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Docket Number 50-346

License Number NPF-3

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United States Nuclear Regulatory Commission
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Subject: Response to Inspection Report Number 50-346/92003

Gentlemen:

Toledo Edison has received Inspection Report 92003 (Log Number 1-2640) and provides the following response. It is Toledo Edison's understanding that this required response is due 30 days from the April 28, 1992, receipt date rather than 30 days from the April 17, 1992, letter date.

Violation

92003-02: Technical Specification 6.8.1.a requires that written procedures be established, implemented and maintained covering activities recommended in Appendix A of Regulatory Guide 1.33, November 1972. Regulatory Guide 1.33, Appendix A, Section I, lists procedures for performing maintenance.

DB-MN-00001, Rev 1, Conduct of Maintenance, paragraph 6.5.4 requires that maintenance tasks shall be performed in accordance with Maintenance Work Order (MWO) packages.

Contrary to the above, on March 1, 1992, personnel performed troubleshooting activities on low vacuum pressure circuitry which was outside the scope of work as defined by MWO 7-91-0395-01.

Response: Acceptance or Denial of the Alleged Violation

Toledo Edison acknowledges the alleged violation.

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Reason for the Violation

On March 1, 1992, at 1500 hours, the unit experienced an Anticipatory Reactor Trip System (ARTS) initiated reactor trip from approximately 40 percent power. The unit had been increasing power from approximately 6 percent after the completion of planned maintenance activities in the containment which were unrelated to the reactor trip.

Maintenance-I&C personnel were troubleshooting the rewiring of the main turbine vacuum trip system under Maintenance Work Order (MWO) 7-91-0395-01 by checking the condition of the vacuum pressure switches in junction box JT 5306. The I&C personnel were unaware that part of the rewiring under the MWO had introduced a redundant power source to the circuit they were checking and that the circuit was actually energized. The redundant power source had been added by the installation of a jumper between terminals 1 and 5 on terminal block EHC-B. Believing the circuit to be de-energized, the I&C technician performing the pressure switch check used a multimeter set in the ohms mode. The I&C technician incorrectly placed the leads of the multimeter across terminals 2 and 5 which effectively bridged an open contact resulting in actuation of the high exhaust hood temperature trip circuitry which triggered a main turbine trip. Because indicated reactor power was greater than the ARTS arming setpoint, the turbine trip resulted in an ARTS initiated reactor trip.

The primary cause of the reactor trip is attributed to personnel error. During troubleshooting of the rewiring of the main turbine vacuum trip system, an I&C technician incorrectly placed leads of a multimeter across the wrong two terminals. This action resulted in the actuation of the high exhaust hood temperature trip circuitry and a subsequent reactor trip.

Contributing to the cause of the reactor trip are several work control issues as they relate to the work performed under MWO 7-91-0395-01. The MWO was created to address concerns documented in Potential Condition Adverse to Quality Report (PCAQR) 91-0395. The PCAQR documents that the redundant turbine low vacuum trip pressure switches were not wired into the trip circuitry, and that the as-built wiring in the field did not correspond to the electrical connection drawings. MWO 7-91-0395-01 was to correct these wiring inconsistencies.

Several aspects of MWO 7-91-0395-01 reflect inadequate pre-job planning and evaluation. The MWO had been scheduled such that it could be performed during Mode 1 operation with the turbine on-line. During discussions between Maintenance and Engineering it was decided by Maintenance that the work should be performed with the turbine off-line, but the MWO did not reflect this decision. Additionally, the verification of computer alarms associated with the pressure switches could not be performed with leads lifted as specified in the MWO. The reversal of the pressure switches resulted in the addition of a constant power source to the turbine vacuum trip circuitry, which was unknown to the I&C Maintenance personnel performing the work.

Work practices during preparation for and performance of MWO 7-91-0395-01 were inadequate. Changes to the MWO description of work did not adequately describe the work to be performed. Changes were made in order to accomplish the work scope and the MWO was not changed. When unexpected conditions were encountered, continuity checks in the field began without properly notifying Operations and without adequately developing an action plan taking into account the changed status of the plant. Documentation in the MWO of the work performed was incomplete.

