

U. S. NUCLEAR REGULATORY COMMISSION
REGION III

Report No. 50-346/92005(DRP)

Docket No. 50-346

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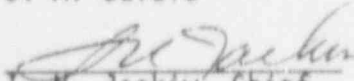
Licensee: Toledo Edison Company
Edison Plaza, 300 Madison Avenue
Toledo, OH 43652

Facility Name: Davis-Besse Nuclear Power Station

Inspection At: Oak Harbor, Ohio

Inspection Conducted: April 7, 1992, through May 18, 1992

Inspectors: W. Lewis
R. K. Walton
J. A. Gavula

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

5-29-92
Date

Inspection Summary

Inspection on April 7, 1992, through May 18, 1992
(Report No. 50-346/92005(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.

Executive Summary:

Plant Operations: Operations performance during a fire drill was good. An equipment operator alertly noted that clearance tags that he was authorized to remove should not be removed. An inspection follow-up item was opened to track licensee efforts to prevent spurious control room ventilation isolations. (Paragraph 4)

Radiological Controls: Improvement was noted in radiological conditions of the Auxiliary Building. A sense of ownership is being exhibited by radiological controls personnel. (Paragraph 5)

Maintenance/Surveillance: Maintenance personnel incorrectly signed for clearance removal of a work item that was not completed. One non-cited violation was identified in the performance of a fire protection surveillance. (Paragraph 6)

Emergency Preparedness: The inspectors witnessed the licensee's dry run exercise on April 24, 1992. The licensee adequately identified weak areas. The graded exercise was held on May 13, 1992. (Paragraph 7)

Safety Assessment/Quality Verification: The inspectors noted that Company Nuclear Review Board (CNRB) meetings contained frank and candid discussion of issues along with providing appropriate recommendations for improvement. The formation of an independent review group to evaluate licensee action with respect to high-energy line break (HELB) actions is a strength. (Paragraph 10.a)

Engineering/Technical Support The licensee identified a deficiency in previous HELB calculations outside of containment. The licensee prepared a justification for continued operation (JCO), implemented some short term compensatory measures and is evaluating long term solutions. An unresolved item was identified with respect to past operability of potentially affected components. (Paragraph 9)

DETAILS

1. Persons Contacted

a. Toledo Edison Company

D. C. Shelton, Vice President, Nuclear
G. A. Gibbs, Director, Quality Assurance
*L. F. Storz, Plant Manager
*J. M. Heffley, Manager, Maintenance
M. B. Bezilla, Superintendent, Plant Operations
*E. M. Salowitz, Director, Planning and Support
*S. C. Jain, Director, DB Engineering
*R. C. Zyduck, Manager, Nuclear Engineering
G. M. Grime, Manager, Industrial Security
*D. R. Timms, Manager, Systems Engineering
*J. R. Polyak, Manager, Radiological Control
R. B. Coad, Supervisor, Radiological Protection
*J. Lash, Manager, Independent Safety Engineering
G. Honma, Supervisor, Compliance
B. P. DeMaison, Manager, Emergency Preparedness
*J. K. Wood, Manager, Plant Operations
*R. W. Schrauder, Manager, Nuclear Licensing
T. J. Myers, Director, Technical Services
*N. K. Peterson, Engineer, Licensing
*E. C. Caba, Manager, Performance Engineering
*L. W. Worley, Manager, Quality Assurance
J. C. Dillich, Superintendent, Operations
*A. V. Antrassian, Engineer-Licensing
*N. L. Bonner, Design Engineering
*R. L. Seyferth, Supervisor, Quality Verification

b. USNRC

*W. Levis, Senior Resident Inspector
R. K. Walton, Resident Inspector
J. A. Gavula, Project Engineer

*Denotes those personnel attending the May 18, 1992, exit meeting.

