

ENCLOSURE

U.S. NUCLEAR REGULATORY COMMISSION

REGION IV

Docket Nos.: 50-313, 50-368

License Nos.: DPR-51; NPF-6

Report No: 50-313/97-08; 50-368/97-08

Licensee: Entergy Operations, Inc.

Facility: Arkansas Nuclear One, Units 1 and 2

Location: 1448 S.R. 333
Russellville, Arkansas 72801

Dates: November 23, 1997, through January 3, 1998

Inspectors: J. Melfi, Acting Senior Resident Inspector
S. Burton, Resident Inspector

Approved by: Elmo E. Collins, Chief, Project Branch C
Division of Reactor Projects

Attachment: Supplemental Information

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EXECUTIVE SUMMARY

Arkansas Nuclear One, Units 1 and 2
NRC Inspection Report 50-313/97-08; 50-368/97-08

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

Operations

- While attempting to remove water from a Unit 1 main generator hydrogen vent, a detonation occurred in a vacuum cleaner when workers did not recognize the combustible hazard. They were focused on troubleshooting and did not apply system knowledge. Safety training that was immediately conducted by the licensee's plant department demonstrated good insight and application of plant experience to other routine evolutions (Section 01.2).
- During a Unit 2 quality assurance audit, the licensee identified a potential failure to perform surveillance requirements for the reactor protection logic as required by Technical Specifications (TS). The licensee took prompt measures to assure TS operability requirements were met until resolution of the requirements was completed. Testing was accomplished within Technical Specification time interval requirements (Section 01.3).

Maintenance

- Unit 2 steam generator atmospheric dump valves are tested and maintained in accordance with procedures. The licensee determined that testing criteria contained within the Safety Analysis Report (SAR) for these valves was in error and did not effect operability (Section M1.2).

Engineering

- The inspectors reviewed testing difficulties with a dc reactor trip breaker and concluded that the degradation of the reset push button did not affect the ability of the breaker to open. The instrument and controls (I&C) technicians showed a good questioning attitude to resolve the problem (Section E1.1).
- The 480 and 4160 volt breakers at Units 1 and 2 have been maintained in accordance with approved procedures. An error in updating maintenance procedures resulted in a delay of the evaluation of the impact of new maintenance requirements for both types of breakers. Subsequent review of the new maintenance requirements indicated that some safety-related breakers at both units had not been overhauled within the revised time intervals. A program that addresses correction of identified deficiencies was under development (Section E2.1 and E2.2).

Plant Support

- Routine tours of radiological areas found all areas properly posted, and survey maps properly reflected radiological conditions. Housekeeping in well traveled areas was good, but some minor items were seen in some less traveled areas (Section R1.1).
- The inspectors reviewed fire watch records and discussed fire watch responsibilities with fire watches. The inspectors found the fire watches knowledgeable and records showed observations were done within required time frames (Section F.4.1).

Report Details

Summary of Plant Status

Unit 1

Unit 1 began the reporting period at 100 percent power. On December 3, 4, and 18, 1997, Unit 1 reduced power slightly to support plugging efforts on the main condenser, returning to 100 percent power each day. Unit 1 began a planned downpower to 85 percent at 10:06 p.m. on December 12 for main turbine valve and governor valve testing, returning to 100 percent power at 4:45 a.m. on December 13. Unit 1 remained at 100 percent power for the rest of the reporting period.

Unit 2

At the beginning of the reporting period, Unit 2 was operating at 100 percent power. At 10:03 p.m. on December 12, Unit 2 reduced power to 97 percent for emergency feedwater check valve testing and returned to 100 percent power at 2 a.m. on December 13. Unit 2 remained at 100 percent power throughout the rest of the reporting period.

I. Operations

O1 Conduct of Operations

O1.1 General Comments (71707)

The inspectors toured all areas of the turbine and auxiliary buildings. Housekeeping and plant material condition were good. The inspectors did not find any examples of equipment or valves leaking during the tours. Gas cylinders were properly secured and all personnel wore required personnel industrial safety equipment.

