

LICENSEE EVENT REPORT

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

0	1	0	H	D	B	S	1	0	0	-	0	0	0	0	-	0	0	3	4	1	1	1	1	4	5
7	8	9	LICENSEE CODE					14	15	LICENSE NUMBER					25	26	LICENSE TYPE					30	57	CAT	58

0	1	L	0	5	0	0	0	3	4	6	0	7	3	0	8	1	0	8	2	7	8	1	9	
7	8	REPORT SOURCE		60	61	DOCKET NUMBER					68	EVENT DATE					74	75	REPORT DATE					80

EVENT DESCRIPTION AND PROBABLE CONSEQUENCES (1)

(02) (NP-33-81-57) After the unit trip on 7/30/81 three action statements were entered.

(03) Auxiliary Feedwater (AFW) Pump 1-2 did not operate properly. Shield building integrity

(04) was lost when Mechanical Penetration Room #4 blowout panel was inadvertently blown

(05) out due to ventilation system problems. Main Steam (MS) safety valve SP17A3 was found

(06) later to have lifted at too low of a setpoint. The applicable technical specifica-

(07) tions were 3.7.1.2, 3.6.5.2, and 3.7.1.1. There was no danger to the health and

(08) safety of the public or station personnel.

0	9	C	H	11	E	12	B	13	M	E	C	F	U	N	14	Z	15	Z	16	8	1	0	4	5	0	3	L	0																
7	8	SYSTEM CODE		9	10	CAUSE CODE		11	CAUSE SUBCODE		12	COMPONENT CODE				13	COMP. SUBCODE		19	VALVE SUBCODE		20	EVENT YEAR		21	22	SEQUENTIAL REPORT NO.		23	24	25	26	27	OCCURRENCE CODE		28	29	REPORT TYPE		30	31	REVISION NO.		32
LER RO REPORT NUMBER		ACTION TAKEN		33	FUTURE ACTION		34	EFFECT ON PLANT		35	SHUTDOWN METHOD		36	HOURS		37	ATTACHMENT SUBMITTED		41	NPRD-4 FORM SLR		42	PRIME COMP. SUPPLIER		43	COMPONENT MANUFACTURER		44	45	46	47	48	49	50										

CAUSE DESCRIPTION AND CORRECTIVE ACTIONS (27)

(10) AFW Pump 1-2 did not operate properly due to a defective governor. The governor was

(11) sent to the manufacturer for investigation and a spare was installed. The blowout

(12) panel was repaired. It had blown out when the containment purge exhaust fan tripped

(13) with the containment purge supply fan still running. (Facility Change Requests

(14) 81-191 and 81-226 were written to resolve this problem) Safety valve SP17A3 was reset.

1	5	X	28	0	0	0	29	After reactor trip	A	31	Operator observation					
7	8	FACILITY STATUS		9	% POWER		10	OTHER STATUS		30	METHOD OF DISCOVERY		44	DISCOVERY DESCRIPTION		32

1	6	Z	33	Z	34	NA	35	NA	36				
7	8	ACTIVITY CONTENT		9	RELEASED OF RELEASE		10	AMOUNT OF ACTIVITY		35	LOCATION OF RELEASE		36

1	7	0	0	0	37	Z	38	NA	39				
7	8	PERSONNEL EXPOSURES		9	NUMBER		10	TYPE		37	DESCRIPTION		39

1	8	0	0	0	40	NA	41			
7	8	PERSONNEL INJURIES		9	NUMBER		10	DESCRIPTION		41

1	9	Z	42	NA	43					
7	8	LOSS OF OR DAMAGE TO FACILITY		9	TYPE		10	DESCRIPTION		43

2	0	N	44	NA	45					
7	8	PUBLICATION		9	ISSUED		10	DESCRIPTION		45

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NRC USE ONLY

TOLEDO EDISON COMPANY
DAVIS-BESSE NUCLEAR POWER STATION UNIT ONE
SUPPLEMENTAL INFORMATION FOR LER NP-33-81-57

DATE OF EVENT: July 30, 1981

FACILITY: Davis-Besse Unit 1

IDENTIFICATION OF OCCURRENCE: Reportable occurrences caused by the unit trip of July 30, 1981

Conditions Prior to Occurrence: The unit had been operating at approximately 100% of full power prior to the trip. The unit was in Mode 3 with Power (MWT) = 0 and Load (Gross MWE) = 0 at the time of the entries into the action statements.

