NRC FORM 366 (7-77)

U.S. NUCLEAR REGULATORY COMMISSION

LICENSEE EVENT REPORT

CONTROL BLOCK: | | | | | | | (1) (PLEASE PRINT OR TYPE ALL REQUIRED INFORMATION)

01 | LICENSEE CODE: O H D B S 1 (2) | LICENSE NUMBER: Ø Ø - Ø Ø N P F - Ø 3 (3) | LICENSE TYPE: 4 1 1 1 1 (4) | CAT: (5)

CON'T 01 | REPORT SOURCE: L (6) | DOCKET NUMBER: Ø 5 Ø - Ø 3 4 6 (7) | EVENT DATE: 1 1 Ø 4 7 8 (8) | REPORT DATE: Ø 1 1 9 7 9 (9)

EVENT DESCRIPTION AND PROBABLE CONSEQUENCES (10)

02 At 02:54:03 hours, operations personnel intending to start Reactor Coolant Pump (RCP)
03 1-1-1, whose essential bus feed breaker undervoltage relays were disconnected for the
04 start, started RCP 1-1-2 instead. Essential Bus D1 de-energized at 02:54:08 hours.
05 Emergency Diesel Generator 1-2 started and Essential Bus D1 was re-energized at 02:54:18
06 hours. It was also determined that disabling the essential bus undervoltage relays is
07 contrary to Technical Specification 3.8.2.1. The total time in which Essential Bus D1
08 was de-energized was ten seconds. The unit was subcritical at the time of the incident.
(NP-33-78-148)

09	SYSTEM CODE	CAUSE CODE	CAUSE SUBCODE	COMPONENT CODE	COMP. SUBCODE	VALVE SUBCODE
	E B (11)	A (12)	A (13)	C K T B K R (14)	E (15)	Z (16)

(17) LER/RO REPORT NUMBER	EVENT YEAR		SEQUENTIAL REPORT NO.		OCCURRENCE CODE	REPORT TYPE		REVISION NO.
	7 8	—	1 2 5	/	Ø 3	L	—	Ø

ACTION TAKEN	FUTURE ACTION	EFFECT ON PLANT	SHUTDOWN METHOD	HOURS (22)	ATTACHMENT SUBMITTED	NPRD-4 FORM SUB.	PRIME COMP. SUPPLIER	COMPONENT MANUFACTURER
H (18)	Z (19)	Z (20)	Z (21)	Ø Ø Ø Ø	Y (23)	N (24)	Z (25)	Z Z Z Z (26)

CAUSE DESCRIPTION AND CORRECTIVE ACTIONS (27)

10 This incident was caused by personnel error and design deficiencies. Essential Bus D1
11 was transferred back to its normal power supply and Emergency Diesel Generator 1-2 was
12 returned to normal standby status. Operations personnel will now transfer the essen-
13 tial bus power supply to the bus tie transformer while starting RCPs or CWPs. FCRs
14 have been prepared to install momentary bypassing of the undervoltage relays and modify the T.S.

15	FACILITY STATUS	% POWER	OTHER STATUS (30)	METHOD OF DISCOVERY	DISCOVERY DESCRIPTION (32)
	C (28)	Ø Ø Ø (29)	NA	A (31)	NA

16	ACTIVITY RELEASED	CONTENT OF RELEASE	AMOUNT OF ACTIVITY (35)	LOCATION OF RELEASE (36)
	Z (33)	Z (34)	NA	NA

PERSONNEL EXPOSURES

17	NUMBER	TYPE	DESCRIPTION (39)
	Ø Ø Ø (37)	Z (38)	NA

PERSONNEL INJURIES

18	NUMBER	DESCRIPTION (41)
	Ø Ø Ø (40)	NA

LOSS OF OR DAMAGE TO FACILITY (43)

19	TYPE	DESCRIPTION
	Z (42)	NA

790125 0140

PUBLICITY

20	ISSUED	DESCRIPTION (45)	NRC USE ONLY
	N (44)	NA	

DVR 78-194

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TOLEDO EDISON COMPANY
DAVIS-BESSE NUCLEAR POWER STATION UNIT ONE
SUPPLEMENTAL INFORMATION FOR LER NP-33-78-148

DATE OF EVENT: November 4, 1978

FACILITY: Davis-Besse Unit 1

IDENTIFICATION OF OCCURRENCE: Loss of power to 4.16 KV Essential Bus D1 and removing essential bus undervoltage relays when starting Reactor Coolant Pumps

Conditions Prior to Occurrence: The unit was in Mode 3, with Power (MWT) = 0, and Load (Gross MWE) = 0.

