ENCLOSURE 2

U.S. NUCLEAR REGULATORY COMMISSION
REGION IV

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License No.:	DPR-46
Report No.:	50-298/97-11
Licensee:	Nebraska Public Power District
Facility:	Cooper Nuclear Station
Location:	P.O. Box 98 Brownville, Nebraska
Dates:	December 14, 1997, through January 24, 1998
Inspectors:	Mary Miller, Senior Resident Inspector Chris Skinner, Resident Inspector Linda Smith, Reactor inspector
Approved By:	Elmo Collins, Chief, Branch C Division of Reactor Projects
ATTACHMENT:	Partial List of Persons Contacted List of Inspection Procedures Used List of Items Opened, Closed, and Discussed

EXECUTIVE SUMMARY

Cooper Nuclear Station
NRC Inspection Report 50-298/97-11

Operations

- Operations was successful in demanding higher performance from other departments and was generally successful in raising crew and operations support performance standards (Section O1.1).

- The inspectors identified that the control room crew did not recognize and comply with Technical Specification action statement requirements regarding reactor sample line isolation requirements. The control room crew did not have a clear understanding of all steps necessary to implement the Action Statement. The licensee showed some weakness in the implementation of a 4-hour sample requirement. The licensee did not distinguish between "sample time" and "analyzed time" and consequently used the 25 percent surveillance extension twice consecutively (Section O4.1).

- Operations demonstrated a strong questioning attitude for plant support for an unexpected door condition. They ultimately identified an inadequate 1994 modification and reduction of design margin for the control room ventilation fans. This indicated a strong safety focus across turnovers by the operations crews and an insistence that problems be fully addressed (Section O4.1).

- The condition report review process was generally more thorough and reopened completed evaluations which were not through or sufficiently broad in scope (Section O7.1).

- Operations timeliness was weak in identifying the cause of a poorly managed 6-hour Technical Specification reactor shutdown in July 1997, which caused group isolations. As a result of internal questioning, the licensee then identified multiple instances of inadequate performance. Interim corrective actions were prompt and thorough, and long-term actions have been initiated (Section O8.1).

Maintenance

- In general, maintenance practices were performed in accordance with procedures and instructions. Radiation protection and security requirements were followed. Exceptions to appropriate practices are documented elsewhere in this report (Section M1.1).

- Several safety-related systems were affected by unanticipated material condition deficiencies. Overall material condition of the facility was good (Section M2.2).

- Two surveillance tests for secondary containment integrity did not adequately test door leakage. Nonconservatism had been identified in this test during the last inspection period, and these inadequacies were not identified in the licensee's subsequent activities (Section M3.1).

- The quality assurance organization performed a credible and insightful audit of the measurement and test equipment calibration program. Numerous examples of poor practices and standards were identified. The maintenance organization has identified corrective actions, and a followup quality assurance audit is planned (Section M7.1).

- The licensee's procedures did not require dedication of fuses for essential applications. The licensee concluded that systems remained operable. Corrective actions to a 1994 self-assessment were inadequate (Section M8.3).

- Maintenance failed to promptly process a group of 25 problem identification reports within about a month. These reports had been initiated to document earlier failures to document problems encountered during surveillance testing (Section M8.6).

Engineering

- The licensee did not document facts critical to the conclusion of an operability assessment for a stuck service water check valve. The operability evaluation also did not consider the potential effects of water hammer (Section E2.2).

- The licensee's ongoing corrective actions to identify and correct unauthorized modifications were effective in identifying and correcting a potentially significant configuration problem (Section E7.1).

- The licensee did not promptly correct a nonconservative Technical Specification surveillance requirement. The licensee was aware that setting the standby liquid control relief valves at the low end of the range allowed by Technical Specification Surveillance Requirement 4.4.A.2.a could result in the failure of the standby liquid control system during an anticipated transient without scram. They implemented administrative controls to address the safety issue, but they did not correct the license (Section E8.4).

Plant Support

- The licensee demonstrated initiatives that reduced projected dose and radioactive waste generation. In some cases dose was reduced greater than 50 percent of the projected value. Minor weaknesses were noted and were promptly addressed (Section R1.1).

- The licensee's review of two unexpected actuations of transformer deluge systems was not thorough in that they did not consider potential tampering (Section S4.1).

Report Details

Summary of Plant Status

During this report period, the plant operated at full power with the exception of a scheduled downpower for turbine valve testing on January 3, 1998.

I. Operations

O1 Conduct of Operations

O1.1 General Comments

a. Inspection Scope (71707)

Inspectors observed operations control room and in-plant activities, crew turnovers, night orders, control room logs, problem identification reports, and interim and long term corrective actions for operations concerns. Discussions were held with operators and operations management.

b. Observations and Findings

Inspectors observed crew shift turnovers and found that plant conditions were properly portrayed, equipment conditions were clearly addressed, and expected maintenance and testing were examined and scheduled to ensure proper coordination with control room resources. Individual operators demonstrated ownership of plant safety by questioning plant problems and off-normal conditions. Turnovers evidenced good coordination between the offgoing and oncoming crews. Minor distractions to crew members during the turnover process were noted by inspectors, which were promptly addressed by crew and operations management. Plant and operations management intervened when minor distractions were not promptly corrected.

During this inspection period, operations initiation of problem identification reports increased slightly. These problem identification reports indicated increasing self-critical perspective, since many of the operations reports concerned situations within operations activities. Also, these problem reports indicated insight regarding safety and administrative process control weaknesses.

Operators identified oil sheen on Residual Heat Removal Pump C and concluded that oil was leaking from one of the bearing oil supplies. Since the operators could not quickly quantify the leak rate or the leakage source, the pump was declared inoperable. Investigation determined that the leak source was the sight glass, the leak rate was very slow, and not dependent on pump operation. An operability determination found that the pump would perform its design basis function, and the pump was then declared operable.

Inspectors identified two examples where operators had failed to log plant conditions as required to be logged by night orders. In response, the licensee promptly reviewed past

control room logs and identified an additional example. The licensee responded to this concern by including a consolidated reference of log taking requirements at each shift turnover. This appeared to address the issue. No further examples were identified.

Operators found that four nonessential reactor building ventilation inlet dampers inadvertently drifted to a midposition. While the dampers were in the midposition, the licensee altered an access hatch to obtain balanced flow in the interim while troubleshooting was underway. These components were all outside the containment isolation boundary. When the plant had been in this configuration for several hours, the inspectors questioned the absence of configuration control for the access hatch in the abnormal position. The licensee acknowledged that "Caution" tags would have been appropriate for maintaining the system in this abnormal lineup. Caution tags were promptly affixed. The licensee identified and repaired an equipment failure to correct the condition.

