



UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION IV
611 RYAN PLAZA DRIVE, SUITE 400
ARLINGTON, TEXAS 76011-4005

February 11, 2008

Mr. Timothy G. Mitchell
Vice President Operations
Arkansas Nuclear One
Entergy Operations, Inc.
1448 S.R. 333
Russellville, AR 72802-0967

SUBJECT: ARKANSAS NUCLEAR ONE - NRC INTEGRATED INSPECTION REPORT
05000313/2007005 AND 05000368/2007005

Dear Mr. Mitchell:

On December 31, 2007, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at your Arkansas Nuclear One, Units 1 and 2, facility. The enclosed integrated report documents the inspection findings, which were discussed on January 16, 2008, with you and other members of your staff.

The inspection examined activities conducted under your licenses as they relate to safety and compliance with the Commission's rules and regulations and with the conditions of your licenses. The inspectors reviewed selected procedures and records, observed activities, and interviewed personnel.

This report documents five NRC-identified findings and one self-revealing finding. Five of these findings were evaluated under the significance determination process as having very low safety significance (Green). One finding impacted the regulatory process and was assessed in accordance with the NRC Enforcement Policy. All six of these findings were determined to involve violations of NRC requirements. Additionally, a licensee-identified violation which was determined to be of very low safety significance is listed in this report. However, because of the very low safety significance and because they are entered into your corrective action program, the NRC is treating these findings as noncited violations consistent with Section VI.A.1 of the NRC Enforcement Policy. If you contest this/these noncited violations, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington DC 20555-0001; with copies to the Regional Administrator, U.S. Nuclear Regulatory Commission Region IV, 611 Ryan Plaza Drive, Suite 400, Arlington, Texas 76011-4005; the Director, Office of Enforcement, U.S. Nuclear Regulatory Commission, Washington DC 20555-0001; and the NRC Resident Inspector at Arkansas Nuclear One, Units 1 and 2, facility.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter, its enclosure, and your response (if any) will be made available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records (PARS) component of NRC's document system (ADAMS). ADAMS is accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html> (the Public Electronic Reading Room).

Sincerely,

/RA/

Jeff Clark, P.E.
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Dockets: 50-313
50-368
Licenses: NPF-51
NPF-6

Enclosure:
NRC Inspection Report 05000313/2007005 and 05000368/2007005
w/Attachment: Supplemental Information

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**U.S. NUCLEAR REGULATORY COMMISSION
REGION IV**

Dockets: 05000313, 05000368
Licenses: NPF-51, NPF-6
Report: 05000313/2007005 and 05000368/2007005
Licensee: Entergy Operations, Inc.
Facility: Arkansas Nuclear One, Units 1 and 2
Location: Junction of Hwy. 64W and Hwy. 333 South
Russellville, Arkansas
Dates: September 24 through December 31, 2007
Inspectors: D. Bollock, Project Engineer
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SUMMARY OF FINDINGS

IR 05000313/2007005, 05000368/2007005; 09/24/07 - 12/31/07; Arkansas Nuclear One, Units 1 and 2; Integrated Resident and Regional Report; Fire Protection, Maintenance Effectiveness, Postmaintenance Testing, Surveillance Testing, and Identification and Resolution of Problems.

This report covered a 3-month period of inspection by resident inspectors and regional specialist inspectors. The inspection identified six Green findings, all of which were noncited violations. The significance of most findings is indicated by their color (Green, White, Yellow, or Red) using Inspection Manual Chapter 0609, "Significance Determination Process." Findings for which the significance determination process does not apply may be Green or be assigned a severity level after NRC management's review. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," Revision 3, dated July 2000.

A. NRC-Identified and Self-Revealing Findings

Cornerstone: Initiating Events

- Green. The inspectors identified a Green noncited violation of Technical Specification 5.4.1, "Procedures," associated with the licensee's failure to adequately implement the fire protection program. Specifically, on multiple occasions station personnel exceeded the transient combustible limits of Procedure EN-DC-161, "Control of Combustibles," Revision 1, without taking appropriate compensatory measures. This issue was entered into the licensee's corrective action program as Condition Report ANO-C-2007-1719.

The finding was determined to be more than minor because it affected the protection against external factors attribute of the initiating events cornerstone, and it directly affected the cornerstone objective to limit the likelihood of those events that upset plant stability and challenge critical safety functions during shutdown as well as power operations. Using Manual Chapter 0609, Appendix F, "Fire Protection Significance Determination Process," Phase 1 Worksheet, the finding was determined to have very low safety significance because the condition represented a low degradation of a fire prevention and administrative controls feature. The finding had crosscutting aspects in the area of problem identification and resolution associated with the corrective action program [P.1(d)] because the licensee failed to take appropriate actions to address an adverse trend in a timely manner which allowed the adverse trend to continue and reoccur on multiple occasions (Section 4OA2).

Cornerstone: Mitigating Systems

- Green: The inspectors identified a Green noncited violation of Technical Specification 6.4.1.c, "Procedures," associated with the licensee's failure to adequately implement the fire protection program. Specifically, station personnel

breached the fire barrier door for emergency feedwater Pump 2P-7A and failed to implement compensatory measures as required by the station Fire Protection Program. This issue was entered into the licensee's corrective action program as Condition Report ANO-2-2007-1729.

The finding was determined to be more than minor because it was associated with the protection against external factors attribute of the mitigating systems cornerstone, and it affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Using Manual Chapter 0609, Appendix F, "Fire Protection Significance Determination Process," Phase 1 worksheet, the finding was determined to have very low safety significance because: (1) the duration factor was assumed to be 6E-5, and (2) the fire frequency was assumed to be 4E-4 which resulted in a change in core damage frequency of less than 1E-6. The finding had crosscutting aspects in the area of problem identification and resolution associated with the corrective action program [P.1(c)] in that the licensee failed to thoroughly evaluate a previous occurrence of leaving fire doors open such that the resolution appropriately addressed the cause (Section 1R05).

- Green. The inspectors identified a Green noncited violation involving the licensee's failure to adequately monitor the performance of the emergency switchgear chillers in accordance with 10 CFR 50.65(a)(2). Specifically, while evaluating the system for 10 CFR 50.65(a)(1) status due to exceeding the established performance criteria, the licensee's maintenance rule expert panel inappropriately changed the system performance criteria to keep the system in a(2) status. This issue was entered into the licensee's corrective action program as Condition Report ANO-C-2007-1621.

The finding was more than minor since violations of 10 CFR 50.65(a)(2) necessarily involve degraded system performance which, if left uncorrected, could become a more significant safety concern. This finding has very low safety significance because the maintenance rule aspect of the finding did not lead to an actual loss of safety function of the system or cause a component to be inoperable, nor did it screen as potentially risk significant due to a seismic, flooding, or severe weather initiating event. The finding had crosscutting aspects in the area of human performance associated with decision making [H.1(b)] because the licensee did not use conservative assumptions and failed to verify the validity of the underlying assumptions used when evaluating the performance criteria of the emergency switchgear chillers for classification as 10 CFR 50.65(a)(1) status (Section 1R12).

- Green. The inspectors identified a Green NCV of 10 CFR Part 50, Appendix B, Criterion XI, "Test Control," for the unacceptable preconditioning of Unit 1 emergency feedwater Flow Control Valve CV-2647 prior to inservice testing. Maintenance was conducted on the valve which included stroking the valve fully open and closed, and the surveillance test was then performed as postmaintenance testing. This issue was entered into the licensee's corrective action program as Condition Report ANO-1-2007-2416.

The finding was greater than minor because it was associated with the equipment performance attribute of the mitigating systems cornerstone, and it affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Using Manual Chapter 0609, "Significance Determination Process," Phase 1 worksheet, the finding was determined to have very low safety significance (Green) because it did not represent an actual loss of safety function and did not screen as potentially risk significant due to a seismic, flooding, or severe weather initiating event. The cause of this finding was determined to have a crosscutting aspect in the area of human performance associated with resources, in that the licensee's work management and planning procedures were not adequate to cause planners to consider, assess, and prevent preconditioning of safety-related components through the scheduling of surveillance tests and maintenance activities. Therefore, the applicable procedures and work packages related to this activity were not complete, accurate, and up-to-date [H.2(c)] (Section 1R19).

