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Dresden Nuclear Power Station
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September 17, 1991

EDE LTR #91-571

U.S. Nuclear Regulatory Commission
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Washington, D.C. 20555

Licensee Event Report #91-017-0, Docket #050237 is being submitted as required by Technical Specification 6.6, NUREG 1022 and 10 CFR 50.73(a)(2)(iv).

L. J. Henner for

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/310)

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LICENSEE EVENT REPORT (LER)

Form Rev 2.0

Facility Name (1) Dresden Nuclear Power Station, Unit 2 Docket Number (2) 0 5 10 10 10 12 13 17 Page (3) 1 of 0 5

Title (4) Unplanned Primary Containment Isolation Valve Movement During Auxiliary Power Transfer Due to Deficient Relays

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	8	2	5	9	1	9	1	0	1	7	0	0	0	3	9	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)

20.402(b)	20.405(c)	X	50.73(a)(2)(iv)	73.71(b)
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 in Abstract below and in Text)
20.405(a)(1)(iii)	50.73(a)(2)(i)		50.73(a)(2)(viii)(A)	
20.405(a)(1)(iv)	50.73(a)(2)(ii)		50.73(a)(2)(viii)(B)	
20.405(a)(1)(v)	50.73(a)(2)(iii)		50.73(a)(2)(x)	

LICENSEE CONTACT FOR THIS LER (12)

Name Emory Johnson, Technical Staff System Engineer Ext. 2603

TELEPHONE NUMBER AREA CODE 8 1 5 9 4 2 - 2 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
X	J M	R L Y	G 0 8 10	Y					

SUPPLEMENTAL REPORT EXPECTED (14)

Expected Submission Date (15) X | NO

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

At 2101 hours on August 25, 1991, while verifying post maintenance operability of the motor operated (M0) "B" Recirculation Pump Discharge Valve, M02-202-5B, Unit 2 experienced a turbine trip from approximately 38% rated core thermal power. While throttling open valve M02-202-5B at approximately 20% open, the Turbine Thrust Bearing Trip Device actuated causing the Main Turbine to trip and a subsequent Auxiliary Power Transfer. The turbine trip device reset itself within two seconds of actuation. During the Auxiliary Power Transfer, several Group I and Group II Primary Containment Isolation Valves experienced unplanned closure. The apparent cause of the unplanned valve isolations is attributed to the valve relays dropping out during the momentary power interruption required to transfer auxiliary power. Corrective actions include installation of a modification for the Group I relays, initiation of an Action Item Record to evaluate potential concerns and recommend a solution to address the Group II and Group III valve unplanned isolations.

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

Normally the relays for the aforementioned Group I and Group II Isolation Valves are supplied by the 120V AC Instrument Bus which is powered by Motor Control Center (MCC) 28-2. MCC 28-2 is powered from Essential Service System (ESS)[EB] Division I, by way of the Unit Auxiliary Transformer (UAT), 4KV Bus 23, Emergency Bus 23-1, and 480V Bus 28 (Refer to Figure 1). During a generator trip, Auxiliary Power is transferred from the UAT to the Reserve Auxiliary Transformer (RAT) which normally feeds ESS Division II equipment. This transfer takes approximately 6 cycles to complete. During this brief interval, power is lost to Division I equipment.

C. APPARENT CAUSE OF EVENT:

This event is being reported in accordance with Title 10 of the Code of Federal Regulations Part 50 Section 73 (a)(2)(iv), which requires the reporting of any event that results in a unplanned actuation of an Engineered Safety Feature (ESF)[JE].

The apparent cause of this event is attributed to relay dropout during Auxiliary Power Transfer. The suspect relay has been identified as General Electric Relay type HMA, model number 12HMA119B.

This model of relay contains an AC coil. For the application in the Primary Containment Isolation System, the relays are normally energized. When an Auxiliary Power Transfer occurs after a turbine/generator trip, there is a momentary deenergization of the power supply to these relays. This momentary interruption is sufficient to permit deenergization of these relays, and contact movement.

D. SAFETY ANALYSIS OF EVENT:

All associated isolation valves failed in the conservative direction. No additional challenges to safe operation of Unit 2 were provided by these unplanned valve isolations, therefore, the safety significance of this event is considered minimal.

E. CORRECTIVE ACTIONS:

The immediate corrective action was for the NSO to reposition the mispositioned valves (237-200-91-14901).

A modification (M12-2(3)-88-60) was initiated to replace Group I AC relays with DC relays (a rectification circuit is part of this design). The DC relays have a longer hold in time after deenergization, approximately twice as long as AC relays, due to residual magnetism. This will prevent relay contact movement, during the momentary power interruption. Installation is to be conducted during Dresden Unit 3 refueling outage, D3R12 (237-200-91-14902) and Dresden Unit 2 refueling outage, D2R13, (237-200-91-14903).

To arrive at an adequate resolution to unplanned Group II valve isolations, an Action Item Record (AIR) is being generated to evaluate concerns, which are delineated as follows (237-200-91-14904):

1. Identify the locations and applications of this GE type HMA relay.
2. Assess the potential aging effects associated with,
 - a) these GE type HMA relays
 - b) Instrument Transformer/Instrument Bus

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3. Perform an Instrument Bus voltage load profile study and to review the possibilities of augmentation to the present system with alternative power supplies such as,
 - a) uninterruptible power supply (UPS)
 - b) motor generator set (MG-Set)
 - c) regulated transformer
4. Address the need to institute a testing program to assist in comparing present in-place relay characteristics with unused new relays to determine dropout voltage demand over time. Also, review the Instrument Bus automatic bus transfer (ABT) switch to assess aging effects.
5. Evaluate the feasibility of a relay change-out for the affected Group II valves similar to M12-2(3)-88-60 which is being performed on Group I Isolation Valves.