2. Licensee Action on Previous Inspection Findings (92701)

(CLOSED) Open Item (87027-02) Fire Drill Deficiencies. On October 21, 1987, the inspectors noted five deficiencies during an unannounced fire drill. Four of these items were addressed in Inspection Report 346/91013. The inspectors were concerned with fire brigade communications weaknesses. The licensee tested fifteen configurations of communications equipment with seven different products. All failed to meet the requirements of typical noise levels encountered during power operations or were considered too complex for use under emergency situations. The licensee has determined that designated runners will be used in high noise areas.

The inspectors witnessed an unannounced fire drill on April 28, 1992, on the turbine deck area and found that fire brigade communications had improved. The inspectors noted that communications during the drill did not require the use of a runner. Brigade members have been trained to speak slowly and announce when using portable radios. The members were able to adequately communicate through their protective clothing. The inspectors consider this item closed.

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 were accomplished in accordance with Technical Specifications (TS).

(OPEN) LER 91-008, Rev 1, Reactor Trip Due to Blown Fuse During Maintenance on Non-Essential 4160 V AC Bus D2. The inspectors will review the licensee's corrective actions at a later date.

(CLOSED) LER 91-009, Seal Test Not Performed on Containment Emergency Air Lock. This event was discussed in Inspection Report 346/92002. The inspectors reviewed the licensee's corrective actions and verified that Procedure No. DB-HP-01101, "Containment Entry", had been revised to include notification of the Shift Supervisor prior to opening either the inner or outer emergency air lock. Also, Procedure No. DB-OP-02004 "Reactor Coolant Alarm Panel 4 Annunciators", was revised to clarify the setpoint, symptoms and supplementary actions for Annunciator Alarm (4-6-A), "CTMT EMER LOCK OPEN". In addition, Maintenance Work Order No. 1-92-0052-00 was issued to troubleshoot the containment emergency lock position switch for the inner door. This work is scheduled to be completed during the next refueling outage. Based on the above discussion, this LER is closed.

(OPEN) LER 92-003, Missed Surveillance Tests for Inservice Test (IST) Inspection. The corrective actions for this LER will be reviewed by the inspectors at a later date.

No other violations or deviations were identified.

4. Plant Operations (71707, 93702)

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.

On April 9, 1992, the inspectors noted that PI-1093, emergency diesel generator air compressor 1-1 discharge pressure gage, was indicating 255 pounds per square inch with the air compressor not running. Since this condition indicated possible leak of a check valve in the diesel air starting system, it was reported to the shift supervisor. The shift supervisor had the performance tests for valves DA-24 and DA-25, the suspected leaking valves, performed. Both valves failed and were subsequently replaced and retested satisfactorily. DA-25 had just been replaced a week earlier. Examination of the failed valve showed signs of corrosion even during this short time interval. A potential condition adverse to quality (PCAQ) was generated to document this condition.

There are four such check valves in the starting air system. A review of performance test data for the last two years showed isolated failures of these valves with the exception of DA-25, which had failed its last three tests. As a result of these failures, the licensee has put this valve, along with DA-24, on a weekly test basis and DA-38 and DA-39 on a monthly test frequency. The licensee believes that the failures are attributable to corrosion products from the carbon steel piping caused by excessive moisture in the system. They are evaluating long term fixes, such as, changing piping material, valve material, or installation of filters. The inspectors will continue to follow licensee efforts in this area during closeout of the PCAQ.

The inspectors observed an unannounced fire drill from the control room and from the simulated fire area. The inspectors observed control room operators make good use of the fire pre-plan and the fire procedure in a timely manner. The fire brigade suited up and applied an extinguishing agent to the simulated fire within 10 minutes. Simulated communications with off-site fire assistance were good. The inspectors note that communications between the control room and the brigade were clear.