- Green The inspectors identified a Green NCV of 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Action," for the licensee's failure to promptly identify and correct a practice of inadequate stroke time testing during ASME Code Inservice Testing of the Unit 1 emergency feedwater flow control valves. Specifically, the licensee was stroke time testing the emergency feedwater flow control valves using the valve position demand meter instead of the actual valve position indication. This issue was entered into the licensee's corrective action program as Condition Report ANO-2007-2286.

The finding was greater than minor because it affected the procedure quality attribute of the mitigating systems cornerstone, and affected the associated cornerstone objective to ensure availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Using Manual Chapter 0609, "Significance Determination Process," Phase 1 Worksheet, the finding was determined to have very low safety significance because it did not represent an actual loss of safety function and did not screen as potentially risk significant due to a seismic, flooding, or severe weather initiating event. The finding had crosscutting aspects in the area of human performance associated with decision making [H.1(b)] because the licensee did not use conservative assumptions and failed to verify the validity of the underlining assumptions used when evaluating the use of the valve position demand meter for ASME Code in-service testing (Section 40A2).

Cornerstone: Miscellaneous

- SL IV. The inspectors identified a Severity Level IV NCV of 10 CFR 50.70, "Inspections," for the licensee's failure to ensure that the arrival and presence of an NRC inspector is not communicated to persons at the facility. A security officer informed other security officers at the facility of the presence and expected arrival of an NRC resident inspector at their duty location. This issue was entered into the licensee's corrective action program as Condition Report ANO-2007-1508.

The finding was determined to be applicable to traditional enforcement because the NRC's ability to perform its regulatory function was potentially impacted by the licensee's notification of personnel whose activities are subject to unannounced inspection by NRC inspectors. The finding was not suitable for evaluation using the significance determination process, and was therefore evaluated in accordance with the Enforcement Policy. The finding was reviewed by NRC management and was determined to be of very low safety significance (Section 4OA2).

B. Licensee-Identified Violations

A violation of very low safety significance which was identified by the licensee has been reviewed by the inspectors. Corrective actions taken or planned by the licensee have been entered into the licensee's corrective action program. This violation and its corrective actions are listed in Section 4OA7 of this report.

REPORT DETAILS

Summary of Plant Status

Unit 1 began the inspection period at 100 percent rated thermal power (RTP) and operated at or near full RTP for the remainder of the inspection period.

Unit 2 began the inspection at 100 percent RTP and operated at or near full RTP for the remainder of the inspection period.

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, Barrier Integrity

1R04 Equipment Alignment (71111.04)

.1 Partial Walkdown

a. Inspection Scope

The inspectors: (1) walked down portions of the three below listed risk important systems and reviewed plant procedures and documents to verify that critical portions of the selected systems were correctly aligned, and (2) compared deficiencies identified during the walk down to the licensee's Updated Final Safety Analysis Report (UFSAR) and corrective action program (CAP) to ensure problems were being identified and corrected.

- October 10, 2007, Unit 2, service water system during maintenance on service water Pump 2P-4C
- October 18, 2007, Unit 2, containment spray system during motor replacement on spray Pump 2P-35B
- November 11, 2007, Unit 2, condenser vacuum system during maintenance on vacuum Pump 2C-5A

Documents reviewed by the inspectors are listed in the attachment.

The inspectors completed three samples.

b. Findings

No findings of significance were identified.

.2 Complete Walkdown

a. Inspection Scope

The inspectors: (1) reviewed plant procedures, drawings, the UFSAR, Technical Specifications (TS), and vendor manuals to determine the correct alignment of the system below; (2) reviewed outstanding design issues, operator workarounds, and UFSAR documents to determine if open issues affected the functionality of the system; and (3) verified that the licensee was identifying and resolving equipment alignment problems.

- December 6, 2007, Unit 2, Emergency Diesel Generator (EDG) 2K-4B

Documents reviewed by the inspectors are listed in the attachment.

The inspectors completed one sample.

b. Findings

No findings of significance were identified.

1R05 Fire Protection (71111.05)

Quarterly Inspection

a. Inspection Scope

The inspectors walked down the six below listed plant areas to assess the material condition of active and passive fire protection features and their operational lineup and readiness. The inspectors: (1) verified that transient combustibles and hot work activities were controlled in accordance with plant procedures; (2) observed the condition of fire detection devices to verify they remained functional; (3) observed fire suppression systems to verify they remained functional and that access to manual actuators was unobstructed; (4) verified that fire extinguishers and hose stations were provided at their designated locations and that they were in a satisfactory condition; (5) verified that passive fire protection features (electrical raceway barriers, fire doors, fire dampers steel fire proofing, penetration seals, and oil collection systems) were in a satisfactory material condition; (6) verified that adequate compensatory measures were established for degraded or inoperable fire protection features and that the compensatory measures were commensurate with the significance of the deficiency; and (7) reviewed the UFSAR to determine if the licensee identified and corrected fire protection problems.

- December 11, 2007, Unit 2, Fire Zone 2024-JJ, Emergency Feedwater (EFW) Pump 2P-7A Room
- December 26, 2007, Unit 1, Fire Zone 99-M, North Switchgear Room

- December 26, 2007, Unit 1, Fire Zone 100-N, South Switchgear Room
- December 27, 2007, Unit 2 , Fire Zone Area 00, Unit 2 Intake Structure
- December 27, 2007, Unit 1, Fire Zone 40-Y, Safeguard Pipeway (South)
- December 31, 2007, Unit 2 , Fire Zone 2026-Y, Drumming Station

Documents reviewed by the inspectors are listed in the attachment.

The inspectors completed six samples.

b. Findings

Introduction: The inspectors identified a Green noncited violation of Technical Specification 6.4.1.c, "Procedures," associated with the licensee's failure to adequately implement the fire protection program. Specifically, station personnel breached the fire barrier door for emergency feedwater (EFW) Pump 2P-7A and failed to implement compensatory measures as required by the station fire protection program.

Description: While touring the auxiliary building on December 11, 2007, the inspectors observed that Fire Door 306 to the EFW Pump 2P-7A room was open. The inspectors investigated this condition and discovered that both operations and maintenance personnel were present in the room conducting postmaintenance testing on the pump. The inspectors noted that the door was labeled with instructions that stated "Keep door closed at all times or post a fire watch per Procedure 1000.120." The inspectors inquired of the operators about whether a fire watch had been posted for leaving the door open and were told that a fire watch had not been assigned, and that it was normal for operators to leave this door open while performing testing on the EFW pump.

The inspectors reviewed Procedure OP-1000.120, "ANO Fire Watch Program," and noted that Fire Door 306 is a fire barrier required to be fully closed at all times, except for normal access and when a continuous or hourly fire watch has been established. The inspectors further inquired into this issue and determined that it was routine for operations personnel to open and leave open other required fire doors as well for other than normal passage. The licensee initiated Condition Report (CR) ANO-2-2007-1729 to address this issue.

The inspectors determined that this was a repeat occurrence of a previously identified condition. Specifically, on July 7, 2007, while performing a tour of the auxiliary building, the inspectors identified that fire Door 206, Decay Heat Vault Door B, was left open for an extended period while maintenance was being conducted in the room. The inspectors identified this to the licensee who in turn shut the door and initiated CR-ANO-2-2007-1014. During their review, the inspectors noted the licensee's only corrective action for this condition was a human performance error review. The inspectors determined that the licensee's corrective action was narrowly focused and failed to identify or correct the cause of the issue.

Analysis: The inspectors determined that the failure of station personnel to follow Procedure OP-1000.120, "ANO Fire Watch Program," was a performance deficiency. The finding was determined to be more than minor because it was associated with the protection against external factors attribute of the mitigating systems cornerstone, and it affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Using Manual Chapter 0609, Appendix F, "Fire Protection Significance Determination Process," Phase 1 Worksheet, the finding was determined to have very low safety significance because: (1) the duration factor was assumed to be 6E-5, and (2) the fire frequency was assumed to be 4E-4 which resulted in a change in CDF of less than 1E-6. The finding had crosscutting aspects in the area of problem identification and resolution associated with the CAP [P.1(c)] in that the licensee failed to thoroughly evaluate a previous occurrence of leaving fire doors open such that the resolution appropriately addressed the cause.

