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Dresden Nuclear Power Station
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Morris, Illinois 60450
Telephone 815/942-2920

May 28, 1993

CWS PMLTR 93-190

U. S. Nuclear Regulatory Commission
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Licensee Event Report 93-006, Docket 050237 is being submitted as required by Technical Specification 6.6, NUREG 1022 and 10 CFR 50.73(a)(1) and 50.73(a)(2)(iv).

Charles W. Schroeder for 5-28-93

Charles W. Schroeder
Station Manager
Dresden Nuclear Power Station

CWS/tsc

Enclosure

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

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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 0 0 0 2 3 7				Page (3) 1 of 0 4															
Title (4) Inadvertent Auto Start of 2/3 Diesel Generator Due to BUS 33 Main Feed Breaker Auxiliary Switch Failure																													
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	4	2	8	9	3	9	3	---	0	0	6	---	0	0	0	5	2	8	9	3	Dresden	0	5	0	0	0	2	4	9
OPERATING MODE (9)		THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIRMENTS OF 10CFR (Check one or more of the following) (11)																											
POWER LEVEL (10)		0		0		0		20.402(b)		20.405(c)		50.73(a)(2)(iv)		73.71(b)															
						20.405(a)(1)(i)		50.36(c)(1)		X		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)																	
LICENSE CONTACT FOR THIS LER (12)																													
NAME T. J. Johnson										TELEPHONE NUMBER Ext.3526				AREA CODE 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	MANUFACTURER	REPORTABLE TO NPRDS	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS																				
X	E	K	5	2	G	0	B	0	Yes																				
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)

On April 28, 1993 at 1712 while transferring Auxiliary Power (Bus 33 feed from transformer (TR) 32 to TR 31) the unit 2\3 Diesel Generator auto-started. Bus 33 was being fed from TR 32. The feed breaker from TR 31 to Bus 33 was closed in. The Operator verified the breaker closing by the breaker position indication and verified load pickup on TR 31 to the bus. When Bus 33 feed breaker from TR 32 was opened to complete the power transfer, the 2/3 Diesel Generator auto started.

The feed breaker from TR 32 was reclosed to Bus 33 and the feed breaker from TR 31 was reopened. Inspection revealed that the linkage arm for the stationary auxiliary switch contacts was not in place. With these contacts not actuated the 2/3 Diesel Generator logic saw both Main feed breakers to Bus 33 as Open. The feed breaker from TR 31 was taken OOS and a Work Request (D 18154) was initiated to repair the stationary contact arm. EMD found the linkage had come apart at a connection point. The entire linkage was removed, reassembled and reinstalled. The breaker was then reinstalled and tested satisfactorily.

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TEXT Energy Industry Identification System (EIS) 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:

Inadvertent Auto Start of 2/3 Diesel Generator Due to Mechanical Failure

A. CONDITIONS PRIOR TO EVENT:

Unit: 2 Event Date: April 28, 1993 Event Time: 1712
 Reactor Mode: Refuel Mode Name: Refuel Power Level: 0%
 Reactor Coolant System Pressure: 0 psig

Unit: 3 Event Date: April 28, 1993 Event Time: 1712
 Reactor Mode: Run Mode Name: Run Power Level: 35%
 Reactor Coolant System Pressure: 1000 psig

B. DESCRIPTION OF EVENT:

On April 28, 1993 at 1712 while transferring Auxiliary Power per Dresden General Procedure 01-01 "Unit 2(3) Normal Unit Startup", (Bus 33 feed from TR 32 to TR 31) the 2/3 Diesel Generator auto started. Initially Bus 33 was being fed from TR 32, and then the feed breaker from TR 31 to Bus 33 was closed in. The Operator verified the breaker closing by the breaker position indication and verified load pickup on TR 31 to the bus. When Bus 33 feed breaker from TR 32 was opened to complete the power transfer, the 2/3 Diesel Generator auto started.

