

U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Report No. 50-346/90005(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 1

Inspection At: Oak Harbor, OH

Inspection Conducted: March 1, to April 16, 1990

Inspectors: P. M. Byron  
D. C. Kosloff  
R. K. Walton  
A. Dunlop

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

5-4-90  
Date

Inspection Summary

Inspection on March 1, through April 14, 1990 (Report No. 50-346/90005(DRP))

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

Results: The licensee experienced four spurious SFAS actuations during the inspection period (Paragraph 4). A weakness continued to exist in control of maintenance activities as evidenced by safety tagging deficiencies (Paragraph 7), an attempt to work on the wrong components (Paragraph 7), poor communications between maintenance workers and radiological controls technicians (Paragraph 6), and an improper valve manipulation by a maintenance technician (Paragraph 7). A violation was identified for incorrectly implementing a procedure (Paragraph 7). An unresolved item was issued due to workers improperly entering a high radiation area (Paragraph 6). Decisive action by the licensee's Quality Assurance Organization following identification of an potential design deficiency in the installation of seismic fire protection piping was a strength (Paragraph 11).

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## DETAILS

### 1. Persons Contacted

#### a. Toledo Edison Company (TED)

- D. Shelton, Vice President, Nuclear
- G. Gibbs, Quality Assurance Director
- \*L. Storz, Plant Manager
- \*M. Heffley, Maintenance Manager
- \*R. Brandt, Plant Operations Manager (Administrative)
- M. Bezilla, Superintendent, Operations
- \*E. Salowitz, Planning and Support Director
- \*S. Jain, Engineering Director
- \*K. Prasad, Nuclear Engineering Manager (Acting)
- G. Grime, Industrial Security Director
- \*D. Timms, Systems Engineering Manager
- D. Lightfoot, Integrated Planning Manager
- \*J. Polyak, Radiological Control Manager
- R. Coad, Radiological Protection Supervisor
- J. Lash, Independent Safety Engineering Manager
- \*H. Stevens, Independent Safety Engineering
- R. Schrauder, Nuclear Licensing Manager
- \*G. Honma, Compliance Supervisor
- R. Gaston, Licensing Engineer
- \*C. Ashworth, Quality Assurance

#### b. USNRC

- \*P. Byron, Senior Resident Inspector
- D. Kosloff, Resident Inspector
- \*R. Walton, Resident Inspector
- A. Dunlop, Reactor Inspector

\*Denotes those personnel attending the April 16, 1990, exit meeting.

### 2. Licensee Action on Previous Inspection Findings (92701, 92702)

(CLOSED) Open Item (346/86023-06(DRP)): Review of corrective action for 10 CFR 21 report relating to SOR pressure switches. The licensee identified four pressure switches which met conditions described in the 10 CFR 21 report. The identified switches were returned to the vendor for additional testing. The vendor was to return those switches which passed the testing and retain the balance. The licensee has not recently experienced SOR pressure switch problems. This item is closed.

(CLOSED) Open Item (346/87008-07(DRP)): Fire Doors left open by craft personnel. The licensee documented this in PCAQR's 87-0213 and 87-0239. The licensee provided additional personnel training, enhanced General Employee Training (GET), increased awareness by articles in site

newsletters, and standardized door information signs. The inspectors' observations indicate that this corrective action has been successful and this item is closed.

(CLOSED) Unresolved Item (346/87026-07(DRP)): Computer based Test Procedures Index (TPI) not treated as a quality document. The licensee reviewed the TPI and devised a method (controlled by Procedure IM-SG-01001) by which document changes are retained. The inspectors consider the licensee's corrective action adequate and this item is closed.

(CLOSED) Open Item (346/87026-08(DRP)): Review the electronic data storage program relative to the retention and retrievability requirements of ANSI 45.2.9-1974. The licensee reviewed its electronic data storage program and determined that all quality related documents stored electronically had hard copy backups. The licensee's review closes this item.

