



Commonwealth Edison

Dresden Nuclear Power Station

R.R. #1

Morris, Illinois 60450

Telephone 815/942-2920

February 21, 1992

CWS LTR #92-110

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

Licensee Event Report 92-004, Docket 050249 is being submitted as required by Technical Specification 6.6, NUREG 1022 and 10 CFR 50.73 (a)(2)(ii)(A).

J. F. Heuser for

Charles W. Schroeder
Station Manager
Dresden Nuclear Power Station

CWS/cfq

Enclosure

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

(ZDVR/486)

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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 5 10 10 12 14 19
 Page (3) 1 of 0 4
 Title (4) Improper Setpoint of Second Level Undervoltage Relays Due to Management 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	1	2	9	2	9	2	0	1	2	Dresden Unit 2	0 5 10 10 12 13 17

OPERATING MODE (9) N

POWER LEVEL (10) 0 0 0

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 type="checkbox"/> Other (Specify in Abstract below and in Text)
<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)	
<input type="checkbox"/> 20.405(a)(1)(iv)	<input checked="" type="checkbox"/> 50.73(a)(2)(ii)	<input type="checkbox"/> 50.73(a)(2)(viii)(B)	
<input type="checkbox"/> 20.405(a)(1)(v)	<input type="checkbox"/> 50.73(a)(2)(iii)	<input type="checkbox"/> 50.73(a)(2)(x)	

LICENSEE CONTACT FOR THIS LER (12)

Name: Steve Lawson, Technical Staff Safety System Group Leader Ext. 2785
 TELEPHONE NUMBER: AREA CODE 8 1 5 9 4 2 1 - 12 19 12 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)

Expected Submission Date (15) X | NO

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

On July 31, 1991, an Emergency Notification System (ENS) notification was performed concerning preliminary calculations performed by the Nuclear Engineering Department (NED) which indicated that the existing Second Level Undervoltage setpoints for 4kV Emergency buses were too low to provide adequate protection to the most limiting Safety Related component. The most limiting component was determined to be the Unit 2 Diesel Generator Cooling Water Pump (DGCWP), which is fed from Unit 2 Division II AC Distribution System. Dresden Station was notified by NED on November 20, 1991, that further Unit 2 Division II calculations had identified additional loads more limiting than the DGCWP; this was reported via Emergency Notification System (ENS). Both Unit 2 and Unit 3 were in cold shutdown at the time.

On January 22, 1992, NED notified the Station that degraded voltage calculations had been completed for Unit 3 Divisions I and II. These calculations, which included credit for planned modifications to improve the available voltage to critical Safety Related components, indicated minimum required 4kV safety bus voltages for Buses 33-1 and 34-1 to be 3832 Volts and 3792 Volts, respectively. This 4kV safety bus voltage concern was previously reported by LER 91-21/050237; a supplement to LER 91-21/050237 will be submitted to provide further information on this topic by March 31, 1992.

LICENSE EVENT REPORT (LER) TEXT CONTINUATION

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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:

Improper Setpoint of Second Level Undervoltage Relays Due to Management Deficiency

A. CONDITIONS PRIOR TO EVENT:

Unit: 3 Event Date: January 22, 1992 Event Time: 1400 Hours

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

Reactor Coolant System (RCS) Pressure: 0 psig

B. DESCRIPTION OF EVENT:

During a Nuclear Regulatory Commission (NRC) Electrical Distribution System Functional Inspection (EDSFI) at Dresden Station during July 1991, a preliminary calculation was performed to determine the adequacy of the 4 kV Bus Degraded Voltage setpoints. Based on this calculation, it was determined that the existing setpoint of 3784 Volts did not provide adequate protection for all Safety Related equipment energized by the 4 kV safety bus [EB].