The inspectors observed various aspects of plant operations, including compliance with TSs; conformance with plant procedures and the SAR; shift manning; communications; management oversight; proper system configuration and configuration control; housekeeping; and operator performance during routine plant operations, the conduct of surveillances, and plant power changes.

The conduct of operations was professional and safety conscious. Surveillances were well controlled, deliberate, and performed in accordance with procedures. Shift turnover briefs were comprehensive and were typically attended by a chemistry technician, a health physics technician, and a representative from system engineering. Housekeeping was generally good and discrepancies promptly corrected. Specific events and noteworthy observations are detailed below.

O1.2 Unit 1 - Hydrogen Detonation in Vacuum Cleaner While Troubleshooting Main Generator Support Systems

a. Inspection Scope (71707)

On December 11, 1997, a hydrogen detonation occurred in a vacuum cleaner used to remove water from a main generator hydrogen vent line. Because of the potential for personal injury, the inspectors reviewed the event.

b. Observations and Findings

The licensee discovered water in a vent line associated with the Unit 1 main generator isophase bus deck and hydrogen dryer. When an operator and a system engineer attempted to remove some water in the associated piping using a wet/dry vacuum cleaner, a hydrogen detonation occurred within the vacuum canister. The licensee stopped troubleshooting activities immediately after the detonation, recapped the connection, and notified the control room of the event. The detonation did not result in any personnel injuries or plant equipment damage. The force of the detonation separated the 2.5 gallon vacuum cleaner canister, constructed of both hard and pliable plastic, into multiple pieces.

The licensee wrote Condition Report (CR) 1-97-0336 for the event and reviewed procedural requirements and causal factors. The operator and engineer were familiar with system operation and the potential for hydrogen in the piping but did not use all of their system knowledge due to their focused effort to remove the water. Routine draining of water from lines and traps was considered a normal watch standing duty and correction of similar problems would not require a procedure. As part of the ongoing root cause analysis for this event, procedural modifications are anticipated which will address explosive gases.

During the review of the event, the inspectors noted that the licensee's painting department effectively utilized this event in safety training. Immediately after this occurrence, the painting department acquired the damaged vacuum cleaner and conducted safety training to demonstrate the problems associated with improper ventilation while painting. The paint department noted that the effects of a detonation associated with paint fumes, which are heavier than air, had a high potential for similar results if proper ventilation precautions were not observed.

c. Conclusions

The detonation of hydrogen inside a vacuum cleaner, while attempting to remove water from Unit 1 main generator hydrogen dryer, occurred due to the focused efforts of troubleshooting personnel and the lack of application of system knowledge. Safety training that was immediately conducted by the licensee's paint department demonstrated good insight and application of plant experience to other routine evolutions.

O1.3 Unit 2 - Reactor Protection Logic Triannual Staggered Test Basis

a. Inspection Scope (71707)

During review of CR 2-97-0600, the inspectors noted that the licensee identified a potential failure to meet the TS staggered surveillance interval for reactor protection system (RPS) logic. The inspectors reviewed the CR and associated TS operability requirements.

b. Observations and Findings

During Quality Assurance Surveillance SR-56-97, the licensee identified that Table 4.3-1 of the TSs requires triannual (123 days) testing of RPS logic on a staggered test interval. A staggered test interval assures that the testing done on separate trains or channels is spread out evenly over an interval. TS Table 3.3-1 defines two subsets of logic: the "matrix logic," which has six channels, and the "initiation logic," which has four channels. For surveillance testing purposes, the licensee divided the 123-day interval into four periods to obtain a staggered test interval of 28 days as opposed to being divided into six periods that would have resulted in a 20.5-day interval. TS Table 4.3-1 does not clearly define if the surveillance is applicable to four RPS channels or the six and four subchannel logics. A review of records and equipment out-of-service intervals showed that the system was never inoperable while taking into account the potentially shorter surveillance interval. The purpose of the CR was to resolve the potential discrepancy.