(CLOSED) Open Item (346/87027-02(DRP)): The licensee committed to use the System Review and Test Program (SRTP) to integrate the generic implications information from event investigations in the power ascension program. The inspectors reviewed the licensee's summary of the items determined to have generic implications. The licensee identified several issues with generic implications. Corrective action for the generic issues included training to prevent using equipment as ladders, improvement of Reactor Coolant System flow transmitter response, improvement of shielded cable connectors, improved preventative maintenance and corrosion control of integrated control system (ICS) components, establishing proper valve motor operator requirements for wedge seating valves, and adjustment of valve motor operator limit switch bypass settings. The inspectors concluded that the licensee met its commitment. This item is closed.

No violations or deviations were identified in this area.

3. Licensee Event Reports Followup (92700, 93702)

Through direct observation, discussions with licensee personnel, and review of records, the following licensee event reports (LER's) were reviewed to determine that reportability requirements were fulfilled, that immediate corrective actions to prevent recurrence was accomplished in accordance with Technical Specifications (TS). The LER's listed below are considered closed:

(CLOSED) LER 86043: Reactor trip due to feedwater isolation and subsequent overcooling. While at 15 percent power, the unit experienced a feedwater (FW) transient. This was a result of poor communication between test personnel and the operators. The feedwater transient resulted in a low Steam Generator (SG) level signal which initiated the Anticipatory Reactor Trip System (ARTS) and tripped the unit. Operator attempts to manually control the FW system resulted in a higher than

intended SG water level. The high SG level with low decay heat caused rapid plant cooldown. The plant cooldown rate exceeded the B&W recommended cooldown rate of 1.67°F per minute for seven minutes. B&W evaluated the cooldown and concluded that there were no operational concerns.

The licensee issued revised restart administrative instructions 10 and 11 which controlled test equipment. It also revised Procedure DB-PF-02000, "RPS, SFAS, SFRCS Trip or SG Tube Rupture" to include instructions to isolate steam loads during a low decay heat trip. These corrective actions appear to have been adequate and this LER is closed.

(CLOSED) LER 90003: Entry into Mode 6 without Audible Source Range. This event was discussed in Inspection Report No. 346/90002 and was considered a non-cited violation (346/90005-04). This LER is closed.

(CLOSED) LER 90004: Fuel assembly moved in Spent Fuel Pool while emergency ventilation inoperable. This event was discussed in Inspection Report No. 346/90002 and was considered a non-cited violation (346/90005-05).

The following LERs were reviewed but require further inspection:

(OPEN) LER 90005: USAR commitment for fault protection for some class 1E circuits not satisfied.

No other violations or deviations were identified in this area.

4. Plant Operations (36800, 71707, 71710, 71715, 92702, 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. The following items were considered during these inspections:

- Adequacy of plant staffing and supervision.
- Control room professionalism, including procedure adherence, operator attentiveness, and response to alarms, events, and off-normal conditions.

- Operability of selected safety-related systems, including attendant alarms, instrumentation, and controls.
- Maintenance of quality records and reports.

The inspectors observed that control room shift supervisors, shift managers, and operators were attentive to plant conditions, performed frequent panel walk-downs and were responsive to off-normal alarms and conditions.

On March 3, 1990, incore neutron detector No. 23, which severed in its guide tube earlier while being retracted from the core, was removed from its guide tube from the reactor vessel side after removal of the last fuel assembly. This detector and three other detectors were later found to have been kinked, possibly due to prior installations. The licensee is documenting its continuing investigation of these conditions on PCAQR's 90-159 and 90-222.

On March 11, 1990, before hanging "Do Not Operate" tags on a electrical breaker in Motor Control Center (MCC) F11A for a valve motor operator, an equipment operator observed that the position indication light in the breaker cubicle indicated that the valve was open (red light on). Since valves are usually tagged closed (green light on) he called the control room to verify the proper valve position before tagging the breaker. Further investigation revealed that the light indications were incorrect for all components that had breaker cubicle indicating lights in F11A. The operators verified the position indication on all MCC's in the plant. It was determined that all red and green lens caps on the eight (two safety-related and six non-safety-related) MCC's in the same room had been switched. Tampering was suspected and security was notified immediately. An investigation was initiated. The inspector's review of electrical drawings revealed that the lens caps were shown on the wiring diagram as if the panel was rotated open. An illegible note on the drawing described the as-found condition, however, the unconventional layout could have caused confusion. The licensee's investigation did not reveal any reason to suspect intentional equipment tampering. It is not known when the lens caps were switched as the indicating lights are not normally used for valve operation or position indication. The indicating light lenses were restored to the correct configuration.