In response to a discussion with the inspectors regarding Technical Specification action statement requirements, operations support identified that the inlet and outlet valves on the mechanical vacuum pump failed in the open, nonsafety direction. An operability evaluation was performed, and operations successfully demanded engineering prepare and schedule a modification of the system to make the valves fail in the conservative direction.

The control room supervisor recognized that a rod pull sheet used for control rod manipulations could become confusing. For that sheet, the control rods were required to be positioned at different heights. The control room supervisor requested reactor engineering to revise the pull sheets to place rods of different heights on different consecutive sheets to avoid confusion. Reactor engineering provided revised control rod pull sheets to the control room within 4 hours of that request.

Operations significantly reduced audible control room distractions by limiting the use of the plant announcing system to those authorized by operations. During the first 2 weeks of this effort, the number of announcements per half hour during day shift dropped from about 90 to 10. Operations was continuing to demand less frequent use by nonauthorized users. At the close of this inspection period, announcements during the day shift had dropped to 5 per half hour during the day shift and one per half hour during the night shift.

c. Conclusions

Operations has usually been successfully demanding higher performance from other departments and has been generally successful in raising crew and operations support performance standards.

O4 Operator Knowledge and Performance

O4.1 Failure to Understand and Follow Technical Specifications During Planned Maintenance

a. Inspection Scope (71707)

The inspectors observed operations performance during a scheduled reactor water cleanup system outage. Inspectors held discussions with the operations shift crew, operations management, and licensing staff.

b. Observations and Findings

1. Violation of Technical Specifications: On December 22, 1997, the control room crew removed the reactor water cleanup system from service. The reactor water cleanup system had been fulfilling the Technical Specification requirement for continuous reactor water conductivity samples. The alternate method of taking a sample used Reactor Water Sample Valves RR-AOV-740 and -741. The plant had entered two Technical Specification action statements, which required that either the sample valve isolation trip system be tripped or that both valves be maintained closed.

On August 8, 1997, the licensee had entered Technical Specification 3.7.D.2, which required that, when an isolation valve (reactor water sample valve) becomes inoperable, at least one valve shall be in the isolated position, but may be reopened on an intermittent basis under administrative control. On December 13, after identifying that one of the four main steam line high radiation monitors, RMP-RM-251B, was inoperable, the licensee had entered Technical Specification 3.2.A, which requires that, when a main steam line high radiation monitor is inoperable, the trip system shall be tripped or the reactor water sample valves isolated. The licensee complied with the action statement by the actions which had been taken earlier on August 8.

The reactor water cleanup system contains the continuous conductivity monitor. With the reactor water cleanup system out of service, the licensee entered Technical Specification 4.6.B.2, which requires the reactor coolant to be analyzed at least every 4 hours.

The inspectors identified that between 2:34 a.m. and 3:09 a.m. and between 4:58 a.m. and 5:50 a.m. on December 22, 1997, while a main steam line high radiation monitor was inoperable, the licensee opened both reactor water sample valves to obtain a reactor sample. The inspectors pointed out that opening the reactor water sample valves did not appear to meet the requirements of Technical Specification 3.2.A.

The failures on December 22, 1997, to maintain the reactor sample line in an isolated condition, at 2:54 a.m. and at 4:58 a.m., are examples of a violation of

Technical Specification 3.2.A, which requires that either the trip system be tripped or close both valves when a main steam radiation monitor is inoperable (50-298/97011-01).

2. Failure to Precisely Understand Technical Specifications: On December 22, 1997, the shift supervisor concluded, based on information from other departments, that tripping Radiation Monitors RMP-RM-251B and -D would meet the requirements of Technical Specification 3.2.A. This did not make up the logic for either reactor water sample valve to isolate. The reactor water sample valves were opened from about 9:26 a.m. to 10:09 a.m. to take a sample.

   The inspectors questioned if the licensee's tripping of Radiation Monitor RMP-RM-251D instead of Radiation Monitor RMP-RM-251A, which would cause one valve to close, met the Technical Specification definitions of trip system, protective function, and protective action. Technical Specification 3.2.A requires that, when a main steam line high radiation monitor is inoperable, a trip system shall be tripped or the reactor water sample valves isolated. The licensee reevaluated their position and concluded that Radiation Monitors RMP-RM-251B and -A should be tripped. These relays were then tripped, resulting in closure of Valve RR-MO-740.

   The shift supervisor directed that the reactor water cleanup system be restored, because the licensee could not verify whether the maximum reactor water chemistry limits were exceeded. Technical Specification 3.6.B.3 was entered at 2:30 p.m., which required that if maximum reactor water chemistry limits were exceeded then the plant must be in the cold shutdown condition within the next 24 hours. The licensee scheduled the first downpower for 5 p.m. At 4:50 p.m., after the reactor water cleanup system was restored, the licensee declared the continuous conductivity monitor operable and exited the 24-hour shutdown action statement.

   On January 14, 1998, the licensee concluded and documented in Technical Specification Interpretation 98-001 that the earlier of the two relay alignments would have been appropriate, tripping relays for RMP-RM-251B and –D, which would have not had a valve close.

   The inspectors acknowledged that the definitions in the Technical Specification were not clear for what the trip system was, but pointed out that a licensee's submittal for Improved Technical Specifications stated that when a trip system is tripped one valve would close, appearing contradicting to the position stated in Technical Specification Interpretation 98-001.

3. "Analyzed" versus "Collected": The inspectors reviewed the licensee's actions to ensure Technical Specification 4.6.B.2 was being met. Technical Specification 4.6.B.2 required that, when the continuous conductivity monitor is inoperable, the reactor coolant shall be analyzed at least every 4 hours.

Inspectors observed that Technical Specification 4.6.B.2 required reactor coolant analysis every 4 hours, but the licensee recorded sample collection times to verify compliance. Operations crew members were unaware that the proper time to record compliance with the Technical Specification was the analysis instead of the collection time. An evaluation of analysis times indicated that the licensee did not exceed the surveillance interval, but utilized the 25 percent grace period on two occasions as a result of tracking collection instead of analysis times for the samples.

