

U. S. NUCLEAR REGULATORY COMMISSION

REGION III

Report No. 50-346/84-28(DRP)

Docket No. 50-346

License No. NPF-3

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

Facility Name: Davis-Besse 1

Inspection At: Oak Harbor, OH

Inspection Conducted: November 6, 1984 - January 6, 1985

Inspectors: W. G. Rogers

L. C. Kosloff

Approved By: *I. N. Jackiw*
I. N. Jackiw, Chief
Reactor Projects Section 2B

1-18-85
Date

Inspection Summary

Inspection on November 6, 1984 - January 6, 1985 (Report No. 50-346/84-28(DRP))

Areas Inspected: Routine, unannounced inspection by resident inspectors of licensee action on previous inspection findings; licensee event reports, maintenance, surveillance, activities during long-term shutdown; IE bulletins; action on regional requests; management meeting; independent inspection; and changes, tests and experiments. The inspection involved 148 inspector-hours onsite by two NRC inspectors including 35 inspector-hours onsite during off-shifts.

Results: Of the ten areas inspected, no items of noncompliance or deviation were identified in eight areas. One item of noncompliance was identified in the area of licensee action on previous inspection findings (failure to take adequate corrective action - Paragraph 2) and two items of noncompliance were identified in the area of independent inspection (failure to meet an action statement of a Limiting Condition for Operation and failure to report the event to the NRC - Paragraph 10).

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DETAILS

1. Persons Contacted

a. Toledo Edison Company

- °T. Murray, Nuclear Mission Assistant Vice President
- *S. Quennoz, Station Superintendent
- *W. O'Conner, Operations Engineer
- °T. Myers, Nuclear Services Director
- D. Briden, Chemist and Health Physicist
- °D. Dean, Performance Enhancement Program Administrator
- *D. Lee, Maintenance Engineer
- C. Daft, QA Director
- °*J. Faris, Administrative Coordinator
- *D. Dibert, Nuclear and Performance Engineer
- +°R. Peters, Licensing Manager
- S. Wideman, Licensing
- +*J. Wood, Facility Engineering General Supervisor
- +S. Osting, Senior Assistant Engineer
- +C. Mekbel, Civil and Structural Systems Engineer

b. Bechtel Power Corporation, Gaithersburg, MD

- +R. Kies, Engineering Supervisor

c. NRC

- +°W. Shafer, Branch Chief, DRP
- +°I. Jackiw, Section Chief, DRP
- +B. Burgess, Project Inspector, DRP
- +P. Kaufman, Reactor Inspector, DRS
- +D. Danielson, Section Chief, DRS
- +I. Yin, Senior Mechanical Engineer, DRS
- °*W. Rogers, Senior Resident Inspector
- °*D. Kosloff, Resident Inspector

*Denotes those attending the December 18, 1984 exit interview.

°Denotes those attending the November 7, 1984 Performance Enhancement Program meeting.

+Denotes those attending the December 21, 1984 meeting in Region III relating to the failed surge line snubber.

2. Licensee Action on Previous Inspection Findings

- a. (Closed) Open Item (346/81-12-03): LER 81-23 reported that the #1 decay heat cooler outlet valve failed to close. The licensee's long term corrective action was to implement Facility Change Request (FCR) 81-128 to change the design of the valve actuator. However, investigation of a subsequent valve failure in November 1982 revealed that a

missing flanged bearing was the cause of the failure. Since the valve performed satisfactorily after the bearing was installed, FCR 81-128 was voided on February 8, 1984. LER 81-23 was revised on July 6, 1984. This item is considered closed.

- b. (Open) Noncompliance (346/82-34-01): Failure to test the computer alarms associated with quadrant power tilt, axial power imbalance and control rod position. The licensee's corrective actions to avoid further noncompliance were: (1) By April 15, 1983, establish a procedure to test the appropriate parts of the computer alarm package any time a limit on tilt, imbalance or rod insertion is changed; (2) by April 15, 1983, incorporate the asymmetric rod fault alarm circuit test into the monthly control rod exercise test; and (3) by startup from the 1983 refueling outage, modify the zero power physics test to check control rod drive sequence alarm circuitry for operability.