The inspectors reviewed the history of TS changes which resulted in the ambiguity. Originally, TSs required surveillance of four channels of reactor protection quarterly without a staggered testing requirement. Subsequently, a need was identified to clarify requirements with the matrix logic, the initiation logic bypass, and associated operability requirements. This resulted in the addition of channel requirements to Table 3.3-1. The last significant amendment was to change the surveillance interval to triannual. In this submittal, a staggered testing requirement was added which ensured that the test interval was not excessive. Although not clearly reflected in the submittal package for the TS change, the supporting calculations and historical testing requirements all indicated that the surveillance requirements were based upon testing the four RPS channels and not on a requirement to test the matrix or initiation sublogics. The licensee plans to further clarify the surveillance requirements currently identified within this TS basis to remove any ambiguity associated with the surveillance methodology.

c. Conclusions

During a Unit 2 quality assurance audit, the licensee identified a potential failure to perform surveillance requirements for the reactor protection logic as required by TS. The licensee took prompt measures to assure TS operability requirements were met until resolution of the requirements was completed. The action was accomplished within Technical Specification time interval requirements.

08 Miscellaneous Operations Issues (92901)

08.1 General Comments

a. Inspection Scope (61726, 929~1)

The inspectors reviewed the following completed operational surveillance:

- Procedure 1015.015, Revision 23, Form G, "Unit 1 Operation Forms; Semiannual Operator Round Verification, " dated September 9, 1997.

b. Observations and Findings

The inspectors found these activities to be complete and performed in accordance with procedures, and the operators were knowledgeable on their assigned tasks. When applicable, appropriate radiological work permits were followed. The inspectors observed supervisory involvement in the activities.

08.2 (Open) Violation 50-368/9509-01 Lack of Temporary Modification for Connecting Shutdown Cooling Heat Exchanger Service Water Drains

During Mode 5 with the shutdown cooling system in operation, the licensee installed what was effectively a temporary modification on two shutdown heat exchangers, consisting of a hose and pump connecting the service water sides. Due to required repairs on one shutdown cooling heat exchanger inlet valve, the licensee intended to utilize the operable shutdown cooling heat exchanger as part of the drain flow path to accept water from the heat exchanger inlet valve. A violation was issued for failure to properly control the modification as required by the temporary modification procedure.

The licensee's immediate corrective actions included initiation of a CR, securing work on the modification, procedure revisions to appropriately control the activity, and corrections to the temporary modification procedure to resolve conflicting steps. Long-term corrective actions included a review of mechanical systems procedures and applicable revisions to prevent occurrence of similar configurations, an industry events analysis to notify other Entergy plants of the condition, a sharing of information with system engineers at other Entergy plants, and lessons learned training for Units 1 and 2 operators concerning the event. The inspectors are continuing their review of the effectiveness of the licensee's evaluation and control of temporary modifications.

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:

- Unit 1 - Job Order (JO) 00969292, "Replace Gear Box Oil Cooler on Diesel K5," on December 9 and 10, 1997.
- Unit 1 - JO 00971933, "Air Filter Gasket Replacement," on December 9 and 10, 1997.
- Unit 2 - JOs 00966168 and --888, "MS Header 1 Dump to Atmosphere Valve Operability," on November 5, 1997.

b. Observations and Findings

The inspectors found that the work performed in these activities was professional and thorough. The work was performed according to procedures and the workers were knowledgeable of their assigned tasks. Maintenance supervisory involvement was observed and appropriate foreign material exclusion controls were implemented. Infrequently performed tests or evolution briefs were held when required.

In addition, see the specific discussions of maintenance observed under Sections M1.2 and M1.3 below.

c. Conclusions

Maintenance performed by the licensee was done professionally and thoroughly. Work was performed according to procedures and by knowledgeable personnel. Supervisory involvement was observed.

M1.2 Unit 1 - Diesel Fire Pump Gear Box Oil Cooler Replacement

a. Inspection Scope (62707)

The inspectors reviewed the maintenance activities associated with replacement of the diesel fire pump gear box under JO 00969292.

b. Observations and Findings

During the replacement of the gear box oil cooler, the maintenance technicians had difficulty in lining up the coolant and drain lines. The maintenance planner was called and was appropriately involved in the resolution. Inverting the cooler easily resolved the alignment problem. The licensee planned to add a step in the work package which would specify the proper configuration of the cooler for future replacement activities.