On April 3, 1990, the licensee had one channel of the Safety Features Actuation System (SFAS) deenergized for preventive maintenance, leaving the SFAS susceptible to activation by a single spurious trip input. All fuel had been offloaded to the spent fuel pool and the SFAS was not required to be operable. This condition existed for the remainder of the inspection period to allow all four channels to be maintained. At 9:05 a.m. on April 3, 1990, SFAS was actuated when a maintenance worker in High Voltage Switchgear Room A inadvertently hit the trip switch for the breaker which supplies

power to the non-class 1E E2 bus. This bus powers a motor control center which was providing alternate power to the Y1 and Y3 vital instrument busses during maintenance. As expected, the loss of these busses caused the SFAS to trip. During normal plant operation the Y1 and Y3 busses are powered from separate class 1E sources. All SFAS components received actuation signals, however, some components did not actuate due to existing plant conditions. The loss of the E2 bus also deenergized one of the two operating spent fuel pool (SFP) cooling water pumps and isolated component cooling water (CCW) flow to the SFP coolers. Operators quickly restored CCW flow to the SFP coolers; SFP temperature remained constant. Later the same day, another SFAS actuation occurred, apparently due to a worker bumping a containment building radiation detector. Again, the proper SFAS components received actuation signals and some components did not actuate due to plant conditions. The licensee has informed all maintenance workers of the need to be more careful and the SFAS containment radiation detectors were protected with temporary barriers.

On April 7, 1990, at 10:31 a.m., another spurious high radiation trip occurred on channel 2, causing another SFAS actuation. All components actuated as expected. The licensee determined that there were no activities in containment that could have caused the spurious trip. The licensee then decided to deenergize the SFAS radiation detectors and remove the power supply fuses for the SFAS containment building pressure detectors to prevent spurious SFAS actuations. During removal of the last set of fuses, an arc was created which actuated SFAS. The SFAS response was as expected.

Troubleshooting of the deenergized channel 2 radiation detector circuit did not reveal any reason for the spurious high radiation level trip. This caused the licensee to reevaluate its earlier conclusion that the April 3, 1990, SFAS had been caused by bumping the radiation detector. The licensee plans to monitor the radiation detector when it is reenergized after completion of SFAS preventive maintenance.

On April 11, 1990, an equipment operator was given verbal direction to manipulate valves in the No. 1 Decay Heat Removal (DHR) System to remove the No. 1 DHR System from service as a back-up source of spent fuel pool (SFP) cooling and line-up the No. 1 DHR System to perform DB-SP-03136, "Decay Heat Pump #1 Quarterly Test." In preparation for the test the suction and discharge of the No. 1 DHR pump was lined up to the Borated Water Storage Tank (BWST). The operator did not isolate the SFP from the No. 1 DHR system. Therefore the BWST began to slowly gravity drain through the No. 1 DHR System into the SFP. After a few hours the operators received an SFP high level alarm and noted a small decrease in BWST level. The operators identified the flow path and isolated the SFP from the BWST. The

SFP was not overfilled and the change in SFP boron concentration was negligible. The licensee has attributed this problem to poor communications and is presently addressing permanent corrective action.

b. Off-shift Inspection of Control Rooms

The inspectors performed routine inspections of the control room during off-shift and weekend periods; these included inspections between the hours of 10:00 p.m. and 5:00 a.m. 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 operation were being adhered to.

c. ESF System Walk-down

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, 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:

- ° 480 Volt AC Electrical Distribution System
- ° Component Cooling Water System
- ° Emergency Diesel Generator System
- ° DC Electric Distribution System
- ° Service Water system

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 appears to be good during the outage.

Plant deficiencies were appropriately tagged for deficiency correction.

No violations or deviations were identified.

5. Refueling (60710, 40500)

The licensee completed defueling on March 3, 1990. One incore detector broke off in its guide tube (Paragraph 4) below the bottom of the incore tank. Removal could only be made from the reactor vessel. The licensee decided to remove the fuel assembly with the stuck incore detector last. The cause of the stuck incore detector was unknown during fuel movement but there was some speculation that it might have been restricted in the fuel assembly. The inspectors reviewed the licensee's action plan and observed the transfer of the last fuel assembly. The inspectors observed that there was relative movement between the detector and the assembly when the assembly was lifted, which indicated that the restriction was not in the fuel assembly. The licensee later determined that kinks in the detector caused it to stick.