The Diesel Generator was verified running with electrical system lineup normal for present unit status, the reason for the diesel auto start was not readily apparent. The feed breaker from TR 32 was reclosed to Bus 33 and the feed breaker from TR 31 was reopened. The Shift Supervisor and the High Voltage Operator went to Bus 33 to investigate the problem. Inspection revealed that the linkage arm for the stationary auxiliary switch contacts was not in place. With these contacts not actuated, the 2/3 Diesel Generator logic saw both Main feed breakers to Bus 33 open when feed breaker from TR 32 was opened. The feed breaker from TR 31 was taken OOS and a Work Request (D 18154) was initiated to repair the stationary contact arm. EMD found the linkage had come apart at a connection point. The entire linkage was removed, reassembled and reinstalled. The breaker was reinstalled and tested satisfactorily. The TR 31 feed breaker to Bus 33 was closed in at 1845 on April 28, 1993.

C. APPARENT CAUSE OF EVENT:

The apparent cause of the event was a linkage arm on the Main Feed breaker to BUS 33 from TR 31 separating. The auxiliary switch operating linkage is held in place to a cam which the breaker operates as it goes from open to close. The connecting arm of the linkage is held in place, connected to the operating cam by a pin that runs thru the cam to the linkage arm. There is a washer attached, and the pin is flared out to hold the washer in place. This in turn holds the arm and cam together. How the washer became dislodged is

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indeterminable. Once the washer was dislodged from the pin, the linkage became disconnected from the operating cam and consequently the auxiliary switch was not operable. It is possible that the breaker linkage was damaged during installation.

It was later determined that during the event the expected annunciator 903-8 C-3 "Bus 33 Main and Reserve Breaker in Parallel" was not received but rather 903-8 A-1, "4kV Main Feed Breaker Trip." The operator having verified breaker position and current indication and receiving an expected audible alarm believed that the correct annunciator had been received. However the operator did not confirm that the received alarm was the expected alarm. The consequences of the actions taken will be disseminated during departmental tailgate.

A maintenance history review was conducted. The search was done on the SBM switch and its associated components. Since January of 1990, 5 separate work requests were written to, or involved with, correction of problems associated with a bent or damaged linkage.

An NPRDS search was conducted. There appears to be some problems associated with the design of the linkage assembly. The manufacturer, General Electric, has replaced the old linkage assembly with a sturdier assembly. The new assembly, besides being much stronger, also has provisions to adjust the linkage to the eccentricities of the particular breaker and cabinet.

Dresden Technical Staff personnel have been in contact with personnel from Quad Cities Station. They were asked to conduct a similar search of their database. Their search revealed no adverse trend.

D. SAFETY ANALYSIS OF EVENT:

The safety significance of the event is considered minimal. The failure of the linkage arm sent erroneous signals to the Diesel Generator logic, but the reaction of the diesel was in a fail-safe condition. Power to the bus was never lost and there were no perturbations to the plant other than the Diesel Generator auto start.

E. CORRECTIVE ACTIONS:

The affected breaker was repaired and testing was successful. The breaker was closed in on the bus at 1845 on 4-28-93.

Corrective actions to prevent re-occurrence are as follows:

1. Dresden Station Technical Staff will evaluate the feasibility of replacing the existing linkage with the new design. To be completed by July 31, 1993 (NTS # 237-180-93-01203).
2. Dresden Station Electrical Maintenance and Technical Staff will evaluate the need for a test breaker and test breaker cubicle for post-maintenance testing of any breaker work. Evaluation to be complete by August 13, 1993 (NTS # 237-180-93-01204).
3. Dresden Station recently began a project to upgrade the existing 250 MVA buses which could receive fault currents in excess of their short circuit capacity, with breakers of greater capacity. This action was addressed during the Dresden EDSFI. The Nuclear Engineering Department will review this linkage problem for possible design consideration during the upgrade (NTS # 237-180-93-01205).

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4. Tailgate with operators to review event and discuss causal factors. To be completed by July 31, 1993 (NTS 237-180-93-00601).

F. PREVIOUS OCCURRENCES:

NTS # 254-201-93-25500 Snap-ring missing from linkage pin, 1/2 DG feed to Bus 13-1.

NTS # 237-180-93-01200 Linkage bent on breaker not allowing Auxiliary Contacts to operate.

G. COMPONENT FAILURE DATA:

<u>Manufacturer</u>	<u>Nomenclature</u>	<u>Model Number</u>	<u>Mfg. Part Number</u>
General Electric	4160 V. Breaker	AMH 4.76-250-OD	