The inspectors found the work performed in these activities to be professional and thorough. The work was performed in accordance with procedures and the workers were knowledgeable on their assigned tasks. Maintenance supervisory involvement was observed and appropriate foreign material exclusion controls were implemented.

c. Conclusions

The work was performed professionally and thoroughly according to procedures. Difficulty in replacement of the gear cooler was appropriately resolved.

M1.3 Unit 2 - Main Steam Header Dump Valves Operability Verification

a. Inspection Scope (62707)

The inspectors reviewed the maintenance activities associated with the operability assessment of main steam header dump valves under routine JOs 00966168 and -888, "MS Header 1 Dump to Atmosphere Valve Operability."

b. Observations and Findings

The inspectors observed the operability assessment of Unit 2 downstream main steam atmospheric dump valves on November 5, 1997. I&C technicians were verifying operability according to maintenance JOs. Unit 2 SAR, Section 10.4.4.2, states that the upstream atmospheric dump valves will modulate full open or closed in a minimum of 15 seconds and a maximum of 20 seconds.

The inspectors observed the technician timing valve motion from the onset of motion to completion of travel. The inspectors noted that this method of measuring stroke time did not account for the time it took from time of initiation but was from the point where air pressure bled sufficiently low enough to allow the onset of valve motion. Additionally, the maintenance procedure only timed valve motion in the opening direction. The inspectors inquired about test methodologies and requirements for testing the downstream atmospheric dump valves since the upstream atmospheric dump valves have stroke time requirements.

The licensee determined that the upstream valves were tested in both directions from the onset of signal until the valve position indicated completion of travel and that this methodology was the acceptable method for testing valve stroke times. The licensee

also noted that the acceptance criteria for the stroke times on the upstream valves allowed times in excess of both the SAR minimum and maximum times. The licensee's investigation of the SAR stroke time requirements indicated that the valve purchase specification had been inadvertently incorporated into the SAR and that a requirement for stroke times did not exist. The licensee found no requirements for testing the stroke time of the down stream valves. Operability of the upstream valve was maintained because the valves are isolated and out of service during normal plant operation.

c. Conclusions

Unit 2 steam generator atmospheric dump valves were tested and maintained in accordance with procedures. The licensee determined that testing criteria contained within the SAR for these valves was in error and did not effect operability.

M8 Miscellaneous Maintenance Issues (92902)

M8.1 (Closed) Unresolved Item (URI) 50-368/9703-02, "Failure of Main Steam Safety Valve Lift Tests"

During insitu testing of main steam safety valves, the lift setpoints did not satisfy the requirements of related TS 3.7.1.1. Subsequently, Licensee Event Report (LER) 50-368/97-005 was issued by the licensee for the failure to meet the requirements of the TS. LER 50-368/97-005 duplicates, and will address, the issues of URI 50-368/9703-02.

III. Engineering

E1 Conduct of Engineering

E1.1 Unit 1 -- Failure of Reactor Trip Breaker to Close During Testing

a. Inspection Scope (37751)

During normal surveillance testing of Channel C of the RPS, a dc reactor trip breaker (CB1) failed to initially reset after the shunt trip had been reset. The inspectors investigated this problem to assess operability of the dc breaker.

b. Observations and Findings

I&C technicians identified a difficulty in resetting a reactor trip breaker and initiated CR 1-97-0333 on December 9, 1997. The licensee determined that the reset push button on this breaker required more pressure than normal to close the breaker. This push button is used to cycle the breaker closed during a test. The licensee suspected a dirty or degraded contact and had the contact cleaned, which restored the push button to its normal condition.

The inspectors reviewed this condition and concluded that this failure did not affect the ability of the breaker to open. The I&C technicians identified this problem and showed a good questioning attitude to resolve the problem.

c. Conclusions

The inspectors reviewed a possible problem with a DC reactor trip breaker and concluded that the degradation found did not affect the ability to trip. The I&C technicians showed a good questioning attitude to resolve the problem.

