ENCLOSURE

U.S. NUCLEAR REGULATORY COMMISSION
REGION IV

Docket No.:	50-483
License No.:	NPF-30
Report No.:	50-483/99-13
Licensee:	Union Electric Company
Facility:	Callaway Plant
Location:	Junction Highway CC and Highway O Fulton, Missouri
Dates:	October 17 through November 27, 1999
Inspectors:	V. G. Gaddy, Senior Resident Inspector J. D. Hanna, Resident Inspector J. F. Melfi, Project Engineer R. V. Azua, Project Engineer
Approved By:	W. D. Johnson, Chief, Project Branch B
ATTACHMENT:	Supplemental Information

EXECUTIVE SUMMARY

Callaway Nuclear Plant
NRC Inspection Report 50-483/99-13

This routine announced inspection included aspects of licensee operations, engineering, maintenance, and plant support. The report covers a 6-week period of resident inspection.

Operations

- Control room operators demonstrated good command and control during the reactor startup following completion of refueling Outage 10. Reactor engineering personnel and control room operators were attentive during the approach to criticality (Section O1.2).

- Operators failed to follow the procedure while testing the auxiliary shutdown panel. Specifically, control room personnel directed local operators to open the wrong valve. This caused the flow of essential service water through the turbine-driven auxiliary feedwater pump and into the main feedwater headers of all four steam generators. Failure to follow the surveillance procedure was a violation of Technical Specification 6.8.1. This Severity Level IV violation is being treated as a noncited violation, consistent with Section VII.B.1.a of the NRC Enforcement Policy (Section O4.1).

- Failure of operators to understand the recirculation flow path of the centrifugal charging pumps and failure to maintain an awareness of the boron concentration in the suction header of the centrifugal charging pumps were the causes of two inadvertent boron addition events. Each inadvertent addition caused a decrease in reactor power of approximately 3 percent and required operators to take actions to stabilize the plant (Section O 7.1).

Maintenance

- Material condition and housekeeping in the auxiliary building, fuel building, control building, diesel generator building, essential service water pump house, and turbine building were good (Section M2.1).

- The licensee's general effort in preparation for and removal of the reactor coolant Pump D motor was good (Section M4.1).

Engineering

- The licensee's performance of the reactor building integrated leak rate test was good. Engineering and contract personnel were knowledgeable and thorough (Section E1.1).

- The licensee has continued to make progress in improving the reliability of the essential service water system. Replacing essential service water pumps improved system flow rates and orifices have been installed to reduce system vibration. Plans to address containment cooler flow rate, corrosion induced failures, and fouling were also developed. However, none of these issues challenged the operability of the essential service water system (Section E2.1).

Plant Support

- The licensee's radiation protection practices during the maintenance activity to remove the reactor coolant Pump D motor were good (Section R1.2).

- Prior to final closure for reactor startup, the reactor containment building was clean and material condition was good (Section R2.1).

Report Details

Summary of Plant Status

The plant began the report period in the middle of refueling Outage 10 with the reactor fuel assemblies fully offloaded to the spent fuel pool. Following reloading of the core and completion of outage work activities, criticality was achieved on November 4, 1999. Electrical output breakers were closed on November 5 and power escalation continued. The reactor remained at approximately 100 percent power through November 25. On November 26, the plant tripped due to a steam generator level instrument failure. The plant was restarted on November 27, which coincided with the end of the inspection period.

I. Operations

O1 Conduct of Operations

O1.1 General Comments (71707)

The inspectors observed various aspects of plant operations, including compliance with Technical Specifications, conformance with plant procedures and the Final Safety Analysis Report, and shift manning. Inspectors also observed the effectiveness of communications, proper system configuration and configuration control, housekeeping, and operator performance during routine plant operations and surveillances.

The conduct of operations was professional and safety conscious. Evolutions were well controlled, deliberate, and performed according to procedures. Shift turnover briefs were comprehensive. Housekeeping was good and discrepancies were promptly corrected. Safety systems were found to be properly aligned. Specific events and noteworthy observations are detailed below.

