

DEC 13 1989

Docket No. 50-346

Toledo Edison Company  
ATTN: Mr. Donald Shelton  
Vice President  
Nuclear  
Edison Plaza  
300 Madison Avenue  
Toledo, OH 43652

Gentlemen:

This refers to the routine safety inspection conducted by Messrs. P. M. Byron, D. C. Kosloff, E. R. Schweibinz, and R. K. Walton of this office on September 14 through November 6, 1989, of activities at Davis-Besse Nuclear Power Station authorized by Facility Operating License No. NPF-3 and to the discussion of our findings with Mr. L. Storz at the conclusion of the inspection.

The enclosed copy of our inspection report identifies areas examined during the inspection. Within these areas, the inspection consisted of a selective examination of procedures and representative records, observations, and interviews with personnel.

During this inspection, certain of your activities appeared to be in violation of NRC requirements, as specified in the enclosed Notice. A written response is required. With respect to the five violations identified in Inspection Report No. 50-346/85039, the inspection showed that actions had been taken to correct the identified violations and to prevent recurrence.

Resulting from a June 8, 1985 event, on December 13, 1985, a Notice of Violation and Proposed Imposition of a Civil Penalty was issued. You responded to the event and Notice with an extensive corrective action program that included design reviews of your facility. During those reviews, you identified several significant design problems that were documented in Inspection Report No. 50-346/85039 as apparent violations warranting escalated enforcement consideration. The efforts you have made to correct those violations and to prevent recurrence have been timely and comprehensive.

The NRC Enforcement Policy, 10 CFR Part 2, Appendix C, Suction V.G.5, "Exercise of Discretion," is intended to encourage and support licensee initiative for self-identification and correction of problems. Based on that section of the Enforcement Policy and your timely identification and correction of those problems, we have chosen to exercise discretion and not issue a Notice of Violation or enforcement action for those five violations described in Inspection Report No. 50-346/85009 and discussed in Paragraph 2 of this report.

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DEC 13 1989

In a letter to the NRC dated July 16, 1985, you stated that you disagreed with violation 346/86012-03(DRP) regarding the time of discovery of a condition of the Domestic Water System lines that was outside the design basis. We have considered your evaluation and have concluded that the violation will stand as is. Our basis for this conclusion is provided in Inspection Report 50-346/89016(DRP) and in Paragraph 3c of this inspection report.

In accordance with 10 CFR 2.790 of the Commission's regulations, a copy of this letter, the enclosures, and your response to this letter will be placed in the NRC Public Document Room.

We will gladly discuss any questions you have concerning this inspection.

Sincerely,

Original Signed by E. G. Greenman  
Edward G. Greenman, Director  
Division of Reactor Projects

Enclosures:

- 1. Notice of Violation
- 2. Inspection Report  
No. 50-346/89022(DRP)

cc w/enclosures:

- L. Storz, Plant Manager  
DCD/DCB (RIDS)  
Licensing Fee Management Branch  
Resident Inspector, RIII  
James W. Harris, State of Ohio  
Roger Suppes, Ohio  
Department of Health
- A. Grandjean, State of Ohio,  
Public Utilities Commission

RIII	RIII	RIII	RIII	RIII	RIII
Jackiw/jaw	Knop	Funk	Grobe	Greger	Greenman

(SEE ATTACHED CONCURRENCE)

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OK  
Funk  
12/7

YES  
RIII  
Grobe  
12/7

RIII  
Gregor

RIII  
Greenman

## DETAILS

### 1. Persons Contacted

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

D. Shelton, Vice President, Nuclear  
\*G. Gibbs, Quality Assurance Director  
\*L. Storz, Plant Manager  
\*W. Johnson, Plant Maintenance Manager  
J. Kasper, Operations Superintendent  
\*E. Salowitz, Planning and Support Director  
S. Jain, Engineering Director  
G. Grime, Industrial Security Director  
T. Anderson, Maintenance and Outage Management Manager  
C. Hengge, Fire Protection Compliance Supervisor  
R. Schrauder, Nuclear Licensing Manager  
G. Skeel, Nuclear Security Operations Manager  
J. Polyak, Manager Radiological Control  
\*J. Lash, Independent Safety Engineering Manager  
\*D. Timms, Manager Systems Engineering  
\*G. Honma, Compliance Supervisor  
\*R. Brandt, Plant Operations Manager, Administration  
\*R. Gaston, Licensing Engineer  
\*V. Watson, Design Engineering

#### b. US NRC

\*P. Byron, Senior Resident Inspector  
\*D. Kosloff, Resident Inspector  
R. Walton, Resident Inspector in Training  
E. Schweibinz, Reactor Inspector

\*Denotes those personnel attending the November 6, 1989, exit meeting.