On December 22, 1997, the licensee had taken a sample and completed the analysis of a reactor sample at 5:55 a.m. For the next sample collected, analysis was completed at 10:18 a.m., which utilized the 25 percent extension of the surveillance interval. At 2:30 p.m., the shift supervisor entered Technical Specification 3.6.B.3, because the sample was not analyzed by 1:55 p.m. Again the licensee utilized the 25 percent extension of the surveillance interval. Technical Specification 1.0.Y states, in part, that the 25 percent extension is not intended to be used repeatedly as a convenience to extend surveillance intervals beyond those specified for surveillances that are not performed during refueling outages. The use of the 25 percent extension time was not evaluated or documented regarding the validity of its use.

c. Conclusions

The inspectors identified that the control room crew did not recognize and comply with Technical Specification action statement requirements regarding reactor sample line isolation requirements. The control room crew did not have a clear understanding of all steps necessary to implement the Action Statement. The licensee showed some weakness in the implementation of a 4-hour sample requirement. The licensee did not distinguish between "sample time" and "analyzed time" and consequently used the 25 percent surveillance extension twice consecutively.

O4.2 Operations Identification of Inadequate Plant Modification

a. Inspection Scope (71707)

Inspectors observed operations resolution of unexpected boundary door and ventilation system conditions and operations followup activities to ask and resolve questions regarding these concerns. Inspectors held discussions with shift crew members and engineers.

b. Observations and Findings

In December 1997, the licensee removed a previously identified unauthorized modification from a door in the containment isolation boundary. This modification had assisted door closure by providing more force. After removal of the modification, the door sometimes would not fully close. Operations did not accept the subsequent plant

maintenance and engineering solution of increasing the force for door closure. Instead they insisted on further examination of the concern to determine the cause. Over several days various shift operators turned over the questions, status, and demands for resolution of the problem to oncoming crews.

Operators found that the door demonstrated a problem only when control room ventilation Fan A was running. Operations then found that the drive sheave on Fan A was larger than on Fan B and that the motor running current was higher than expected. This condition had been introduced in a 1994 modification, but the increase in running current was not recognized.

Although the design running amperage was 10 amps, Fan A was found to draw 22 amps and Fan B was found to draw 18 amps. The nameplate motor rating was 26 amps. Electrical distribution design calculations were found to have margin for both amperage and voltage, although the nonconservatism of this condition was significant. An operability evaluation was performed which concluded that, although the margin to the design amperage and voltage had been affected nonconservatively, the condition was bounded by design values. Other minor technical considerations associated with this installation were identified and resolved.

The failure to maintain the control room ventilation within the approved design is a violation of 10 CFR Part 50, Appendix B, Criterion III, which requires that the licensee implement design control to ensure plant equipment performs in accordance with the approved plant design. This nonrepetitive, licensee-identified and corrected violation is being treated as a noncited violation, consistent with Section VII.B.1 of the NRC Enforcement Policy (50-298/97011-05).

c. Conclusions

Operations demonstrated a strong questioning attitude for plant support for an unexpected door condition. They ultimately identified an inadequate 1994 modification and reduction of design margin for the control room ventilation fans. This indicated a strong safety focus across turnovers by the operations crews and an insistence that problems be fully addressed.

O7 Quality Assurance in Operations

O7.1 Observations Concerning Plant Wide Problem Identification and Corrective Action During this Inspection Period

a. Inspection Scope (71707)

Inspectors reviewed problem identification reports, attended condition review group meetings, observed reviews of closed significant conditions adverse to quality and observed licensee implementation of the corrective action process.

b. Observations and Findings

The condition review group review of these problems generally indicated strong safety focus and exploration of potential programmatic issues. A stronger questioning attitude was observed during these meetings over that observed in previous meetings. The reviews of closed significant conditions adverse to quality rejected those closed reports which had not fully identified or addressed the root cause of the condition. These reports were then reopened for resolution. The reviews also pointed out and reopened reports where the scope of corrective actions did not appear sufficiently broad and the extent of condition efforts had not been thorough.

c. Conclusions

The condition report review process was generally more thorough and reopened completed evaluations which were not thorough or sufficiently broad in scope.

O8 Miscellaneous Operations Issues (92901)

O8.1 (Closed) Licensee Event Report 50-298/97-11: Forced shutdown due to failure of torus to drywell vacuum breaker valves. On July 29, 1997, the licensee performed a controlled shutdown required by Technical Specification due to failure to maintain adequate differential pressure between the torus and the drywell. A torus to drywell vacuum breaker would not reclose. During the shutdown, the licensee experienced a group isolation due to reactor vessel low level. The licensee event report and subsequent discussions with operators stated these isolations were expected during a 6-hour plant shutdown.

During discussions with inspectors, operations management stated that the cause of the isolations was a revised reactor level setpoint, which narrowed the reactor vessel level operating band. Operators also noted that the scram had been performed from a higher than usual power level. The inspector informed the operations management that the setpoint calculation had been inspected and did not appear to be the cause of the group isolation. The inspector questioned if the cause of the isolation had been addressed.

On January 7, 1998, engineering identified that the problem identification report associated with that isolation had been inappropriately assigned to instrument and control engineering to review the setpoint. The problem identification report was reassigned to operations. Subsequent review by operations found that the shutdown had not been promptly initiated when the 6-hour shutdown action statement was entered. This contributed in part to the less than optimum power level and reactor vessel level at the time of the scram. The licensee also identified that the sequence for normal shutdown from power had not been followed in that the reactor had been scrammed prior to the turbine trip and reactor vessel level at that time was much lower than required by procedure for normal shutdown from power. The licensee identified that the normal

sequence for shutdown from power should have been exited and a shutdown from power should have been entered which would have allowed the turbine trip/reactor scram at the higher power level.

The licensee initiated interim corrective action to ensure shutdowns were promptly implemented and tentatively identified several procedures to be changed to avoid recurrence. Enforcement associated with the cause of the shutdown has been issued (NRC Inspection Report 50-298/97-12/EA 97-424).

O8.2 (Closed) Unresolved Item 50-298/97007-01: Multiple examples of inadequate corrective actions. Subsequent enforcement action was taken on these issues associated with NRC Inspection Report 50-298/97-12 (EA 97-424). This issue will be followed by the open item associated with the violation.

II. Maintenance

M1 Conduct of Maintenance

M1.1 General Comments

a. Inspection Scope (62707 and 61726)

Inspectors observed all or portions of various maintenance, troubleshooting, and surveillance activities, reviewed associated maintenance work orders, test records, clearances, logs, and other documentation, and held discussions with maintenance and operations staff and management.

b. Observations and Findings

Inspectors observed portions of maintenance activities and reviewed applicable documentation for the following activities:

Reactor equipment cooling heat exchanger cleaning (Maintenance Work Request 97-2449),

Rod block monitor Surveillances 6.RBM.301 and -302,

Fire protection system Surveillance 6.FP.302,

Secondary containment Surveillances 6.SC.501 and -502,

Reactor building painting, and

Low voltage fuse verification and replacement.

