

U. S. NUCLEAR REGULATORY COMMISSION

REGION III

Report No. 50-346/92011(DRP)

Docket No. 50-346

Operating License No. NPF-3

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

Facility Name: Davis-Besse Nuclear Power Station

Inspection At: Oak Harbor, Ohio

Inspection Conducted: June 23, 1992, through August 3, 1992

Inspectors: W. Levis
K. Walton

Approved By: I. N. Jackiw
I. N. Jackiw, Chief
Reactor Projects Section 3A

8-6-92
Date

Inspection Summary

Inspection on June 23, 1992, through August 3, 1992
(Report No. 50-346/92011(DRP))

Areas Inspected: A routine safety inspection by resident inspectors of licensee actions on previous inspection findings, licensee event reports followup, plant operations, followup of events, radiological controls, maintenance/surveillance, emergency preparedness, security, engineering and technical support, and safety assessment/quality verification was performed.

Plant Operations:

The inspectors' review of zone operators performance on rounds was considered a strength. The inspectors were concerned with a daily evolution performed by operators which had the potential to adversely affect the turbine lube oil system if performed improperly, (Paragraph 4).

Maintenance/Surveillance:

A licensee multi-disciplined team reviewed several events that resulted in the loss of electrical busses. The team's findings and recommendations to prevent recurrence were considered a strength in the licensee's self-assessment capabilities, (Paragraph 3). The improper reassembly of a motor-operated valve by a trainee without adequate supervision is considered to be an inattention to detail by the trainer rather than a programmatic weakness, (Paragraph 6).

Engineering/Technical Support:

A valve removed and reinstalled backwards as part of a modification to the makeup system resulted in restricting hydrogen flow into the makeup tank and is considered to be a weakness in engineering review of modifications, (Paragraph 2). The licensee located a through wall leak in a four-inch service water supply header, and is adhering to the recommendations of Generic Letter 90-05. The licensee's timely response to Bulletin 92-01, was considered a strength, (Paragraph 9).

Safety Assessment/Quality Verification:

A program to evaluate site-wide departmental performance was initiated by the licensee. The program, called Windows, will identify areas of weaknesses and strengths for assessment by upper management, (Paragraph 10).

DETAILS

1. Persons Contacted

a. Toledo Edison Company

D. Shelton, Vice President, Nuclear
*G. Gibbs, Director, Quality Assurance
L. Storz, Plant Manager
*J. W. Rogers, Manager, Maintenance
M. Bezilla, Superintendent, Plant Operations
E. Salowitz, Director, Planning and Support
*S. Jain, Director, DB Engineering
*R. Zyduck, Manager, Nuclear Engineering
G. Grime, Manager, Industrial Security
*D. Timms, Manager, Systems Engineering
*J. Polyak, Manager, Radiological Control
*V. Sodd, Manager, Independent Safety Engineering
*G. Honma, Supervisor, Compliance
B. DeMaison, Manager, Emergency Preparedness
*J. K. Wood, Operations Manager
R. W. Schrauder, Manager, Nuclear Licensing
T. J. Myers, Director, Technical Services
*N. K. Peterson, Engineer, Licensing
*J. Barron, Manager, Performance Engineering (Acting)
G. Skeel, Gen. Supervisor, Nuclear Sec. Operations
*L. W. Worley, Manager, Quality Assurance
*N. L. Bonner, Manager, Design Engineering
S. A. Byrne, Superintendent, Electrical Maintenance
*J. Moyers, Manager, Quality Assurance
*T. W. Haberland, Manager-Maintenance Planning & Outage Mgmt.
*M. A. Turkal, Licensing

b. USNRC

*W. Levis, Senior Resident Inspector
*R. K. Walton, Resident Inspector

*Denotes those personnel attending the August 3, 1992, exit meeting.

2. Licensee Action on Previous Inspection Findings (92701)

(CLOSED) Unresolved Item (346/89026-07), Operability of CCW System When Room Ventilation is Unavailable. After further NRC review it was determined that licensee's actions were appropriate when taking a CCW ventilation train out of service. They declared the associated CCW train inoperable and followed the required action statement.