Recently, an operator was dispatched to clear tags from the control room No. 2 normal air conditioning unit prior to operating it for a maintenance retest. An error by maintenance personnel, which allowed clearing the tags, was detected by the operator. When clearing tags, the operator noted that a condensing cooler fan was disassembled. The operator stopped clearing tags and notified the shift supervisor of the situation. The isolation was later re-established. Licensee management has stressed conservative operations and has outlined its expectations to its operators. These philosophies include self-checking, checking others and BE CERTAIN which is an acronym to aid operators in reducing personnel errors. The inspectors note that this philosophy was effective for this case.

On May 11, 1992, the inspectors noted during a tour of the control room ventilation area that PT 5898 and PT 5899, both Rosemount 1153 pressure transmitters had two instead of four bolts mounting the

transmitters to its mounting bracket. The inspectors passed this observation to the system engineer. In response to this issue, the licensee issued a PCAQ, walked down all accessible 1153 transmitters, and performed a calculation to verify that the transmitters were seismically qualified in the current configuration. The calculation verified that the present condition was acceptable and the walkdown showed no other problems. The inspector had no other questions.

On May 12, 1992, at 1601 hours, control room ventilation tripped when placing radiation detector 4598AA back in service. The log entry in the control room log indicated that the detector was placed in service prior to ensuring that the detector was below its trip setpoint. The ventilation system was restored, personnel counseled, and a Procedure Change Request submitted to correct this problem.

The inspectors noted that DB-CH-03008, the procedure covering the restoration to service of the radiation detector had been revised on December 19, 1991, to help preclude tripping of the ventilation system. Specifically, a caution was added to have the pump run for at least 15 minutes before resetting the alarm function. On February 18, 1992, a control ventilation isolation occurred while restoring RE 4598AA to service. PCAQ 92-0061 was written to document the deficiency. The cause of the trip was attributed to a spiking detector after its restoration to service. The corrective action for this PCAQ has not yet been completed. As a result of the latest isolation, the previous PCAQ was revised to address the causes of the trip and factor in proposed corrective actions. The inspector will follow up on licensee efforts to prevent spurious control room ventilation isolation, Inspection Follow-up Item 346/92005-01, Control Room Isolation.

The inspectors reviewed PCAQ 91-0595 relating to concerns with reactor operator proficiency requirements for performing zone operator duties. The inspectors reviewed reactor operator (RO) training requirements with respect to maintaining proficiency as an equipment operator (EO) since ROs occasionally stand EO watches. The licensee's RO job description notes that ROs be able to perform EO duties. The EO reports to the RO during the normal job performance. The inspectors reviewed RO and EO training requirements, interviewed several ROs and accompanied an RO standing an EO watch. The inspectors determined that all EO proficiency requirements are not covered by RO proficiency training. However, those actions that involve safety related equipment or actions to shutdown the plant outside the control room are sufficiently covered. In addition, job performance measures, conducted during RO requalification training, test the RO's ability to perform key evaluations in the plant. Based on this review the inspectors determined that the RO training adequately addressed EO proficiency requirements. This item is considered closed (R-III-91-A-0103).

b. Off-Shift Inspection of Control Rooms

The inspectors performed routine inspections of the control room during off-shift and weekend 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.

c. Engineered Safety Feature System Walkdown

The operability of selected engineered safety features was confirmed by the inspectors during walk-downs of the accessible portions of several systems. The following items were included: verification that procedures match the plant drawings, verification that equipment, instrumentation, valve and electrical breaker line-up status is in agreement with procedure checklists, and verification that locks, tags, jumpers, etc., are properly attached and identifiable. The following systems were walked down during this inspection period:

- AFW Train 1
- AFW Train 2

d. 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. Improvements were noted in the conditions of the Auxiliary Building.

One inspection follow-up item was identified.

No violations or 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. The inspectors noted improved performance of radiological controls technicians with respect to improved housekeeping in the Auxiliary Building. Ownership of spaces within the building was clearly evident. The technicians were routinely observed in their assigned spaces and were knowledgeable of activities in their areas.

Health physics controls and practices were satisfactory.

No violations or deviations were identified.