For the above observations, inspectors noted technicians following procedures in a step-by-step fashion, operators and maintenance technicians communicating with appropriate levels of clarity and precision, operators and technicians documenting completion of test activities as steps were accomplished, and operators establishing appropriate clearance boundaries. Calibration equipment was logged and calibration due dates were not expired. New parts were properly documented and controlled in accordance with warehouse requirements. Technicians and operators implemented appropriate radiation protection and as-low-as-reasonable-achievable techniques. Coverage of activities by radiation protection technicians was appropriate. All personnel observed followed security requirements. Exceptions to these general observations are described elsewhere in this report.

c. Conclusion

In general, maintenance practices were performed in accordance with procedures and instructions. Radiation protection and security requirements were followed. Exceptions to appropriate practices are documented elsewhere in this report.

M2 Maintenance and Material Condition of Facilities and Equipment

M2.1 Summary of Material Conditions

a. Inspection Scope (62707)

During routine tours and document reviews, inspectors assessed plant material condition and equipment failures.

b. Observations and Findings

1. Check Valve Stuck Closed on Residual Heat Removal Service Water System: On December 18, 1997, the licensee found that water had drained from Residual Heat Removal Exchanger A. Troubleshooting efforts concluded that Service Water Booster Pump A Discharge Check Valve SW-CV-19A had stuck closed. The licensee disassembled and inspected the check valve and was unable to definitely determine why the check valve had stuck closed. The valve was exercised and reinstalled. As a compensatory measure, the licensee measures daily the pipe temperature to verify that service water is flowing by the check valve (see Section E2.2).

2. Damper Failures Due to Air Regulator: Nonessential reactor building ventilation system dampers failed partially closed due to failure of an air regulator controlling the dampers (see Section 01.1).

3. Nonconservative Valve Design: The nonessential Technical Specification valves isolating the inlet and outlet of the mechanical vacuum pump were found to fail in the nonconservative (open) direction. A modification has been prepared and scheduled (see Section 01.1).

4. Improper Modification: Operators identified an improper 1994 design modification of the control room envelope. The control room envelope was more tightly sealed in response to NRC escalated enforcement. As a result, higher electrical power demands were required by the ventilation system. This effect was not anticipated and substantially decreased electrical distribution system design margins (see Section 04.2).

5. Failure to Properly Test Secondary Containment Doors: Surveillance testing did not measure air flow through one of the secondary containment doors. Had the door degraded, testing may not have detected the degradation. Also, redundant doors were not required to be held open during air flow tests through secondary containment door sets (see Section M3.1).

6. Undedicated Fuses in Essential Service: Inspectors identified that some fuses installed in essential systems had not been dedicated (see Section M8.3).

7. Two Spurious Deluge Actuations: Two cases of deluge actuation were caused by improper adjustment of valve weight in the fire protection system (see Section S4.1).

8. Unanalyzed Piping Support: A piping support was installed connecting piping attached to primary containment directly to the secondary containment structure, without analysis or drawing documentation (see Section E7.1).

9. Residual Heat Removal Pump C Oil Leak: A oil leak from the pump sight glass was identified by the licensee. The leakage rate was very small and the pump was considered operable (see Section O1.1).

c. Conclusion

Several safety-related systems were affected by unanticipated material condition deficiencies. Overall material condition of the facility was good.

M3 Maintenance Procedures and Documentation

M3.1 Inadequate Surveillance Procedure for Secondary Containment

a. Inspection Scope (61726)

Inspectors reviewed two surveillance procedures associated with secondary containment. Inspectors held discussions with engineers and performed walkdowns of the secondary containment boundary.

b. Observations and Findings

The inspectors identified that Procedures 6.SC.501, "Secondary Containment Leak Test," Revision 3c2, and 6.SC.502, "Secondary Containment Penetration Examination," Revision 2c1, did not conservatively determine operability of the secondary containment south vestibule door. Also, Procedure 6.SC 502 did not require that one door of a containment penetration door set be opened while measuring the air flow through the redundant closed door. The licensee stated that, during the past few tests to determine airflow through these doors, one door had been held open while airflow measurements were taken on the closed door. This addressed the inspectors' immediate concern for door operability.

The outer south reactor building door had been welded shut to preclude security concerns. Therefore, opening the outer door was not feasible when testing the inner door. Instead, during testing, the licensee opened a 6-inch penetration in the outer door area, allowing airflow through the penetration to establish a differential pressure across the inner door. The airflow through that door was not directly measured as the other doors were.

Instead, Procedure 6.SC.501 measured airflow simultaneously for all secondary containment penetrations by measuring the discharge flow of one train of standby gas treatment systems fans. Although flow through the south door was made possible during this test by unblocking an outside penetration to provide differential pressure across the door, measurement of all penetrations, not only door flow, was obtained by the test.

Procedure 6.SC.502 required individual door flow to be measured for each door. However, only a visual inspection, with no acceptance criteria, was required for the south reactor building door. No individual flow measurement for the south door was required. In order to sum the overall in-leakage value for secondary penetration doors, an in-leakage value was substituted for that door which had been obtained several years earlier. No basis was provided for the current validity of that measurement. The licensee agreed that this substitute value might no longer be valid.

The inspectors noted that this procedure was the same procedure in which weaknesses were identified during the previous inspection period. Although these weaknesses were

minor and no operability concerns were identified, the failure to evaluate and identify these weaknesses as a result of the earlier concerns indicated a less than questioning attitude by the licensee.

The failure of Procedures 6.SC.501 and 6.SC.502 to appropriately measure secondary containment performance is a violation of 10 CFR Part 50, Appendix B, Criterion V, which requires procedures be appropriate to the circumstances (50-298/97011-02).

c. Conclusions

Two surveillance tests for secondary containment integrity did not adequately test door leakage. Nonconservatism had been identified in this test during the last inspection period, and the inadequacies were not identified in the licensee's subsequent review and corrective actions.