(OPEN) Open Item (346/91018-01) On November 5, 1991, operators inadvertently drained approximately 350 gallons of purified reactor coolant to the protected area yard through the hydrogen addition line to

the makeup tank. This event was documented in Inspection Report 346/91018(DRP). The licensee has removed contaminated soil from the site and shipped it off site for disposal, (see IR 346/92009(DRSS)). As a corrective action, the licensee performed a modification to the hydrogen addition line to the makeup tank. One item performed by MOD 91-0044 was the removal, reversal and reinstallation of solenoid valve, MU54, to seal against leakage out of the makeup tank. After the modification was completed, Operations noted that MU54 appeared to pass more flow with the valve closed than with the valve opened. Systems Engineering contacted the valves' vendor and determined that with MU54 reversed, it acted as a check valve thereby inhibiting hydrogen flow into the makeup tank. The licensee documented this condition on Potential Condition Adverse to Quality Report (PCAQR 92-0309). The inspectors will review this item pending the completion of the system modification.

3. Licensee Event Reports Followup (92701)

Through direct observation, discussions with licensee personnel, and review of records, the following licensee event reports (LERs) were reviewed to determine that reportability requirements were fulfilled, that immediate corrective actions to prevent recurrence was accomplished in accordance with Technical Specifications (TS).

(CLOSED) LER 91008 and Revision 1, Reactor Trip Due to Blown Fuse
During Maintenance on on-Essential 4160 VAC Bus D2. On December 10, 1991, with the plant in Mode 3, maintenance performed on the D2 bus resulted in the actuation of an under-voltage relay for the bus causing the bus to automatically shed its loads. This event is described in Inspection Report 346/91022(DRP). The licensee assembled a multi-disciplined team to evaluate this and six similar occurrences. The team concluded the cause of these events was a synergistic combination of deficient design modification walkdowns, poor maintenance work practices, poor pre-job briefs, a lack of cognizant review by a single responsible organization and circuits not originally designed to be tested had not been altered as new testing requirements were added. The team submitted a list of recommendations to plant management which was distributed to cognizant organizations for implementation. The inspectors reviewed the licensee's report and its recommendations and consider the item closed.

(CLOSED) LER 92005, Hourly Fire Watch Patrol Exceeded Allowed Interval by Five Minutes. The inspectors have reviewed the LER and the licensee's corrective actions and consider this LER closed.

No other violations or deviations were identified.

4. Plant Operations (71707)

a. Operational Safety Verification

Inspections were routinely performed to ensure that the licensee conducts activities at the facility safely and in conformance with regulatory requirements. The inspections focused on the implementation and overall effectiveness of the licensee's control of operating activities, and on the performance of licensed and non-licensed operators and shift managers. The inspections included direct observation of activities, tours of the facility, interviews and discussions with licensee personnel, independent verification of safety system status and limiting conditions of operation (LCO), and reviews of facility procedures, records, and reports.

b. Off-Shift Inspection of Control Rooms

The inspectors performed routine inspections of the control room during offshift periods. The inspections were conducted to assess overall crew performance and, specifically, control room operator attentiveness during night shifts. The inspectors determined that both licensed and non-licensed operators were alert and attentive to their duties, and that the administrative controls relating to the conduct of operations were being adhered to.

The inspectors followed a zone operator on his rounds through the switchyard and turbine building on June 30, 1992. The inspectors found the operator to be very observant of system conditions. The operator was attentive of maintenance and operations information tags hung on components for which he was responsible. The inspectors believe that operators could be more sensitive to seismic concerns in the high voltage switchgear room. Specifically, equipment left in the room is generally restrained from movement by cognizant personnel. Operations department philosophy is to check work performed by others. Room tours conducted by the operator did not check any equipment for seismic restraints.

The inspectors noted an evolution, which was performed daily by zone operators, has a potential to allow for foreign material intrusion into the turbine lube oil system. Specifically, operators open the turbine lube oil sump hatch, raise the filter screens from the sump and wipe them down. Operators check both the filter screens and the wiping rags for foreign material of which little material has been found. The inspectors note that foreign material has fallen into the open sump during past filter inspections. Foreign material, if dropped downstream of the screens and is large enough, has the potential to be sucked into the lube oil pump which could adversely affect the operations of the turbine lube oil system. The inspectors have spoken to plant

management about evaluating the risk/benefits of doing this evolution daily.

Of four operators questioned by the inspector, none could identify which systems required independent verification of valve lineups. Independent verification of valve lineups are required of systems which ensure reliable and safe operation of the plant. The inspectors spoke with operations management who identified that DB-OP-00000, Conduct of Operations, section 6.13, addressed independent verifications. The inspectors are concerned that the zone operators may not have received adequate training on the requirements of section 6.13 of DB-OP-00000. The inspectors will monitor the licensee's actions regarding this issue during future inspections.

c. Plant Material Conditions/Housekeeping

The inspectors performed routine plant tours to assess material conditions within the plant, ongoing quality activities and plant-wide housekeeping. Housekeeping was generally good. There has been a continuing effort by radiological controls personnel to reduce contaminated areas. Maintenance personnel generally leave their areas in a neat and orderly fashion.