E2 Engineering Support of Facilities and Equipment

E2.1 Review of 480 Volt Breakers

a. Inspection Scope (37551)

The inspectors reviewed the preventive maintenance program associated with 480 volt breakers. Included in the review was an overview of maintenance procedures and breaker maintenance history.

b. Observations and Findings

The inspectors reviewed licensee CR C-97-0337 for Units 1 and 2, which identified that a change to preventive maintenance engineering evaluation (PMEE) increased the frequency for breaker preventive maintenance to 5 years and added a 10-year requirement to overhaul 480 volt breakers. The CR documented the licensee's review of breaker maintenance histories and noted that multiple breakers exceeded the newly revised preventive maintenance requirements. The CR also noted those safety-related breakers which became overdue as a result of the change.

The inspectors reviewed the licensee's findings with the following observations. Records indicated that eight Unit 1 and nine Unit 2 safety-related 480 volt breakers have not been refurbished within the newly established limit.

The licensee's operability assessment included a review of overhaul requirements for 480 volt breakers, maintenance program effectiveness with identifying failure mechanisms, and industry events and associated root causes for breaker failures. The licensee indicated that the preventive maintenance program addressed all items identified during their review. The licensee indicated that failure mechanisms which occurred at other licensees are routinely addressed under the existing preventive maintenance program. Additional plans included refurbishment of all breakers that have or will exceed the 10-year requirement within the next 9 months with priority given to safety-related breakers, evaluation of breaker interchangeability, procurement of additional breakers parts, and procurement of five spare safety-related breakers.

While evaluating changes to the preventive maintenance program for CR C-97-0337, the licensee discovered that the 480 volt breaker preventive maintenance schedules are not updated to reflect recent changes to maintenance frequency. CR-C-97-0338, written on November 14, 1997, noted that the maintenance frequency for breakers was amended in June 1997 with Revision 8 to PMEE 064 for 480 volt breakers. The inspectors noted that approximately 5 months had elapsed, since the revision, until the discovery that preventive maintenance procedures had not been updated to account for the change in maintenance frequency. The inspectors will review the acceptability of the licensee's preventive maintenance program for 480 volt breakers and the timeliness of the licensee's incorporation of vendor requirements into the preventive maintenance program in a future inspection report. This will be tracked as an inspector followup item (IFI) (50-313/9708-01; 50-368/9708-01).

c. Conclusions

The 480 volt breakers at Units 1 and 2 have been maintained in accordance with approved procedures. An error in updating maintenance procedures resulted in a delay of the evaluation of the impact of new maintenance requirements for 480 volt breakers. Subsequent review of the new maintenance requirements indicated that some safety-related breakers at both units had not been overhauled within the revised time intervals. A program that addresses correction of identified deficiencies was under development.

E2.2 Units 1 and 2 - Review of 4160 Volt GE Magna Blast Breaker Preventive Maintenance History

a. Inspection Scope (37551)

The inspectors reviewed the preventive maintenance program associated with 4160 volts breakers. Included in the review was an overview of maintenance procedures and breaker maintenance history.

b. Observations and Findings

The inspectors reviewed licensee CR C-97-0338 for Units 1 and 2, which identified that a change to PMEE added another requirement to periodically overhaul 4160 volt breakers. The CR documented the licensee's review of breaker maintenance histories and noted that multiple breakers had not been overhauled within the 6 to 9-year time frame now required. The CR also noted those safety-related breakers which became overdue as a result of the change.

The licensee's operability assessment included a review of overhaul requirements for 4160 volt breakers, maintenance program effectiveness with identifying failure mechanisms, industry events and associated root causes for breaker failure, and grease hardening issues. The licensee indicated that the preventive maintenance program addressed all items identified during their review. The licensee indicated that failure

mechanisms which occurred at other licensee facilities were addressed under the existing preventive maintenance program. Additional plans included replacement of a number of existing General Electric 4160 volt breakers with Siemens vacuum type breakers during the next Units 1 and 2 refueling outages and establishing a rotation program for remaining breakers by overhauling the breakers replaced with Siemens breakers.