M7 Quality Assurance in Maintenance Activities

M7.1 Audit of Measurement and Test Equipment Program

a. Inspection Scope (62707)

The inspector reviewed Quality Assurance Report QAD 970213 "Measurement and Test Equipment Calibration." The inspector held discussions with maintenance and quality assurance staff.

b. Observations and Findings

The inspector found the measurement and test equipment calibration audit to be thorough and broad. It addressed performance-based findings as well as programmatic findings. The audit concluded that, although shops had a strong sense of ownership for the program, the practices for calibration and control of test equipment were inconsistent, ineffective, and in some cases inadequate. Several problem identification reports were issued for specific findings regarding inadequate calibration records, lack of calibration tags, incomplete calibration numbers, and less than effective control of locations of calibration equipment. Problem identification reports were also written for inadequate procedural controls regarding calibration vendors and procurement of calibration services. The audit identified that assessments of this program had not been performed. In total, approximately 15 problem identification reports were issued. In response to the audit the maintenance organization acknowledged the need for better control of maintenance and test equipment, including training, consolidation of ownership and storage, and strengthening of records and evaluation processes. A followup Quality Assurance audit is planned for March 1998.

c. Conclusions

The quality assurance organization performed a credible and insightful audit of the measurement and test equipment calibration program. Numerous examples of poor practices and standards were identified. The maintenance organization has identified corrective actions, and a followup quality assurance audit is planned.

M8 Miscellaneous Maintenance Issues (92902)

M8.1 (Closed) Violation 50-298/94016-02 (EA 94-166, 02023): Failure to properly perform surveillance testing of 480v breakers. After NRC identification of significant programmatic weaknesses in the surveillance and preventive maintenance programs, the licensee performed programmatic reviews and corrections of surveillance testing and preventive maintenance in 1994 and 1995. Subsequent review by the inspectors to close the issue identified that inadequate records had been maintained to substantiate completion of these efforts. Further, in some cases the inspectors identified that the licensee had failed to properly address requirements of the Updated Safety Analysis Report. These failures were to properly update and evaluate Updated Safety Analysis Report requirements, and failures to update the Updated Safety Analysis Report were addressed with escalated enforcement in 1996.

Subsequent inspector reviews in 1996 identified additional weaknesses in records of activities and license change requests. In response, the licensee performed a review of the program and identified several cases where action items were improperly closed out based on expected license amendment changes or closed out to other programs. Some of these actions did not address the original concern. During this inspection period, inspectors noted that preventive maintenance scheduled for 12 months for those items which are typically maintained each cycle (18 months) had not been addressed. Inspectors found that an independent preventive maintenance activity initiative had addressed those concerns independent of the surveillance review. Inspectors noted that since the preventive maintenance testing change from 12 to 18 months occurred when fuel design allowed 18- instead of 12-month cycles, the licensee's ongoing efforts to address questions in the reload analysis incorporates these issues as well. This issue is being followed by a separate NRC unresolved item (50-298/97003-01).

NRC inspection determined that, although surveillance and preventive maintenance procedures have been noted to have weaknesses, and specific instances have been identified involving failure to perform adequate preventive maintenance, these instances appear to have involved root causes different than those involved in this violation. Multiple observations of testing from 1995 through the present indicated a greatly improved surveillance and preventive maintenance testing program. The broad program weakness and violations observed in 1994 appear to have been adequately identified and corrected.

M8.2 (Closed) Violation 50-298/96023-01: Failure to log unavailability time for maintenance rule. The inspector verified the corrective actions described in the licensee's response letter, dated December 12, 1996, to be reasonable and complete. No similar problems were identified.

M8.3 (Open) Inspector Followup Item 50-298/97008-02): Weak documentation and evaluation of fuse usage. This item addressed both fuse control and fuse dedication. Fuse control is still being evaluated; therefore, the item will remain open.

Inspectors reviewed the fuse dedication process and found that the licensee had identified in 1994 a failure to perform fuse dedication consistent with Generic Letter 91-05. The licensee's 1994 self-assessment stated that, although fuse dedication had not been performed, no operability issue existed based on highly reliable manufacturing processes and in-service experience. The licensee concluded that the undedicated fuses installed in the plant, as well as those in the warehouse stock were suitable for essential application.

On December 8, 1997, inspectors questioned if fuses installed in essential circuits, and spare fuses in the warehouse, had been dedicated. Inspectors also questioned the licensee's rationale of using nondedicated fuses in essential applications. The licensee then quarantined all nondedicated fuses that were in stock. Further investigation by the licensee discovered that Procedure 1.8, "Warehouse Issue, Return and Shipping," Revision 23, considered fuses as a consumable material. Step 8.1.2 stated that consumable material did not require an engineer verification or approval for application to a higher safety classification installation. The procedure was corrected.

The licensee provided an operability evaluation that concluded that the nonessential fuses currently installed in essential applications were operable.

10 CFR Part 50, Appendix B, Criterion III, "Design Control," requires, in part, that measures shall be established for the selection and review for suitability of application of materials, parts, equipment, and processes that are essential to the to the safety-related functions of the structures, systems, and components. Procedure 1.8 allowed installation of nonessential, nondedicated fuses in essential applications (50-298/97011-03).

M8.4 (Closed) Licensee Event Report 50-298/97009-00 and -01: Inadvertent reactor protection system half trip. The Reactor Protection System A bus tripped due to a failure of Electrical Protection Assembly 1A2. The reactor protection system trip caused "A" Groups 1, 2 , 3, and 7 to actuate and both "A" and "B" Group 6 actuation. These group isolations resulted in various primary containment and secondary containment valves closing, since half of the reactor protection system logic actuated. The reactor protection System A bus was promptly transferred to an alternate power source and equipment and systems were restored to their normal configuration. A plant transient did not occur. A defective card in the electrical protection assembly caused the bus failure.

The licensee replaced the card, which was satisfactory tested. The defective card was shipped to General Electric for examination, testing, and repair. Further corrective action will be taken, based on the General Electric examination results.

The inspectors verified that the card was replaced and the defective card was sent to General Electric. The examination results were not expected back from General Electric until February 1998. A problem identification report was initiated and designated a condition adverse to quality. This requires a root cause determination and implementation of corrective actions to prevent recurrence.

M8.5 (Closed) Violation 50-298/97-016-02: Problem report of through-wall leakage of diesel service water piping not processed as a condition adverse to quality. This issue described a failure of the licensee to properly classify a condition adverse to quality. Instead, the condition adverse to quality was treated as a work item only. The problem identification review process allowed review of problem identification reports and removal of those reports which were work items only from the condition review group and shift supervisor review process. The licensee acknowledged a weakness in this area and conducted audits of problem identification reports processed through the "work items only" process and determined that additional review was necessary for these items to ensure that conditions adverse to quality were identified. The process for work item review of problem identification reports has been changed to require review by a senior reactor operator to determine if a condition adverse to quality existed, which is the same review required for problem identification reports generated which are not indicated as work item. This corrective action appears to address the root cause. Therefore this violation is closed.