One bank of pressurizer heaters have been installed. Eddy current testing of the steam generators (SG) and the associated tube plugging have been completed. Approximately eight plugs were installed in SG 1-2 and four plugs in SG 1-1. Refueling is scheduled to commence on April 25, 1990.

6. Radiological Controls (71707, 40500, 92720)

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.

On March 11, 1990, four contract workers entered and worked in a posted high radiation area in containment without alarming dosimeters and without being accompanied by radiological controls (RC) personnel. Three of the workers entered the area twice. The workers received indicated total doses of 22, 75, 102, and 210 millirem. The workers intended to remove interferences to removal of the Reactor Coolant Pump (RCP) 1-2 rotor in the west biological shield (D-ring), and so informed the appropriate RC technician in containment. This work did not require entry into a high radiation area. However, they then mistakenly went to the east D-ring and removed interference for the RCP 2-2 rotor. This work was done in a high radiation area. During the work one of the workers contaminated his face. During the critique of the facial contamination RC personnel learned that the workers had been in a high radiation area. RC personnel then conducted a critique of the improper entry of the high radiation area. As a result of the critique the licensee surveyed the high radiation area, improved the high radiation area posting, conducted discussions with maintenance workers and



supervisors to emphasize the importance of conforming with RC requirements and the importance of thorough and accurate communication with RC personnel, the plant manager issued a memo to all radiation workers to remind them of the requirements for entering high radiation areas, RC prepared required reading on the incident for RC personnel, and a root cause evaluation was begun. This incident will remain unresolved (346/90005-01(DRP)) pending further review by regional radiological controls inspectors.

The SFAS actuation of April 3, 1990, occurred coincident with the performance of DB-PF-03065, Revision 0, "Hydrostatic Test HP 2A/MU7" (See Paragraph 4). Both valves HP2A and HP2B opened releasing test pressure through open drain valves. Hoses running from these pipe drains were blown out of the floor drains and contaminated one person and the No. 2 Mechanical Penetration Room. The switches for valves HP2A and HP2B were "Do Not Operate" tagged off but the breakers for the valve motor operators were not tagged or opened during the SFAS trip. The licensee has determined the cause of this was an error in judgment by supervisors. The licensee is continuing to determine a corrective action to prevent recurrence.

Health physics controls and practices were satisfactory. Knowledge and training of personnel were satisfactory.

The licensee re-revised its dose estimate for the current outage downward after adding additional shielding and the replanning and rescheduling of tasks. A significant effort was made to reduce worker exposure. The licensee now estimates a total dose for the outage of 470 person-rem and 500 person-rem for the year. The most significant contributors to this dose level are the tasks associated with the steam generators, pressurizer, reactor vessel bolt replacement and reactor coolant pumps, as well as the high pressure nozzle and inservice inspections.

No violations or deviations were identified.

7. Maintenance/Surveillance (37828, 40500, 60710, 61726, 62703, 73753, 73756, 92701, 93702)

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.

a. Maintenance

The reviewed maintenance activities included:

- Control room annunciator panel modification.
- Modification of 480 VAC motor control center.
- Installation of service water (SW) flow control valve (SW1424) for component cooling water to SW heat exchanger.
- Condensate Storage Tank sandblast and repaint.
- Cleaning of the reactor vessel head studs and nuts.
- Removal, disassembly, cleaning and reassembly of Control Rod Drive Mechanisms.
- Installation of new essential inverters.
- Eddy current testing of feedwater heater and circulating water tubes.
- Replacement of auxiliary feedwater valves AF 608 and AF 599.
- Upper and lower core bolt replacement.
- Preventive maintenance of No. 2 Emergency Diesel Generator (EDG).
- Modification and testing of No. 1 EDG air start piping.
- Modification of the make-up system to enhance feed-and-bleed.
- Installation of fire dampers in control room ventilation ducts.

On March 6, 1990, an electrician performing maintenance on the main generator exciter discovered all four generator field rectifier disconnects closed with "Do Not Operate" tags attached which required the disconnects to be open. With the disconnects shut, the worker could have been electrically shocked. The licensee has determined that the inadequate electrical isolation was due to improper operation of the disconnects and has since retrained its operators on the proper operation of these disconnects.