F. PREVIOUS OCCURENCES:

LER/Docket Numbers Title

91-011/050237 Unit 2 Reactor Scram Following Turbine Trip Due to Main Turbine Thrust Bearing Wear Detector Malfunction

During testing of the Main Turbine Thrust Bearing Wear Detector operation at 42% power, a reactor scram was received due to high reactor pressure signals following a turbine trip. A malfunction of the thrust bearing wear detector was attributed to the turbine trip. Several Group I and Group II isolation valves repositioned when auxiliary power transferred to the RAT.

87-024/050237 Unit 2 Reactor Scram on Low Level Due to 2A Feedwater Regulating Valve Failure

During operation at 93% power, a reactor scram occurred from a low water level signal caused by stem and plug assembly failure of the 2A Feedwater Regulating Valve [SJ]. Unanticipated closure of some Group I valves and loss of the inboard MSIV AC pilot valve solenoid light indication occurred.

G. COMPONENT FAILURE DATA:

<u>Manufacturer</u>	<u>Nomenclature</u>	<u>Model Number</u>	<u>Mfg. Part Number</u>
General Electric Co.	Relay	12HMA111B9	N/A

An industry wide Nuclear Plant Reliability Data System (NPRDS) data base search revealed one reported instance of failure of this device. Conversely, this event is not specifically classified as a failure, but it is being reported due to the device not being able to perform as intended in its application.

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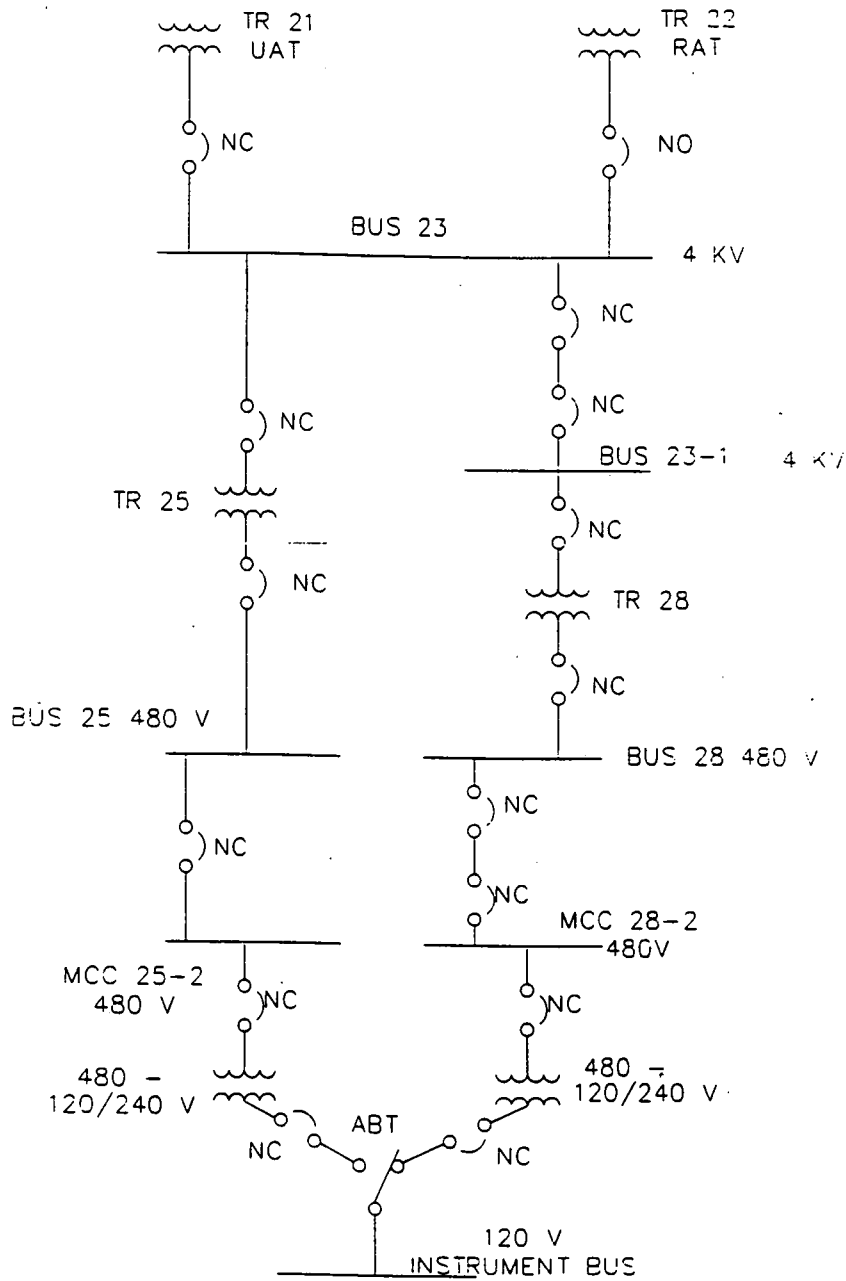


FIGURE 1