The inspectors reviewed the licensee's findings, with the following observations. Records indicated that all safety-related breakers have had the trip latch roller bearings replaced within the last 32 months. Breaker and breaker cubicle preventive maintenance, which included cleaning, lubrication, and inspection, was performed on all of the breakers within the last 32 months. Some breakers have never had the breaker bushings replaced. On other breakers, the plunger gap had not been checked. A review of information provided by the licensee indicated that most breakers had breaker springs replaced and/or bushings inspected. Records indicated that, of the 21 breakers identified in the CR, four Unit 1 and one Unit 2 4160 volt breakers have not been overhauled. The remaining breakers have been overhauled with a date that exceeded the new 6- to 9-year requirement.

While evaluating changes to the preventive maintenance program for CR C-97-0337, it was discovered that 4160 volt breaker preventive maintenance schedules were not updated to reflect recent changes to maintenance frequency. This will be tracked as an IFI specified in Section E2.1 above (50-313/9708-01; 50-368/9708-01).

c. Conclusions

The 4160 volt breakers at Units 1 and 2 have been maintained in accordance with approved procedures. An error in updating maintenance procedures resulted in a delay in the evaluation of the impact of new maintenance requirements for 4160 volt breakers. Subsequent review of the new maintenance requirements indicated that some safety-related breakers at both units have only had partial refurbishment and have not been overhauled since installation. A program that addresses overhaul and rotation of General Electric breakers and replacement of some breakers with Siemens vacuum type breakers was under development.

E8 Miscellaneous Engineering Issues (92903)

E8.1 (Closed) Violation 50-368/9712-01, "Inadequate Inspection of Shield Lid Drain Line"

During inspection activities associated with welding the shield lid and structural lid for a dry fuel storage cask, the inspectors noted that blockage in the shield lid drain line resulted in the inability to drain water from under the shield lid before welding. The inspectors verified that the licensee revised portions of Procedures 1302.024, "Dry Fuel Storage Equipment Preparation," and 1302.025, "Spent Fuel Removal and Dry Storage Operations," to preclude this problem from happening. Based on these actions, this violation is closed.

E8.2 (Closed) - URI 50-313/9701-05; 50-368/9701-05, Units 1 and 2 10 CFR 70.24
Requirements, Criticality Monitors

This issue involved the failure to have in place either a criticality monitoring system for storage and handling of new (nonirradiated) fuel or an NRC approved exemption to this requirement contained in 10 CFR 70.24.

10 CFR 70.24 requires that each licensee authorized to possess more than a small amount of special nuclear material (SNM) maintain in each area in which such material is handled, used, or stored a criticality monitoring system which will energize clearly audible alarm signals if accidental criticality occurs. The purpose of 10 CFR 70.24 is to ensure that, if a criticality were to occur during the handling of SNM, personnel would be alerted to that fact and would take appropriate action.

Most nuclear power plant licensees were granted exemptions from 10 CFR 70.24 during the construction of their plants as part of the Part 70 license issued to permit the receipt of the initial core. Generally, these exemptions were not explicitly renewed when the Part 50 operating license was issued, which contained the combined Part 50 and Part 70 authority. In August 1981, the Tennessee Valley Authority (TVA), in the course of reviewing the operating licenses for its Browns Ferry facilities, noted that the exemption to 10 CFR 70.24 that had been granted during the construction phase had not been explicitly granted in the operating license. By letters dated August 11, 1981, and August 31, 1987, TVA requested an exemption from 10 CFR 70.24. On May 11, 1983, NRC informed TVA that "the previously issued exemptions are still in effect even though the specific provisions of the Part 70 licenses were not incorporated into the Part 50 license." Notwithstanding the correspondence with TVA, the NRC has determined that, in cases where a licensee received the exemption as part of the Part 70 license issued during the construction phase, both the Part 70 and Part 50 licenses should be examined to determine the status of the exemption. The NRC's view now is that, unless a licensee's licensing basis specifies otherwise, an exemption expires with the expiration of the Part 70 license. The NRC intends to amend 10 CFR 70.24 to provide for administrative controls in lieu of criticality monitors.