O1.2 Observation of Reactor Startup

a. Inspection Scope (71707)

On November 4, operators commenced reactor startup and achieved criticality following the completion of refueling Outage 10. The inspectors observed the plant startup and related activities.

b. Observations and Findings

Prior to commencing the startup, operators conducted a briefing and limited personnel access to the control room to minimize distractions. The reactor startup was conducted in accordance with Procedure OTG-ZZ-00002, "Reactor Startup," Revision 25. Control room operators adhered to procedural requirements and performed the reactor startup cautiously and methodically. Operators utilized three-way communications during the evolution. Reactor engineers conducted low power physics testing in accordance with Procedure ESP-ZZ-00024, "Low Power Physics Testing and Data Acquisition," Revision 4. A reactor engineer was stationed in the control room to perform

independent verifications of subcritical multiplication and reactivity calculations as required by the procedure. Criticality was achieved within the range allowed by the estimated critical rod position calculation.

c. Conclusions

Control room operators demonstrated good command and control during the reactor startup following completion of refueling Outage 10. Reactor engineering personnel and control room operators were attentive during the approach to criticality.

O4 Operator Knowledge and Performance

O4.1 Essential Service Water Intrusion Into the Feedwater and Auxiliary Feedwater Systems

a. Inspection Scope (71707)

On October 27, during the performance of surveillance procedures, operators aligned essential service water to all four steam generators. The inspectors reviewed the circumstances surrounding this event.

b. Observations and Findings

On October 27, operators in the control room and at the auxiliary shutdown panel were performing surveillance Procedure OSP-RP-00002, "Auxiliary Shutdown Panel Controls Test," Revision 9. During the test, the control room operator turned to the wrong page of the procedure and directed that Valve ALHV0033, essential service water to turbine-driven auxiliary feedwater, be opened in accordance with step 6.19. The correct order was to open Valve ALHV0031, essential service water to motor-driven auxiliary feedwater Pump A, in accordance with step 6.20. The auxiliary shutdown panel operator then depressed the button to open Valve ALHV0033. This resulted in the flow of essential service water through the turbine-driven auxiliary feedwater pump and into the main feedwater headers of all four steam generators. (All four steam generators were in wet layup condition at the time.)

The auxiliary shutdown panel operator promptly realized the error and shut the valve by depressing the close pushbutton. No significant level increases were experienced in any of the four steam generators. The licensee performed extensive sampling of potentially affected piping in order to quantify the extent of essential service water contamination. No contamination was found in any of the four steam generators. The licensee found contamination in the auxiliary feedwater lines and, to a lesser extent, the main feedwater lines. The affected lines were flushed and restored to service. The inspectors reviewed the licensee's compensatory measures for the essential service water contamination and found them to be adequate.

Technical Specification 6.8.1.a requires, in part, that written procedures shall be established, implemented, and maintained covering the applicable procedures recommended in Appendix A of Regulatory Guide 1.33, Revision 2, February 1978.

Regulatory Guide 1.33, Section 3.I, includes procedures for the auxiliary feedwater system. Failure to properly perform Procedure OSP-RP-00002, by not complying with the requirements of the test, was a violation of Technical Specification 6.8.1.a. This violation is in the licensee's corrective action program as Suggestion-Occurrence-Solution Report 99-3082 (50-483/99013-01).

c. Conclusions

Operators failed to follow the procedure while testing the auxiliary shutdown panel. Specifically, control room personnel directed local operators to open the wrong valve. This caused the flow of essential service water through the turbine-driven auxiliary feedwater pump and into the main feedwater headers of all four steam generators. Failure to follow the surveillance procedure was a violation of Technical Specification 6.8.1. This Severity Level IV violation is being treated as a noncited violation, consistent with Section VII.B.1.a of the NRC Enforcement Policy.

O7 Quality Assurance in Operations

O7.1 Inadvertent Boron Addition While at Power

a. Inspection Scope (71707)

During the performance of a centrifugal charging pump surveillance procedure on November 10, operators inadvertently added borated water (approximately 2450 ppm) to the reactor coolant system while at power. The inspectors assessed the circumstances surrounding this event and the corrective actions taken by the licensee following a similar occurrence in August 1999.

b. Observations and Findings

On August 12, with the reactor shut down to repair a 6-inch reheater drain tank line, several spurious alarms of "Source Range Nuclear Instrumentation Counts Per Second Level" occurred. The high count rate alarm resulted in a source range flux doubling multiplication actuation. This actuation aligned borated water from the refueling water storage tank (2450 ppm) to the suction of the centrifugal charging pumps. Following verification of no actual neutron flux multiplication, normal charging pump suction was realigned to the volume control tank.

