Commonwealth Edison
Dresden Nuclear Power Station
R.R. #1
Morris, Illinois 60450
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July 30, 1992

CWS LTR #92-475

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

Licensee Event Report 91-42-01, Docket 050237 is being submitted to provide additional information with regard to an investigation to identify the population of similarly routed cables for both Dresden Units 2 and 3 and the corrective actions performed.

L. F. Hearn 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

300[illegible]

(ZDVR/702)

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) Cable Separation Criteria Not Met Due to Original Construction 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)
									Dresden Unit 3	0 5 0 0 0 2 4 9
1 1	2 7	9 1	9 1	0 4 2	0 1	1 2	2 3	9 1		

OPERATING MODE (9)		THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10CFR (Check one or more of the following) (11)					
N		20.402(b)	20.405(c)	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)	X 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
Emory Johnson, Technical Staff System Engineer Ext. 2603	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	MANUFAC-TURER	REPORTABLE TO NPRDS		CAUSE	SYSTEM	COMPONENT	MANUFAC-TURER	REPORTABLE TO NPRDS

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 fifteen single-space typewritten lines) (16)

While performing a walkdown for a proposed modification to re-install feed cable to Unit 2 480V Motor Control Center (MCC) 29-2, it was discovered that the existing cabling crossed from Engineered Safeguards System (ESS) Division II to ESS Division I along its cable pan routing. This condition is contrary to system separation criteria. Upon further investigation, three other MCC feed cables were identified as being of concern. Corrective actions were to initiate modifications M12-2-91-027 and M12-3-91-027 to recable and divisionally reroute the feed cabling from Unit 2 480V Bus 29 to MCC 29-2, from Unit 2 480V Bus 28 to MCCs 28-3 and 28-2, and from Unit 3 480V Bus 38 to MCC 38-2. Both Units 2 and 3 were shutdown and depressurized at the time these discrepancies were discovered; the modifications were completed prior to restart on each unit. No previous events of this type have been identified. The Commonwealth Edison Co. Nuclear Engineering Department (NED) has performed a comprehensive investigation into this event. The NED Operability and Safety Assessment performed determined that no credible failure mechanisms existed for this issue which could reduce plant safety to an unacceptable level.

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:

Cable Separation Criteria Not Met Due to Original Construction Design Deficiency

A. CONDITIONS PRIOR TO EVENT:

Unit: 2(3) Event Date: November 26, 1991 Event Time: 1604 Hours

Reactor Mode: N(N) Mode Name: Refuel(Shutdown) Power Level: 0%(0%)

Reactor Coolant System (RCS) Pressure: 0 psig(0 psig)

B. DESCRIPTION OF EVENT:

At 1604 hours on November 26, 1991, with Unit 2 shutdown and depressurized in the refuel mode, during a walkdown for a proposed modification, it was discovered that the existing power feed cables to Unit 2 480 Volt [ED] Motor Control Center (MCC) 29-2 from Bus 29 were routed through both Engineered Safeguards System (ESS) [ED] Division I and Division II cable pans. MCC 29-2 is currently designated as being ESS Division II equipment. This condition is contrary to the basic design criterion of divisional separation. An investigation was promptly initiated.

The initial results of the review identified two additional Unit 2 MCCs, 28-2 and 28-3, which possessed feed cabling that was inconsistently routed.

Further inspections on Dresden Unit 3 at 0930 hours on December 6, 1991, revealed that the feed cabling from Unit 3 480 Volt Bus 38 to MCC 38-2 (ESS Divison I) was also incorrectly routed in a Division II cable tray. Unit 3 was shutdown with all fuel removed from the reactor vessel at the time of this discovery.

A detailed evaluation of the population of feed cables with the potential of being inconsistently routed was performed. No other MCCs were identified from this review.

C. APPARENT CAUSE OF EVENT:

This event is submitted pursuant to the requirements of Title 10 of the Code of Federal Regulations Part 50.73(a)(2)(ii)(B) which requires the reporting of any event or condition of the nuclear power plant that is outside the design basis.

The Commonwealth Edison Co. Nuclear Engineering Department (NED) has performed a comprehensive investigation and review of this event. It has been determined that this condition has existed since the initial construction of Units 2 and 3. The investigation also indicates that the cabling in question was originally designated as Balance of Plant (BOP) cabling and was routed as such; however, a subsequent upgrade in the early 1970s was performed to reclassify certain auxiliary equipment considered important for safe shutdown to safety related. This upgrade did not include a review of the MCC feed cables to ensure that they were properly divisionally separated.

D. SAFETY ANALYSIS OF EVENT:

An Operability and Safety Assessment for the physical routing of the subject MCC feeder cables was performed. The assessment determined that there existed a lack of physical separation between cables providing redundant safety functions; however, for an external event (including fire, missiles, flooding, etc.) a simultaneous Design Basis Loss of Coolant Accident (LOCA) is considered to be beyond design basis. Therefore, a failure of the subject cable raceways is not considered a credible single failure during a LOCA. In the event of a fire or other external event resulting in multiple cable damage in the area of concern, the use of Appendix R Safe Shutdown procedures provides assurance that the plant could be safely shutdown. Therefore, credible failure mechanisms do not exist for this issue which could reduce plant safety to an unacceptable level. This is documented in a report from NED to Dresden Station dated December 13, 1991.

E. CORRECTIVE ACTIONS:

The immediate corrective actions were to perform a review to identify the population of similarly routed cables on both units. Upon the initial results of this NED review, modifications M12-2-91-027 and M12-3-91-027 were initiated. Partial modification M12-2-91-027A installed new cables to ensure proper divisional separation and address degraded voltage concerns for the power feed and control cables for Bus 28 to MCC 28-2. Partial modification M12-2-91-027B replaced and divisionally routed the feed cables and breaker control cables from Bus 28 to MCC 28-3. Partial modification M12-2-91-027C installed new cables to ensure proper divisional separation and address degraded voltage concerns for the power feed and control cables from Bus 29 to MCC 29-2. Modification M12-3-91-027 replaced and divisionally routed the feed cabling and breaker control cabling from Bus 38 to MCC 38-2. The completed investigation did not identify any additional separation inconsistencies requiring physical reroute of cables. However, in response to degraded voltage concerns, two more partial modifications M12-3-91-029A and M12-3-91-029B were initiated. Partial modification M12-3-91-029A replaced the feed cabling from Bus 39 to MCC 39-2. Partial modification M12-3-91-029B installed an additional cable per phase in parallel with the existing feed cabling from Bus 38 to MCC 38-3.

Modifications M12-2-91-027A, -027B, and -027C were completed before the startup of Unit 2 and modifications M12-3-91-027, M12-3-91-029A, and -029B were completed before the startup of Unit 3. The current modification process requires cable routing verification to ensure that the cables are properly separated and divisionalized.

F. PREVIOUS OCCURENCES:

LER/Docket Numbers Title

None. This is the first reported instance of this type.

G. COMPONENT FAILURE DATA:

Manufacturer	Nomenclature	Model Number	Mfg. Part Number
N/A	N/A	N/A	N/A

Since no component failure was identified with this event, this section is not applicable.