The inspector verified that procedure ST 5020.02.00, Technical Specification Computer Alarms Functional Check, had been written to test the alarms package and that the test had been scheduled after each refueling and quarterly thereafter. Action (1) is considered complete. The inspector's review of ST 5013.04.04, Control Rod Exercising Test, revealed that ST 5013.04.04 does not test the asymmetric rod fault alarm circuitry. The inspector's review of ST 5013.03.09, Control Rod Program Verification, revealed that ST 5013.03.09 does test the asymmetric rod fault alarm circuitry. However, since ST 5013.03.09 is done at each refueling and not monthly, action (2) is considered incomplete. The inspector's review of ST 5010.03.06, Post Refueling Physics Testing, revealed that ST 5010.03.06 does not check the control rod drive sequence alarm circuitry for operability. Action (3) is also considered incomplete.

The failure to properly perform the corrective actions associated with asymmetric rod fault circuitry and control rod drive sequence alarm circuitry is considered an item of noncompliance (346/84-28-01) for failure to take adequate corrective action under 10 CFR 50, Appendix B, Criterion XVI.

- c. (Closed) Noncompliance (346/83-20-02): Failure to inform the Shift Supervisor of the return to service of a Safety Features Actuation System (SFAS) radiation monitor at the conclusion of maintenance. The inspector verified that a procedure change had been made to ST 5031.04, Containment Radiation Monitor Input to the SFAS Refueling Period Calibration, to inform the shift supervisor when radiation bistables are reset. Based on this procedure change, the item is considered closed.
- d. (Closed) Noncompliance (346/83-19-04): Failure to use a test procedure instead of a test outline during testing of the electrical distribution system. The inspector verified that adequate procedural guidance had been added to the administrative procedures. AD 1845.03.00, Facility Change Request Implementation, Step 8.1 contains this guidance.

Based upon this procedure change and the inspector's verification of the use of test procedure TP 520.73, Startup Feedwater Pump Power via C-1 Using Emergency Diesel Generator 1-1, during test activities, this item is considered closed.

- e. (Closed) Deviation (346/83-20-04): Failure to assure all maintenance work orders were closed on a safety-related system prior to placing that system in service. The inspector reviewed the revision made to AD 1844.00, Maintenance, and noted that adequate controls over maintenance work order suspension had been incorporated. The inspector verified Special Order 15 was issued. The inspector verified that maintenance work orders 2-80-88-1 and 2-80-93-3 had been closed and the drawings updated. Based on these observations, this item is considered closed.
- f. (Closed) Noncompliance (346/83-20-06): Failure to make a 30 day Licensee Event Report upon discovering an inoperable emergency ventilation system train during a nonconformance report review. The inspector verified that the Technical Section Supervisor is required to be contacted when engineering personnel determine that an item will not perform its nuclear safety-related, fire protection, ASME or seismic category 1 function. These instructions were originally placed in engineering procedure NFE-007, Processing of Nonconformance Reports and Supplier Deviation Reports. When all the engineering procedures were consolidated and revised, these instructions were placed in NFEP 60, Processing of Nonconformance Reports, Supplier Deviation Reports, and Supplier Deviation Disposition Requests. The inspector verified that Licensee Event Report 83-65 had been generated concerning the inoperable emergency ventilation system train. This item is considered closed.
- g. (Closed) Noncompliance (346/84-01-01): Failure of Station Review Board to review all Audit Finding Reports. The inspector verified that the two internal audits referenced in the item of noncompliance had been reviewed by the Station Review Board. The inspector verified that measures have been established to check the computer generated monthly log of audit finding reports against the audit finding report review subcommittee log. This item is considered closed.
- h. (Closed) Noncompliance (346/84-01-07): Control room ventilation damper identification tags contrary to drawing M-027A. The inspector verified through field observation and drawing review that the drawing description of dampers HV-5301F, HV-5311F, HV5301G and HV5311G agrees with the actual installation.
- i. (Closed) Noncompliance (346/84-06-07): Failure to report two reactor protection system actuations. The inspector reviewed the licensee's instructions on NRC four-hour and one-hour notifications and determined that they were adequate. The inspector reviewed the Operations Engineer's additional guidance to the licensed operators regarding reactor protection system actuations and determined the guidance to be adequate. This item is considered closed.