In addition, the decision to continue work under the MWO with the turbine on-line was made without adequate consideration of alternatives and consequences. When planned maintenance activities were completed in containment, the work on the main turbine vacuum trip system was still in progress. Operations management decided to place the turbine on-line, increase power to a steady-state level below the ARTS arming setpoint, and assign two operators the responsibility of tripping the turbine manually in the event of a loss of main turbine vacuum. The schedule called for completion of turbine vacuum trip work prior to placing the turbine on-line. Deviation from the work schedule occurred without a thorough review by Davis-Besse management.

Compliance to station procedures was not maintained. Contrary to DB-PN-00007, Control of Work, the MWO was not re-routed to the Shift Supervisor/Shift Manager for review of changes made to the MWO after granting permission to commence work. Contrary to DB-MN-00001, Conduct of Maintenance, and DB-MI-05013, Plant Miscellaneous Pressure Switch Calibration, wires were disconnected and jumpers installed without completing the jumper and lifted wire log or contacting the Shift Supervisor.

Corrective Action Taken and Results Achieved

Potential Condition Adverse to Quality Report 92-0084 was initiated on March 1, 1992, to document the reactor trip. Potential Condition Adverse to Quality Report 92-0134 was initiated on March 24, 1992, to document work control issues related to MWO 7-91-0395-01.

Licensee Event Report (LER) 92-002 was issued on March 31, 1992, in accordance with 10CFR50.73(a)(2)(iv) describing this event.

A revision to LER 92-002 was issued on May 8, 1992.

On April 29, 1992, a memorandum was issued by the Manager - Plant Maintenance to I&C and Electrical Maintenance personnel discussing the proper use of the Jumper and Lifted Wire Log, as well as proper Shift Supervisor notification.

Corrective Action to Prevent Recurrence

With regard to the personnel error, this event and the surrounding circumstances will be reviewed by Maintenance personnel during the Continuous Training Program. In addition, training will be performed on the proper use of test equipment. These actions will be completed by June 26, 1992.

Corrective actions for the work control issues described in the "Reason for the Violation" section are described below.

Required reading of this LER will be performed by appropriate Operations, Maintenance, and Planning personnel by June 26, 1992.

DB-MN-00001 will be changed to require the Jumper and Lifted Wire Log to be completed concurrent with the actual work activity. This change will be completed by July 1, 1992.

Changes to the requirements for pre-evolution briefings are being processed as part of the corrective actions for LER 91-008-01. The pre-evolution briefings will include the Operating Crew, the Craft Supervisor, Craft Personnel, and Engineering support as appropriate. The briefing should identify the individual responsible for performing the evolution, the purpose and objective of the evolution, and the equipment or systems involved. In addition, the briefing will review the responsibilities of all personnel involved and the expected system responses and clearly specify parameter values at which action will be taken to stop the evolution or mitigate possible failures. These changes will be completed by May 29, 1992.

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In addition, a step will be added to DB-OP-06901, Plant Startup, which requires the Duty Plant Manager, Operations Manager, and Maintenance Manager to review plant status prior to raising reactor power to 15%. During this review, attention will be focused on safety systems and equipment protective features that may be in off-normal conditions. This change will be completed by June 1, 1992.

Date When Full Compliance Will Be Achieved

The corrective actions to prevent recurrence described above will be implemented and full compliance achieved by July 1, 1992

Should you have any questions or require additional information, please contact Mr. R. W. Schrauder, Manager - Nuclear Licensing, at (419) 249-2366.

Very truly yours,



AVA/dlm

cc: A. B. Davis, Regional Administrator, NRC Region III
J. B. Hopkins, NRC Senior Project Manager
W. Levis, DB-1 NRC Senior Resident Inspector
Utility Radiological Safety Board