M8.6 (Closed) Violations 50-298/96031-02, 50-298/97002-04, and 50-298/97013-02: Failure to write problem identification reports to identify problems. Inspectors identified failures of the maintenance staff to initiate problem identification reports when required. Samples of licensee maintenance and surveillance work records determined that this failure occurred. A licensee review conducted in December 1997 through January 1998 identified that 25 problem identification reports should have been initiated for maintenance activities on various safety systems.

In a telephone conversation on January 8, 1998, the licensee discussed these problem identification reports and the failure of maintenance to follow the requirements of Procedure 0.5, "Problem Identification and Corrective Action," Revision 13c1. During this activity, the inspector identified that the problem identification reports of concern had been maintained as a group from mid-December through the time of the conference and not processed promptly to evaluate safety significance by the control room or the condition review group. The licensee acknowledged the need for these problem identification reports to have been promptly processed and subsequently provided the problem identification reports to the Condition Review Group.

The failure to comply with the requirements of Procedure 0.5, "Problem Identification and Corrective Actions," is a violation of 10 CFR Part 50, Appendix B, Criterion V, which requires that procedures appropriate to the circumstances be implemented (50-298/97011-02).

The failure of the maintenance organization to more readily issue problem identification reports is an example of a long-standing issue regarding problem identification and corrective action. This concern was cited in escalated enforcement associated with NRC Inspection Report 50-298/97-12 and falls within the scope of NRC concerns expressed in that escalated enforcement action. Therefore, the corrective for these concerns will be followed with closure of that escalated action.

III. Engineering

E2 Engineering Support of Facilities and Equipment

E2.1 Lack of Adequate Documentation for Seismic Interaction of Man-Lift

a. Inspection Scope (37551)

Inspectors performed routine plant walkdowns and held discussions with operators and engineers.

b. Observations and Findings

On January 21, 1998, during a routine plant walkdown, the inspector identified that a man-lift in the Residual Heat Removal Heat Exchanger B room had been chained to an essential support. No documentation for this condition had been provided. The licensee stated that a review had been performed and verbal approval of the condition had been provided by civil engineering. The licensee acknowledged that, although procedures allowed temporary attachments to essential supports, the lack of documentation was inappropriate. Documentation was promptly prepared which addressed relevant seismic and mechanical issues.

c. Conclusions

The technical adequacy of temporary attachment of a man-lift to an essential seismic support had not been documented. Subsequent licensee evaluation concluded that the condition was technically acceptable.

E2.2 Troubleshooting to Determine the Cause of a Vacuum in Service Water Piping

a. Inspection Scope (37551)

Inspectors observed licensee troubleshooting activities to determine the cause of draining of essential service water system piping.

b. Observations and Findings

On December 18, 1997, the licensee concluded that service water booster pump discharge Check Valve SW-CD-19 was stuck in the closed position thus, allowing the downstream piping and service water side of the residual heat removal heat exchanger to be filled with air. Upon identification of the condition, the licensee declared this portion of the system inoperable.

After disassembly of the check valve, the licensee was unable to identify a cause for the stuck check valve. Three prior examples over the past 7 years had been found where this check valve apparently did not open. Upon reassembly, the licensee performed an operability assessment and declared the system operable.

The operability assessment that concluded that the systems were operable did not address the relevant details of those examples where the valves were found stuck closed. Therefore, the basis for the operability conclusion was not fully documented. However, operations and engineering staff stated several points that had been discussed during preparation of this operability evaluation, which appeared to address the relevant question. After discussion with inspectors, the licensee revised the operability evaluation. The inspector also identified that the licensee had not addressed the impact of the voided system on the operability of the system when the water was displaced by air. The licensee acknowledged that this concern should be evaluated.

While the system contained air, the licensee had not known if the air-filled piping condition was analyzed. Evaluation to determine if this condition has been analyzed was in progress at the end of the inspection period. Inspectors will be following the licensee's activities with an inspector followup item (50-298/97011-04).

c. Conclusions

The licensee did not document critical facts in an operability assessment for a stuck service water check valve. The operability evaluation also did not consider the potential effects of water hammer.

E7 Quality Assurance in Engineering Activities

E7.1 Continued Corrective Action to Identify Unauthorized Modifications

a. Inspection Scope (37551)

During routine inspection activities, inspectors followed licensee implementation of corrective actions to identify unauthorized modifications.

b. Observations and Findings

As part of ongoing corrective actions to identify unauthorized modifications, the licensee identified a concern regarding the support for a high pressure core injection system valve equalization line. This piping support was attached directly to the containment structure. The support had not been analyzed or recorded on plant drawings.

As an interim corrective measure, the licensee detached the support since the piping was small and was supported by the larger high pressure coolant injection piping. The licensee promptly performed a technical evaluation of the forces expected and found that current allowable stresses would not have been exceeded.

This licensee-identified and corrected condition was found by licensee corrective actions in response to an earlier enforcement, regarding control of plant modifications. Therefore no additional enforcement action is appropriate.

c. Conclusions

The licensee's ongoing corrective actions to identify and correct unauthorized modifications were effective in identifying and correcting a potentially significant configuration problem.

E8 Miscellaneous Engineering Issues

E8.1 (Closed) Violation 50-298/95011-01: High pressure coolant injection steam line water accumulation. This violation involved the licensee's failure to identify and correct an accumulation of liquid in the high pressure coolant injection turbine exhaust piping. The licensee had failed to recognize that liquid in that line was a condition adverse to quality. The licensee acknowledged that an original design deficiency had been compensated for by a "work around" and had been accepted over the years since it appeared to address the symptoms of the condition. The NRC reviewed the licensee's calculation and operability assessment and found them to address the concern and to demonstrate that the high pressure coolant injection had been operable. The licensee reviewed the vacuum breaker design for the high pressure coolant injection steam supply line and determined that a larger check valve design would be desirable. These four check valves were installed and have appeared to have corrected this concern.

E8.2 (Closed) Licensee Event Report 50-298/95002-00: Failure to modify standby nitrogen and traversing incore probe system containment isolation valves to prevent auto-opening upon resetting of a Group II isolation signal. In 1995, the licensee identified that 14 valves required modification to prevent their opening upon resetting an actuation signal. The identification of these additional examples was part of broad corrective action in association with NRC-identified deficiencies and enforcement associated with primary containment penetration design and testing. The licensee evaluated the safety significance of the condition and concluded that it was low based on the actual plant configuration. The licensee completed modification and testing of these valves before

plant startup in 1995. The NRC has reviewed the correction of the primary containment penetration design and testing program and has found the licensee's corrective actions to address the concerns.

