

TOLEDO EDISON COMPANY
DAVIS-BESSE NUCLEAR POWER STATION UNIT ONE
SUPPLEMENTAL INFORMATION FOR LER NP-33-80-72

FACILITY: Davis-Besse Unit 1

DATE OF OCCURRENCE: July 20, 1980 and August 9, 1980.

IDENTIFICATION OF OCCURRENCE: Failure of NI-1 instrument indication

Conditions Prior to Occurrence: The unit was in Mode 5 with Power (MWT) = 0 and Load (Gross MWE) = 0.

Description of Occurrence: At 0425 hours on July 20, 1980, control room operators noticed NI-1 startup rate peg high, then peg low. Source range indication for NI-1 also went to zero, and the instrument was declared inoperable. The Instrument and Control Foreman was informed of the situation and sent an I&C mechanic to investigate. By the time the mechanic arrived in the control room, the instrument appeared to be indicating properly, and the decision was made not to conduct any troubleshooting until ST 5091.01, Source Range Monitor Functional Test, was performed on the instrument. At 0920 hours, ST 5091.01 was satisfactorily completed on the instrument, and NI-1 was declared operational.

At 1710 hours on August 9, 1980, control room operators again noticed the NI-1 startup rate peg high and then low along with source range going to zero. The instrument was declared inoperable. At 1725 hours NI-1 returned to normal on its own. ST 5091.01, Source Range Monitor Functional Test was successfully run at 2345 hours on August 9, 1980, and NI-1 was declared operable.

Technical Specification 3.3.1.1 Table 3.3-1 requires a minimum of one channel of source range instrumentation to be operable while in Mode 5. Since NI-1 being inoperable did not violate the minimum channels operable requirements of Technical Specification 3.3.1.1, no action statement was entered.

Designation of Apparent Cause of Occurrence:

Since it normally restores itself within minutes, it has been difficult for I&C personnel to check it in a failed state. A check on August 15 did show that the signal pulses from the pre-amp were only -0.35 to -0.40 volts which was less than the -0.5 to -1.0 volts called for in IC 2002.04, Source Range Detector High Voltage and Discrimination Setting Procedure. This may have resulted in these lower signal pulses being lost in noise clutter and being cut off by the discriminator. This could explain the loss of indication.

Analysis of Occurrence:

There was no danger to the health and safety of the public or to station personnel. The thermal power level was maintained at less than 10^{-10} amps on the intermediate range flux instrumentation. The redundant source range instrument NI-2 was in service and operational throughout the occurrence.

Corrective Action:

In both cases the indications returned to normal before troubleshooting could begin. In both cases ST 5091.01 was satisfactorily completed and NI-1 was declared operable at 0920 hours on July 21, 1980 and at 2345 hours on August 9, 1980, respectively. Under Maintenance Work Order IC-572-80, it was discovered that the signal pulses from the pre-amp was -0.35 to -0.4 volts which was less than the -0.5 to -1.0 volts called for in IC 2002.04. The pre-amp gain link was re-adjusted from X10 to X20 which raised the signal pulses to about -0.8 volts. IC 2002.04 was then performed to establish new Source Range High Voltage and discriminator setpoints. This resulted in much stronger signal pulses to and through the source range count amp.

Failure Data:

Short duration failures of NI-1 have been repetitive, but the cause is not yet known. Previous reports on similar failures are Licensee Event Reports NP-33-77-79, NP-33-77-88, NP-33-77-100, NP-33-78-110 (78-093), NP-33-79-87 (79-078), and NP-33-80-65 (80-054).

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