Commonwealth Edison
Dresden Nuclear Power Station
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November 19, 1990

EDE LTR #90-735

U.S. Nuclear Regulatory Commission
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Licensee Event Report #90-011-0, Docket #050237 is being submitted as required by Technical Specification 6.6, NUREG 1022 and 10 CFR 50.73(a)(2)(iv).

E.D. Eenigenburg
Station Manager
Dresden Nuclear Power Station

EDE/ade

Enclosure

cc: A. Bert Davis, Regional Administrator, Region III
File/NRC
File/Numerical

(ZDVR/65)

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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 4

Title (4) Unplanned Automatic Start of the Unit 2/3 Diesel Generator Due to Procedure 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 0	2 7	9 0	9 0	---	0 1 1	--- 0 0	1 1	0 5	9 0	N/A	0 5 0 0 0

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)	X 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 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	TELEPHONE NUMBER AREA CODE
J. Boyar, Regulatory Assurance Engineer Ext. 2707	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)

At 0520 hours on October 27, 1990, an unplanned automatic start of the Unit 2/3 Diesel Generator (DG) occurred while Operations Department personnel were preparing to take 4 KV busses 23 and 23-1 out of service (OOS) to facilitate breaker and cubicle preventative maintenance work. Dresden Unit 2 was in cold shutdown for a refuel outage, while Unit 3 was under normal power operation at 90% rated core thermal power. The Unit 2/3 DG provides emergency AC power to either or both Units; the safety significance of this event was minimal because the Unit 2 and Unit 3 DGs were operable and the unplanned Unit 2/3 DG autostart had no affect on its availability to power emergency AC loads if needed. The root cause was attributed to procedure deficiency due to inadequate procedural guidance to prepare the OOS instructions. Corrective actions will include development of improved procedures for de-energizing 4 KV busses which have the potential for unplanned DG starts, clarification of policy concerning techncial assistance for such evolutions, and labeling improvements. A previous event involving an unplanned ESF actuation during the current Unit 2 refuel outage was reported by LER 90-10/050237.

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:

Unplanned Automatic Start of the Unit 2/3 Diesel Generator (DG) [EK] Due to Procedure Deficiency

A. CONDITIONS PRIOR TO EVENT:

Unit(s): 2 (3) Event Date: October 27, 1990 Event Time: 0520 Hours

Reactor Mode(s): N (N) Mode Name(s): Shutdown (Run) Power Level(s): 0(90%)

Reactor Coolant System (RCS) Pressure(s): 0 (999) psig

B. DESCRIPTION OF EVENT:

At 0520 hours on October 27, 1990, while Operations personnel were preparing to take 4 KV busses 23 [EA] and 23-1 [EB] out of service (OOS) for breaker and cubicle preventative maintenance work, an unplanned automatic start of the Unit 2/3 DG occurred when bus 23 was de-energized. The Unit 2/3 DG supplies AC power to Unit 2 and/or Unit 3 as necessary to support design basis loss of offsite power or 10CFR50 Appendix R safe shutdown conditions. Unit 2 was in cold shutdown for a refuel outage and Unit 3 was under normal power operation at 90% rated core thermal power at the time of this event. Bus 23 was re-energized via Reserve Auxiliary Transformer 22 [FK] and the Unit 2/3 DG was secured. Investigation revealed that the OOS instructions had failed to correctly identify a knife switch required to prevent the unplanned automatic start during this evolution.

C. APPARENT CAUSE OF EVENT:

This report is submitted under the requirements of 10CFR50.73(a)(2)(iv) as an unplanned Engineered Safety Feature (ESF) actuation.

De-energization of 4 KV busses 23 and 23-1 was planned to support completion of breaker and cubicle preventative maintenance work during the refuel outage. The 4 KV breaker and cubicle preventative maintenance program has been enhanced significantly, requiring improved inspection/overhaul frequencies and implementation of augmented maintenance procedures. As such, although previous practice involved taking these busses OOS separately, it was planned to de-energize them together at an appropriate time within the refuel outage.