- j. (Closed) Open Item (346/84-15-02): In accurate information provided in Licensee Event Report 84-05. The Licensee Event Report was revised on August 24, 1984, removing the inaccurate information. This item is considered closed.
- k. (Open) Open Item (346/84-20-03): Control Room Emergency Ventilation damper supports C-clamped together. The licensee's analysis of the as-built condition determined that the operability of the ventilation system was maintained. The inspector reviewed the analysis and found it adequate. However, the licensee intends to initiate a Facility Change Request to bolt or weld the supports together. Closure of this item will be contingent upon the implementation of the Facility Change Request.

3. Licensee Event Reports Followup

Through direct observations, discussions with licensee personnel, and review of records, the following event reports were reviewed to determine that reportability requirements were fulfilled, immediate corrective action was accomplished, and corrective action to prevent recurrence had been accomplished in accordance with technical specifications (Closed).

- LER 82-01 Borated Water Storage Tank temperature higher than assumed in FSAR
- LER 82-62 Hydrogen dilution valve failed closed due to inappropriate design
- LER 83-01 Feedwater transient due to loss of power to main feedwater valve
- LER 83-55 Fire doors 203 and 108 found open on different occasions
- LER 83-67 Inoperable fire dampers not provided with continuous fire watch
- LER 83-70 Wrong resin used in makeup and purification system
- LER 84-03 Stuck open main steam safety valve after inadvertent closure of a main steam isolation valve
- LER 84-04 Fire doors not in conformance with NFPA 80, "Code for Fire Doors"
- LER 84-05 Inoperable control room emergency ventilation system
- LER 84-07 High noise level in diesel fire pump right angle drive
- LER 84-08 Inoperable diesel generators due to installation of defective parts
- LER 84-11 Inoperable fire barrier penetration between service water pump and valve rooms

The following LERs were reviewed but not closed out at this time:

(Open) LER 80-91: Overstressed walls. An overview of the long term corrective actions for this LER showed that nineteen Facility Change Requests (FCR) have been completed and five FCRs remain to be closed out. The inspector will continue to review the long term corrective action for this LER and document the results in later inspection reports.

(Open) LER 83-63: Inadequate fire analysis for two pipe chases. Licensee actions yet to be completed include determination of long term corrective action and revision of the LER to indicate the appropriate corrective action.

(Open) LER 83-64: Failure of controls for main steam line atmospheric vent valve. Corrective action included implementation of FCR 82-125 which is now in progress. The LER will be reviewed for close out when the FCR is complete.

No items of noncompliance or deviation were identified.

4. Monthly Maintenance Observation

Station maintenance activities of safety related systems and components listed below were observed/reviewed to ascertain that they were conducted in accordance with approved procedures, regulatory guides and industry codes or standards and in conformance with technical specifications.

The following items were considered during this review: the limiting conditions for operation were met while components or systems were removed from service; approvals were obtained prior to initiating the work; activities were accomplished using approved procedures and were inspected as applicable; functional testing and/or calibrations were performed prior to returning components or systems to service; quality control records were maintained; activities were accomplished by qualified personnel; parts and materials used were properly certified; radiological controls were implemented; and, fire prevention controls were implemented.

Work requests were reviewed to determine status of outstanding jobs and to assure that priority is assigned to safety related equipment maintenance which may affect system performance.

The following maintenance activities were observed/reviewed:

Testing of Auxiliary Feed Pump Ventilation Fan Breaker.

Preventive Maintenance of 120 VAC Essential Inverter.

Preventive Maintenance on Emergency Diesel Generator.

Change Torque Switch Setting on Valve CS 1530.

Replacement of a Defective Printed Circuit Card in 120 VAC Essential Inverter.

Following completion of maintenance on the 120 VAC Essential Inverter, the inspector verified that the system had been returned to service properly.

No items of noncompliance or deviations were identified.