The NRC has concluded that a violation of 10 CFR 70.24 existed. The NRC has also determined that numerous other licensees have similar circumstances that were caused by confusion regarding the continuation of an exemption to 10 CFR 70.24 originally issued prior to issuance of the Part 50 license. After considering all the factors that resulted in these violations, the NRC has concluded that, while a violation did exist, it is appropriate to exercise enforcement discretion for violations involving special circumstances in accordance with Section VII B.6 of the "General Statement of Policy and Procedures for NRC Enforcement Actions" (Enforcement Policy), NUREG-1600. Pending the amendment to 10 CFR 70.24, further enforcement action will not be taken for failure to meet 10 CFR 70.24, provided an exemption to this regulation is obtained before the next receipt of fresh fuel or before the next planned movement of fresh fuel.

IV. Plant Support

R1 Control of Radiological Protection & Chemistry Controls

R1.1 General Comments (71750)

During routine tours of the plant and observations of plant activities, the inspectors found that access doors to locked high radiation areas were properly locked, areas were properly posted, and personnel demonstrated proper radiological work practices. The inspectors toured both Units 1 and 2 auxiliary and fuel storage buildings. Housekeeping in well transited areas was very good. However, in areas that were out of the way, housekeeping was not as good, with some minor items laying around that were not being used.

All radiological areas were properly posted. Informational survey maps located outside rooms throughout the radiological controlled area properly reflected the radiological conditions within the rooms.

F4 Fire Protection Staff Knowledge and Performance

F4.1 Fire Watch Rounds (71750)

On December 21, 1997, the inspectors reviewed the hourly fire watch records, completed rounds, and discussed fire watch responsibilities with fire watches. Fire watch standers were knowledgeable of procedures, fire loading limitations, effect on watch standing practices, requirements for continuous and hourly fire watches, and the basis for the items observed on their watch station. Records indicated that observations were made within required time frames on all equipment identified as requiring hourly inspections.

V. Management Meetings

X1 Exit Meeting Summary

The inspectors presented the inspection results to members of licensee management at the conclusion of the inspection on January 7, 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

SUPPLEMENTAL INFORMATION

PARTIAL LIST OF PERSONS CONTACTED

Licensee

C. Anderson, Plant Manager, Unit 2
G. Ashley, Licensing Supervisor
B. Bennet, Manager, Radiation Protection and Chemistry
V. Bond, Supervisor, Unit 2 System Engineering EIC
M. Chisum, Manager, Unit 2 System Engineering
M. Cooper, Licensing Specialist
D. Denton, Director, Support
G. Dobbs, Supervisor, Design E&IC
D. Mims, Director, Licensing
A. South, Licensing Specialist
J. Vandergrift, Director, Quality
H. Williams, Superintendent, Plant Security

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: Followup - Plant Operations
IP 92902: Followup - Maintenance
IP 92903: Followup - Engineering

ITEMS OPENED, CLOSED, AND DISCUSSED

Opened

50-313;368/9708-01	IFI	Untimely PM Updates for 480 and 4160 Volt Breakers (Sections E2.1 and E2.2)
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Closed

50-313;368/9701-05	URI	Units 1 and 2 10 CFR 70.24 Requirements, Criticality Monitors (Section E8.2)
50-368/9703-02	URI	Failure of Main Steam Safety Valve Lift Tests (Section M8.1)
50-368/9712-01	VIO	Inadequate Inspection of Shield Lid Drain Line (Section E8.1)

Discussed

50-368/9509-01	VIO	Lack of Temporary Modification for Connecting Shutdown Cooling Heat Exchanger Service Water Drains (Section 08.2)
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LIST OF ACRONYMS USED

CR	condition report
dc	direct current
I&C	instrumentation and control
IFI	inspector followup item
JO	job order
LER	licensee event report
PMEE	plant maintenance engineering evaluation
RPS	reactor protection system
SAR	Safety Analysis Report
SNM	special nuclear material
TS	Technical Specification
TVA	Tennessee Valley Authority
URI	unresolved item