Alert was terminated at 1445. The original plant design did not have a fuse in this circuit. The fuse was installed in January, 1990, as part of an annunciator system modification. This is a large modification which is being installed in stages and construction is continuing during the current refuel outage. As a corrective action for this event, the designers of the modification are reviewing the circuit to determine if individual fusing of the chassis commons is feasible. The safety significance of this event was considered minimal as all fuel was removed from the reactor vessel and normal annunciator operation was promptly restored. This is the first event involving loss of multiple annunciator panels due to a single fuse failure.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

Form Rev 2.0

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)						Page (3)		
		Year	///	Sequential Number	///	Revision Number				
Dresden Nuclear Power Station	0 5 0 0 0 2 4 9	9 1	-	0 1 1	-	0 0	0 3	Of	0 3	

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

The original plant design did not have a fuse in this circuit. The fuse was installed in January, 1990, as part of an annunciator system modification. This is a large modification which is being installed in stages and construction is continuing during the current refuel outage. The fuse installed was rated at three amps, which is what the modification design originally specified. However, a design change was issued on July 17, 1991, which changed the fuse to a 10 amp rating. The original fuse sizing was based on the circuit only supplying the annunciator horns. The designer recognized that the horns were not the only load on this fuse and revised their calculation. The design was revised and the drawings reissued; however, station personnel were not adequately informed of the reason for the change. Further modification to the annunciator power supplies was to be performed and it was believed, by station personnel, that the fuse change was not required until this time. Conversations with the designer indicate that they were unaware that any fuse had been installed in the circuit up to this time. As the fuse had not previously opened during annunciator operation and the circuit load was 0.4 amps, it is not believed that the fuse opened because of the annunciator chassis or horn load.

D. SAFETY ANALYSIS OF EVENT:

The annunciator system is a warning system which informs the reactor operator audibly and visually of abnormal equipment status. Upon the loss of power to the annunciator, the Alert was properly declared in accordance with Condition 3.i of Emergency Plan Implementing Procedure (EPIP) 200-T1, Dresden Emergency Action Levels. Although the fuse was replaced and the annunciator system promptly restored to normal operation in approximately 17 minutes, as a precautionary measure the Alert was not terminated until the fuse was replaced with the copper link. The copper link is acceptable, as the positive 125 VDC supply to each branch circuit in Panel 903-34 is adequately fused. Prior to this event, all fuel had been removed from the reactor vessel and no fuel moves were being performed during the event. Also, the Operator still had gauges and recorders of vital parameters to determine plant status. Therefore, the safety significance of this event is considered minimal.

E. CORRECTIVE ACTIONS:

The immediate corrective action was to insert a 3 amp fuse in F-25. However, due to the fact that one fuse could deenergize the whole annunciator system, the 3 amp fuse was replaced with a copper link. This was implemented using Field Change Request (FCR) D-6583, which was reviewed by NED. As a long term corrective action, NED will investigate the feasibility of separating the loads on F-25 and individually fusing the negative 125 VDC to the common of each annunciator panel chasis (249-200-91-07201).

F. PREVIOUS OCCURENCES:

LER/Docket Numbers Title

89-1/050249 Turbine Trip and Reactor Scram on Stop Valve Closure Due to Slow Transfer of House Loads During Loss of Offsite Power.

During this event, power to annunciator panel 902-3 was interrupted due to fuse F-9 opening. Power was also interrupted for annunciator panel 902-6 due to another fuse opening; no other annunciator panels were affected. The cause was attributed to 125 VDC system spikes during the event. The appropriate fuses were replaced.

G. COMPONENT FAILURE DATA:

As no component could be determined to have failed to initiate this event, this section is not required.