5. Monthly Surveillance Observation

The inspector observed technical specifications required surveillance testing on the Containment Spray System, ST 5062.02, Containment Spray Refueling Test, and verified that testing was performed in accordance with adequate procedures, that test instrumentation was calibrated, that limiting conditions for operation were met, that removal and restoration of the affected components were accomplished, that test results conformed with technical specifications and procedure requirements and were reviewed by personnel other than the individual directing the test, and that any deficiencies identified during the testing were properly reviewed and resolved by appropriate management personnel.

The inspector also witnessed portions of the following test activities:

- ST 5011.03 Boron Injection Flowpath Makeup Monthly Test
- ST 5031.14 Steam and Feedwater Rupture Control System Monthly Test
- ST 5062.01 Containment Spray System Monthly Test
- ST 5084.01 Station Batteries Weekly Surveillance Test
- ST 5031.09 Steam and Feedwater Rupture Control System Refueling Test
- ST 5043.01 Primary and Secondary System Radiochemistry
- ST 5043.02 Primary and Secondary System Chemistry
- ST 5064.01 Ctmt. Isolation Valves Post Maintenance Test for Valves
AF 599, CV 5007, CV 5008 and MU2A
- ST 5040.02 Power Relief Valve Calibration Check
- ST 5037.02 Cl₂ Detector Monthly Test
- ST 5099.01 Miscellaneous Instrument Shift Checks
- ST 5099.02 Miscellaneous Instrument Daily Checks
- ST 5066.00 ASME Section XI Inservice Pressure Test for the
Auxiliary Spray Piping

No items of noncompliance or deviations were identified.

6. Surveillance - Refueling

The inspector observed the Integrated Safety Features Actuation System surveillance test, ST 5031.07 to verify that the tests were covered by properly approved procedures; that the procedures used were consistent with regulatory requirements, licensee commitments, and administrative controls; that minimum crew requirements were met, test prerequisites were completed, special test equipment was calibrated and in service, and required data was recorded for final review and analysis; that the qualifications of personnel conducting the test were adequate; and that the test results were adequate.

No items of noncompliance or deviations were identified.

7. Inspection During Long Term Shutdown

The inspector observed control room operations, reviewed applicable logs and conducted discussions with control room operators during the months of November and December. The inspector verified surveillance tests required during the shutdown were accomplished, reviewed tagout records, and verified applicability of containment integrity. Tours of all accessible areas, including exterior areas were made to make independent assessments of equipment conditions, plant conditions, radiological controls, safety, and adherence to regulatory requirements and to verify that maintenance requests had been initiated for equipment in need of maintenance. The inspector observed plant housekeeping/cleanliness conditions, including potential fire hazards, and verified implementation of radiation protection controls. The inspector by observation and direct interview verified that the physical security plan was being implemented in accordance with the station security plan. The inspector reviewed the licensee's jumper/bypass controls to verify there were no conflicts with technical specifications.

During a tour of the auxiliary building on December 14, 1984, the inspector observed open piping in the service water and hydrogen dilution systems. Valves in these systems had been removed for maintenance and both ends of the exposed piping had not been covered for housekeeping purposes. This is considered an unresolved item (346/84-28-02) pending review of the licensee's training records for the individuals involved and additional review of the licensee's procedures and applicable ANSI standards.

During an auxiliary building tour on December 14, 1984, the inspector observed a brownish-white liquid discharge coating an approximately four foot wide section of the east side of the north wall of the Miscellaneous Waste Monitor Tank Room. The liquid discharge was covering electrical conduit hangers CS-633-114-07-1 and CS-634-114-08-1. These hangers support the power cables for the number one train's high pressure injection, low pressure injection and containment spray pumps. The inspector requested the licensee investigate the cause of the liquid discharge. This item is considered unresolved (346/84-28-03) and will be followed up in a subsequent inspection.

During a review of the unit log for December 15, 1984, the inspector noted that Emergency Diesel Generator (EDG) number two had started due to undervoltage on essential 4.16 kV bus D1. EDG number two functioned normally, providing power to bus D1. The D1 undervoltage was caused by a momentary short circuit on the D1 bus. The short circuit was caused by I and C technicians who had inadvertently dropped a test lead onto the bus. The licensee did not report the EDG actuation to the NRC within four hours. The inspector is investigating the EDG actuation to determine if a four-hour report was required by 10 CFR 50.72. This item is considered open (346/84-28-04) and will be followed up in a subsequent inspection.