### 2. Resolution of Violations Previously Considered for Escalated Enforcement (92701)

Violations 346/85039-01 through 05 had been considered in 1985 for escalated enforcement; however, the enforcement policy was subsequently revised to allow not issuing a notice of violation or a proposed civil penalty for items identified by the licensee if they meet the criteria described in 10 CFR 2, Appendix C, Section V.G.2. The inspectors review of these items indicate each meets the criteria. The formation of the Systems Engineering group was the corrective action common to all five violations. The inspectors' observations indicate that System Engineering is effective and these violations are closed as described in the following.

- a. (Closed) Violation (346/85039-01(DRS)): Inadequate post-LOCA Service Water (SW) flow to containment air cooler (CAC) unit. A deficient original design didn't ensure isolation of SW flow to the non-running CAC on a Safety Features Actuation System (SFAS) actuation. This condition was not identified until 1985 because of an inadequate surveillance test. The licensee upgraded the air volume tanks for the SW outlet isolation valve and the tubing between the tank and the valve operator. This ensures that the valve will close even if the normal air supply is lost.

The licensee also revised the surveillance test to verify that the standby CAC stops and its respective SW outlet valve closes on an SFAS actuation. Review of the other items that the licensee committed to do in its response indicated acceptable completion. This violation is closed.

- b. (Closed) Violation (346/85039-02(DRS)): Inadequate service water building ventilation due to installation of a 10 CFR 50, Appendix R modification without proper post-modification testing which would have identified inadequate ventilation air flow. Permanent modifications to the ventilation system were made to correct this deficiency and a test was conducted to verify proper service water pump room ventilation. This violation is closed.
- c. (Closed) Violation (346/85039-03(DRS)): Inadequate preoperational testing of emergency diesel generators (EDGs) resulted in the failure of one EDG to meet the design basis of five starts from a single air receiver. The original range for air receiver pressure was 200-250 psig. The licensee determined that if the minimum pressure was increased to 210 psig the EDGs could be started five consecutive times. The licensee revised its procedures to maintain the pressure between 220 psig and 250 psig and revised the test procedure to verify the adequacy of this range. This violation is closed.
- d. (Closed) Violation (346/85039-04(DRS)): Failure to provide adequate surveillance testing for the SFAS actuation of the high pressure injection valves. The valves were being manually tested but were not being tested on an 18-month frequency from a safety injection test signal.

The licensee revised its surveillance procedures to provide for a complete test and correct these inadequacies. This violation is closed.

- e. (Closed) Violation (346/85039-05(DRS)): Inadequate post-maintenance testing, resulting in a CAC fan running backwards. This item was also reviewed in Inspection Report 50-346/89019. Review of the licensee's response and implementing procedures raised some questions as to the adequacy of the monthly surveillance procedures used to determine the

operability in accordance with Technical Specifications. The licensee reviewed the inspectors concerns and modified the procedures to provide testing that would assure that the fans were running in the slow speed during testing. The inspector verified that the procedures have subsequently been modified and approved. This violation is closed.

3. Licensee Action on Previous Inspection Findings (92701, 92702, 92720)

- a. (Closed) Open Item (346/86005-07(DRP)): Minimal controls for drilling holes in safety-related walls. The licensee revised Procedure DB-MM-01005, "Core Bores and Cut Outs Through Barriers." The inspectors reviewed the procedure and noted that it addresses the concerns identified in the open item. Paragraph 8.5 requires a unique identifier for each penetration. Paragraph 5.2.2 requires that an appropriate temporary seal be installed as soon as practical if the permanent penetrant is not installed immediately. Paragraph 8.6 requires a temporary seal to meet all the requirements of the function of the barrier. This item is closed.
- b. (Closed) Unresolved Item (346/86009-02(DRS)): Lack of venting of the High Pressure Injection (HPI) system. This item was identified during the review of LER 86-012 documented in Inspection Report 50-346/86009. The item was partially closed after further review which was documented in Inspection Report 50-346/86030. The remaining unresolved issue was the analysis of potential water hammer stresses that could have occurred if failure to vent the system allowed large bubbles to remain in the piping. The analysis was required to determine if the stresses could cause the piping to be inoperable. The inspectors reviewed, on April 16, 1987, a letter from Bechtel to the licensee which stated that the water hammer analysis had been completed and that the HPI piping was within specification tolerances and code allowables. Therefore the failure to vent the HPI piping did not cause the piping to be inoperable. This item is closed.
- c. (Closed) Violation (346/86012-03(DRP)): This violation was closed in Inspection Report 50-346/89016(DRP). The licensee denied the violation in a letter to the NRC dated July 16, 1986. The NRC considered the violation to be valid but failed to document its disagreement with the licensee. The following documents the basis for the validity of the violation.

