

Commonwealth Edison Dresden Nuclear Power Station 6500 North Dresden Road Morris, Illinois 60450 Telephone 815/942-2920

April 12, 1994

GFSLTR 94-0120

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

Licensee Event Report 94-011, Docket 50-249 is being submitted as required by Technical Specification 6.6, NUREG 1022 and 10CFR50.73(a)(2)(iv).

Sincerely,

Gary/ F. Spedl

Station Manager Dresden Station

GFS/JJV:cfq

Enclosure

cc: J. Martin, Regional Administrator, Region III NRC Resident Inspector's Office File/NRC File/Numerical

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NRC FORM 366 U.S. NUCLEAR REGULATORY COMMISSION A (5-92)						APPROVED BY	APPROVED BY ONB NO. 3150-0104 EXPIRES 5/31/95						
LICENSEE EVENT REPORT (LER)						ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 50.0 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE INFORMATION AND RECORDS MANAGEMENT BRANCH (MNBB 7714), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555-0001, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.							
FACILITY NAME (1) Dresden Nuclear Power Station Unit 3						DOCKET NUMBER (2) 05000249				PAGE (3) 1 OF 4			
TITLE (4)Loss of Power to Bus 34 Resulted in Auto-Start of Unit 3 Emergency DieselGenerator Due lack of preventive maintenance on Bus Pots.													
EVEN	T DATE	(5)		LER NUMBER (6)	REPO	RT DATI	E (7)		OTHER FACIL	ITIES INV	OLVED	(8)
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REVISION	MONTH	DAY	YEAR	FACILI None		-	DOCKET	NUMBER
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LICENSEE CONTACT FOR THIS LER (12)													
NAME								TELEPHONE NUMBER (Inc			lude Area Code)		
J. J. Viney					-		Ext.	3526	(81	5) 942-	2920		
COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)													
CAUSE	SYSTE	M CO	MPÓNENT	MANUFACTURER	REPORTABI	LE S	. (AUSE ·	SYSTEM	COMPONENT	MANUFAC	TURER	REPORTABLE TO NPRDS
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	SUPPLEMENTAL REPORT EXPECTED (14)						EXPECTED MONT			DA	Y YEAR		
YES (If yes, complete EXPECTED SUBMISSION DATE).				X	10		SI D	SUBMISSION DATE (15)					
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At 2355 on March 25, 1994, multiple alarms were received on panels 903-8, 903-5, 902-4, 923-2, 923-5, and many of the lights on the Unit 3 side of the Control Room went off. This caused a Unit 3 Half Scram, Standby Gas Treatment (SBGT) auto-start and auto-start of Unit 3 Emergency Diesel Generator (EDG) which closed onto bus 34-1. Bus 34 indicated a low voltage condition (via panel meters and white bus energized light out) with the feed breaker from Transformer (TR) 32 to Bus 34 indicating closed. The loss of power to Bus 34 was caused by corrosion buildup on the Bus Pots due to lack of preventive maintenance. A continuing program of preventive maintenance on the Bus Pots has been initiated.

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Α.

PLANT CONDITIONS PRIOR TO EVENT:

Unit: 3Event Date: March 25, 1994Event Time: 2355Reactor Mode: ShutdownMode Name: OutagePower Level: 0Reactor Coolant System Pressure: 0 psig

B. <u>DESCRIPTION OF EVENT</u>:

On March 25, 1994, at approximately 2355, Bus 34 undervoltage (UV) relays 127B34 1-2 and 127B34 2-3 actuated. These relays actuate the 127-B34X1, 127-B34X2, 127-B34X3 relays. These relays load shed Bus 34, consequently de-energizing Bus 34-1, and causing the Unit 3 EDG to auto-start. Bus 35, Bus 36, and Bus 37 were cross-tied and all were de-energized. Bus 38 and Bus 39 were crosstied, but fed from Bus 33-1, so neither was lost. Reactor Protection System (RPS) Bus B was de-energized as it was being fed from its reserve feed, MCC 35-2. All systems functioned as expected for a first level undervoltage.

The Unit 3 Nuclear Station Operator (NSO) recognized a Unit 3 Half Scram, Standby Gas Treatment (SBGT) auto-start and auto-start of Unit 3 Emergency Diesel Generator (EDG) which closed onto bus 34-1. Bus 34 was indicating a low voltage condition (via panel meters and white bus energized light out) with the feed breaker from Transformer (TR) 32 to Bus 34 indicating closed. 480 Volt Busses 35, 36 and 37 were all de-energized due to the loss of Bus 34. This caused multiple switchyard alarms due to the loss of AC power (Bus feed 25 was already OOS due to outage work). The loss of Bus 37 caused a Unit 2 Instrument Air (IA) low pressure due to loss of 3C IA Compressor which is lined up to Unit 2. The Service Air (SA) cross-tie opened to maintain IA pressure (the Unit 2 SA Compressor was carrying Unit 2 SA, supporting Unit 2 IA and carrying Unit 1 SA and IA due to Unit 1 Compressor problems). The TR 32 to Bus 34 breaker was opened from the Control Room and the Bus was inspected by the HVO and Electrical Maintenance Department (EMD), visual inspection did not reveal any abnormalities. All loads were verified stripped from the Bus and an attempt was made to close the TR 32 to Bus 34 breaker. The TR 32 to Bus 34 breaker was closed but voltage was not restored to Bus 34. The breaker was re-opened and taken to Pull To Lock (PTL) from the Control Room. The Bus Pot Fuses were removed, inspected and re-installed. The breaker was then closed and Bus 34 was energized. Restoration of normal feeds was actively pursued and all were easily recovered except for Bus 35. Bus ties from 35 to 36 or 35 to 37 could not be closed until jumpers were installed. This happened because the 480 Volt breaker at Bus 35 from Bus 33 was actually removed from the cubicle for maintenance. When the breaker is removed, it breaks the closing circuit for the Bus tie breakers.