No items of noncompliance or deviation were identified.

8. Meeting on December 21, 1984 Relating to the Snubber Failure During Normal Plant Operation

During the present plant refueling outage, pipe snubber PSU-H1 installed on the 10" pressurizer surge line was found broken at the piston rod end near the spherical bushing rod eye clevis connection. The RIII staff requested an opportunity to review the incident because the same PSU-H1 snubber assembly was found pulled away from the concrete wall during the 1982 plant refueling outage, and at that time calculation records could not be located for the support. While the above issues were resolved (inspection documentation was contained in RIII reports 50-346/82-22 and 50-346/83-17), this recent discovery raised new questions concerning the design, installation, and inspection for this snubber support.

A meeting was held with TECo at the RIII office on December 21, 1984, to discuss the above occurrence. During the meeting the staff reviewed photographs showing deep scratch marks at the wall location where the snubber was installed, design drawings and support details, and the failed snubber with the broken piston rod and the scuffed snubber surface which indicates contact had been made with the wall. The staff agreed with the licensee in principle that the cause of the snubber damage was due to component and wall interference during piping thermal movement.

In view of the history of this problem and the significance of the incident, the staff requested the licensee to complete the following actions prior to 100% power operation. The 100% power operation was subsequently clarified to mean normal plant operation.

- a. Determine by analytical means if there had been sufficient interference due to thermal displacement to cause the snubber piston rod to break.
- b. Determine by physical inspection at operating temperatures that all piping, components, and equipment at the wall location, including the new support installations, are to be free of thermal interferences.
- c. Provide RIII a copy of the support design calculation for the revised snubber assembly configuration.

Followup of the licensee's actions is planned. This is an unresolved item (346/84-28-11).

9. IE Bulletin Followup

For the IE Bulletins listed below the inspector verified that the Bulletin was received by licensee management and reviewed for its applicability to the facility. If the Bulletin was applicable the inspector verified that the written response was within the time period stated in the Bulletin, that the written response included the information required to be reported, that the written response included adequate corrective action commitments based on information presented in the Bulletin and the licensee's response, that the licensee management forwarded copies of the written response to

the appropriate onsite management representatives, that information discussed in the licensee's written response was accurate, and that corrective action taken by the licensee was as described in the written response.

(Closed) IEB 78-10, Bergen-Patterson Hydraulic Shock Suppressor Accumulator Spring Coils

(Closed) IEB 84-01, Cracks in Boiling Water Reactor Mark 1 Containment Vent Heaters

(Closed) IEB 84-03, Refueling Cavity Water Seal

The inspector also reviewed the licensee's response to IEB 82-02, Degradation of Threaded Fasteners in the Reactor Coolant System (RCS) Pressure Boundaries of PWR Plants. The inspector reviewed the maintenance procedures associated with the RCS boundary threaded fasteners. All procedures appeared to have adequate torquing, untorquing and handling guidance. The inspector noted that the format for Limitorque valve maintenance was not consistent with the latest revision to AD 1844.00, Maintenance. This is considered an open item (346/84-28-05) until the format is changed. One set of threaded fasteners, the reactor coolant pump cover bolts, has not been required to be removed due to maintenance or inspection activities. As a result of this condition no procedure for removal of these bolts had been written. When this procedure is written the inspector will review the procedure against IEB 82-02 criteria. This is an open item (346/84-28-06). The licensee did perform an inspection of the bolts in the installed condition during this refueling outage and no degradation was noted. The inspector noted that the maintenance procedures required visual inspections of the threaded fasteners, but not magnetic particle or liquid penetrant inspections. The licensee stated that these inspections were performed under the inservice inspection program. The inspector will followup on this item during a subsequent inspection. This is considered an open item (346/84-28-07). The IEB response stated "Engineering is presently working with Babcock and Wilcox to develop an alternative to lubricants that contain molybdenum disulfide". The inspector will followup on the results of that effort during a subsequent inspection. This is considered an open item (346/84-28-08). The rest of the IEB response was reviewed and considered adequate. Based on the review conducted the inspector considers the IEB closed.