The Updated Safety Analysis Report (USAR) classifies the Domestic Water System as a Seismic Class II Fluid System. Section 3.6.2.7.2.4 of the USAR states that "No safety-related equipment would be affected by a Domestic Water System rupture." On February 19, 1986, the inspectors observed that domestic water lines were installed directly over three of the six class 1E station battery chargers and notified the licensee of their finding. The licensee isolated and drained the

water lines. On March 21, 1986, the licensee completed an engineering evaluation which determined that the domestic lines could not meet seismic requirements. On April 18, 1986, the licensee issued licensee event report (LER) 86-15.

The inspectors considered that based on the USAR description, their observation was a condition outside the design basis. 10 CFR 50.73 (a) (ii) (B) states that a condition or event which places the plant in a condition that was outside the design basis is reportable. 10 CFR 50.73 (a) (1) states that an LER should be submitted within 30 days after the discovery of any event described in 10 CFR 50.73. Based on answer 2 to question 14.5 in NUREC-1022, Supplement 1, the inspectors consider the time of discovery to be when they notified the licensee. The licensee contended that the time of discovery was when its engineering evaluation determined that the USAR was correct. The inspectors observation of a condition not analyzed in the USAR was the time of discovery and the licensee's denial is disallowed.

- d. (Closed) Open Item (346/87004-09(DRP)): Work performed to replace the control room heating, ventilation, and air-conditioning (HVAC) chiller appeared to go beyond the scope of the paperwork controlling the work. This was identified by the inspectors who discussed the issue with Independent Safety Engineering (ISE). ISE wrote Potential Condition Adverse to Quality Report (PCAQ) 87-0180 after meeting with the inspectors. The licensee determined that the chiller replacement was performed by a maintenance work order (MWO) before Facility Change Request (FCR) 87-002 was issued. The licensee justified its action by labeling it priority work. However, the unit was out of service for 4 months prior to the commencement of work. The licensee violated its procedures in that the work constituted a modification as it was not a like for like replacement. The licensee concluded that the replacement did not constitute a safety issue. However, the loss of control of work had the potential to affect safety.

The licensee emphasized to all parties the need to follow procedures. The inspectors have not observed a repetition of bypassing the modification (FCR) system and consider that the corrective action was satisfactory. This item is closed.

- e. (Closed) Unresolved Item (346/87026-04(DRP)): Missing U-bolt on a motor operator seismic support. The licensee documented a missing U-bolt on a seismic support for the motor operator for valve CV 5010D in PCAQ 87-0572. The inspectors reviewed the safety evaluation for PCAQ 87-0572. The evaluation concluded that the as-found condition did not affect the operability of the valve. Drawing Change Notice FSK-M-HCB-38-11--1-1-1 was issued to correct the drawing to reflect the as-found condition. The inspectors consider the licensee's actions to be adequate and this item is closed.



f. (Closed) Open Item (346/87031-02(DRP)): Control of material in the plant. The licensee identified during a quality assurance (QA) surveillance that material in the plant was improperly stored and issued PCAQ 87-0664 to document the condition. The inspectors had previously identified similar concerns in Inspection Reports No. 50-346/87004 and 50-346/87008. Procedure NP-MM-00006, "Material Storage," was revised to provide for the Nuclear Material Control Foreman to conduct weekly tours of material control areas utilizing a detailed checklist. In addition, all excess material was removed from the maintenance shops and returned to material control areas. Training was also provided to maintenance foremen on the requirements of Procedure AD1847.00, "Material Storage." The inspectors have observed the effectiveness of the licensee's corrective actions and consider this item closed.

4. Information Notices (92701)

a. (Closed) Information Notice 87-32: Deficiencies in the Testing of Nuclear Grade Activated Charcoal. The licensee adequately reviewed Information Notice 87-32. NUCON is the laboratory which the licensee uses to test activated carbon. NUCON's test results meet NRC criteria. This item is closed.