Enforcement: Unit 2 TS 6.4, "Procedures," requires that written procedures be established, implemented, and maintained covering fire protection program implementation. Procedure OP-1000.120, "ANO Fire Watch Program," is one of those procedures and requires that fire doors be fully closed at all times, except for normal access and when a continuous or hourly fire watch has been established. Contrary to this, on December 11, 2007, while performing postmaintenance testing of emergency feedwater Pump 2P-7A, station personnel opened and left open Fire Door 306 without establishing a continuous or hourly fire watch. Because this finding is of very low safety significance and has been entered into the CAP as CR-ANO-C-2007-1719, this violation is being treated as an NCV consistent with Section VI.A of the NRC Enforcement Policy: "Failure to Maintain Fire Barrier for Emergency FeedWater Pump A."

1R06 Flood Protection Measures (71111.06)

Annual External Flooding

a. Inspection Scope

The inspectors: (1) reviewed the UFSAR, the flooding analysis, and plant procedures to assess seasonal susceptibilities involving external flooding; (2) reviewed the UFSAR and CAP to determine if the licensee identified and corrected flooding problems; (3) inspected underground bunkers/manholes to verify the adequacy of (a) sump pumps, (b) level alarm circuits, (c) cable splices subject to submergence, and (d) drainage for bunkers/manholes; (4) verified that operator actions for coping with flooding can reasonably achieve the desired outcomes; and (5) walked down the four listed areas to verify the adequacy of: (a) equipment seals located below the floodline, (b) floor and wall penetration seals, (c) watertight door seals, (d) common drain lines and sumps, (e) sump pumps, level alarms and control circuits, and (f) temporary or removable flood barriers.

- External Fire Protection Equipment and Piping
- Units 1 and 2 Safety-Related Structure Roof Drains
- Units 1 and 2 Intake Structures
- Condensate Storage Tank Sumps

Documents reviewed by the inspectors are listed in the attachment.

The inspectors completed one sample.

b. Findings

Introduction: The inspectors identified an unresolved item (URI) associated with an apparent susceptibility to external flooding.

Description: The inspectors reviewed station Calculations CALC-94-E-0079-01, "Evaluation of Unit 1 Safety-Related Structures for the Effects of Local Intense Precipitation," Revision 0; CALC-94-E-0079-02, "Evaluation of Unit 2 Safety-Related Structures for the Effects of Local Intense Precipitation"; and 5.8.2, "Effects of Local Intense Precipitation on Safety-Related Roofs," Revision 0. During this review, the inspectors noted that Calculation CALC-94-E-0079-01 concluded the installation of five scuppers on the Unit 1 auxiliary building roof that were 12 inches high and 40 inches long was required to prevent the collapse of the roof structure due to excessive ponding from the local intense precipitation. This calculation determined that the resultant maximum amount of ponding after scupper installation on the Unit 1 auxiliary building roof would be 7.5 inches. Calculation CALC-94-E-0079-02 determined that maximum depth of ponding on the Unit 2 auxiliary building roof would be approximately 11.5 inches. The inspectors noted Units 1 and 2 share a common auxiliary building roof. The inspectors also noted that for the Unit 2 intake structure, Calculation 5.8.2 calculated live load for the roof assuming a ponding value of 14.7 inches, which resulted in the roof exceeding the design limit for live load.

Subsequently, the inspectors performed walk downs of these areas and noted discrepancies between the calculations and actual facility. Specifically, on the Unit 1 auxiliary building there were only four scuppers installed that were 16 inches high and only 6 inches long, whereas the calculation had determined that five 40-inch long scuppers were needed to maintain the roof loading limit. The inspectors noted a divider installed to separate the roofs of the Unit 1 and 2 auxiliary buildings appeared to be less than 11 inches tall, which would allow spill over from Unit 2 to Unit 1 not analyzed for in Calculation CALC-94-E-0079-01. The inspectors also noted the Unit 2 intake structure roof has grating installed above each service water pump. This grating is surrounded by berms to prevent water intrusion. However, the berms were only 6 inches tall, which was considerably less than the 14.7 inch depth assumed in Calculation 5.8.2. The inspectors presented this information to the licensee and, the licensee determined that further review was necessary to determine the acceptability of the identified issues.

Analysis: The inspectors determined that the potential vulnerabilities to both the Unit 1 auxiliary building and Unit 2 intake structure roofs as well as the Unit 2 service water pumps during an external flooding event will be treated as an URI, pending further inspector review of the licensee's analysis. A URI is an issue requiring further information to determine if it is acceptable, if it is a finding, or if it constitutes a violation of NRC requirements. In this case, additional NRC inspection will be required to assess the ability of the Unit 1 auxiliary building and Unit 2 intake structure roofs as well as the Unit 2 service water pumps to cope with an external flooding event.

Enforcement: Additional information was needed to determine whether a violation of regulatory requirements occurred. Pending further review of additional information provided by the licensee, this issue is being treated as an URI 05000368/2007005-02, "External Flooding Susceptibility."

Semi-annual Internal Flooding

a. Inspection Scope

The inspectors: (1) reviewed the UFSAR, the flooding analysis, and plant procedures to assess seasonal susceptibilities involving internal flooding; (2) reviewed the UFSAR and CAP to determine if the licensee identified and corrected flooding problems; (3) inspected underground bunkers/manholes to verify the adequacy of (a) sump pumps, (b) level alarm circuits, (c) cable splices subject to submergence, and (d) drainage for bunkers/manholes; (4) verified that operator actions for coping with flooding can reasonably achieve the desired outcomes; and (5) walked down the below listed areas to verify the adequacy of: (a) equipment seals located below the floodline, (b) floor and wall penetration seals, (c) watertight door seals, (d) common drain lines and sumps, (e) sump pumps, level alarms and control circuits, and (f) temporary or removable flood barriers.

- December 31, 2007, Unit 2, Diesel Generator Room Access Corridor and Motor Control Center

Documents reviewed by the inspectors are listed in the attachment.

The inspectors completed one sample.

b. Findings

No findings of significance were identified.

1R07 Heat Sink Performance (71111.07)

a. Inspection Scope

The inspectors reviewed licensee programs, verified performance against industry standards, and reviewed critical operating parameters and maintenance records for the Unit 2 EDG 2K-A service water heat exchangers. The inspectors verified that: (1) performance tests were satisfactorily conducted for heat exchangers/heat sinks and reviewed for problems or errors; (2) the licensee utilized the periodic maintenance method outlined in EPRI NP-7552, "Heat Exchanger Performance Monitoring Guidelines"; (3) the licensee properly utilized biofouling controls; (4) the licensee's heat exchanger inspections adequately assessed the state of cleanliness of their tubes, and (5) the heat exchanger was correctly categorized under the Maintenance Rule.

Documents reviewed by the inspectors are listed in the attachment.

The inspectors completed one sample.

b. Findings

No findings of significance were identified.

1R11 Licensed Operator Requalification Program (71111.11)

a. Inspection Scope

On November 13, 2007, the inspectors observed testing and training of senior reactor operators and reactor operators to identify deficiencies and discrepancies in the training, to assess operator performance, and to assess the evaluator's critique. The training scenario involved the crew response to a reactor trip with a main steam line break outside of containment and upstream of the main steam isolation valves with a failure of the main steam isolation system to automatically actuate.

Documents reviewed by the inspectors included:

- SES-2-038, "Dynamic Exam Scenario," Revision 2

The inspectors completed one sample.

b. Findings

No findings of significance were identified.

1R12 Maintenance Effectiveness (71111.12)

a. Inspection Scope

The inspectors reviewed the four below listed maintenance activities to: (1) verify the appropriate handling of structure, system, and component (SSC) performance or condition problems; (2) verify the appropriate handling of degraded SSC functional performance; (3) evaluate the role of work practices and common cause problems; and (4) evaluate the handling of SSC issues reviewed under the requirements of the Maintenance Rule, 10 CFR Part 50, Appendix B, and TSs.

- November 7, 2007, Unit 1, Instrument Air System
- November 13, 2007, Unit 1, Emergency Switchgear Room Chillers
- November 15, 2007, Unit 1, Decay Heat/Low Pressure Injection System
- December 18, 2007, Unit 1, EFW System

Documents reviewed by the inspectors are listed in the attachment.