6. Maintenance/Surveillance (61700, 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.

On April 22, 1992, maintenance personnel had completed working on the control room No. 2 condenser and were ready to perform an operational test. This condenser is a portion of one of the two units which supplies the normal source of air conditioning to the control room and adjacent support rooms. The worker authorized removing the tagout and anticipated opening the disconnect switch for work on the No. 2 condensing unit which was not ready to be operated. An operator, when clearing the tags, alertly noted that No. 2 condensing unit fan was still disassembled. The operator stopped restoring equipment and notified the shift supervisor. The tag out was re-established.

The worker believed that the control room chiller unit work could be isolated using the disconnect switch and mistakenly cleared the tagout. The worker was on the clearance holder list which allowed him to authorize lifting the isolation. He was familiar with the tagout procedure, but was never formally trained with the process. The worker should have made a change to the clearance and not had the tags removed. No personnel injury or equipment damage resulted from this event.

The individual involved in this event has been counseled. The mechanical maintenance department noted that non-supervisory mechanics listed on its clearance holder list had training deficiencies. As a corrective action, the mechanical maintenance department allows only a first line maintenance supervisor be authorized to clear tags. Additionally, these supervisors are to receive additional training on the tagout process.

a. Maintenance

The reviewed maintenance activities included:

- Performance and Retest of Modification 92-007, Remove local control of Main Steam Line Isolation Valves to Auxiliary Feedwater Pump Turbine.
- Balancing Emergency Ventilation Fan No. 2

- No. 3 Service Water Pump Repairs

b. Surveillance

The reviewed surveillances included:

<u>Procedure No.</u>	<u>Activity</u>
DB-MI-03057	Reactor Protective System Channel No. 1 Calibration Flux/Delta Flux/Flow

PCAQ 92-0149, dated March 31, 1992, was issued to document a discrepancy in the performance of DB-FP-04005, Fire Brigade Monthly Inspection. Among the deficiencies, DB-OP-02000, Emergency Procedure, was noted to be missing from the Auxiliary Shutdown Panel. Further review by the licensee determined that the procedure was never issued to this location by document control. The fire protection procedure has been satisfactorily completed on a monthly basis since May 18, 1990.

The licensee corrective actions for this deficiency included placing a copy of the procedure at the shutdown panel and ensuring that it was placed on distribution by document control. The licensee also concluded that had a situation arisen where a copy was needed, it would be readily retrievable from document control or another location. The licensee also investigated the past successful completion of the procedure to determine if personnel inappropriately had been signing off a procedure step that could not have been accomplished. The inspectors noted that the particular procedure step on Attachment 5 of the procedure requires that a manual containing six procedures be located in room 324. The other five procedures were present in the manual. The licensee performed several security checks to determine if personnel who had signed for completion of the procedure in the past had actually been in the required spaces. The checks revealed that personnel were in the area for a time that corresponded with time required to perform the procedure. The inspector concluded that there was no willfulness involved and that the issue was more of "Attention to Detail". Personnel had been ensuring that the manual was there, not necessarily all 6 procedures were contained in the manual. The licensee's failure to adequately perform the fire protection surveillance procedure is a violation. However, the licensee identified violation will not be cited since the criteria specified in Section VII.B.1 of the "General Statement of Policy and Procedures for NRC Enforcement Actions," (Enforcement Policy, 10 CFR Part 2, Appendix C (1992)) were satisfied.

The NRC inspectors also reviewed calibration and test records for the performance of TS snubber surveillance. During the fifth refueling outage, this work was performed for Davis-Besse by the Paul-Monroe Energetech (PME) Company. A concern had been raised regarding the adequacy of the calibration process for this work during early 1988.

The NRC resident reviewed the quality control (QC) documents and interview the QC inspector involved with the snubbers test done March 23, 1988. Limited test machine calibration records were available in the licensee's files. No problems were noted during the review of the available records. The QC inspector stated that his department closely followed all aspects of the snubber work. He did not recall any problems with the test machine computer clock calibration. He also stated that PME had performed quality work during snubber maintenance and testing activities. This was supported by a review of the Quality Assurance files for work performed by PME.

