

LICENSEE EVENT REPORT

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

0 0 H D B S 1 0 0 - 0 0 N P F - 0 3 4 1 1 1 1 4 _____ 5

LICENSEE CODE 14 15 LICENSE NUMBER 25 26 LICENSE TYPE JU 57 CAT 58L

CON'T

0 1 REPORT SOURCE L 0 5 0 - 0 3 4 6 1 2 1 1 7 7 0 1 0 3 7 8 9

60 61 DOCKET NUMBER 68 69 EVENT DATE 74 75 REPORT DATE 80

EVENT DESCRIPTION AND PROBABLE CONSEQUENCES (10)

0 2 Shortly after both Auxiliary Feed Pumps (AFP) started from a Steam and Feedwater

0 3 Rupture Control System (SFRCS) signal on 12/11/77 during the Reactor/Turbine Trip

0 4 Test, control of both AFP Turbines was lost. AFPT 1-1 would not vary from the high

0 5 speed stop while AFPT 1-2 would not increase above the low speed stop. The unit was

0 6 in Mode 3, "Hot Standby" which satisfied Limiting Condition for Operation 3.0.3 which

0 7 requires the station to be in Hot Standby within one hour. There was no danger to

0 8 the health and safety of the public or to unit personnel. (NP-33-77-110)

0 9 SYSTEM CODE C H (11) CAUSE CODE E (12) CAUSE SUBCODE A (13) COMPONENT CODE M E C F U N (14) COMP. SUBCODE Z (15) VALVE SUBCODE Z (16)

17 LER NO REPORT NUMBER 7 7 (17) SEQUENTIAL REPORT NO. 1 1 0 (24) OCCURRENCE CODE 0 3 (28) REPORT TYPE L (30) REVISION NO. 0 (32)

ACTION TAKEN B (18) FUTURE ACTION A (19) EFFECT ON PLANT C (20) SHUTDOWN METHOD Z (21) HOURS 0 0 0 (22) ATTACHMENT SUBMITTED Y (23) NPR-4 FORM SUB. Y (24) PRIME COMP. SUPPLIER A (25) COMPONENT MANUFACTURER W 2 9 0 (26)

CAUSE DESCRIPTION AND CORRECTIVE ACTIONS (27)

1 0 Independent component failures caused the loss of control on both AFP Turbines. AFPT

1 1 1-1 control was lost due to turbine governor mechanical binding. AFPT 1-2 control

1 2 power was lost due to blown control power supply fuses caused possibly by sticking

1 3 relays. Both Auxiliary Feed Pump Governors were modified by adding an oilite bush-

1 4 ing and both control relays were replaced on AFPT 1-2.

1 5 FACILITY STATUS B (28) % POWER 0 0 0 (29) OTHER STATUS NA (30) METHOD OF DISCOVERY A (31) DISCOVERY DESCRIPTION NA (32)

1 6 ACTIVITY CONTENT Z (33) RELEASED OF RELEASE Z (34) AMOUNT OF ACTIVITY NA (35) LOCATION OF RELEASE NA (36)

1 7 PERSONNEL EXPOSURES NUMBER 0 0 0 (37) TYPE Z (38) DESCRIPTION NA (39)

1 8 PERSONNEL INJURIES NUMBER 0 0 0 (40) DESCRIPTION NA (41)

1 9 LOSS OF OR DAMAGE TO FACILITY TYPE Z (42) DESCRIPTION NA (43)

2 0 PUBLICITY N (44) DESCRIPTION NA (45)

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TOLEDO EDISON COMPANY
DAVIS-BESSE UNIT ONE NUCLEAR POWER STATION
SUPPLEMENTAL INFORMATION FOR LER NP-33-77-110

DATE OF EVENT: December 11, 1977

FACILITY: Davis-Besse Unit 1

IDENTIFICATION OF OCCURRENCE: Loss of control to both Auxiliary Feed Pumps during Reactor/Turbine Trip Test

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

Description of Occurrence: At 0710 hours on December 11, 1977, the reactor was tripped for the 40% "Reactor/Turbine Trip Test", TP 800.14. During the trip recovery, both Steam Generators secondary side water level decreased below the level trip set-point of the Steam and Feedwater Rupture Control System (SFRCS). This automatically started both Auxiliary Feed Pumps.

Auxiliary Feed Pump 1-1 started properly and supplied feedwater but control was lost when the governor would not vary from the high speed stop. Auxiliary Feed Pump 1-2 started but later failed at the minimum speed, also indicating a loss of control. This placed the unit in excess of the Action Statement of Technical Specification 3.7.1.2 which requires two independent Auxiliary Feed Pumps in Modes 1, 2 and 3. The unit was in Mode 3, "Hot Standby" which satisfied Limiting Condition for Operation 3.0.3 which requires the unit to be in Hot Standby within one hour and Cold Shutdown within the following thirty hours if the corrective action is not completed.

Designation of Apparent Cause of Occurrence: On Auxiliary Feed Pump Turbine (AFPT) 1-1, the governor (Woodward Type PG-PL) speed setting shaft was binding where it enters the governor housing, and at the governor receiver bracket (the bearing surface). Also, the speed changer drive clutch was slipping which resulted in the governor not responding to the speed change signal. The cause of the binding was an improper initial installation of the roll pin (high speed stop pin) which allowed a bearing washer to stick.

On AFPT 1-2, the control power fuses which also provide power for the governor speed changer motor were blown preventing the governor from responding to control signals. The control power fuses were possibly blown by a momentary sticking of a relay in the speed control circuit.

Analysis of Occurrence: There was no danger to the health and safety of the public or to unit personnel. The reactor was previously tripped and the unit was in Mode 3, "Hot Standby" at the time of the occurrence. No steam line or feedwater rupture occurred.

Corrective Action: On AFPT 1-1, the roll pin which caused the washer to bind was correctly positioned; the governor speed setting shaft bearing area was cleaned and lubricated; and the speed changer drive clutch tension was adjusted to provide more torque before slipping.

On AFPT 1-2, the blown fuses were replaced. The roll pin was inspected and found properly positioned. Both the relays were replaced in the speed control circuit to correct for the possible momentary sticking.

A modification was made (Facility Change Request 77-501) on both governors installing an oilite bushing for the speed setting shaft bearing surface in the governor housing to eliminate the binding experienced on AFPT 1-1.

After repairs, the governors for both turbines were tested through ten cycles (high speed to low speed). Auxiliary Feed Pump 1-2 was declared operable at 1200 hours on December 11, and Auxiliary Feed Pump 1-1 was declared operable at 1430 hours on December 11, removing the unit from the Action Statement of Technical Specification 3.0.3 and 3.7.1.2, respectively.

Surveillance Testing frequency has been increased to weekly pending outcome of engineering evaluation being made to increase reliability of AFPTs. Additionally, the method of Surveillance Testing has been modified to allow additional exercising of the governor.

Failure Data: Blown fuses have occurred in the AFPT governor speed changer circuits before because of relay failures (see Licensee Event Report NP-33-77-51 and NP-33-77-52). There has been no binding of the AFPT governor shafts previously.