5. Licensee Event Reports Followup (90713, 92700)

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

a. (Closed) LER 87002: Personnel error in improper bypassing of an SFAS containment radiation trip module. The number of operable instrument strings for containment radiation-high was less than the minimum number required. Violation 346/86032-09 was assessed for this event. The licensee's corrective action was to counsel the individuals and revise the conduct of maintenance and conduct of operations procedures to better coordinate work activities to be performed. The inspectors reviewed the revised procedures. In addition, the licensee emphasized the need for increased attention to detail at supervisor's meetings. The licensee has completed its corrective actions and they appear to be effective. This item is closed.

b. (Closed) LER 88025, Rev. 1: Inadvertent initiation of steam and feedwater rupture control system. Revision 0 of this LER was closed in Inspection Report 50-346/88037(DRP). Revision 1 corrected an error in the indicated plant operating mode. This item is closed.

- c. (Closed) LER 88026, Rev. 1: Inadvertent initiation of steam and feedwater rupture control. Revision 0 of this LER was closed in Inspection Report 50-346/88037(DRP). Revision 1 corrected an omission of the LER sequential number. This item is closed.
- d. (Closed) LER 88029: Group rod drop. The event described by this LER is documented in Inspection Report 50-346/88037(DRP). Violations 346/88037-02, 04, 05, 06, and 07 were identified in the report. An additional violation was identified in the Notice of Violation and Proposed Imposition of Civil Penalty dated April 21, 1989. The additional violation will be tracked as 346/88037-08. The licensee's corrective action for this LER will be reviewed during followup inspections of the violations discussed above. This item is closed.
- e. (Closed) LER 88032: Safety Features Actuation System (SFAS) Start of a High Pressure Injection (HPI) Pump. During a monthly test of SFAS channel 4, a failed relay in SFAS channel 2 caused HPI Pump No. 2 to start. Normally, failed SFAS relays are found by observing the individual SFAS data lights (deenergized) for SFAS actuated equipment. In this case, however, HPI Pump No. 2 was being tested when the operator checked the data lights, so the indication was masked (lights deenergized when pump running). The licensee developed three corrective actions to prevent recurrence. The monthly SFAS test procedure was revised to limit other testing in progress and provide additional precautions. The inspectors reviewed procedure DB-SC-03110, "SFAS Channel 1 Functional Test" and verified that this corrective action was complete. Additional training was provided to operators who perform the test. The inspectors reviewed the training materials used for this purpose and verified that the training was completed. A Facility Change Request (FCR) was proposed to provide the SFAS with a shutdown bypass function which would prevent an unintentional start of HPI equipment while the plant is shut down. The FCR (86-265) was later converted to Request for Modification 87-1102 after the plant modification process was changed. Although the modification to the SFAS has not been completed, the licensee recognizes this modification as a commitment to the NRC and it is scheduled to be worked during the next (sixth) refueling outage. This item is closed.

The following LER's were reviewed but require further inspection:

- a. (Open) LER 86006: Environmental qualification program not adequately established.
- b. (Open) LER 86010: Fire damper installation deficiencies voiding UL rating.
- c. (Open) LER 86027: Fire doors inoperable by NFPA 80 standards.

- d. (Open) LER 86030: Fire protection kaowool, lighting and detector deficiencies.
- e. (Open) LER 86034: Fire barrier penetration seal surveillance deficiencies.
- f. (Open) LER 86040: Inappropriate surveillance procedure for fire detectors.
- g. (Open) LER 86041: Identification and resolution of Technical Specification compliance deficiency.
- h. (Open) LER 87004: Unusual event declared due to inoperability of the Auxiliary Feedwater System.
- i. (Open) LER 87006: Reactor trip due to accidental isolation of feedwater to steam generator number 2.
- j. (Open) LER 87013: Loss of Y-2, essential 120 vac bus, due to personnel error during troubleshooting.
- k. (Open) LER 88028: Reactor trip on high flux at low level limits.
- l. (Open) LER 89003, Rev. 1 and 2: Reactor trip from full power due to spurious control rod drive (CRD) trip confirm signal.

6. Allegations

(Closed) Allegation (RIII-89-A-0081): Quality Control (QC) inspectors were certified as Level II Instrumentation and Control (I&C) inspectors and performed inspections in this area but had no previous experience as I&C inspectors. Region III requested the licensee to perform the following actions:

- 1. Review the two individuals' backgrounds to see if they had adequate experience to be Level II I&C inspectors. If they did not, review all QC inspectors' certifications and backgrounds, supplied by contractors, to assure that no other QC inspectors were improperly certified.
- 2. Review all work performed in areas where QC inspectors were not adequately qualified, and take appropriate corrective actions.
- 3. Describe its program for assuring this activity (if substantiated) (sic) does not recur.
- 4. Report its findings and corrective actions to RIII.