On August 31, at 2:41 p.m., centrifugal charging Pump A was started to allow warming of pump lube oil for later sampling. The reactor coolant system temperature was expected to decrease 0.3°F following the startup of the pump. This temperature decrease was based on a suction header boron concentration of 120 ppm. (When the centrifugal charging pump was last run, this value was recorded on the control room "white board" as an operator aid.) The reactor coolant system boron concentration was 70 ppm. When the pump was started, a larger than expected decrease in reactor coolant temperature occurred. The larger temperature decrease was due to the higher boron concentration which remained in the centrifugal charging pump suction header

following the August 12 flux doubling event. Operators stabilized the plant by diluting the reactor coolant system, withdrawing control rods two steps, and decreasing the main turbine load. At 3:57 p.m., plant conditions were stabilized with reactor power at 97 percent.

Suggestion-Occurrence Solution Report 9-1812, "A(lpha) Centrifugal Charging Pump Placed in Service with Higher than Expected Boron Concentration," was written to address the event. Corrective actions following the event on August 31 included the following:

- Request For Resolution 18901A was initiated to remove the flux doubling circuitry during refueling Outage 11.

- Annunciator response Procedure OTA-RL-RK057, "Windows 57A Through 57F," Revision 3, was modified to ensure the control room "white board" was updated with current boron concentration should a flux doubling event occur. The "white board" was also intended to be reviewed prior to running the centrifugal charging pumps.

During refueling Outage 10, which commenced on October 2, both centrifugal charging pumps were run in support of surveillances and other routine operations. These runs aligned the refueling water storage tank to the suction of the centrifugal charging pumps. Operators properly recorded the boron concentration on the "white board." In preparation for reactor startup, the reactor coolant system was diluted to approximately 1500 ppm boron, on November 4.

On November 3 and 4, the inspectors asked control room personnel whether an inadvertent boron addition could occur following the reactor startup due to starting centrifugal charging pumps. Control room personnel stated that current boron concentration in the centrifugal charging pump inlet header was being tracked on the "white board." The inspectors were also told that this information was checked prior to starting the pumps to allow operators to compensate for a potential temperature decrease.

On November 11, the licensee was making preparations to perform the routine quarterly surveillance Procedure OSP-SA-0017B, "Train B SIS-CSAS Slave Relay Test," Revision 11. The plant conditions were as follows:

- Reactor power was at 100 percent.

- The normal charging pump was running in support of routine chemical and volume control system function.

- Both centrifugal charging pumps were secured.

- Centrifugal charging Pump B inlet header boron concentration was 2482 ppm.

- Reactor coolant system boron concentration was 1092 ppm.

Valve BGFCV121 (centrifugal charging Pumps A and B discharge to the regenerative heat exchanger flow control valve) was shut in accordance with step 6.2.2 of the slave relay test procedure. During performance of the surveillance, charging Pump B was started. This action recirculated the highly borated water contained in the pump inlet header to the suction of the normal charging pump. The normal charging pump then injected this water into the reactor coolant system. The negative reactivity addition resulted in a 2.5°F decrease in reactor coolant temperature and an approximate 3 percent decrease in reactor power.

During followup, the inspectors learned that operators thought that closing Valve BGFCV121 would prevent borated water from being injected into the reactor coolant system. The inspectors found that the control room operators' lack of knowledge of the chemical and volume control system configuration contributed to the November 11 event.

To address these deficiencies at the end of this inspection period, operations management was identifying all procedures that start the centrifugal charging pumps to require that boron concentrations in the charging pump suction header be checked prior to starting the pump. The boron concentration "white board" was also to be updated after the pumps were run.

c. Conclusions

Failure of operators to understand the recirculation flow path of the centrifugal charging pumps and failure to maintain an awareness of the boron concentration in the suction header of the centrifugal charging pumps were the causes of two inadvertent boron addition events. Each inadvertent addition caused a decrease in reactor power of approximately 3 percent and required operators to take actions to stabilize the plant (Section O 7.1).

II. Maintenance

M1 Conduct of Maintenance

M1.1 General Comments

a. Inspection Scope (62707)

The inspectors observed all or portions of the following maintenance activities:

- Fuel loading
- Replacement of SENI0032 source range nuclear instrumentation card
- Standby emergency diesel Generator B control circuitry repairs

b. Observations and Findings

The inspectors identified no substantive concerns. All work observed was performed with the work packages present and in active use. Foreign material exclusion controls were met. The inspectors frequently observed supervisors and system engineers monitoring job progress, and quality control personnel were present when required. Specific discussions of maintenance observed are discussed in Section 4.1, below.