On March 6, 1990, the electric fire pump started automatically on low pressure when a worker removed a gasket from a pressurized section of fire main. The main was required to have been depressurized and drained for maintenance but a valve required to have been shut, was instead opened. The inadequate isolation provided was due to improper review of the work package by plant supervision.

On March 28, 1990, the No. 2 fuel transfer mechanism containment hoist was removed without hanging danger tags to deenergize the electrical power to the hoist's motor.

Based on the above tagging deficiencies, the PCAQ review board requested QA to perform a trend analysis of safety tagging problems at the facility to determine if these events have a similar root cause. The inspectors will review the collective significance of these tagging deficiencies in conjunction with the licensee's response to previously identified violation No. 346/90002-7b(DRP).

On March 8, 1990, an alert equipment operator stopped a contractor from performing maintenance on the in-service EDG control cabinet. The contractor had intended to work on the control cabinet for the other EDG, which had been tagged out for maintenance. Although, in this case, no work was actually performed, if the maintenance activity would have continued the contractor could have been injured and the facility could have been left without an emergency source of power. The licensee initiated a PCAQ to review this event and implement corrective actions to prevent recurrence.

On March 15, 1990, the licensee discovered SP9A6A (SG No. 2 level source valve) shut. This caused a loss of all control room indication of SG No. 2 water level. It was determined that a maintenance worker closed the valve as directed by a work package. Even though a work package may require a valve to be positioned, the actual positioning must be performed by an operator as required by procedures and not by maintenance workers. The licensee initiated a PCAQ and is determining the corrective action for this problem.

b. Surveillance

The reviewed surveillances included:

<u>Procedure No.</u>	<u>Activity</u>
DB-FP-03001	7 Day Diesel Fire Pump Test
DB-FP-03022	18 Month Structural Steel Fireproofing Visual Inspection
DB-PF-03393	Fuel Handling Bridge Load Test. The licensee uses this test to conform with the Technical Specification 4.9.6. requirement to perform a hoist load test of at least 3000 pounds before using the hoists for moving fuel. Licensee performance engineering personnel, assisted by licensed operators, performed this test on February 27, 1990, and it was reviewed by a performance engineering supervisor on the same day. Revision 0, dated April 14, 1988, was the

current revision used to perform the test. The licensee considered the test to have been successfully completed. In accordance with the licensee's procedure for control of testing the test was reviewed on March 18, 1990, by a "Designated Reviewer". The designated reviewer discovered that the load recorded in the test for both the main and auxiliary fuel handling hoists was 2980 pounds. The performance engineer who was in charge of performing the test stated that he made an error in reading the required load and thought that a 2980 pound test was within the acceptable range of test values. The licensee later determined by interviewing the engineer and the operators that while the hoists were being moved the load indication exceeded 3000 pounds and that the recorded reading was taken when the load indication was stable. Although any momentary load of 3000 pounds appears to meet the TS requirement, the licensee agreed that the desirable test method and the intent of the procedure is to achieve a stable load indication of at least 3000 pounds. The licensee counseled all individuals involved in the test and plans to improve the test procedure to make it more user friendly. Failure to correctly implement procedure DB-PF-03393 is a violation (346/90005-02(DRP)) of Technical Specification 6.8.1. No notice of violation will be issued as this event was of minor safety significance and meets the requirements of 10 CFR 2, Appendix C, V.G.1.(See paragraph 13).

DB-SC-04109	EDG Air Compressor 2 Charging Test
DB-SC-04181	Quarterly Functional Test of RE 5405
DB-SP-03136	Decay Heat Pump 1 Quarterly Pump and Valve Test
DB-SP-03030	Service Water Pump 3 Quarterly Test

Personnel performing maintenance or surveillances used correct procedures and proper work control documents. Work authorization had been obtained for the jobs performed. Prerequisites for performing the job, such as worker protection and tagging had been performed. Surveillance continues to be an area where only an occasional minor problem arises.

No other violations or deviations were identified.

8. Emergency Preparedness (71707, 82701)

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.

9. Security (71707, 81018)

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.