E8.3 (Closed) Licensee Event Report 50-298/96014-01 and -02: Fuel preparation machine upper limit stops set in violation of Technical Specifications. During an earlier review of this item, the inspector noted that the licensee had failed to thoroughly address the safety significance of the expected higher dose rate caused by the fuel machine stops being set at a nonconservative height. This dose rate would result in approximately a 2.9 times higher radiation field than that field expected if the machine was properly set. The licensee responded to this concern and revised the licensee event report to document the safety significance assessment.

The licensee found that the root cause of the problem involved a change in active fuel length in a nonconservative fashion that would result in less shielding of the fuel radiation by the water. The local area radiation monitors are set at 80 mrem/hr and, when fuel was inspected in 1996, the measured dose rate was about 4 mrem/hr at the edge of the fuel pool. In the worst case configuration of the fuel preparation machine before it had been corrected, the dose rate would have been about 12 mrem/hr. The licensee also identified that a contributing cause to this deficiency was the misinterpretation that the Technical Specification requirement of 8.5 feet of water over the top of the active fuel applied only to the fuel stored in the spent fuel pool storage racks.

E8.4 (Closed) Unresolved Item 50-298/96024-13: Inadequate surveillance requirement for the standby liquid control system relief valves. To meet 10 CFR 50.62, "Requirements for reduction of risk from anticipated transients without scram events for light-water-cooled nuclear power plants," the licensee modified operation of the standby liquid control system. The licensee also requested a license amendment to revise the standby liquid control relief valve settings contained in Surveillance Requirement 4.4.A.2.a. As a basis for the license amendment request, the licensee specified that the margin between the expected pump discharge pressure and the low relief valve setpoint was 70 psid during an anticipated transient without scram. The licensee subsequently conducted postmodification tests on May 10, 1988, and determined that the actual margin was 31.1 psid. In NRC Inspection Report 50-298/96-24, the NRC identified that the licensee did not appropriately correct Technical Specification Surveillance Requirement 4.4.A.2.a. after they learned that the safety basis for the related license amendment was no longer valid.

The inspector reviewed the May 10, 1988, postmodification test data and the standby liquid control hydraulic analysis to determine the basis for the change in margin between the expected pump discharge pressure and the low relief valve setpoint. The inspector found that the original hydraulic analysis, which was used as a basis for the anticipated transient without scram license amendment request, did not accurately predict system performance. Following postmodification testing in 1988, the licensee corrected the analysis to be consistent with the postmodification test data. Based on the revised

analysis, the predicted maximum nominal pressure increased from 1380 psig to 1419 psig. This accounted for the change in margin between the expected pump discharge pressure and the low relief valve setpoint.

The standby liquid control system consists of two positive displacement pumps. Pumps of this type generate repeated pressure pulses, known as pump ripple. The licensee stated that the pump ripple was expected to be 1 percent of nominal pressure. Considering the licensee's calculated system pressure (1419 psig) and adding the licensee-determined margin of 1 percent for pump ripple, related to the use of positive displacement pumps, the inspector determined that the system pressure could repeatedly peak at 1433 psig.

The system also consists of a relief valve on the discharge piping from each standby liquid control pump. The licensee stated that the lift pressure for these relief valves was expected to drift ± 3 percent from the as-left relief valve setpoint. On May 1, 1997, Technical Specification Surveillance Requirement 4.4.A.2.a. stated, "Check that the settings of the subsystem relief valves are $1450 < P < 1680$ psig and the valves will reset at $P > 1300$ psig." Considering the expected ± 3 percent drift, the inspector determined that setting a relief valve at the low end of the allowed range (1450 psig) could result in a relief valve lifting as low as 1407 psig during system operation.

Technical Specification Basis Section 3.4 indicated that the minimum relief valve setpoint was selected to prevent the relief valve from prematurely lifting and recycling the liquid control solution. Since the highest expected pressure during an anticipated transient without scram was greater than the lowest expected relief valve setting, setting the relief valves at the minimum setting could result in the relief valves lifting prematurely. The inspector determined that Surveillance Requirement 4.4.A.2.a. was not consistent with Technical Specification Basis Section 3.4.

In 1988, the licensee recognized that it would be inappropriate to set the standby liquid control relief valves at the low end of the allowed surveillance requirement range. They established administrative measures, which narrowed the acceptable as-left relief valve setting range and assured system operability. However, the licensee did not take steps to correct the license until NRC intervened.

10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Action," requires that measures shall be established to assure that conditions adverse to quality, such as deficiencies and nonconformances, are promptly identified and corrected. The failure to promptly correct Technical Specification Surveillance Requirement 4.4.A.2.a., when it was determined to be inconsistent with Technical Specification Basis Section 3.4, was a violation of NRC requirements (50-298/97011-06).

On May 5, 1997, the licensee requested a Technical Specification amendment, which relocated Technical Specification Surveillance Requirement 4.4.A.2.a to the Inservice Test Augmented Testing Program. The nominal setpoint of 1540 $\pm$ 1% was also included in the Updated Final Safety Analysis Report. The relocation of the surveillance

requirement resulted in stricter control of the relief valve setpoint. The safety evaluation which approved Technical Specification Amendment 176 was issued on May 9, 1997. The inspector reviewed the safety evaluation for the amendment and concluded that the licensee's specific corrective actions were adequate.

In NRC Inspection Reports 50-298/97-07 and 50-298/97-12, the NRC identified similar failures to promptly identify and correct conditions adverse to quality. As a result, on December 1, 1997, the NRC issued a Notice of Violation in Escalated Action 97-424. Corrective action for the general problem of failure to promptly identify and correct conditions adverse to quality will be evaluated as a part of followup to Escalated Action 97-424. Therefore, no response is required for this violation.

E8.5 (Open) Unresolved Item 50-298/97003-01: Procedures allow operations inconsistent with core reload analysis. Reactor engineering identified additional nonconservative assumptions in earlier core, fuel, and spent fuel pool analyses. This activity is continuing and the licensee has obtained technical assistance to further resolve these issues. At this time, all nonconservative findings in the analysis have been evaluated and shown to be bounded by margins in the analysis.