The inspectors completed four samples.

b. Findings

Introduction: The inspectors identified a Green noncited violation involving the licensee's failure to adequately monitor the performance of the emergency switchgear chillers in accordance with 10 CFR 50.65(a)(2). Specifically, while evaluating the system for 10 CFR 50.65(a)(1) status due to exceeding the established performance criteria, the licensee's maintenance rule expert panel inappropriately changed the system performance criteria to keep the system in a(2) status.

Description. The inspectors reviewed the maintenance rule expert panel electronic vote record dated July 10, 2007, which evaluated placing emergency switchgear room Chiller VCH-4A in 10 CFR 50.65(a)(1) status for exceeding the established performance criteria of less than three functional failures per train per rolling 18 months. The expert panel concluded that emergency switchgear room Chiller VCH-4A would not be placed in (a)(1) status but would remain in (a)(2) status and the performance criteria would be changed from using specific functional failure criteria to plant level monitoring criteria. The inspectors noted that the maintenance rule expert panel had concluded that the emergency switchgear chillers were nonsafety-related, low risk significant normally operating components. As such, their determination was that the chillers were conservatively being monitored under the maintenance rule and it was acceptable to change the systems performance criteria to plant level monitoring.

The inspectors reviewed the (a)(1) evaluation used by the expert panel to reach these conclusions. The evaluation concluded that the emergency switchgear room chillers were not safety related since they were part of the plant chilled water system, and that the chillers were low risk significance components because they were not modeled in the Unit 1 probabilistic safety analysis. The evaluation also determined the chillers were normally operating components because they were thermostatically controlled and there was no design basis to establish the thermostat setpoint. The evaluation further cited that station Calculation EIC-88-240, "An Analysis of the Effects of Loss of HVAC (due to a fire) Upon Electrical Equipment at ANO," Revision 0, determined that the emergency switchgear chill water system was not required for safe shutdown.

The inspectors determined that though the emergency switchgear room chillers were classified as part of the plant chilled water system in the maintenance rule program, they were, in fact, standalone chiller units specifically identified as safety-related components in the Unit 1 UFSAR as well as the Unit 1 Indus/Passport Equipment database. The inspectors determined that the emergency switchgear room chillers had been installed in response to the licensee's determination that emergency ventilation in the North and South electrical equipment rooms and North and South battery and charger rooms was inadequate to maintain temperatures in these rooms to remain below their design limits during a design bases accident.

The inspectors also determined that Calculation EIC-88-240, "An Analysis of the Effects of Loss of HVAC (due to a fire) Upon Electrical Equipment at ANO," was a nondesign basis calculation for the emergency switchgear chillers. The inspectors noted that this calculation had been superceded in February 2007 when the licensee identified an issue with cable heat loads in electrical equipment rooms. As such, the inspectors concluded that this calculation had no bearing on the system and should not have been used by

the maintenance rule expert panel in the (a)(1) evaluation process.

The inspectors also questioned the licensee's classification of the chillers as normally operating. The inspectors determined that though the chillers were thermostatically controlled, this was not the criteria used in Procedure EN-DC-204, "Maintenance Rule Scope and Basis," for determination of a components operating mode. Specifically, Section 5.3.5[1] states, "If a surveillance or other test is required to detect failure, the SSC is usually standby. If failure is self-revealing, the SSC is usually normally operating." Through interviews with operators, the system engineer, and operational log reviews, the inspectors determined that the that the only time the emergency switchgear room chillers were run was for surveillance testing. As such, the inspectors determined that classifying the emergency switchgear room chillers as normally operating was not in accordance with station procedure. Accordingly, the inspectors concluded that the chillers were low risk significant standby components and that plant level performance monitoring criteria was not appropriate.

The licensee initiated CR ANO-C-2007-1621 to review this issue. Subsequently, the licensee determined that the decision to monitor the emergency switchgear room chillers using plant level performance criteria was a nonconservative change.

Analysis: The inspectors determined that the failure of the licensee to effectively monitor the performance of the emergency switchgear room chillers was a performance deficiency. The finding was more than minor since violations of 10 CFR 50.65(a)(2) necessarily involve degraded system performance which, if left uncorrected, could become a more significant safety concern. This finding has very low safety significance because the maintenance rule aspect of the finding did not lead to an actual loss of safety function of the system or cause a component to be inoperable, nor did it screen as potentially risk significant due to a seismic, flooding, or severe weather initiating event. The finding had crosscutting aspects in the area of human performance associated with decision making [H.1(b)] because the licensee did not use conservative assumptions and failed to verify the validity of the underlying assumptions used when evaluating the performance criteria of the emergency switchgear chillers for classification as 10 CFR 50.65(a)(1) status.

Enforcement: 10 CFR 50.65(a)(1) requires, in part, that holders of an operating license shall monitor the performance or condition of SSCs within the scope of the rule against licensee-established goals in a manner sufficient to provide reasonable assurance that such SSCs are capable of fulfilling their intended safety functions. 10 CFR 50.65(a)(2) requires, in part, that monitoring specified in paragraph (a)(1) is not required where it has been demonstrated the performance or condition of an SSC is being effectively controlled through appropriate preventive maintenance, such that the SSC remains capable of performing its intended function. Contrary to the above, the licensee failed to demonstrate that performance of the emergency switchgear room chillers was being effectively controlled through appropriate preventive maintenance. Specifically, the licensee performed a nonconservative change of the emergency switchgear room chillers performance criteria on July 10, 2007, during evaluation of emergency switchgear room Chiller VCH-4A for (a)(1) status after functional failures indicated that performance of the system was not being effectively controlled and goal setting and monitoring was required. Because this finding is of very low safety significance and has

been entered into the CAP as CR ANO-C-2007-1621, this violation is being treated as an NCV consistent with Section VI.A of the NRC Enforcement Policy: NCV 05000313/2007005-03, "Failure to Adequately Monitor the Performance of the Emergency Switchgear Room Chillers."

1R13 Maintenance Risk Assessments and Emergent Work Control (71111.13)

Risk Assessment and Management of Risk

a. Inspection Scope

Risk Assessment and Management of Risk

The inspectors reviewed the two below listed assessment activities to verify: (1) performance of risk assessments when required by 10 CFR 50.65 (a)(4) and licensee procedures prior to changes in plant configuration for maintenance activities and plant operations; (2) the accuracy, adequacy, and completeness of the information considered in the risk assessment; (3) that the licensee recognizes, and/or enters as applicable, the appropriate licensee-established risk category according to the risk assessment results and licensee procedures; and (4) that the licensee identified and corrected problems related to maintenance risk assessments.

- October 9, 2007, Trenching Work in the Main Switch Yard
- October 12, 2007, Control Room HVAC Fan VSF-10 Breaker Swap

Documents reviewed by the inspectors are listed in the attachment.

The inspectors completed two samples.

b. Findings

No findings of significance were identified.

Emergent Work Control

a. Inspection Scope

The inspectors: (1) verified that the licensee performed actions to minimize the probability of initiating events and maintained the functional capability of mitigating systems and barrier integrity systems; (2) verified that emergency work-related activities such as troubleshooting, work planning/scheduling, establishing plant conditions, aligning equipment, tagging, temporary modifications, and equipment restoration did not place the plant in an unacceptable configuration; and (3) reviewed the UFSAR to determine if the licensee identified and corrected risk assessment and emergency work control problems.

- October 19, 2007, Unit 1 and 2, Alternate AC Diesel Generator Starting Air Leak
- October 19, 2007, Unit 2, Containment Spray Pump 2P-35B Emergent Seal

Replacement

- December 21, 2007, Unit 1, EDG K-4A, Speed Switch Failure

Documents reviewed by the inspectors are listed in the attachment.

The inspectors completed three samples.

b. Findings

No findings of significance were identified.

1R15 Operability Evaluations (71111.15)

a. Inspection Scope

The inspectors: (1) reviewed plant status documents such as operator shift logs, emergent work documentation, deferred modifications, and standing orders to determine if an operability evaluation was warranted for degraded components; (2) referred to the UFSAR and design basis documents to review the technical adequacy of licensee operability evaluations; (3) evaluated compensatory measures associated with operability evaluations; (4) determined degraded component impact on any TSs; (5) used the significance determination process to evaluate the risk significance of degraded or inoperable equipment; and (6) verified that the licensee has identified and implemented appropriate corrective actions associated with degraded components.