The licensee reviewed the on-site QC certification files for the individuals described in the allegation. It also performed an off-site review of the contracting firm's background investigation files. The investigation revealed that there was sufficient documentation on site to support the certification as a QC Level II I&C inspector for one individual. This individual had previously worked at Davis-Besse for a different contractor. The licensee found insufficient documentation on site for the other individual but was able to reproduce his certifications file with the assistance of the contracting firm.

There was sufficient information to support the certification. The licensee concluded that the allegation was not substantiated and actions 2 and 3 did not apply.

The following additional findings were identified during the licensee's investigation:

1. The licensee had granted unescorted access to the contracting firms' employees without first completing Toledo Edison's (TE's) internal access control procedure process.
2. It had allowed two contract QC personnel to perform work prior to completing generic qualification cards required by its internal procedures.
3. On-site QC inspector documentation maintained in the certification files may not be adequate to support QC inspector certifications.

The licensee advised the NRC of the corrective action for the failure to adhere to the "Unescorted Access Requirements" procedure during a telephone discussion on July 26, 1989. Corrective actions included:

- a. Issuing a memorandum to Access Control personnel reiterating the importance of strict procedural compliance;
- b. Revising the Contractor Background Evaluation Procedure to require verification of compliance to Unescorted Access Requirements;
- c. Increasing the frequency and scope of Contractor Background Evaluations; and
- d. Requiring the contracting firm, who provided the QC inspectors, to submit all backgrounds to Toledo Edison for Access Control review prior to granting unescorted access.

Additionally, the specific Access Control individual who failed to comply with TE procedures has been counseled. The corrective actions described above should prevent recurrence.

The failure of the two QC inspectors to complete generic qualification cards had no effect on their ability to perform inspections. The contract inspectors' supervisor had incorrectly interpreted the Generic Qualification Procedure (QA-OP-07001) as only requiring the contract inspectors to complete required reading lists rather than the entire qualification card. A subsequent QA review determined that the QC Supervisor had misinterpreted the requirement and the entire generic qualification card was then completed. Potential Condition Adverse to Quality Report (PCAQ) 89-0406 has been initiated to fully investigate and disposition the concerns identified by findings 2 and 3 above.

The inspectors have reviewed the licensee's August 21, 1989, response to the Region III request, its investigation and corrective actions. The allegation was not substantiated and the corrective actions for the additional identified items appears to be adequate. This item is closed.

7. Plant Operations (42700, 64704, 71707, 71710, 71714)

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 walkdowns and were generally responsive to off-normal alarms and conditions.

The operating crew was generally cognizant of ongoing work activities. Surveillances and testing activities were appropriately authorized and logged. Licensed operators were generally cognizant of entry into and compliance with LCO action requirements.

On September 19, 1989, with the plant at full power, at about 7:50 a.m. plant operators attempted to change the source of power for 480 VAC nonsafety-related electrical load center F2. When the transfer switch in the control room was taken from the neutral position to the reserve source position the reserve source breaker closed as expected. When the transfer switch was allowed to spring return to neutral the normal source breaker (BBF2) did not trip as expected. The operators noted that the control room ammeters indicated that F2 was being fed from both sources. A zone operator responding to the load center did not observe any visible abnormal conditions. However after a few minutes he observed smoke coming from BBF2 and upon closer examination saw fire inside the breaker. He reported this condition to the control room and was directed to trip the breaker using the pushbutton on the breaker. After tripping the breaker he put out the fire with a carbon dioxide fire extinguisher. The fire brigade was not assembled. The cause of the fire and corrective actions are discussed in paragraph 9.a.

