

TOLEDO EDISON COMPANY
DAVIS-BESSE NUCLEAR PCWER STATION UNIT ONE
SUPPLEMENTAL INFORMATION FOR LER NP-32-80-12

DATE OF EVENT: July 24, 1980

FACILITY: Davis-Besse Unit 1

IDENTIFICATION OF OCCURRENCE: Loss of Decay Heat Flow

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

Description of Occurrence:

At 0955 hours on July 24, 1980, the control room operators observed a loss of decay heat flow. They noticed that there was no indication for the valve position of Decay Heat Isolation Valve DH12. The running Decay Heat Pump 1-2 was stopped to prevent damage due to a loss of suction. At 1011 hours the bypass valves (DH21 and DH23) were opened and system venting began. At 1045 hours the DH Pump 1-2 was restarted and 1300 gpm flow verified. Decay heat flow was lost for a 50 minute period.

At 2232 hours on July 24, 1980, personnel were attempting to clear lights on SFAS Channel 4 following Instrument and Controls personnel completion of Facility Change Request (FCR) 79-439A. Unaware that the trip circuit for Decay Heat Isolation Valve DH11 had been restored, he adjusted the constant current adjustment potentiometer (CCAP) switch level. This caused the output bistable (B/S) BA413 to reset, which resulted in the DH Isolation Valve DH11 to close. DH Pump 1-2 was tripped immediately by the operator. At 2234 DH11 was reopened and the pump restarted with flow of 1300 gpm verified. Decay heat flow was lost for a 2 minute period.

At 1554 hours on August 8, 1980, Instruments and Controls personnel were performing work on bistable BA413 under MWO IC 547-80. When the bistable was removed, isolation valve DH11 went closed. Decay Heat Pump 1-1 was stopped to prevent damage. This caused decay heat flow to be stopped for 3 minutes until the bistable could be replaced and the pump restarted.

These occurrences placed the unit in violation of Technical Specification 3.4.1 which requires at least one decay heat pump be in operation while the unit is in Mode 5.

Designation of Apparent Cause of Occurrence:

The cause of the 0955 hour occurrence was personnel error. While working in disconnect cabinet CDE-11B2, construction electricians were pulling wires and shorted out a fuse clip. This blew the 3 amp fuse in the valve control circuit causing DH12 to travel closed.

The occurrence at 2232 hours was attributed to procedural inadequacy. Insufficient guidance on the Maintenance Work Order (MWO) covering the work, with regards to system restoration, led to steps being done out of sequence. The personnel were under the impression that TP35 slide link was open and TB35 points 25 and 26 were jumpered per ST5031.01, SFAS Monthly Test, which was being performed to check out Maintenance Work Order IC FCR79-439A SFAS Reactor Coolant System Pressure to T-Sat. In fact an I&C Technician had just removed the TP35 slide link and the jumper for TB35 points 25 and 26, to establish the normal system condition.

The occurrence at 1554 hours on August 3, 1980, was attributed to personnel error. The maintenance specialist had previously reviewed the SFAS drawings for the MWO and concluded the bistable could be removed with no special precautions. He incorrectly determined that the bistable de-energized the output relay to allow DH11 to open, when actually the relay is energized by bistable BA413 to allow DH11 to open.

Analysis of Occurrence:

There was no danger to the health and safety of the public or to station personnel. In all three cases the loss of decay heat flow caused no significant increase in RCS temperature. There was no damage to the DH pump since it was stopped immediately when the valve was confirmed shut.

Corrective Action:

The first event was corrected by opening the DH11 and 12 bypass valves DH21 and DH23. DH pump 1-2 was revented and restarted on the bypass at 1045 hours. The blown fuse was replaced, DH11 and DH12 were opened at 1051 hours, and DH21 and DH23 were closed. Flow was verified at 1300 gpm. The details of the event and electrical work practices was discussed with the construction electrician and his supervisor.

In the second case where DH flow was lost, DH11 was re-opened. DH pump 1-2 was restarted and flow verified at 1300 gpm. Additional, pertinent guidance will be provided on future Maintenance Work Order's with regards to system restoration.

In the third event the bistable was re-installed. DH11 was opened and pump 1-1 was started. Flow was restored by 1457 hours on August 3, 1980. A tag will be attached to this module indicating that its removal will allow DH11 to go closed. Two modules controlling Core Flood valves have been identified as operating in a similar manner, and will also be tagged to prevent inadvertent closing of the valves. The maintenance specialist who made the error was cautioned to use more diligence in doing his work.

Failure Data:

Previous loss of decay heat flow due to personnel errors were reported in NP-32-77-05, 32-77-09, and 33-80-54.

Previous losses of decay heat flow due to procedural error were reported in NP-32-77-3 and NP-33-80-53(80-043).