No violations or no deviations were identified.

5. Radiological Controls (71707)

The licensee's radiological controls and practices were routinely observed by the inspectors during plant tours and during the inspection of selected work activities. The inspection included direct observations of health physics (HP) activities relating to radiological surveys and monitoring, maintenance of radiological control signs and barriers, contamination, and radioactive waste controls. The inspection also included a routine review of the licensee's radiological and water chemistry control records and reports.

Health physics controls and practices were satisfactory.

No violations or deviations were identified.

6. Maintenance/Surveillance (61726, 62703)

Selected portions of plant surveillance, test and maintenance activities on systems and components important to safety were observed or reviewed to ascertain that the activities were performed in accordance with approved procedures, regulatory guides, industry codes and standards, and the Technical Specifications. The following items were considered during these inspections: limiting conditions for operation were met while components or systems were removed from service; approvals were obtained prior to initiating work; activities were accomplished using approved procedures and were inspected as applicable; functional testing

or calibration was performed prior to returning the components or systems to service; parts and materials used were properly certified; and appropriate fire prevention, radiological, and housekeeping conditions were maintained.

Maintenance was performed on motor operated valve SW1367, Containment Air Cooler #2 Inlet Isolation valve, which required the valve to be completely disassembled and reassembled. DB-ME-09230, Maintenance and Repair of Limitorque Operator, step 8.8.1.c requires that the declutch fork be reinstalled with the prongs pointing down. Additionally, figure 9 in the procedure has a caution which also notes the proper orientation of the fork. During the reassembly on June 23, 1992, a trainee installed the declutch fork upside down. The master mechanic with the trainee did not detect the installation error. During post maintenance testing on June 25, 1992, the valve failed to operate using the motor. Maintenance personnel disassembled, repaired, and reassembled the limitorque. The valve was later tested satisfactory and returned to service.

The inspectors spoke to maintenance management about their concerns with improperly supervised work. The mechanical maintenance department has implemented a trainer/evaluator program designed to improve the quality of on the job training of trainees. The program stresses the use of procedures by the trainee and more clearly outlines the responsibilities of the evaluator. The master mechanic involved has been remediated and removed from the program pending management review.

The licensee considers this to be a rework issue because the valve assembly error was found during post-maintenance testing and was never considered to be operable. Presently, the maintenance program rework rate is approximately 2%.

a. Maintenance

The reviewed maintenance activities included:

- Work on DBC-IPN Battery Charger
- Component Cooling Water Pump Room Temperature Detector Work
- Replacement of Fire Protection Piping
- Troubleshooting Safety Features Actuation System Channel 1 Sequencer.
- Removal of YV3 K1 Under-voltage Relay for Relay Setting and Testing
- Maintenance on High Pressure Injection Train #1

b. Surveillance

The reviewed surveillances included:

<u>Procedure No.</u>	<u>Activity</u>
DB-SP-03337	Quarterly Pump and Valve Test Containment Spray Pump #1.

No violations or deviations were identified.

7. Emergency Preparedness (71707)

An inspection of emergency preparedness activities was performed to assess the licensee's implementation of the emergency plan and implementing procedures. The inspection included monthly observation of emergency facilities and equipment, interviews with licensee staff, and a review of selected emergency implementing procedures.

No violations or deviations were identified.

8. Security (71707)

The licensee's security activities were observed by the inspectors during routine facility tours and during the inspectors' site arrivals and departures. Observations included the security personnel's performance associated with access control, security checks, and surveillance activities, and focused on the adequacy of security staffing, the security response (compensatory measures), and the security staff's attentiveness and thoroughness. Security personnel were observed to be alert at their posts. Appropriate compensatory measures were established in a timely manner. Vehicles entering the protected area were thoroughly searched.

No violations or deviations were identified.

9. Engineering and Technical Support (62703, 64704, 71707)

An inspection of engineering and technical support activities was performed to assess the adequacy of support functions associated with maintenance/modifications, operations, surveillance and testing activities. The inspection focused on routine engineering involvement in plant operations and response to plant problems. The inspection included direct observation of engineering support activities and discussions with engineering, operations, and maintenance personnel.