M1.2 General Comments on Surveillance Activities

a. Inspection Scope (61726)

The inspectors observed or reviewed all or portions of the following test activities:

- Test Procedure OSP-EP-V0004, "SI Accumulator Discharge Isolation and SI Test Header Isolation Valve Operability," Revision 1,
- Test Procedure OSP-EP-V0002, "Section XI Safety Injection Accumulator Valve Operability," Revision 6,
- Test Procedure OSP-EF-V001A, "ESW Train A Operability," Revision 14,
- Test Procedure OSP-EF-V001B, "ESW Train B Operability," Revision 16,
- Test Procedure ETP-FC-03002, "Tripping Sequence of Auxiliary Feedwater Pump Turbine KFC02," Revision 5,
- Test Procedure OSP-BB-VL006, "Section XI RCS Pressure Isolation Valves Leak Rates Tests," Revision 22,
- Test Procedure OSP-FC-V0001, "Section XI Auxiliary Feedwater Pump Turbine Valve Operability," Revision 16,
- Test Procedure OSP-SA-2416, "ESFAS Turbine Driven Auxiliary Feedwater Pump Response Time Test," Revision 3,
- Test Procedure OSP-NE-0001B, "Standby Diesel Generator 'B' Periodic Tests," Revision 5, and
- Test Procedure OSP-AB-V002B, "Main Steam Isolation Valves Operability," Revision 11.

b. Observations and Findings

The surveillance testing was conducted satisfactorily in accordance with the licensee's approved programs and the Technical Specifications.

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- Test Procedure ETP-FC-03002, "Tripping Sequence of Auxiliary Feedwater Pump Turbine KFC02," Revision 5,
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- Test Procedure OSP-FC-V0001, "Section XI Auxiliary Feedwater Pump Turbine Valve Operability," Revision 16,
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- Test Procedure OSP-NE-0001B, "Standby Diesel Generator 'B' Periodic Tests," Revision 5, and
- Test Procedure OSP-AB-V002B, "Main Steam Isolation Valves Operability," Revision 11.

b. Observations and Findings

The surveillance testing was conducted satisfactorily in accordance with the licensee's approved programs and the Technical Specifications.

M2 Maintenance and Material Condition of Facilities and Equipment

M2.1 Review of Material Condition During Plant Tours

a. Inspection Scope (62707)

The inspectors performed routine plant tours to evaluate plant material condition.

b. Observations and Findings

The inspectors observed that material condition and housekeeping in the auxiliary building, fuel building, control building, diesel generator building, essential service water pump house, and turbine building were good. The inspectors identified few discrepancies during plant tours. The licensee documented these discrepancies and initiated corrective action.

Following plant startup from the refueling outage, the inspectors made tours of the secondary plant. The few steam leaks observed by the inspectors were of minor magnitude. These leaks had been identified by the licensee and were in their corrective action program. Similar tours were performed inside the radiologically controlled area. Only a few minor packing leaks with minimal boric acid leakage were observed by the inspectors. None of these leaks challenged equipment operability. These items were also added to the licensee's corrective action program.

M4 Maintenance Staff Knowledge and Performance

M4.1 Removal of Reactor Coolant Pump D Motor

a. Inspection Scope (62707)

The inspectors witnessed portions of the licensee's effort to remove the reactor coolant Pump D motor.

b. Observations and Findings

The licensee held briefings prior to performing this maintenance activity. These briefings covered the radiation protection and work control aspects of the overall effort, affording the maintenance personnel the opportunity to raise questions and address concerns. Good communications and work control practices were noted throughout the effort, with proper adherence to good personnel safety practices. Personnel involved were knowledgeable of their responsibilities.

c. Conclusions

The licensee's overall effort in preparation for and removal of the reactor coolant Pump D motor was good.

III. Engineering

E1 Conduct of Engineering

E1.1 Reactor Building Integrated Leak Rate Test

a. Inspection Scope (62707)

The inspectors reviewed the licensee's preparation for performing the reactor building integrated leak rate test. The inspectors reviewed engineering surveillance Procedure ESP-GP-01007, "Reactor Building Integrated Leak Rate Test," Revision 7, to verify that the licensee had incorporated the associated regulatory requirements and commitments. After the test was completed, the inspectors reviewed the results.

b. Observations and Findings

The inspectors randomly selected some systems, which were addressed in Procedure ESP-GP-01007, for review against the licensee's piping and instrumentation diagrams. This was done in an effort to determine that all the appropriate valves in the selected systems were addressed in the procedure. The inspectors also reviewed the test position of the valves, listed in the same procedure, to verify that the associated systems were placed in correct alignment for the performance of the reactor building pressurization test. Finally, the inspectors determined that all appropriate systems required to be aligned for the test were addressed in the valve lineup checklist. No problems were noted.