On November 6, 1989, the inspectors observed that the licensee had blocked open Door 307 to Mechanical Penetration Room #3 and considered the door inoperable at 7:19 am. The door was open to allow hoses to be placed in the doorway for a hydrostatic test of newly installed fire protection system piping. The licensee determined that it was in the LCO action statements for TS 3.7.10 and 3.6.5.2. TS LCO 3.6.5.2, which required the door to be shut within 24 hours, was the more restrictive of the two. The licensee was controlling the opening of the door with a maintenance work order (MWO) and an attachment to the MWO. After reviewing the MWO attachment, the inspectors informed the Shift Supervisor that with door 307 blocked open both independent Emergency Ventilation Systems (EVS) could be considered inoperable. The inspectors then discussed the issue with the Operations Superintendent. The Operations Superintendent informed the inspectors that licensee management had previously considered the effect that open doors would have on EVS operability and had determined that TS 3.6.5.2 was the applicable TS. The licensee closed Door 307 at 10:27 am. Upon further review the inspectors concluded that blocking open Door 307 allowed a gap in the shield building airtight barrier in excess of 2.8 square feet which is the maximum opening allowable to ensure that the EVS drawdown time assumed in the USAR Accident Analysis is met. Both EVS draw air from the shield building via Mechanical Penetration Room #4. An effective leakage area in excess of the USAR assumption will render both EVS inoperable as it will be unable to perform its intended function. Technical Specification 3.6.5.1 requires that with one EVS inoperable it must

be restored within 7 days or be in at least Hot Standby within the next 6 hours. Since no action is specified if both EVS are inoperable TS 3.0.3 is applicable and action should be initiated within one hour to place the unit in a mode in which 3.6.5.1 does not apply.

The open door is an unresolved item (346/89022-01(DRP)) pending further NRC review of the possible conflict between TS 3.6.5.2 and 3.6.5.1.

b. Off-shift Inspection of the Control Room

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 administrative controls for 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:

- Control Room Emergency Ventilation System
- Direct Current Electrical Distribution System
- Low Pressure Injection System
- Reactor Protection System
- Safety Features Activation System
- Service Water System
- 480 VAC Electrical Distribution 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.

Plant deficiencies were appropriately tagged for deficiency correction.

No violations or deviations were identified.

8. 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 generally satisfactory. Housekeeping in the radiological controlled areas was generally satisfactory. Knowledge and training of personnel were generally satisfactory.

- a. The inspectors had previously observed boric acid buildup on some components in the Auxiliary Building (Inspection Report 50-346/89011). As a result of the inspectors' observations, the licensee initiated a program to remove boric acid buildup weekly. On October 23 and 24, 1989, the inspectors toured the Auxiliary Building and observed boric acid buildup on the out board seal end of the makeup pumps, Containment Spray Pump 1-2, and again in the Boric Acid Addition Tank (BAAT) room. The inspectors informed the licensee of their observations. On October 31, 1989, the inspectors observed that the buildup had not been removed. The inspectors immediately took the licensee on a tour of the affected areas. The licensee took immediate action. This is an open item (346/89022-02(DRP)).
- b. The licensee has had three unplanned radioactive releases during the past several months. The amount of radioactivity was well below regulatory limits in each case. The most recent incident involved discharging resin to a settling pond as a result of an improper valve lineup. The licensee had intended to backwash the number one condensate polisher to a holdup tank. The licensee documented this in PCAQ 89-0453. Inspection Report 50-346/89023(DRSS) describes the event in more detail. Each of the events have had different causal factors. It appears that the licensee's controls to minimize



unplanned releases need improvement. The inspectors have discussed their concerns with the licensee. The licensee is reviewing more positive methods to control all discharges.

No violations or deviations were identified.

9. Maintenance/Surveillance (37701, 61700, 61726, 62703, 73753, 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:

- ° Replacement of Reactor Coolant System Flow Transmitter FTRCIA2.
- ° Repair of air pilot valve for the positioner for Main Feedwater Control Valve SP6B.
- ° Repair of breaker BBF2. On September 19, 1989, breaker BBF2 failed to trip and caught on fire. This event is also discussed in Paragraph 7.a. The inspectors inspected a similar GE AK-50 breaker in the electric shop and discussed the repair of BBF2 with the electrician who performed the repair. The shunt trip device, energized during the transfer, was not properly aligned with its trip paddle. Since the breaker did not trip, the shunt trip coil remained energized, overheated and caught fire. Damage was limited to the shunt trip device and two adjacent wires. The damaged components were replaced, the shunt trip device was aligned and the breaker was tested. It appears that the BBF2 shunt trip feature had not been tested when the breaker was last installed. Procedure DB-ME-09103, "480 Volt G.E. (AK 50) Breaker Maintenance", did not provide specific instructions for aligning or testing the shunt trip device. The licensee verified that the shunt trip on all other installed AK 50 breakers functioned properly and prepared a revision to DB-ME-09103. The inspectors reviewed the October 31, 1989, revision of DB-ME-09103 and verified that adequate instructions had been added.