- September 28, 2007, Unit 2, Through Wall Leak on Service Water Valve 2SW-69A
- October 3, 2007, Unit 2, EFW Pump 2P-7B
- October 11, 2007, Unit 2, Plant Protection System A
- December 5, 2007, Unit 2, Containment Escape Airlock
- December 20, 2007, Unit 1, Emergency Switchgear Chillers VCH-4A and -B

Documents reviewed by the inspectors are listed in the attachment.

The inspectors completed five samples.

b. Findings

No findings of significance were identified.

1R19 Postmaintenance Testing (71111.19)

a. Inspection Scope

The inspectors selected the five below listed postmaintenance test activities of risk significant systems or components. For each item, the inspectors: (1) reviewed the applicable licensing basis and/or design-basis documents to determine the safety functions; (2) evaluated the safety functions that may have been affected by the maintenance activity; and (3) reviewed the test procedure to ensure it adequately tested the safety function that may have been affected. The inspectors either witnessed or reviewed test data to verify that acceptance criteria were met, plant impacts were evaluated, test equipment was calibrated, procedures were followed, jumpers were properly controlled, the test data results were complete and accurate, the test equipment was removed, the system was properly realigned, and deficiencies during testing were documented. The inspectors also reviewed the UFSAR to determine if the licensee identified and corrected problems related to postmaintenance testing.

- October 2, 2007, Unit 2, EFW Pump 2P-7B
- October 26, 2007, Unit 2, Motor Control Center 2B-52 Restoration Following a Fire
- October 11, 2007, Unit 1, South Emergency Switchgear Room Chiller VCH-4A
- November 15, 2007, Unit 2, Refueling Water Tank Outlet Valve 2CV-5631-2
- November 13, 2007, Unit 1, EFW Flow Control Valve CV-2647

Documents reviewed by the inspectors are listed in the attachment.

The inspectors completed five samples.

b. Findings

Introduction: The inspectors identified a Green NCV of 10 CFR Part 50, Appendix B, Criterion XI, "Test Control," for the unacceptable preconditioning of Unit 1 EFW Flow Control Valve CV-2647 prior to inservice testing. Maintenance was conducted on the valve which included stroking the valve fully open and closed, and the surveillance test was then performed as postmaintenance testing.

Description: On November 13, 2007, Work Orders (WO) 51209628 and 85348 were implemented, which included the replacement of the circuit board for the Unit 1 EFW flow control Valve CV-2647. This activity also involved the stroking of the valve to each end of its travel in accordance with Procedure 1404.002, "EFW Flow Control Valves Maintenance," Supplement 3, "CV-2647/FC-2647 Testing and Calibration," Revision 10. The postmaintenance test that was performed for this activity was Procedure 1106.006, "Emergency Feedwater Pump Operation," Supplement 12, "Steam Driven Emergency Feedwater Pump (P-7A) Test (Quarterly)," Revision 71. This test included the American

Society of Mechanical Engineers (ASME) Code required quarterly stroke testing for Valve CV-2647, and this performance served as the required quarterly inservice test (the previous performance was on August 22, 2007).

The inspectors reviewed the regulatory positions and guidance on the subject of preconditioning that are contained in NRC Information Notice (IN) 97-16, "Preconditioning of Plant Structures, Systems, and Components Before ASME Code Inservice Testing or Technical Specification Surveillance Testing"; NRC Inspection Manual Part 9900: Technical Guidance, "Maintenance - Preconditioning of Structures, Systems, and Components Before Determining Operability"; and NUREG-1482, "Guidelines for Inservice Testing at Nuclear Power Plants." The purposes of IN 97-16 were to alert licensees to the potential for maintenance activities performed before surveillance testing to adversely affect the validity of the surveillance test, to give examples of preconditioning activities that have been the subject of issued violations, and to express that inservice testing is typically performed in the as-found condition. Part 9900 guidance establishes that the NRC expects surveillance and testing processes of SSCs to be evaluated in an "as-found" condition in order to verify that operability and performance characteristics of SSCs have not degraded during a specified period. Preconditioning is defined as the alteration, variation, manipulation, or adjustment of the physical condition of an SSC before TS surveillance or ASME Code testing, and the acceptability of such a practice depends, in part, on whether the practice bypasses or masks the as-found condition of the equipment. Part 9900 further states that the performance of TS surveillance tests after maintenance activities so that the surveillance test can also serve as the postmaintenance test could inadvertently result in unacceptable preconditioning due to postmaintenance test results being insufficient to demonstrate operability over a past surveillance interval. In NUREG-1482 Section 3.5, "Pre-Conditioning of Pumps and Valves," the NRC staff establishes that the operation of a pump or valve shortly before a test, if such operation could be avoided through plant procedures with personnel and plant safety maintained, constitutes unacceptable preconditioning.

Additionally, in the licensee's Procedure CEP-IST-4, "Entergy South Standard on IST," Revision 1, IST Position No. 3, "Position on Component Preconditioning," states that exercising a motor-operated valve, other than for test configuration or normal system operation, prior to a surveillance test on the valve, is an example of unacceptable preconditioning.

Pre-stroking of a valve prior to its surveillance test masks its as-found condition and, therefore, can preclude monitoring the component to detect and trend degradation mechanisms. Performing a surveillance test following significant maintenance that can affect the operational characteristics of the component precludes the demonstration of operability over a past surveillance interval. In consideration of the above, the maintenance and stroking of Valve CV-2647 prior to its inservice test constitutes unacceptable preconditioning.

Analysis: The performance deficiency associated with this finding involved the licensee's failure to conduct inservice testing under suitable conditions. Specifically, the exercising of EFW flow control Valve CV-2647 following maintenance and prior to its quarterly surveillance test constituted unacceptable preconditioning. The finding was

greater than minor because it was associated with the equipment performance attribute of the mitigating systems cornerstone, and it affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Using Manual Chapter 0609, "Significance Determination Process," Phase 1 worksheet, the finding was determined to have very low safety significance (Green) because it did not represent an actual loss of safety function and did not screen as potentially risk significant due to a seismic, flooding, or severe weather initiating event. The cause of this finding was determined to have a crosscutting aspect in the area of human performance associated with resources, in that the licensee's work management and planning procedures were not adequate to cause planners to consider, assess, and prevent preconditioning of safety-related components through the scheduling of surveillance tests and maintenance activities. Therefore, the applicable procedures and work packages related to this activity were not complete, accurate, and up-to-date [H.2(c)].

Enforcement: 10 CFR Part 50, Appendix B, Criterion XI, "Test Control," requires, in part, that testing is performed under suitable environmental conditions. Suitable environmental conditions include those that are representative of the expected standby configuration and the condition in which the equipment would be when required to perform its safety function. Contrary to this, on November 13, 2007, the licensee failed to assure that testing was performed under suitable environmental conditions. Specifically, EFW flow control Valve CV-2647 was tested after having been stroked open and closed following maintenance. Because the finding is of very low safety significance and has been entered into the licensee's CAP as CR ANO-1-2007-2416, this violation is being treated as an NCV consistent with Section VI.A of the Enforcement Policy: NCV 05000313/2007005-04, "Unacceptable Preconditioning of EFW Flow Control Valve Prior to Inservice Testing."

1R22 Surveillance Testing (71111.22)

a. Inspection Scope

The inspectors reviewed the UFSAR, procedure requirements, and TSs to ensure that the two below listed surveillance activities demonstrated that the SSC's tested were capable of performing their intended safety functions. The inspectors either witnessed or reviewed test data to verify that the following significant surveillance test attributes were adequate: (1) preconditioning; (2) evaluation of testing impact on the plant; (3) acceptance criteria; (4) test equipment; (5) procedures; (6) jumper/lifted lead controls; (7) test data; (8) testing frequency and method demonstrated TS operability; (9) test equipment removal; (10) restoration of plant systems; (11) fulfillment of ASME Code requirements; (12) updating of performance indicator (PI) data; (13) engineering evaluations, root causes, and bases for returning tested SSCs not meeting the test acceptance criteria were correct; (14) reference setting data; and (15) annunciators and alarms setpoints. The inspectors also verified that the licensee identified and implemented any needed corrective actions associated with the surveillance testing.