Procedure ESP-GP-01007 gave the licensee the option to perform either the Type A test as described in ANSI/ANS 56.8-1994, "Containment System Leakage Testing Requirements," or, under favorable conditions, the licensee could perform a reduced time test, using the methodology described in Bechtel Topical Report BN TOP-1. The inspectors reviewed the two options and found them to be technically adequate.

The inspectors reviewed the reactor building integrated leak rate test results. The test was completed on October 26, 1999. An 8-hour containment leak rate test was performed per ANSI/ANS 56.8-1994, and the official test results were obtained using the mass point data analysis technique. The "as-left" integrated leakage rates and minimum pathway Type B and C leakage rates were used to calculate "as-found" integrated leakage rates.

The "as-left" and "as-found" leakage rates calculated at the 95 percent upper confidence limit were less than 75 percent of the maximum allowable leakage rate, i.e., less than 0.150 percent per day. The inspectors verified these values by performing manual calculations.

The inspectors found that the requirements of 10 CFR Part 50, Appendix J, the Callaway Updated Safety Analysis Report, and Technical Specifications were met.

c. Conclusions

The licensee's performance of the reactor building integrated leak rate test was found to be good. Engineering and contract personnel involved were knowledgeable and thorough.

E2 Engineering Support of Facilities and Equipment

E2.1 Essential Service Water System Performance

a. Inspection Scope (37551)

Due to its risk importance, the inspectors evaluated both current and planned actions to improve the reliability of the essential service water system.

b. Observations and Findings

The inspectors learned that the licensee had identified several issues that adversely affected performance of the essential service water system. Action plans had been developed to address these issues. The issues were:

- decreased flow rates to containment coolers,
- corrosion induced failures, including valve internals and pinhole leaks,
- fouling, and
- vibration induced failures.

Decreased Flow Rates to Containment Coolers

The licensee believed that the reduced flow rates to the containment cooler were due to fouling inside the tubes and a decrease in essential service water system flow rates. Flow degradation was beginning to challenge the ability to comply with the Technical Specifications requirement of 4000 gpm to each cooler group. In each of the last two outages, the licensee replaced an essential service water pump. This has resulted in increased system flow. To address fouling, the licensee planned to back flush the containment coolers and replace tube banks with available spares during the next outage. Long-term actions include replacing the cooler design with one that provided easier access to clean individual tubes and possibly perform an engineering analysis to determine if the flow rate and effectiveness requirement could be relaxed.

Corrosion Induced Failures

Multiple pin hole leaks and structural failure of valve internals have been attributed to general water corrosion. The action plan called for increased monitoring of valve internal surfaces and a modification to replace up to 3000 feet of essential service water piping over the next 3 years. The design for replacement throttle valves was being evaluated for improved resistance to corrosion related failures and for best throttling characteristics.

Fouling

This issue involved the plugging of smaller diameter piping that reduced cooling to essential loads. Additionally, the fouling buildup inhibited the use of ultrasonic flow meters used to verify the required flow rates to some essential service water loads. Debris had also been introduced into the essential service water system through the service water system. The licensee planned to replace the carbon steel piping with stainless steel piping. This would help resolve the fouling concern. It would also be expected to correct the flow rate measurement issue since no problems had been noted with ultrasonic flow rate measurements in stainless steel piping. However, at this time, the licensee is not pursuing a modification to reduce the introduction of debris from the service water system.

Vibration Induced Failures

Vibration induced failures have been most predominant with components associated with the component cooling water heat exchangers.

Located at the outlet of each heat exchanger were throttle valves (EFV0058/90) that regulated flow. The vibration across these valves was due to extreme flow cavitation. The cavitation began in 1992, when the back pressure orifice was enlarged to increase system flow rates to optimize flow to the containment coolers. This, in turn, increased the differential pressure across the throttle valves, which resulted in the flow induced cavitation. During the last operating cycling, vibration was the worst at Valve EGV00355 (component cooling water heat Exchanger A drain valve). Vibration was as high as 10.4 inches/second.