- Installation of static transfer switches for FCR 86-0272 for the replacement of the essential inverters.
- Preventive maintenance of the motor operator for valve DH 64.
- Replacement of the fire protection sprinklers and sprinkler piping in Mechanical Penetration Room #2.
- Replacement of the station heating system flow transmitter.
- Inspection of motor operator for valve DH 1517.
- EDG 1-2 maintenance outage work.
- Troubleshooting loss of Y2 bus.
- Modification of position indication for valve DH 1B.

b. Surveillance

The reviewed surveillances included:

<u>Procedure No.</u>	<u>Activity</u>
◦ SY 5030.02	RPS Monthly Functional Test
◦ DB-PF-03220	Imbalance, Tilt and Rod Index Calculations - Group 38 Alarms Inoperable
◦ DB-SC-03110	SFAS Channel 1 Functional Test
◦ DB-CH-3008	Station Vent Releases, Weekly Radiological Monitoring Sampling and Analysis
◦ DB-MI-3042	Channel Functional Test of PS NI15-1 Containment Pressure to RPS CH 2
◦ DB-MI-3043	Channel Functional Test of PS NI15-4 Containment Pressure to RPS CH 3
◦ DB-SP-03357	Reactor Coolant System Water Inventory Balance
◦ DB-MI-03211	Channel Functional Test of SFRCS Actuation Channel 1 Logic for Mode 1.
◦ DB-MI-03351	Channel Functional Test of PSL-4533A, 4534A and 4535A Main Feed Pump 1 and 2 Turbine Hydraulic Oil Trip and Main Turbine Oil Trip ARTS Channel 1.

No violations or deviations were identified.

10. Reactor Vessel Pressure Transient Protection for Pressurized Water Reactors  
(Temporary Instruction 2500/19 - Unresolved Safety Issue A-26)

The licensee relies on various interlocks, procedures and administrative controls to prevent reactor vessel cold overpressure events. An integrated cold overpressure protection system does not exist.

The Updated Safety Analysis Report (USAR) section 9.3.5.5.1 describes the design of the overpressure protection system and supporting analysis. The inspectors' review of drawings and procedures have verified that the plant installed equipment is in accordance with the USAR. The system design ensures that a reliable means of overpressure protection exists to relieve the flow expected from two "run away" high pressure injection (HPI) pumps. The relief valve is integral to the Decay Heat Removal (DHR) System and isolable from the Reactor Coolant System (RCS) by two motor-operated valves and procedures ensure that the power to these valves is removed to prevent inadvertent isolation of the relief valve. In addition, when the RCS temperature is less than 280 degrees Fahrenheit, both HPI pump breakers are racked out.

When the plant is below 120 degrees Fahrenheit, the maximum allowable pressure is below the setpoint of the relief valve and no automatic overpressure protection is provided. The licensee procedurally secures and isolates the Make-up and Purification System and maintains RCS pressure below 75 psig. At 30 psig, the pressurizer heaters are secured, the pressurizer is pressurized with nitrogen and pressurizer level is maintained in the visible range. A "solid" pressurizer is not allowed.

At those system pressures and temperatures that are above the design pressure of the DHR system and less than the reference transition temperature, overpressure protection is provided by the operator in conjunction with administrative controls. No automatic overpressure protection is provided for such plant conditions.

The licensee's low temperature overpressure protection system is a passive system, therefore a failure of electrical power or pressurized air will not render the system inoperable. A 10 CFR 50.59 evaluation and an NRR safety evaluation of Amendment No. 28 to the facility operating license (dated July 25, 1980) outline the licensee's commitments to ensure that cold overpressurization of the reactor vessel is a low probability event.

The operators receive periodic training on the cold overpressure protection including plant operation and operator responses to possible plant transients. The inspectors' review of licensee training material revealed that maintenance practices are not covered by operator training.

There are no alarms to warn the operator that an overpressure condition for any given temperature exists. The licensee interlocks the two series DHR valves with RCS pressure such that heaters are unavailable if DHR system is on line and RCS pressure is above a setpoint thereby ensuring that the pressurizer heaters will not be a source of overpressurization.

The DHR relief valve is replaced during each refueling outage with a newly calibrated relief valve. If the relief valve is installed, it is considered operable; no other tests are performed to verify its operability.

There is no redundancy of overpressure protection. There is only one DHR relief valve. It is a self-actuated relief valve and is not dependent upon pressurized air or electrical power.