10. Engineering and Technical Support (37828, 40500, 62703, 71707, 92701, 92720)

An inspection of engineering and technical support activities was performed to assess the adequacy of support functions associated with operations, maintenance/modifications, 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.

During the last operating cycle, the licensee experienced a minor primary to steam generator (SG) leak. An SG bubble test was performed to locate the leak but the test was inconclusive; additional information is contained in Inspection Report No. 50-346/90002. While setting up equipment in the bowl of SG No. 1-1, water was detected dripping from a tube that had previously been plugged with an explosive expansion plug. The licensee believes the source of primary to secondary leakage has been identified. This tube will be replugged.

On March 15, 1990, the licensee discovered a 4" x 1/2" bolt in the bottom of the reactor vessel. The licensee was able to recover the bolt. During the 1980 refueling outage the licensee discovered that the clapper assembly of check valve, CF-30, had become disconnected. The licensee has concluded that bolt was from the 1980 CF-30 problem and had worked its way to the bottom of the vessel during the last operating cycle.

On April 25, 1989, the ECCS Room No. 3 sump overflowed while the licensee was draining loop 2 of the decay heat system (see Inspection Report No. 50-346/89014). The licensee disassembled the level switch that controls the sump pump and discovered that the switch had failed to start the pump because dirt was interfering with the operation of the switch float/displacer mechanism. As a corrective action, the sump standpipes were to be cleaned and flushed every 18 months. On March 27, 1990, the ECCS room No. 2 sump overflowed, apparently for the same reason. As a result, the licensee has increased the frequency for switch cleaning to annually and is investigating the failures to determine what additional corrective actions may be appropriate.

The inspectors have observed a greater degree of engineering involvement in this outage than the last refueling outage. System engineering continues to provide adequate coverage and response. Design engineering appears to provide more timely response than it had in the previous refueling outage. The inspectors attribute this to the completion of most of the modification engineering packages prior to the outage. This allowed the engineers to address emergent work. It is the inspectors' opinion that the availability of engineering staff has been a significant contributor to the timely addressing and resolution of technical problems and the relative smoothness of the outage process.

No violations or deviations were identified.

11. Safety Assessment/Quality Verification (35502, 40500, 92701, 92720)

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 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 fire suppression system is being modified during the outage which includes the installation of new piping throughout the turbine and auxiliary buildings. A QA surveillance performed by the licensee of seismic piping tolerances used with respect to the design criteria and specifications for the design and installation of piping revealed that the hanger mounting tolerances listed on the drawings did not agree with those contained in the specifications and were less conservative. On March 6, 1990, a stop work order and a management corrective action report (MCAR 90-02) were issued by Quality Assurance to stop the installation of seismically qualified fire protection piping and resolve the difference between the design criteria and the mounting tolerances on

the working drawings. QA was concerned that there was a lack of an independent check of required design dimensions on the "as-built" piping drawings and a lack of technical justification for the deviation from design specifications. By March 21, 1990, Engineering had responded to the concerns raised by QA and work was allowed to resume. Decisive action by QA in this situation is considered a strength.

No violations or deviations were identified.

12. Management Meeting (30702)

On March 28, 1990, NRC Region III management and staff and NRR staff met with the licensee to discuss the licensee's check valve reliability program and its implementation at Davis-Besse. Other matters discussed included the results of Inspection Report No. 50-346/890201 (Interfacing system LOCA inspection) and its effects on training of personnel and plant operations.

13. Violations for Which a "Notice of Violation" Will Not Be Issued

The NRC uses the Notice of Violation (NOV) as a standard method for formalizing the existence of a violation of a legally binding requirement. However, because the NRC wants to encourage and support licensees' initiatives for self-identification and correction of problems, the NRC will not generally issue a NOV for a violation that meets the tests of 10 CFR 2, Appendix C, Section V.G.1. These tests are: (1) the violation was identified by the licensee; (2) the violation would be categorized as Severity Level IV or V; (3) the violation was reported to the NRC, if required; (4) the violation will be corrected, including measures to prevent recurrence, within a reasonable time period; and (5) it was not a violation that could reasonably be expected to have been prevented by the licensee's corrective action for a previous violation. Violations of a regulatory requirement identified during the inspection for which a NOV will not be issued are discussed in Paragraphs.

14. Exit Interview (30703)

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.