A regional specialist was contacted regarding previous NRC inspections of PME snubber testing. There were two inspections performed in late 1987 and early 1988 that dealt with PME snubber work. No problems were encountered with any of the PME work during these inspections. With regard to computer clock calibration, this issue had been independently reviewed by the NRC inspector during these previous inspections. The clock was an integral part of the computer that controlled the test machine and as such could not be adjusted or calibrated. If the clock were to be inaccurate, then the computer itself probably would not function. Based in this, the inspector concluded that there was no significant issue associated with the computer clock calibration. This item is considered closed (R-III-91-A-0090).

7. Emergency Preparedness (7177)

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.

The inspectors witnessed the licensee's emergency drill dry run on April 24, 1992, and attended their post drill critique on April 24, 1992. The drill demonstrated satisfactory response of the licensee's emergency response organization, although some deficiencies were noted in communications and establishing priorities in combating the various casualties. These and other deficiencies were noted by the licensee in their post drill critique. Corrective actions are in progress to improve these areas.

The annual graded exercise was held on May 13, 1992. Details from this exercise can be found in report 346/92004.

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, 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 April 27, 1992, the licensee initiated PCAQ 92-0195 to document potential Environmental Qualification concerns related to possible errors in previously assumed peak temperatures due to a HELB outside containment. Initial licensee investigation showed these temperatures could be greater than 100°F in error. The mistake in the original calculation was caused by incorrect assumptions in the use of the condensing heat transfer mechanism of the RELAP 4 code.

The licensee developed a plan of action to address the issue which included assessing the scope of the problem, redoing calculations for the affected areas, reevaluating the environmental qualification status of affected equipment, preparing a JCO, and evaluating interim compensatory measures and long term corrective action. The licensee's JCO dated May 1, 1992, concluded that there was reasonable assurance that required equipment would operate and that continued operation of the plant was warranted. The JCO was reviewed by regional and headquarters personnel. Questions raised during the review were addressed by the licensee as part of their action plan.

Some short term corrective actions included the disabling of local/remote switches for valves MS-106, MS-106A, MS-107, and MS-107A, the insulating of SFAS (safety features actuation system) pressure transmitters PT2001 and PT2002, requiring 4 hour walkdowns of affected rooms for signs of a break, and the treatment of sprinkler systems for affected rooms in a more restrictive manner. Specifically, if sprinklers in rooms 124 and 501 are inoperable, the licensee will enter a 72 hour action statement as the sprinklers in room 124 were assumed to function during the postulated HELB to limit temperatures of other auxiliary building rooms. The long term corrective actions for this issue are still being evaluated. The licensee did establish an independent review group to assess the adequacy of their actions. This group is scheduled and will finish their review by May 18, 1992. The willingness to perform such an independent review is a strength. The licensee submitted a voluntary LER, 92-004, on May 8, 1992,

to document the issue. This item will be Unresolved Item, 346/92005-02, pending review of independent review group activities and completion of the licensee's action plan.

One unresolved item was identified.

No violations or deviations were identified.

10. Safety Assessment/Quality Verification (40500, 92700, 92701)

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 PCAQRs, Station Review Board (SRB) and 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.

The inspectors attended a CNRB meeting and a subcommittee meeting. There was candid discussion of the issues presented and appropriate recommendations for improving performance.

No violations or deviations were identified.

11. Open and Unresolved Items

Open items are matters which have been discussed with the licensee, which will be reviewed further by the inspectors, and which involve some action on the part of NRC or licensee or both. Open items disclosed during the inspection are discussed in paragraph 4.

Unresolved items are matters about which more information is required in order to ascertain whether they are acceptable items, items of noncompliance, or deviations. An unresolved item disclosed during the inspection is discussed in paragraph 9.

12. Exit Interview (71707)

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.