During plant shutdown and cooldown, the licensee procedurally (DB-OP-06903) sequences placing the DHR system in service, securing the HPI pumps and the Make-Up and Purification System and deenergizing pressurizer heaters followed by placing the plant on a nitrogen bubble. The procedure includes precautions and checks to ensure that the overpressurization protection is in service. The inspectors have reviewed licensee procedures and have verified its adherence to these procedures. This item is closed.

11. 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.

12. Security (71707, 81700)

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.

The 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.

13. Engineering and Technical Support (42700, 62703, 64704, 71707, 92701, 93702)

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.

- a. The licensee has experienced two incidents of valves not being identified on the Piping and Instrument Diagrams (P&IDs) during the inspection period. The licensee performed maintenance on a fire protection drain valve (FP265) and failed to shut the valve after maintenance. Three MCC's were sprayed with fire protection water when the system was restored to service as a result of the failure to shut FP265. The licensee documented this in PCAQ 89-0518. It also determined that FP265 was not shown on the P&ID (1016B).

On October 11, 1989, the operators wrote PCAQ 89-0508 to document that 14 Control Room Emergency Ventilation System (CREVS) Valves were not shown on the P&ID (M-027A). The inspectors reviewed Procedure DB-OP-06505 and noted that 10 of the 14 valves were isolation valves for pressure indicators and 4 were air cooled condenser isolation valves. Procedure DB-OP-06506, Attachment 4, is the Control Room Refrigerant Flow Diagram which depicts the valves. The inspectors reviewed M-026A and noted that most of the valves listed in PCAQ 89-0508 were shown on the P&ID but were not labeled. The inspectors discussed their concern with the licensee. Engineering's response was that the valves did not need to be on the P&ID's as the information was available on other drawings. The inspectors are of the opinion that the operators should have the necessary information in the Control Room to mitigate events. This has been discussed with the licensee and it will again review the issue with operations. This is an open item (346/89022-03(DRP)).

- b. On November 1, 1989, the inspectors observed that the door to Room 235 (Boric Acid Evaporator Room) was open and had observed this door to have been opened for an extended period of time. Section 3.6.2.7.1.8 of the USAR requires this door to be shut in the event of an auxiliary feed line rupture to control flooding to a rate that can be easily removed by floor drains in the adjacent space (Room 227).

The open door to Room 235 was a change to the facility as described in the USAR. 10 CFR 50.59 (b) (1) requires a safety evaluation for changes to the facility as described in the USAR. The licensee has been unable to provide a 10 CFR 50.59 review for the open door to Room 235. This is a violation (346/89022-04(DRP)) to 10 CFR 50.59 (b) (1).

The inspectors' review of the open door determined that the shift supervisor was not aware that the door to Room 235 was a flood barrier as well as a fire door. He took the proper compensatory measures for an open fire door. Discussions with the licensee revealed that in 1987 it had made a matrix which listed the functions of each door. Unfortunately the shift supervisor was unaware of the existence of the door function matrix. The licensee is in the process of making known the availability of the matrix to the shift supervisor and placing it in his office.

No other violations or deviations were identified.

14. Safety Assessment/Quality Verification (30702, 30793, 40500, 92720, 93702)

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 (PCAQ), 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.

On October 5 and 6, regional management met with licensee management and members of their staff to discuss the status of various licensee programs including the operations procedure rewrite program, corrective action task force report recommendations, and projected staffing. These meetings were held as a preliminary to the next Quarterly Management meeting which is scheduled for November 7, 1989.

15. Open 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 Paragraphs 8 and 13.

16. Unresolved Items

Unresolved items are matters about which more information is required in order to ascertain whether they are acceptable items, violations, or deviations. An unresolved item disclosed during the inspection is discussed in Paragraph 7.

17. Violations for Which a "Notice of Violation" Will Not be Issued

The NRC uses the Notice of Violation 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 Notice of Violation for a violation that meets the tests of 10 CFR 2, Appendix C, Section V.G.2. These tests are: (1)(a) the NRC has taken significant enforcement action based upon a major safety event contributing to an extended shutdown of an operating reactor; (b) the licensee developed and aggressively implemented during the shutdown a comprehensive program for problem identification and correction; and (c) NRC concurrence was needed by the licensee prior to restart; (2) the now-willful violation was identified by the licensee as a result of its comprehensive program; (3) the violation was based upon activities of the licensee prior to the events leading to the shutdown; and (4) the violation would normally not be categorized as higher than a Severity Level III violation.

Violations of regulatory requirements identified during a previous inspection for which a Notice of Violation will not be issued are discussed in Paragraph 2.

18. 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.