- October 4, 2007, Unit 1, Containment Spray Pump P-35A Inservice Test
- December 5, 2007, Unit 2, Containment Escape Airlock Outer Door local leak

rate test (LLRT)

Documents reviewed by the inspectors are listed in the attachment.

The inspectors completed two samples.

b. Findings

Introduction: The inspectors identified an URI associated with an apparent inadequate procedure for local leakage rate testing (LLRT) of containment air lock door seals.

Description: On December 4, 2007, the licensee conducted leakage testing of the Unit 2 containment escape air lock barrel per Procedure 2304.258, "Unit 2 Escape Airlock Leak Rate Test," Revision 016. The maintenance workers were unable to pressurize the air lock barrel to accident pressure per Step 8.3.10 of the procedure. Technicians at the scene noted excessive air leakage through the containment air lock outer door seals. Since the air lock inner door had passed a LLRT the previous week and had not been operated since, operators concluded the leakage through the outer door seals was the cause of the failure of the air lock barrel to pressurize. Operators declared the surveillance test invalid since accident pressure could not be achieved in the escape air lock barrel.

The inspectors determined that the operators' declaration of the test as an invalid test lacked a technical basis. The inspectors noted the purpose of the leakage test was to detect leakage from the air lock. Since the air lock barrel could not be pressurized due to excessive leakage through the outer door, the inspectors concluded the surveillance test therefore demonstrated a valid failure of the air lock outer door seals. Although the operators did not recognize the test results as a failed surveillance test, they kept the air lock inner door locked closed, meeting the TS actions required for an inoperable air lock outer door.

On December 5, 2007, the licensee performed an LLRT on the Unit 2 containment escape hatch outer door seals. The door seals passed the LLRT with only minimal leakage. Despite the test result, the licensee replaced the outer door seals since technicians had reported excessive leakage through the seals during the air lock barrel test. Licensee engineers concluded the outer door seals passed the test as a result of differences in the LLRT and air lock barrel testing procedures.

Analysis: The team determined that additional information was required to determine the acceptability of the licensee's method for leak testing the air lock door seals.

Enforcement: Additional information was needed to determine whether there was a violation of 10 CFR Part 50, Appendix J, requirements or the station containment LLRT program. Pending further review of additional information provided by the licensee, this issue is being treated as an URI 05000368/2007005-05, "Apparent Inadequate Procedure for Containment Air Lock Leakage Testing."

1R23 Temporary Plant Modifications (71111.23)

a. Inspection Scope

The inspectors reviewed the UFSAR, plant drawings, procedure requirements, and TSs to ensure that the one below listed temporary modification was properly implemented. The inspectors: (1) verified that the modification did not have an affect on system operability/availability, (2) verified that the installation was consistent with the modification documents, (3) ensured that the postinstallation test results were satisfactory and that the impact of the temporary modification on permanently installed SSC's were supported by the test, (4) verified that the modifications were identified on control room drawings and that appropriate identification tags were placed on the affected drawings, and (5) verified that appropriate safety evaluations were completed. The inspectors verified that licensee identified and implemented any needed corrective actions associated with temporary modifications.

- November 13, 2007, Unit 2, Refueling Water Tank Outlet Valves 2CV-5630-1 and 2CV-5631-2

Documents reviewed by the inspectors are listed in the attachment.

The inspectors completed one sample.

b. Findings

No findings of significance were identified.

Cornerstone: Emergency Preparedness

1EP4 Emergency Action Level and Emergency Plan Changes (71114.04)

a. Inspection Scope

The inspector performed in-office reviews to the Arkansas Nuclear One Emergency Plan, Revision 33, submitted August 23, 2007. This revision returned two emergency action levels for reactor coolant system leakage to their previous revision based on the guidance of Regulatory Information Summary 2007-001, "Clarification of NRC Guidance for Maintaining a Standard Emergency Action Scheme," revised the description of dosimetry issued to emergency workers, revised the description of the periodicity of audits of the emergency preparedness program, updated titles, and corrected minor and typographical errors.

The revision was compared to its previous revision, to the criteria of NUREG-0654, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants," Revision 1, and to the requirements of 10 CFR 50.47(b) and 50.54(q) to determine if the licensee adequately implemented 10 CFR 50.54(q). This review was not documented in a safety evaluation report and did

not constitute approval of licensee changes; therefore, these changes are subject to future inspection.

The inspector completed one sample during this inspection.

b. Findings

No findings of significance were identified.

4. OTHER ACTIVITIES

4OA1 Performance Indicator (PI) Verification (71151)

.1 Cornerstone: Mitigating Systems

a. Inspection Scope

Cornerstone: Mitigating Systems

The inspectors sampled licensee submittals for the two PIs listed below for the period January 1 through September 30, 2007, for Units 1 and 2. The definitions and guidance of Nuclear Energy Institute 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 5, were used to verify the licensee's basis for reporting each data element in order to verify the accuracy of PI data reported during the assessment period. The inspectors reviewed LERs, out-of-service logs, operating logs, and the maintenance rule database as part of the assessment. Licensee PI data were also reviewed against the requirements of Procedure EN-LI-114, "Performance Indicator Process," Revision 2.

- Mitigating System Performance Index (MSPI) - Residual heat removal system
- MSPI - Cooling Water Support System

Documents reviewed by the inspectors are listed in the attachment.

The inspectors completed four samples.

b. Findings

No findings of significance were identified.

4OA2 Identification and Resolution of Problems (71152)

.1 Routine Review of Identification and Resolution of Problems

The inspectors performed a daily screening of items entered into the licensee's CAP. This assessment was accomplished by reviewing work orders, CRs, and attending corrective action review and work control meetings. The inspectors: (1) verified that equipment, human performance, and program issues were being identified by the licensee at an appropriate threshold and that the issues were entered into the CAP;

(2) verified that corrective actions were commensurate with the significance of the issue; and (3) identified conditions that might warrant additional followup through other baseline inspection procedures.

.2 Semiannual Trend Review

a. Inspection Scope

The inspectors completed a semi-annual trend review of repetitive or closely related issues that were documented in trend reports, problem lists, PIs, health reports, quality assurance audits, corrective action documents, etc., to identify trends that might indicate the existence of more safety significant issues. The inspectors review consisted of the six month period of June 1 through November 30, 2007. When warranted, some of the samples expanded beyond those dates to fully assess the issue. The inspectors compared and contrasted their results with the results contained in the licensee's quarterly trend reports. Corrective actions associated with a sample of their issues identified in the licensee's trend report were reviewed for adequacy.

When evaluating the effectiveness of the licensee's corrective actions for these issues, the following attributes were considered:

- Complete and accurate identification of the problem in a timely manner commensurate with its significance and ease of discovery
- Evaluation and disposition of operability and reportability issues
- Consideration of extent of condition, generic implications, common cause, and previous occurrences
- Classification and prioritization of the resolution of the problem commensurate with its safety significance
- Identification of root and contributing causes of the problem for significant conditions adverse to quality
- Identification of corrective actions which are appropriately focused to correct the problem
- Completion of corrective actions in a timely manner commensurate with the safety significance of the issue

Documents reviewed by the inspectors are listed in the attachment.

b. Findings

Introduction: The inspectors identified a Green NCV of TS 5.4.1, "Procedures," associated with the licensee's failure to adequately implement the fire protection program. Specifically, on multiple occasions station personnel exceeded the transient combustible limits of Procedure EN-DC-161, "Control of Combustibles," Revision 1,

without taking appropriate compensatory measures.

Description: During a plant tour on September 28, 2007, the inspectors identified a concern with two nonmetallic carts containing what appeared to be trash stored on Elevation 354 in the Unit 1 auxiliary building. The inspectors noted the carts and their contents appeared to exceed the allowed transient Class A combustible limit for the area of 100 pounds as identified in station Procedure EN-DC-161, "Control of Combustibles." The inspectors identified this condition to the licensee, who in turn removed the material and initiated CR ANO-1-2007-2127. The licensee subsequently determined that these items threatened or exceeded the limit for the fire zone.