The OOS instructions were prepared by an SRO-Licensed Operations Planner. While preparing the OOS instructions, Dresden Operating Surveillance (DOS) 6600-6, Bus Undervoltage and Emergency Core Cooling System Test for the Unit 2/3 DG, was used as reference material because no specifically applicable procedure addressing this type of dual bus outage existed. This resulted in inclusion into the OOS instructions a requirement to open four knife switches, as listed in DOS 6600-6 steps F.1.a through F.1.d, for the purpose of preventing unplanned automatic start of the Unit 2/3 DG. However, subsequent thorough review of the bus 23 and bus 23-1 undervoltage logic schematics concluded that one of the knife switches specified in the OOS instructions was inappropriate for this purpose because it does not defeat the Unit 2/3 DG automatic start signal on bus 23-1 undervoltage. Therefore, the proximate cause of the unplanned DG start was an error in preparation of the OOS instructions. However, the following factors were concluded to contribute to an underlying root cause of procedure deficiency.

1. Although the knife switch specification error could potentially have been discovered through review of Dresden Operating Procedure (DOP) 6500-11, De-energizing 4 KV bus 23-1 for Maintenance, it should be noted that this procedure was not specifically applicable to the situation (de-energization of both busses together).

2. The Shift Supervisor performing verification of the OOS involved with this activity utilized the OOS instructions, DOS 6600-6, and electrical schematic drawing 12E-2351B sheet 2. He concluded that the OOS instructions specified the correct knife switches but misidentified the erroneous one because it had similar contact designation to that listed in DOS 6600-6. It should be noted that the verifying Shift Supervisor did interpret the autostart logic correctly. However, unclear wording of the device numbers and locations on the schematic caused difficulty in the verification process. It was also noted during the investigation that labeling improvements to the knife switches are needed.

3. Review of this event concluded that clearer guidance was needed concerning the types of situations in which Operations should request assistance from other departments (such as the Technical Staff or Electrical Maintenance Staff) during the OOS preparation and verification process.

D. SAFETY ANALYSIS OF EVENT:

This event had no affect on the availability of the Unit 2/3 DG to supply Unit 3 loads if needed. When the automatic start occurred, Unit 2 4 KV busses 23 and 23-1 had been stripped of all essential loads. Immediate investigation resulted in discovery of the knife switch problem, and the Unit 2/3 DG was secured. For these reasons, this event had no adverse safety consequences.

E. CORRECTIVE ACTIONS:

The following corrective actions were initiated to prevent recurrence of this type of event.

1. The Operations Staff will implement labeling improvements to the undervoltage knife test switches for all the Unit 2 and Unit 3 4 KV busses which have the potential for an unplanned DG start (237-200-90-11801).

2. Specific procedures will be developed by the Operations Staff for de-energization of all the Unit 2 and Unit 3 4 KV bus combinations which have the potential for an unplanned DG start (237-200-90-11802).

3. The Assistant Superintendent of Operations will issue an Operations Policy Statement clarifying the types of situations in which Operations should request assistance from other departments (i.e., Technical Staff or Electrical Maintenance Staff) during the OOS preparation and verification process. This policy will require that Operations request assistance for all electrical outages which do not involve a specifically-applicable procedure or previously verified instruction scheme, or which cannot be clearly understood via the use of electrical schematics and/or wiring diagrams (237-200-90-11803).

4. The System Engineer will review the logic diagrams involved with this event and initiate appropriate improvements to the device identification wording (237-200-90-11804).

F. PREVIOUS OCCURENCES:

A previous event involving an unplanned ESF actuation during the current Unit 2 refuel outage is listed below.

LER/Docket Numbers	Title
90-10/050237	2B Core Spray [BM] Pump Automatic Start Due to Management Deficiency

This event involved an unplanned start of the 2B Core Spray pump during maintenance activity on a Unit 2 DG cubicle on 4 KV bus 24-1 [EB]. This did not result in injection to the reactor vessel, and is believed to have resulted from inadvertent grounding of a contact set during the maintenance activity. Corrective action included review of the event with Electrical Maintenance Work Analysts in order to clarify the need for highlighting the potential for this type of event.

G. COMPONENT FAILURE DATA:

This section is not applicable because this event did not involve component failure.