Description of Occurrence: Prior to starting Reactor Coolant Pumps (RCP) 1-1-1 and 1-2-2 on November 4, 1978, unit personnel temporarily disabled 4.16 KV Essential Bus "C1" Feeder Breaker AC110 Undervoltage Relays 27A-1/C1 and 27A-4/C1 per Reactor Coolant Pump Operating Procedure SP 1103.06, Temporary Modification T-2937. This was done to eliminate the possibility of tripping Essential Bus C1 on low voltage when RCP 1-1-1 or RCP 1-2-2 was started. At 02:50:45 hours, RCP 1-2-2 was successfully started.

At 02:54:03 hours, operations personnel, intending to start RCP 1-1-1, started RCP 1-1-2 instead. When RCP 1-1-2 was started, it depressed the voltage of its supply bus, 13.8 KV Bus "B". The 4.16 KV Essential Bus "D1", which is also supplied from Bus "B" through Bus Tie Transformer "BD", suffered a proportional voltage drop which caused Essential Bus "D1" Feeder Breaker AD110 Undervoltage Relays 27A-1/D1 and 27A-4/D1 (still in service) to trip Feeder Breaker AD110 and de-energize Essential Bus D1 at 02:54:08 hours.

The loss of power initiated an emergency start of Emergency Diesel Generator 1-2. As a result, Essential Bus "D1" was re-energized, and its voltage was returned to normal at 02:54:18 hours.

The loss of power to Essential Bus "D1" placed the unit in the Action Statement of Technical Specification 3.8.2.1, which states that 4.16 KV Essential Bus "D1" must be operable and energized while in Mode 3.

The total time in which Essential Bus "D1" was de-energized was ten seconds. During an NRC Exit Interview on December 22, 1978, it was determined that this incident was reportable and that disabling the essential bus undervoltage relays as described in Modification T-2937 was contrary to Technical Specification 3.8.2.1.

Designation of Apparent Cause of Occurrence: This incident was caused by personnel error and by design deficiencies. Operations personnel started RCP 1-1-2 instead of RCP 1-1-1; Essential Bus "D1" Feeder Breaker AD110 Undervoltage Relays were still in service and the start of RCP 1-1-2 and the resultant voltage depression caused Essential Bus "D1" to trip. Bus voltage depression caused by starting large motors

such as the Reactor Coolant Pumps necessitated the temporary removal of the essential bus feeder breaker undervoltage relays. This action left the affected bus without undervoltage protection.

Analysis of Occurrence: There was no danger to the health and safety of the public or to unit personnel. The unit was subcritical at the time of the incident. There was only a brief interruption in essential equipment operation as Essential Bus "D1" was re-energized within ten seconds.

Corrective Action: At 02:54:18 hours, the 4.16 KV Essential Bus "D1" was re-energized. At 03:00:38 hours, Essential Bus "D1" was transferred back to its normal power supply and Emergency Diesel Generator 1-2 was returned to normal standby status. Operations personnel have been instructed to be more alert when starting unit equipment.

Modification T-2937 has been replaced by Modification T-3444. T-3444 transfers the affected essential bus's power supply from its normal 13.8 KV/4.16 KV bus tie transformer to the alternate 13.8 KV/4.16 KV bus tie transformer during the start of a Reactor Coolant Pump.

Facility Change Requests 77-430 and 77-430 Supplement 2 were written to request provisions for momentary bypassing of the undervoltage relays when starting the Reactor Coolant Pumps and to change the Technical Specifications to allow the undervoltage relays to be momentarily bypassed when starting Reactor Coolant Pumps and Circulating Water Pumps.

LER #78-125