

U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Report No. 50-346/84-23

Docket No 50-346

License No. NPF-3

Licensee: Toledo Edison Company
Edison Plaza, 300 Madison Avenue
Toledo, Ohio 43652

Facility Name: Davis-Besse 1

Inspection At: Oak Harbor, Ohio

Inspection Conducted: September 19-20, 1984

Inspector: *R. Mendez*
R. Mendez

10/5/84
Date

Approved By: *C. C. Williams*
C. C. Williams, Chief
Plant Systems Section

10/15/84
Date

Inspection Summary

Inspection on September 19-20, 1984 (Report No. 50-346/84-23(DRS))

Areas Inspected: Routine inspection of followup on previous inspection findings and review of containment electrical penetrations. The inspection involved a total 12 inspector-hours onsite by one NRC inspector.

Results: No items of noncompliance were identified.

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DETAILS

1. Persons Contacted

Toledo Edison Company

*Steven G. Wideman, Senior Licensing Specialist

*T. Beeler, Facility Engineering Supervisor

E. Johnson, Senior Assistant Engineer

The inspector also contacted and interviewed other licensee employees.

*Denotes those present at the exit interview on August 3, 1984.

2. Action on Previous Inspection Findings

a. (Closed) Open item (50-456/81-01-02): "Containment Electrical Penetrations". On January 19, 1981, the licensee reported to the NRC that water had been found in all twenty-four of the containment electrical penetrations located on the east nitrogen header. On January 29, 1981, an Immediate Action Letter (IAL) was issued by Region III which set forth five conditions which were to be reviewed by NRC representatives prior to returning the Davis-Besse Station to power operation. The following actions were agreed to by the licensee:

- (1) Establish a program to identify the source of water found in the electrical penetrations. (This item may require long range activities for completion.)
- (2) On a sampling basis, perform an insulation resistance test to verify no degradation of the electrical penetrations has occurred. These tests are to be performed in accordance with Section 5.1.5 of IEEE 317-1971.
- (3) Perform a local leak rate testing of all 48 electrical penetrations in accordance with applicable requirements.
- (4) Establish a method to provide assurance that the 48 electrical penetrations will remain dry and protected from moisture.
- (5) Establish a long term program of insulation resistance testing to verify the continued acceptability of these electrical penetrations.

In addition, the licensee agreed to having the long term conditions of Items 1, 4 and 5 remain in effect until cancelled in writing by the NRC Regional Office.

Resident Inspectors reviewed Items 1 through 5 to determine the licensee's actions and plans to resolve the problem of moisture in the electrical penetrations. The resident inspector's review was documented in Davis-Besse Report 346/81-01. No items of noncompliance or deviations were identified in this report.

In a subsequent inspection, the long term conditions of Items 1, 4 and 5 were reviewed and documented in Davis-Besse Report 346/83-10. It was determined during this inspection that the conditions of Item 5 had not been fully implemented. While the licensee had established a long term program of insulation resistance testing, some spare conductors in the penetrations continued to have insulation resistance readings which were below the minimum acceptance criteria. Additionally, the licensee had only recently implemented a program to investigate instances of low readings. The licensee had apparently overlooked the fact that although the conductors were spares and, therefore, provided no safety function, the spares were to be used to provide an indication of the status of the penetrations. This was documented as unresolved item 346/83-10-01.

During this inspection the inspector reviewed Item 5 to determine the acceptability of the testing program and to evaluate the megger data accumulated since May 1983. From May until November, the licensee tested the electrical penetrations each month. Since November 1983, the licensee implemented a 6 month testing frequency. The results of the testing program indicate that generally the conductors tested were well above the minimum acceptance value of 100 M-ohms. However, low readings in penetrations P1D3B, P2C5G, PBC20 and PCL2G which were tested in July 1983 could not be explained.

These four penetrations were tested the following month and exhibited acceptable insulation resistance values. Since July 1983 the megger readings of the spare conductors have been fairly consistent (well above 100 M-ohms) and consequently, none of the penetrations appeared to exhibit trends which would indicate deterioration or degradation of the conductor's insulation.

On October 2, 1984, the inspector telephoned E. Johnson of the licensee's facility engineering department. It was concluded that the licensee would issue an additional letter to the Region that would summarize and support their considerations for discontinuing the testing program as specified by the conditions of the IAL. Based on NRC review since the initiation of this issue, this matter is considered resolved.

- b. (Closed) Unresolved Item (50-346/82-21-03): NUREG-0737 outlines the requirements for post TMI implementation. Within the NUREG there is a requirement to have two 0-10% hydrogen analyzers. The licensee adapted their 0-5% hydrogen analyzers to conform to the NUREG requirement by expanding the scale to 0-10%. However, the licensee's method for calibrating the hydrogen analyzers was to test them with a 2.5% hydrogen source. It was a concern that the analyzers would not provide accurate readings under emergency conditions given a one point calibration and the expanded scale. On August 7, 1984, Comsip, Inc. (the manufacturer) issued a letter stating that the span calibration using a 2.5% gas was acceptable for the expanded range (0-10% hydrogen analyzer). The manufacturer also cautioned that any error experienced at the 2-5% hydrogen value will be four fold greater if a 10% hydrogen sample is analyzed.

- c. (Closed) Noncompliance (50-346/82-21-08): It was previously identified that the licensee deleted applicable regulatory and design basis requirements from the purchase order documents without provisions to document or track the apparent nonconforming conditions. The environmental and seismic qualifications for the containment wide range level, containment wide range pressure, and the safety grade auxiliary feedwater instrumentation had been removed without the issuance of a nonconformance report. The licensee, subsequently, wrote a nonconformance report (NCR) 82-464 and conditionally released the instrumentation under Safety Deviation Report (SDR) No. 2129. The NCR and the SDR have both been closed out by the licensee. Additionally, the original purchase order specification No. 1250-M-327AQ for transmitters was changed to Rosemount specification titled, "Rosemount Model 1153, Series D Nuclear Safety Related Transmitters."
- d. (Closed) Open item (50-346/82-21-07): NUREG-0737 requires the containment narrow range water level indication instrumentation to be environmentally qualified according to Regulatory Guide 1.89. Qualification applies to the complete instrumentation from sensor to display. Seismic and environmental qualification procedures and reports have been submitted and were reviewed by the inspector, and found to be acceptable.
- e. (Open) Open item (50-346/82-21-14): The licensee's FSAR states that loads required for operation during the event of a loss of coolant accident (LOCA) are below the continuous rating of an emergency diesel generator (EDG). In addition, the FSAR states the station batteries are sized about 20 percent over capacity to compensate for the loss due to aging of the batteries. The new loads imposed by the addition of the TMI instrumentation and electrical components no longer assures that one EDG and the station batteries can handle all the LOCA load requirements. With respect to the station batteries, a licensee representative stated that a load study was presently being performed. However, no information was available regarding a load study on the diesel generator. This matter remains open pending review of the load studies.
- f. (Closed) Unresolved item (50-346/83-10-01): It was previously identified that followup action by the licensee's engineering department to resolve and evaluate test results which failed to meet the minimum acceptance criteria, was apparently not evident. Insulation resistance readings taken of cable in electrical penetrations which did not meet the minimum acceptance values were not being investigated to determine the causes for low megger readings. The licensee presently reviews and evaluates the results of the insulation resistance tests.

3. Exit Meeting

The inspector met with licensee representatives (denoted under Persons Contacted) on September 20, 1984. The inspector summarized the scope of the inspection. The licensee representatives acknowledged the findings reported in previous paragraphs.