No items of noncompliance or deviation were identified.

10. Regional Request

Regional management requested the inspector to determine if the licensee prohibits in-core detector seal table maintenance with the reactor coolant system at full operating pressure. The inspector discussed in-core detector maintenance practices with appropriate licensee management and determined that in-core detector maintenance at full operating pressure was considered inappropriate.

No items of noncompliance or deviation were identified.

11. Management Meeting (Regulatory Improvement Program)

On November 7, 1984, the licensee and the NRC met at the Davis-Besse site to discuss the status of the licensee's Performance Enhancement Program (PEP) (see Paragraph 1 for list of attendees). The licensee described their PEP organization, presented the current status of PEP action items and provided a sample printout of the PEP implementation plan tracking system.

No items of noncompliance or deviation were identified.

12. Independent Inspection

During the inspection period, the licensee informed the inspector that a relay had been removed from the control cabinet for the Fuel Storage Handling Bridge Crane. The removal of the relay prevented the crane from operating. The licensee could not find any recent or current maintenance work orders that would have involved work on the missing relay. The licensee was unable to find anyone who knew why the relay had been removed. After the relay was discovered missing, the licensee conducted inspections of the crane controls prior to each use of the crane. During these inspections, a wire cutter was found in the crane control cabinet. Although the wire cutter had identifying marks, the licensee was unable to determine which individual had last used the wire cutter. Further investigation and inspection by the licensee revealed no additional information. No additional problems or unusual situations involving the crane have been identified and this item is considered closed.

During a review of licensee deviation reports the inspector noted that a surveillance test had not been performed before the maximum allowable time interval (including the 25% allowed grace period) had been exceeded. The test was required to be completed by 0855 on August 21, 1984. The test was satisfactorily completed at 1430 on August 21, 1984. The test dealt with fire suppression equipment including a visual inspection of all fire hose stations listed in Table 3.7-4 of Technical Specifications.

When a surveillance test time interval is exceeded the associated equipment is considered inoperable per Technical Specification 4.0.3 and the Limiting Condition for Operation (LCO) action statements are required to be complied with. The LCO action statement for fire hoses, Technical Specification 3.7.9.3.a, requires the routing of an equivalent capacity fire hose to the unprotected area from an operable hose station within one hour. This was not done and the LCO action statement was exceeded. The other fire suppression equipment to LCO action statements was of longer duration and were not exceeded.

The test had appeared on the test schedule for an entire month prior to the Technical Specification late date being exceeded. The personnel normally assigned to this test was on leave or assigned to other jobs.

The on-site review committee reviewed the deviation report and considered the event not reportable under the licensee event report system. This was due to a personnel error in computing the LCO action statement time interval for fire hose stations. 10 CFR 50.73.a.2.i.B requires a 30 day report to the NRC when a LCO action statement is exceeded.

The failure to meet an action statement of an LCO and failure to report the exceeding of an action statement are considered items of noncompliance (346/84-28-09 and 346/84-28-10).

No other items of noncompliance or deviation were identified.

13. Changes, Tests and Experiments Observation

The inspector observed performance of TP 520.73, SUFP Power Via C1 Using EDG 1-1. The inspector verified that all prerequisites were accomplished, personnel were adequately qualified, the procedure was adhered to, the test leader was aware of his responsibilities and the acceptable criteria was met. No items of noncompliance or deviation were identified.

14. Unresolved Items

Unresolved items are matters about which more information is required in order to ascertain whether they are acceptable items, items of noncompliance, or deviations. Unresolved items disclosed during the inspection are discussed in Paragraphs 6 and 8.

15. Open Items

Open items are matters which have been discussed with the licensee, which will be reviewed further by the inspector, and which involve some action on the part of the NRC or licensee or both. Open items disclosed during the inspection are discussed in Paragraphs 6 and 7.

16. Exit Interview

The inspector met with licensee representatives (denoted in Paragraph 1) throughout the month and at the conclusion of the inspection and summarized the scope and findings of the inspection activities. The licensee acknowledged the findings.