The inspectors determined that this was a repeat occurrence of a previously identified condition. Specifically, during a plant tour on May 8, 2007, the inspectors had identified a concern with two nonmetallic carts containing what appeared to be trash stored on Elevation 354 in the Unit 1 auxiliary building. The inspectors identified this condition to the licensee, who in turn removed the material from the area and initiated CR ANO-2007-1225. The licensee subsequently determined that these items were close to or exceeded the limit for the fire zone.

In addition, during a plant tour of the Unit 1 auxiliary building on October 9, 2007, the inspectors identified a wet floor sign made of combustible material in an area marked as a zero combustible loading area. The inspectors determined that this was contrary to Station Procedure EN-DC-161, "Control of Combustibles." The inspectors identified this condition to the licensee, who in turn moved the sign and initiated CR ANO-1-2007-2170.

Based on the above instances, the inspectors conducted a review of the licensee's CAP to assess past performance associated with control of combustible materials and identified the following additional deficiencies.

- On April 11, 2007, transient combustible material in excess of the fire zone limit was left unattended in Fire Zone 2156-A, containment purge air equipment room.
- On April 30, 2007, transient combustible material in excess of the fire zone limit was left unattended in Fire Zone 67-U, lab and demineralizer area, and 20-Y, radwaste processing area.
- On June 8, 2007, transient combustible material, in excess of the fire zone limit was left unattended in Fire Zone 98-J, the EDG corridor.
- On June 18, 2007, transient combustible material in excess of the fire zone limit was left unattended in Fire Zone 2242-OO, H&V mechanical equipment area.
- On July 12, 2007, transient combustible material in excess of the fire zone limit was left unattended in Fire Zone 34-Y, North safeguards pipeway.
- On September 21, 2007, transient combustible material in excess of the fire zone limit was left unattended in Fire Zone 2156-A, containment purge air equipment room.

The inspectors presented this information indicating an apparent trend associated with control of combustible materials to the licensee. On November 1, 2007, the licensee initiated CR ANO-C-2007-1719 to document the issue and perform a review to see if an adverse trend existed.

As part of their review, the licensee performed an apparent cause evaluation (ACE) of as documented in CR ANO-C-2007-1719, and determined that there had been three previous adverse trend CRs written against the stations combustible control program. Two adverse trend CRs had been generated in 2003, ANO C-2003-0104 and ANO-C-2003-0821; and one in 2005, ANO-C-2005-0940. The licensee noted that CR ANO-C-2005-0940 identified a flat trend associated with the number of combustible control violation CRs from 2003 through 2005. Subsequently, in their apparent cause evaluation the licensee determined that the trend from 2003 through 2007 was flat as well, indicating a steady number of combustible control violation CRs since 2003. However, the inspectors noted that each of the previous adverse trend CRs had been closed based on improving performance. The inspectors concluded that the licensee had not shown improvement in the area of control of combustible materials despite the fact that adverse trends had been identified three previous times.

The inspectors concluded that these transient combustible items, individually and collectively, contributed insignificantly to the overall combustible loading in the auxiliary and turbine buildings. However, multiple departments responsible for placing these items in the auxiliary and turbine buildings failed to comply with fire protection program procedures and many of these items were in place for extended periods of time without being questioned by plant personnel. Therefore, these items were indicative of a programmatic issue with proper implementation of the fire protection program, with respect to the control of combustible materials program.

Analysis: The inspectors determined that the failure of station personnel to follow Procedure EN-DC-127, "Control of Combustible Materials," was a performance deficiency. The finding was determined to be more than minor because it affected the protection against external factors attribute of the initiating events cornerstone, and it directly affected the cornerstone objective to limit the likelihood of those events that upset plant stability and challenge critical safety functions during shutdown as well as power operations. Using Manual Chapter 0609, Appendix F, "Fire Protection Significance Determination Process," Phase 1 worksheet, the finding was determined to have very low safety significance because the condition represented a low degradation of a fire prevention and administrative controls feature. The finding had crosscutting aspects in the area of problem identification and resolution associated with the CAP [P.1(d)] because the licensee failed to take appropriate actions to address an adverse trend in a timely manner which allowed the adverse trend to continue and reoccur on multiple occasions.

Enforcement: Unit 1 TS 5.4, "Procedures," requires that written procedures be established, implemented, and maintained covering fire protection program implementation. Procedure EN-DC-161, "Control of Combustibles," requires that if the transient combustible limit of a fire zone is exceeded, then an hourly fire watch will be posted in accordance with Procedure OP-1000.120, "ANO Fire Watch Program."

Contrary to this, between January 1 and December 27, 2007, the inspectors identified 10 examples of transient combustibles in the auxiliary building without the posting of an hourly fire watch. Because this finding is of very low safety significance and has been entered into the CAP as CR ANO-C-2007-1719, this violation is being treated as an NCV consistent with Section VI.A of the NRC Enforcement Policy: NCV 05000313/2007005-06, "Failure to Control Combustible Material Brought into the Auxiliary Building."

.3 Selected Issue Followup Inspection

a. Inspection Scope

In addition to the routine review, the inspectors selected the three below listed issues for a more in-depth review. The inspectors considered the following during the review of the licensee's actions: (1) complete and accurate identification of the problem in a timely manner; (2) evaluation and disposition of operability/reportability issues; (3) consideration of extent of condition, generic implications, common cause, and previous occurrences; (4) classification and prioritization of the resolution of the problem; (5) identification of root and contributing causes of the problem; (6) identification of corrective actions; and (7) completion of corrective actions in a timely manner.

- September 25, 2007, Units 1 and 2, Communication of the Presence of NRC Inspectors by Security Officers
- October 22, 2007, Units 1 and 2, Cumulative Effects of Operator Workarounds
- November 9, Unit 1, EFW Pump P-A Flow Control Valve ASME Section XI Testing

Documents reviewed by the inspectors are listed in the attachment.

The inspectors completed three samples.

b. Findings

.1 Communication of an NRC Inspector's Presence by Security Personnel

Introduction: The inspectors identified a Severity Level IV NCV of 10 CFR 50.70, "Inspections," for the licensee's failure to ensure that the arrival and presence of an NRC inspector is not communicated to persons at the facility. A security officer informed other security officers at the facility of the presence and expected arrival of an NRC resident inspector at their duty location.

Description: On September 25, 2007, an NRC resident inspector attempted to gain access to the secondary alarm station (SAS) as part of a routine observation of security-related activities. Following a discussion with the security shift supervisor, the inspector elected not to enter the SAS at that time, indicating that he would possibly return later. Another resident inspector then proceeded to the central alarm station

(CAS) to observe the activities there. Subsequent to the departure of the first inspector from the SAS, the security shift supervisor directed the officer stationed at the SAS to ensure that the facility was cleaned up to meet the expected housekeeping standards. He also directed the SAS operator to inform the CAS operators to ensure that the expected level of housekeeping at the CAS was being maintained. When the SAS operator communicated this message to the CAS operators, he informed them that the NRC was expected to be entering the CAS. The second inspector had already arrived in the CAS at the time of this communication and observed it. The licensee entered this issue into their CAP as CR ANO-2007-1508.

Analysis: The performance deficiency associated with this finding involved licensee contract personnel being notified of the expected arrival of an NRC inspector by a security officer at the facility. The finding was determined to be applicable to traditional enforcement because the NRC's ability to perform its regulatory function was potentially impacted by the licensee's notification of personnel whose activities are subject to unannounced inspection by NRC inspectors. The finding was not suitable for evaluation using the significance determination process, and was therefore evaluated in accordance with the Enforcement Policy. The finding was reviewed by NRC management and was determined to be of very low safety significance (Severity Level IV).

Enforcement: 10 CFR 50.70(b)(4) requires, in part, that the licensee shall ensure that the arrival and presence of an NRC inspector, who has been properly authorized facility access, is not announced or otherwise communicated by its employees or contractors to other persons at the facility unless specifically requested by the NRC inspector. Contrary to this, on September 25, 2007, the licensee failed to ensure that the arrival and presence of an NRC inspector, who was properly authorized facility access, was not announced or otherwise communicated by its employees or contractors to other persons at the facility. Specifically, a security officer stationed at the SAS alerted other security officers at the facility to the arrival and presence of an NRC resident inspector. Because the finding is of very low safety significance and has been entered into the licensee's CAP as CR ANO-C-2007-1508, this violation is being treated as an NCV consistent with Section VI.A of the Enforcement Policy: NCV 05000313/2007005-07; 05000368/2007005-07, "Communication of an NRC Inspector's Presence by Security Personnel."