To alleviate this problem the licensee installed smaller orifice plates upstream of the throttle valves. This reduced pressure on the upstream side of the valve. The licensee then throttled opened the component cooling water return bypass valves (EFH0059/60). This redirected a portion of component cooling water flow around the throttle valve, thereby reducing flow through the valve. These actions have reduced cavitation at the throttle valves.

The pipe vibration standard used by the licensee was located in ASME OM-S/G-3, Appendix 3. This standard stated that piping systems with peak velocities less than 0.5 inches/second were considered safe from a vibratory stress standpoint and required no further analysis. Vibratory velocities greater than 0.5 inches/second require further analysis to determine acceptability.

Following these corrective measures, the worst vibration still occurs at Valve EGV00355. However, its vibration was reduced to 0.65 inches/second. Request for Resolution 20302A was generated to address vibration in the valve. All other vibration readings were less than 0.5 inches/second.

c. Conclusions

The licensee has continued to make progress in improving the reliability of the essential service water system. Replacing essential service water pumps improved system flow rates and orifices have been installed to reduce system vibration. Plans to address containment cooler flow rate, corrosion induced failures, and fouling were also developed. However, none of these issues challenged the operability of the essential service water system

IV. Plant Support

R1 Radiological Protection and Chemistry Controls

R1.1 General Comments (71750)

The inspectors observed health physics personnel, including supervisors, routinely touring the radiologically controlled areas. Licensee personnel working in radiologically controlled areas exhibited good radiation worker practices.

Contaminated areas and high radiation areas were properly posted. Area surveys posted outside rooms in the auxiliary building were current. The inspectors checked a sample of doors, required to be locked for the purpose of radiation protection, and found no problems. Specific events and noteworthy observations are detailed below.

R1.2 Radiological Controls at Power and During Refueling Outage

a. Inspection Scope (71750)

The inspectors observed radiological controls during the licensee's effort to remove the motor from reactor coolant Pump D.

b. Observations and Findings

The radiological protection personnel held a briefing with the maintenance personnel involved prior to removing the reactor coolant Pump D motor. This briefing was held to discuss both the radiation work permit, under which the work would be covered, and the radiological conditions that were expected at the work site. High radiation areas and ALARA zones were identified.

During the performance of the maintenance activity, radiological protection personnel were present to monitor both the maintenance workers and the radiation levels as the pump motor was lifted off the pump. Maintenance personnel were found to adhere to good radiation protection practices. The inspectors noted that, during the evolution, maintenance workers at risk for receiving the highest exposure had not periodically

checked their electronic dosimetry. This was contrary to licensee management expectations. None of the maintenance personnel involved in this evolution exceeded their exposure limits.

c. Conclusions

The licensee's overall radiation protection practices during the maintenance activity to remove the reactor coolant Pump D motor were found to be good.

R2 Status of Radiological Protection and Chemistry Controls Facilities and Equipment

R2.1 Reactor Building Tour

a. Inspection Scope (71750)

The inspectors accompanied licensee personnel on a tour of the reactor building prior to final containment closure and reactor startup.

b. Observations and Findings

The inspectors found material condition to be good. The radiologically controlled area was generally clean, although some minor housekeeping problems were identified. Equipment that remained in containment (e.g., ladders, tool boxes, etc.) was properly secured. The inspectors and licensee personnel noted minor debris in certain areas, for which corrective action was immediately taken. Similarly, the licensee promptly corrected loosened fasteners on lagging blankets identified by the inspectors. The reactor containment building was clean and material condition was good.

V. Management Meetings

X1 Exit Meeting Summary

The exit meeting was conducted on November 30, 1999. The licensee did not express a position on any of the findings in the report.

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

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J. T. Patterson, Superintendent, Work Control (Acting)
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T. P. Sharkey, Supervising Engineer, Systems Engineering
M. E. Taylor, Manager, Nuclear Engineering

INSPECTION PROCEDURES USED

37551	Onsite Engineering
61726	Surveillance Observations
62707	Maintenance Observations
71707	Plant Operations
71750	Plant Support Activities

ITEMS OPENED AND CLOSED

Opened

99013-01	NCV	Essential service water intrusion into the feedwater and auxiliary feedwater systems (Section O4.1).

Closed

99013-01	NCV	Essential service water intrusion into the feedwater and auxiliary feedwater systems (Section O4.1).