The NSO log books, SER/Alarm Typer output, Event Participant Statements and Prints 12E-3333, 12E-3334, 12E-3343, & 12E-3347 were reviewed. A Total Job Management (TJM) search of previous Bus 31, Bus 32, Bus 33, Bus 34, Bus 33-1 and 34-1 work requests was performed and D3R12 relay calibrations for Bus 34 and TR 32 were reviewed.

The cause of this event was a loss of the power from the Bus 34 Bus Pots. An actual undervoltage condition did not exist at TR 32 feeding Bus 34 but Bus 34

NRC FORM 366A (5-92)	APPROVED BY ONB NO. 3150-0104 EXPIRES 5/31/95						
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FACILITY NAME (1)	FACILITY NAME (1) DOCKET NUMBER			LER NUMBER (6) PAGE (3			
Dresden Nuclear Power	Station Unit 3	05000249	YEAR 94	SEQUENTIAL NUMBER	REVISION NUMBER OO	3 OF 4	

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was de-energized. TR 32 UV relays are set to actuate at a higher voltage than the Bus 34 UV relays and with a smaller time delay. No TR 32 UV targets nor alarms were received, no other Bus experienced UV conditions and they were all fed from the same source. This would indicate that voltage at TR 32 was within acceptable limits. The only other way to drop out the Bus 34 UV relays would be to disturb power from the Bus Pots to the relaying scheme.

The Bus Pots were thoroughly cleaned and ohm readings brought back within acceptable limits. All stabs were realigned. EMD will clean all Unit 3 Bus Pots this outage. Unit 2 Bus Pots will be cleaned during D2R14.

It is this combination of factors that substantiates the fact that the Bus Pots lost good contact and caused the Bus Undervoltage condition. The Bus Pots were removed during the Bus outage and the stabs were inspected and cleaned. High resistance readings were indicated at the stab connections. This was anticipated as removing and inspecting the Bus Pots allowed re-energization of Bus 34 from TR 32 during the initial recovery from the event. This is further substantiated by the fact that a TJM history search indicates no record of Bus Pot cleaning and previous cubicle inspections indicate that the Bus and Cubicles were generally in an unpolished state.

C. <u>CAUSE OF EVENT</u>:

This report is being submitted in accordance with 10CFR50.73(a)(2)(iv) which requires the reporting of any event or condition that resulted in manual or automatic actuation of any Engineered Safety Feature.

Root cause of the event is corrosion buildup on the Bus Pot stabs in Bus 34 due to lack of preventive maintenance.

D. <u>SAFETY ANALYSIS</u>:

The safety significance of the event during normal shutdown operations is minimal. The loss of power to Bus 34 sent auto-start signals to the Emergency Diesel Generator logic. The Unit 3 Emergency Diesel Generator started properly and assumed the proper loads when challenged by the actuation of the undervoltage relays.

Because Bus 35 and ties from 35 to 36 or 35 to 37 could not be closed until jumpers were installed, the Unit 3 Half-Scram could not be reset and SBGT could not be secured. This resulted in normal Reactor Building Ventilation System unavailability for a period of time. Emergency systems functioned as expected.

E. <u>CORRECTIVE ACTIONS</u>:

Three NWR's were initiated to clean and inspect Bus Pots at Busses 31, 32, 34 and 34-1. This cleaning and inspection verified the root cause of the event.

EMD revised packages that existed for Bus 33 and Bus 33-1 inspections to include cleaning of the Bus Pots.

Electrical Maintenance shall create procedures to clean and inspect all Unit Bus Pots by D2R14. Bus Pot cleaning will become a GSRV item and be performed every other refuel outage. These GSRV items shall be created prior to D2R14.

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	FACILITY NAME (1)	DOCKET NUMBER		LER NUMBER (6)		PAGE (3)
	Dresden Nuclear Power Station Unit 3	05000249	YEAR 94	SEQUENTIAL NUMBER 011	REVISION NUMBER OO	4 OF 4

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EMD shall revise procedures DEP 7300-09 and DEP 7300-10 to place the Bus Jumpers at locations that allow tie breakers to be operated even if a feed breaker is removed.

F. <u>PREVIOUS OCCURRENCES</u>:

LER/Docket Number Title

- 93-012 Inadvertent Auto Start of 2/3 Diesel Generator Due to Mechanical Failure. C/A: The affected breaker was repaired and testing was successful.
- 92-033 Inadvertent Auto Start of 2/3 Diesel Generator Due to cubicle door slam. C/A: Include in HVO training syllabus caution to the sensitivity of the relays in question. Post warning signs on cabinet doors. Tailgate current cabinet door situation to all operators. Fixed cabinet doors so that excessive force or special techniques are not required to properly close the doors.

G. <u>COMPONENT FAILURE DATA</u>:

Manufacturer Nor	nenclature
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Model Number

Mfg. Part Number

Not Applicable