On June 25, 1992, the NRC resident office notified the licensee of the issuance of Bulletin 92-01, Failure of Thermo-Lag 330 Fire Barrier System to Maintain Cabling in Wide Cable Trays and Small Conduits Free From Fire Damage. The inspectors witnessed the licensee perform plant walkdowns to verify the location of Thermo-Lag. The licensee determined that no wide trays (fourteen inches or wider) containing safe shutdown

cables are used at the facility and that ten rooms have conduit four inches or less in diameter containing safe shutdown cables protected by Thermo-Lag 330 fire barrier systems. The Component Cooling Water pump room has a one inch or less diameter conduit using Thermo-Lag and on June 26, 1992, the licensee declared the room inoperable for fire protection concerns and established an hourly fire watch in accordance with Technical Specification 3.7.10. In the remaining rooms which contain conduit between one and four inches in diameter protected by the Thermo-Lag 330 fire barrier system, roving fire watches were conservatively established but the rooms were not considered to be inoperable. In addition, the licensee added a portable fire detection circuit in room 114, where previously no fire detection circuit existed. The licensee conducted an engineering evaluation of conduit protection by the Thermo-Lag 330 fire barrier system to determine whether safe plant shutdown would be adversely affected. The evaluation determined that, based on the combustible loading of the affected fire areas, the Thermo-Lag will provide adequate protection from a fire and that safe shutdown was not adversely affected. Based on this evaluation, on July 20, 1992, the licensee exited the action statement for Technical Specification 3.7.10. and secured the fire watch for the affected rooms. On July 29, 1992, the licensee submitted their 30 day response to NRC Bulletin 92-01. The response will be reviewed by NRR staff.

On June 26, 1992, the licensee discovered a through-wall leak in a four inch carbon steel service water system pipe which supplies a source of cooling water to the #2 Emergency Core Cooling System Room cooler. A non-ASME code repair was made to the pipe to stop the leakage. The licensee plans to perform a code repair by replacing approximately 100 feet of this piping prior to the next refueling outage (scheduled for March of 1993). The licensee has experienced through-wall leaks in this portion of piping in the past (reference IR 346/90013 and IR 346/91010) and has attributed the leakage to the effects of microbiologically induced corrosion (MIC) on a horizontal run of carbon steel piping under stagnant flow conditions. Ultrasonic testing of surrounding portions of piping have been unable to detect this very localized form of corrosion. In accordance with NRC Generic Letter 90-05, the licensee submitted a relief request to the NRC on July 20, 1992 to request approval of the temporary repair until permanent repairs can be made at a later date. The licensee documented this event on PCAQR 92-0275.

No violations or deviations were identified.

10. Safety Assessment/Quality Verification

An inspection of the licensee's quality programs was performed to assess the implementation and effectiveness of programs associated with management control, verification, and oversight activities. The inspectors considered areas indicative of overall management involvement in quality matters, self-improvement programs, response to regulatory and industry initiatives, the frequency of management plant tours and control room observations, and management personnel's participation in

technical and planning meetings. The inspectors reviewed Potential Condition Adverse to Quality Reports (PCAQR), Station Review Board (SRB) and Company Nuclear Review Board (CNRB) meeting minutes, event critiques, and related documents; focusing on the licensee's root cause determinations and corrective actions. The inspection also included a review of quality records and selected quality assurance audit and surveillance activities.

On July 15, 1992, the licensee distributed its first Windows Process Report. The Windows program is a site wide assessment program to evaluate the performance of all site departments in four designated areas. These designated areas are cost, personnel, equipment and program. The Windows Report presents a visual summary by use of colors to identify site activities which are excelling or require improvement. The Windows program was compiled by a multi-disciplinary team of site employees which developed performance indicators and grading criteria. The report will be evaluated and distributed quarterly. The inspectors believe that this program, if properly implemented, is a good initiative for management to assess plant performance.

On July 29, 1992, the Assistant Director for Region III Reactors and his staff met with senior licensee management and his staff to discuss engineering issues and other topics. The meeting was concluded with a tour of the facility.

On July 30, 1992, the Assistant Director for Region III Reactors and his staff met with various Region III plant licensing staff and members of the State of Ohio for a counterpart meeting to discuss issues of mutual interest.

No violations or deviations were identified.

11. Temporary Instruction (TI) Reviews

(CLOSED) TI 2515/115 Verification of Plant Records

The requirements of this instruction were inspected while reviewing licensee actions to Information Notice 92-30 as reported in Inspection Report 50-346/92008.

12. Exit Interview (30702)

The inspectors met with licensee representatives (denoted in Paragraph 1) throughout the inspection period and at the conclusion of the inspection and summarized the scope and findings of the inspection activities. The licensee acknowledged the findings. After discussions with the licensee, the inspectors have determined there is no proprietary data contained in this inspection report.