

TOLEDO EDISON COMPANY
DAVIS-BESSE NUCLEAR POWER STATION UNIT ONE
SUPPLEMENTAL INFORMATION FOR LER NP-33-79-82

DATE OF EVENT: July 7, 1979

FACILITY: Davis-Besse Unit 1

IDENTIFICATION OF OCCURRENCE: Auxiliary Feedwater (AFW) Suction Pressure Switch
PSL-4929B out of calibration

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

Description of Occurrence: On July 7, 1979, at 1130 hours during surveillance testing under Maintenance Work Order (MWO) IC-334-79, Instrument and Control personnel discovered that PSL-4929B, Auxiliary Feedwater Pump 1-2 Suction Before Strainer Pressure Switch, actuated at a pressure input outside of its desired tolerance. The desired setpoint is 3.3 psig \pm 0.5 psig decreasing. The switch actuated at 2.25 psig decreasing. This made AFW Train 1-2 incapable of shifting suction to service water if the condensate storage tanks were unavailable and placed the unit in the Action Statement of Technical Specification 3.7.1.2, which requires two independent steam generator auxiliary feed-water pumps and associated flowpaths to be operable in Modes 1, 2, and 3.

Designation of Apparent Cause of Occurrence: On May 21, 1979, a similar event had occurred (reported in Licensee Event Report NP-33-79-64). After that occurrence, two pressure switches were returned to the manufacturer, Static-O-Ring Pressure Switch Company for analysis of the failure. PSL 4929B was taken to the factory for testing with the previous two switches. The failure of all three switches was determined to be the permeating of the fluid (demineralized water with ammonia added for pH control) through the thin Buna N diaphragm onto the aluminum piston, causing the piston to corrode severely. A second contributing factor was a shift in the overtravel of the piston, which causes non-repeatability. The cause of this shift was not determined. The instrument could have been dropped, or hit, etc.

Analysis of Occurrence: There was no danger to the health and safety of the public or to station personnel. The unit had been shutdown since March 31, 1979, and was shutdown at the time of this occurrence. AFW Train 1-1 was operable throughout the occurrence.

Corrective Action: MWO IC-335-79 was initiated to calibrate and install a replacement switch for PSL-4929B. This replacement switch was satisfactorily tested at 2300 hours on July 7, 1979 under ST 5071.04, the Auxiliary Feedwater System Channel Functional Test. This removed the station from the action statement of Technical Specification 3.7.1.2.

The root causes of this occurrence (and the May 21, 1979 occurrence) will be corrected

as follows. Facility Change Request 79-293 has been initiated and a purchase order written to replace the eight Auxiliary Feedwater Pump suction pressure switches with switches which have stainless steel diaphragms and pressure ports. This will preclude the permeation of the pressure sensing diaphragm and subsequent corrosion/oxidation of the pistons. In addition, a Maintenance Instruction is being written for calibration of Static-O-Ring pressure switches. This Maintenance Instruction will delineate the method to be used to ensure that the microswitch overtravel has not shifted both on new switches (bench calibration) and installed switches.

Failure Data: Previous inoperabilities of Auxiliary Feedwater Pump suction switches were reported in Licensee Event Report NP-33-79-64.

LER #79-074

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