Description of Occurrence: On July 30, 1981, Davis-Besse Unit 1 was operating at approximately 100% of full power when the rubber expansion joint between Low Pressure Turbine #1 and the high pressure condenser failed. Due to the subsequent loss of condenser vacuum, the operators began an immediate load reduction to take the turbine/generator off the line. At 0812 hours, the reactor tripped at approximately 14% of full power on low Reactor Coolant System (RCS) pressure following the rapid reduction in reactor power.

At 0839 hours, the Main Feedwater Pump Turbine (MFPT) #2 automatically tripped on low condenser vacuum, MFPT #1 was already shutdown per station procedures. Both auxiliary feedwater pumps (AFP) were manually started to restore the dropping steam generator levels to avoid a Steam and Feedwater Rupture Control System (SFRCS) trip. When both pumps were placed in automatic on a half SFRCS trip, which led eventually to a full SFRCS trip on #1 actuation channel, AFP #2 did not respond properly. This placed the unit in the 72 hour action statement of Technical Specification 3.7.1.2.

At 1600 hours, it was noted that the blowout panel in Mechanical Penetration Room #4 was loosened due to events following the reactor trip and had a gap equivalent to approximately 200 square inches. This placed the unit in the action statement of Technical Specification 3.6.5.2 which requires shield building integrity to be restored within 24 hours.

Following the reactor trip, Main Steam Safety Valve SP17A3 lifted. Since no conclusive information was available as to the exact lift pressure (the transient monitor data is available three seconds apart which might not show a pressure spike), the valve was hydro-tested during startup at 0930 hours on August 15, 1981. The test results showed that safety valve SP17A3 had a lift point which was out of specification low. The conditions of the action statement of Technical Specification 3.7.1.1 were met when the lift setpoint was reset and proven repeatable at approximately 1230 hours per Surveillance Test ST 5070.01.

The trip recovery was completed without any unusual RCS transients. The plant was placed in Mode 4, Hot Shutdown (and eventually entered Mode 5) to repair the rubber expansion joint which had failed.

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Designation of Apparent Cause of Occurrence: The cause of the AFW Pump 1-2 improper response appears to be a problem internal to the turbine governor.

The cause of the loosened blowout panel in Mechanical Penetration Room #4 was due to the tripping of the containment purge exhaust fan while the containment purge supply fan was still running. A routine penetration room purge was in progress prior to the trip. The containment purge exhaust fan tripped during the 13.8 KV fast transfer from the auxiliary transformers to the startup transformers. The Microswitch relays in Honeywell control panels have such a fast dropout time that during the 13.8 KV fast transfer, the relays dropped out, tripping the corresponding fan.

The apparent cause of the slight variation in relief valve lift pressure is still unknown. The vendor, Dresser Industries, has been working with Toledo Edison to determine the cause of the setpoint changes.

Analysis of Occurrence: There was no danger to the health and safety of the public or to station personnel. AFW Pump 1-1 operated properly supplying OTSG #1 while AFW Pump 1-2 settled out while in manual and supplied OTSG #2.

The safety valve apparently lifted only 4% lower than its setpoint. The valve would still have served its intended function of relieving pressure had a trip from a higher reactor power occurred. The valve lift did not affect the post trip response of the unit.

Containment integrity was maintained during the time that the blowout panel was loosened. The emergency ventilation system was not challenged.

Corrective Action: The AFW Pump 1-2 governor was replaced with a rebuilt spare governor under Maintenance Work Order 81-2985. The AFW pump was successfully tested using auxiliary steam on August 2, 1981 and main steam on August 14, 1981 per Surveillance Test ST 5071.01. The governor that was removed has been sent to the manufacturer for inspection and analysis. The blowout panel was repaired at 1640 hours on July 30, 1981. Facility Change Request 81-191 has been written to install an interlock so that if either the containment purge exhaust fan or containment purge supply fan were to trip, the other will also trip. A change was also requested per Facility Change Request 81-226 to change the Microswitch relays in the Honeywell control panels with relays that can ride out the fast transfers without dropping out.

Under Maintenance Work Order 81-3127, the main steam safety valve SP17A3 setpoint was adjusted in accordance with ST 5070.01 on August 15, 1981.

Failure Data: Although there have been previous reportable occurrences of AFW system failures, only Licensee Event Report (LER) NP-33-80-02 (80-003) and LER NP-33-81-44 (81-037) appear to have a related root cause.

There have been seven previous safety valve setpoint problems reported in LERs NP-33-81-44 (81-037), NP-33-81-39 (81-034), NP-33-79-51 (79-049), NP-33-79-34 (79-032), NP-33-79-25 (79-020), NP-33-79-23 (79-018), and NP-33-78-145 (78-124).

There have been no previous reportable occurrences of a loss of shield building integrity with a related root cause.

LER #81-045