Commonwealth Edison Company (CECo) performed a preliminary calculation of auxiliary power system [EB] voltages for Dresden Unit 2 Division II utilizing the Unit 2 Emergency Diesel Generator [EK] Cooling Water Pump (DGCWP) as the most limiting Class 1E load. This path was selected to support the review activities of the EDSFI inspection team. The DGCWP was selected since it was the largest electrical load on the lowest voltage Motor Control Center (MCC). The preliminary calculation determined that the minimum 4 kV safety bus voltage to run the DGCWP was 3850 Volts. Additionally, it was identified that the estimated 4 kV safety bus voltage to start the DGCWP was approximately 3960 Volts. Based on these results, compensatory measures were developed to ensure continued operability of the DGCWP. These compensatory measures were discussed with NRR and Region III personnel on August 1, 1991, and incorporated into Dresden Operating Order 20-91. The compensatory actions were subsequently incorporated into Dresden Operating Abnormal (DOA) procedures DOA 6500-07, Unit 2 4 KV Emergency Bus Degraded Voltage, DOA 6500-08, Unit 3 4 KV Emergency Bus Degraded Voltage, and Dresden General Procedure (DGP) 02-03, Unit 2/3 Reactor Scram.

Subsequently, CECo performed additional preliminary calculations, utilizing refined loading tables and cable lengths. The revised calculation identified two additional loads more limiting than the Unit 2 DGCWP, and that the critical 4 kV safety bus voltage had increased to approximately 4120 Volts (including relay and potential transformer tolerance). It was determined that the critical 4 kV safety bus voltages for the Control Room Train "B" Air Filtration Heater [VI] and the Unit 2 Containment Cooling Service Water (CCSW) [BO] Pump Vault Cooling Fans were more limiting than the Unit 2 DGCWP. Based on this information, on November 20, 1991, CECo Engineering issued an Operability Determination per procedure ENC-QE 40.1, to document the potential operability concern. Within four hours of the notification, Dresden notified the NRC via the ENS. Both Units 2 and 3 were in Cold Shutdown at the time.

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

On January 22, 1992, CECO Nuclear Engineering Department (NED) notified Dresden Station that additional degraded voltage calculations were completed for Unit 3 Divisions I and II. Based on calculations, which included credit for modifications to improve the available voltage to critical Safety Related components, the minimum 4 kV required safety bus voltage for Buses 33-1 and 34-1 were 3832 Volts and 3792 Volts respectively. Consequently, based on the fact that these critical voltages are greater than the existing relay setting, Dresden has determined that this condition was reportable due to being in an unanalyzed condition.

C. APPARENT CAUSE OF EVENT:

This report is being submitted in accordance with 10CFR50.73(a)(2)(ii)(A) which requires the reporting of an unanalyzed condition. The apparent cause of the event is attributed to inadequate design control due to management deficiency. This concern was also addressed in LER 91-021/050237, Improper Setpoint Of Second Level Undervoltage Relays Due to Management Deficiency.

D. SAFETY ANALYSIS OF EVENT:

NED has performed a review of Dresden Switchyard voltages and the relative frequency of degraded grid voltage which results in degraded 4 kV safety bus voltage. It has been determined that the existing Second Level Undervoltage Relay settings were inadequate to assure proper protection of all Safety Related equipment, and that in order to assure adequate protection, modifications were needed to be performed on both Unit 2 and Unit 3. Both units were in cold shutdown when Dresden was notified of the calculations, and it was immediately recognized that these modifications were needed to be performed prior to unit startup.

E. CORRECTIVE ACTIONS:

Immediate corrective actions were to design and install necessary modifications prior to any mode change on either unit. LER 91-021 stated that a Supplemental Report would be issued detailing all events on both Unit 2 and Unit 3 regarding degraded voltage, final calculations and all near and long term corrective actions. This LER Supplement is to be submitted to the NRC by March 31, 1992. A complete report including a reference to this report will be included in the supplement (249-200-92-01801).

F. PREVIOUS OCCURENCES:

LER/Docket Numbers Title

91-021/050237 Improper Setpoint of Second Level Undervoltage Relays Due to Management Deficiency

During an Electrical Distribution System Functional Inspection (EDSFI), the NRC inspection team questioned whether the setting of the Second Level Undervoltage relays would provide adequate protection to Class 1E equipment. An Engineering review was performed. The review resulted in implementation of compensatory measures.

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G. COMPONENT FAILURE DATA:

<u>Manufacturer</u>	<u>Nomenclature</u>	<u>Model Number</u>	<u>Mfg. Part Number</u>
N/A	N/A	N/A	N/A

There is no component failure identified with this event, therefore, this section is not applicable.