IV. Plant Support

R1 Radiological Protection and Chemistry Controls

R1.1 Radiation Protection Initiatives

a. Inspection Scope (71750)

Inspectors observed radiation protection activities during plant walkdowns and interviewed radiation protection technicians and other plant staff.

b. Observations and Findings

The inspectors observed radiation protection initiatives to reduce liquid waste. During cleaning of a reactor equipment cooling heat exchanger, the licensee piped cleaning water used for the service water side of the heat exchanger to a tank. After cleaning, this liquid was sampled and found to be uncontaminated and therefore was not added to the radiological waste inventory. This amount consisted of over 3,000 gallons. The inspector noted that the licensee had demonstrated good initiative to reduce liquid radiological waste releases. The inspector noted that a holding tank in the line to the large storage tank would isolate releases and preclude contamination of the entire cleaning water inventory in the event contamination occurred during cleaning operations. This would result in lowering the risk of contaminating the entire inventory due to a release during a brief time frame. The licensee acknowledged this weakness.

The inspector noted that initiatives to reduce dose had been made, including painting with longer poles to keep technicians further from equipment, reduction of detail painting

to reduce time spent in radiation areas, and use of a man-lift instead of [illegible] reduce the radiation exposure associated with scaffold-building. Further [illegible] for the painting included painting first in lower dose areas to better implement [illegible] saving techniques prior to painting in high radiation areas.

The inspector noted that dose reduction for individual jobs appeared to have been done in a conscientious and innovative fashion. The inspector noted, however, that coordination between maintenance and engineering and coordination to consolidate work in sectors of containment to reduce dose had not been accomplished. The licensee acknowledged that additional dose reduction might be obtained through this integration process.

c. Conclusions

The licensee demonstrated initiatives that reduced projected dose and radioactive waste generation. In some cases dose was reduced greater than 50 percent of the projected value. Minor weaknesses were noted and were promptly addressed.

S Security and Safeguards Staff Knowledge and Performance

S4.1 Failure to Review Tampering as Potential Cause for System Actuation

a. Inspections Scope (71750)

The inspectors observed the licensee's investigation into the cause of two deluge system actuations and held discussions with operations, maintenance technicians, and engineers.

b. Observations and Findings

After two cases of unexpected actuation of main transformer deluge systems (see Section M2.1), the licensee reset the system. However, in resetting the system the licensee failed to consider in their evaluation if the actuations could have been caused by manual manipulation or tampering. The licensee has been observed to check for potential tampering when switches are found out of position, but did not do so for this system actuation without apparent cause. The licensee acknowledged that the weakness did exist and planned to take actions to correct it.

c. Conclusion

The licensee's review of two unexpected actuations of transformer deluge systems was not thorough in that they did not consider potential tampering.

X. Exit Meeting Summary

The inspectors presented the inspection results to members of licensee management at the exit meeting on January 22, 1998. The licensee acknowledged the findings presented.

The inspectors asked the licensee whether any materials examined during the inspection should be considered proprietary. No proprietary information was identified.

ATTACHMENT

PARTIAL LIST OF PERSONS CONTACTED

Licensee

B. Houston, Licensing Manager
L. Dewhirst, Licensing Engineering
S. Blitchington, Acting Radiological Manager
M. Gillan, Acting Performance Analysis Department Manager
C. Gains, Maintenance Manager
B. Newell, Assistant Maintenance Manager
M. Peckham, Plant Manager
L. Newman, Operations Manager
J. Pellitier, Senior Engineering Manager
R. Deatz, Quality Assurance Inspector

INSPECTION PROCEDURES USED

IP 37551:	Onsite Engineering
IP 61726:	Surveillance Observations
IP 62707:	Maintenance Observations
IP 71707:	Plant Operations
IP 71750:	Plant Support Activities
IP 92901:	Follow up - Operations
IP 92902:	Follow up - Maintenance
IP 92903:	Follow up - Engineering

ITEMS OPENED, OPENED AND CLOSED, CLOSED, AND DISCUSSED

Opened

50-298/97011-01	VIO	Technical Specification violation for sample line isolation (Section O4.1).
50-298/97011-02	VIO	Two examples of unappropriated or failure to follow procedures (Sections M3.1 and M8.6).
50-298/97011-03	VIO	Procedure allowed installation of nonessential, nondedicated fuses in essential applications (Section M8.3).
50-298/97011-04	IFI	Air filled service water piping and residual heat removal exchanger (Section E2.2).
50-298/97011-06	VIO	Failure to correct Technical Specification surveillance requirement (Section E8.4).

Open and Closed

50-298/97011-05	NCV	Past inadequate modification of the control room envelope (Section O4.2).

Closed

50-298/97011-00	LER	Forced shutdown due to failure of torus to drywell vacuum breaker valves (Section O8.1).
50-298/97007-01	URI	Multiple examples of inadequate corrective actions were taken (Section O8.2).
50-298/94016-02	VIO	Failure to properly perform surveillance testing of 480v breaker system (EA 94-166, 02023) (Section M8.1).
50-298/96023-01	VIO	Failure to log unavailability time for maintenance rule (Section M8.2).
50-298/97009-00 50-298/97009-01	LER	Inadvertent reactor protection system half trip (Section M8.4).
50-298/97016-02	VIO	Problem report of through-wall leakage of diesel service water piping not processed as a condition adverse to quality (Section M8.5).
50-298/96031-02	VIO	Failure to write Problem Identification Reports to Identify Problems (Section M8.6).
50-298/97002-04	VIO	Failure to write Problem Identification Reports to Identify Problems (Section M8.6).
50-298/97013-02	VIO	Failure to write Problem Identification Reports to Identify Problems (Section M8.6).
50-298/95011-01	VIO	High pressure coolant injection steam line water accumulation (Section E8.1).
50-298/95002-00	LER	Failure to modify 14 primary containment isolation valves to prevent auto-opening upon resetting a Group II isolation signal (Section E8.2).
50-298/96014-01 50-298/96014-02	LER	Fuel preparation machine upper limit stops set in violation of Technical Specifications (Section E8.3).
50-298/96024-13	URI	Inadequate surveillance requirement for the standby liquid control (Standby liquid control) system relief valves (Section E8.4).

Discussed

50-298/97008-02	IFI	Weak documentation and evaluation of fuse usage (Section M8.3).
50-298/97003-01	URI	Procedures allow operating not evaluated in core reload analysis (Sections M8.1 and E8.5).

50-266/97012-02	VIO	Multiple examples of not identifying conditions adverse to quality (Sections O8.1, O8.2, and E8.4).