.2 Failure to Identify and Corrected Inadequate Stroke Time Testing of EFW Flow Control Valves

Introduction: The inspectors identified a Green NCV of 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Action," for the licensee's failure to promptly identify and correct a practice of inadequate stroke time testing during ASME Code inservice testing of the Unit 1 EFW flow control valves. Specifically, the licensee was stroke time testing the EFW flow control valves using the valve position demand meter instead of the actual valve position indication.

Description: The licensee initiated CR ANO-1-2006-0456 on April 5, 2006, to calibrate the EFW Flow Control Valve CV-2645 hand indicating controller (HIC) because it had been identified that there was a difference in stroke time between the demand meter

and the actual valve position indicator. Specifically, the valve was closing more quickly than demanded. During surveillance testing, the operators noted that the valve remained fully closed and did not begin to open until demand indication was 20 percent. The CR also identified that the procedure did not specify how to time the valve in the closed direction, and that there was a difference in times between the valve demand and the valve position indication.

The inspectors reviewed this issue and noted that the Unit 1 inservice testing program as described in Section 5.5.8 of ANO 1 TSS, and Procedure CEP-IST-1, "Inservice Testing Bases Document," Revision 4, identifies that the licensee is committed to the ASME Operations and Maintenance Standard, 1987 Edition with OMa-1988 Addenda, Part 10 as required by 10 CFR 50.55a. During the inspectors' review, they identified that the use of HIC demand versus actual valve position as described in the above CR was contrary to the requirements of the ASME Section XI code. Specifically, ASME code requirements specify that when stroke time testing a valve, an indicator showing positive indication of obturator travel from closed to open and back shall be used. On April 6, 2006, the licensee initiated CR ANO-1-2006-0463 to determine the correct methodology for stroke time testing of the EFW flow control valves and to perform an operability evaluation and an extent of condition review.

During subsequent review of this issue, the inspectors noted that CR ANO-1-2006-0463 was closed to CR ANO-1-2006-00456 on April 10, 2006, and all corrective actions were documented as being completed on July 10, 2006. The inspectors identified, during their review of the corrective actions taken, that the licensee had failed to use conservative assumptions in the development of corrective actions for the issue of using valve demand instead of valve position indication. Specifically, the licensee had evaluated this issue and determined that use of valve demand was the same as the actual valve position and revised their quarterly surveillance test Procedure OP-1106.006 "Emergency Feedwater Pump Operation," to direct the valve demand be used for closed and opening timing.

This failure to take corrective actions was entered into the licensee's CAP as CR ANO-1-2007-2286.

Analysis: The performance deficiency associated with this finding involved the licensee's failure to identify that the practice of using the HIC demand indicator for valve stroke time testing while conducting the quarterly surveillance test was unacceptable based on the information provided in the ASME code. The finding was greater than minor because it affected the procedure quality attribute of the mitigating systems cornerstone, and affected the associated cornerstone objective to ensure availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Using Manual Chapter 0609, "Significance Determination Process," Phase 1 worksheet, the finding was determined to have very low safety significance because it did not represent an actual loss of safety function and did not screen as potentially risk significant due to a seismic, flooding, or severe weather initiating event. The finding had crosscutting aspects in the area of human performance associated with decision making [H.1(b)] because the licensee did not use conservative assumptions and failed to verify the validity of the underlining assumptions used when evaluating the use of the valve position demand meter for ASME Code in-service

testing.

Enforcement: 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Action," requires, in part, that measures be established to assure that conditions adverse to quality are promptly identified and corrected. Contrary to this, between April 2006 and November 2007, the licensee's measures failed to assure that a condition adverse to quality was promptly corrected. Specifically, the licensee's evaluation of the applicability of CR ANO-1-2006-0456 failed to promptly identify and correct a practice of inadequate stroke time testing methodology for the Unit 1 EFW flow control valves. Because the finding is of very low safety significance and has been entered into the licensee's CAP as CR ANO-1-2007-2286, this violation is being treated as an NCV consistent with Section VI.A of the Enforcement Policy: NCV 05000313/2007005-08, "Failure to Identify and Correct Inadequate Stroke Time Testing of EFW Flow Control Valves."

4OA3 Followup of Events and Notices of Enforcement Discretion (71153)

a. Inspection Scope

The inspectors: (1) reviewed operator logs, plant computer data, and/or strip charts for the below listed evolutions to evaluate operator performance in coping with nonroutine events and transients; (2) verified that operator actions were in accordance with the response required by plant procedures and training; and (3) verified that the licensee has identified and implemented appropriate corrective actions associated with personnel performance problems that occurred during the nonroutine evolutions sampled.

- October 23, 2007, Unit 2, Fire in Motor Control Center 2B-52.

Documents reviewed by the inspectors are listed in the attachment.

The inspectors completed one sample.

b. Findings

No findings of significance were identified.

4OA6 Meetings, Including Exit

On November 15, 2007, the emergency preparedness inspector conducted a telephonic exit meeting to present the emergency plan change inspection results to Mr. R. Holeyfield, Manager, Emergency Planning, who acknowledged the findings. The inspector confirmed that proprietary information was not provided or examined during the inspection.

On January 16, 2008, the inspectors presented the inspection results to Mr. Tim G. Mitchell, Vice President, Operations, and other members of the licensee's management staff. The licensee acknowledged the findings presented. The inspectors noted that, while proprietary information was reviewed, none would be included in this report.

4OA7 Licensee-Identified Violations

The following violation of very low safety significance (Green) was identified by the licensee and is a violation of NRC requirements which meets the criteria of Section VI of the NRC Enforcement Policy for being dispositioned as an NCV.

- 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," requires, in part, that activities affecting quality shall be prescribed by documented instructions, procedures, or drawings of a type appropriate to the circumstances and shall be accomplished in accordance with these instructions, procedures, or drawings. Contrary to this requirement, Procedure OP-1104.027, "Battery and Switchgear Emergency Cooling System," Revision 27, failed to provide adequate procedural guidance. Specifically, during a procedure review, licensee personnel identified that Procedure OP-1104.027, failed to incorporate guidance for emergency switchgear chillers and associated room cooler inoperability that had been developed by design engineering as part of an operability determination for CR ANO-C-200-0289 for a previously identified issue. In accordance with Manual Chapter 0609, Appendix A, this finding was of very low safety significance (Green) because it was confirmed not to result in loss of operability per Part 9900, Technical Guidance, "Operability Determination Process for Operability and Functionality Assessment." This issue was entered into the licensee's CAP as CR ANO-1-2007-2440.

ATTACHMENT: SUPPLEMENTAL INFORMATION

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee Personnel

J. Bacquet, ALARA Supervisor
B. Berryman, General Manager, Plant Operations
C. Bregar, Nuclear Safety Assurance Director
B. Byford, Supervisor, Simulator Training
K. Canitz, Simulator Instructor
A. Clinkingbeard, Operations, Unit 1
J. Cork, Evaluator, Operations Training, Unit 1
S. Cotton, Manager, Training & Development
S. Cupp, Supervisor, Simulator Support
G. Doran, Quality Assurance Auditor
J. Eichenberger, Acting Director, Nuclear Safety
M. Fields, Senior Reactor Operator
D. Fowler, Supervisor, Quality Assurance
R. Holeyfield, Manager, Emergency Planning
D. James, Licensing Manager
R. Martin, Supervisor, Operations Training, Unit 1
D. Marvel, Acting, Radiation Protection Manager
T. Mitchell, Vice President, Operations
C. Murray, Reactor Operator
R. Pace, Manager, Planning, Scheduling, and Outages
C. Reasoner, Engineering Director
R. Scheide, Licensing Specialist
R. Schwartz, Radiation Protection Specialist
D. Slusher, Instructor, Operations Training Unit 1
J. Smith, Quality Assurance Manager
R. Soukup, Instructor, Operations Training, Unit 1
B. Starkey, Radiation Protection Supervisor
D. Stoltz, ALARA Coordinator
C. Tyrone, Manager, Quality Assurance
F. Van Buskirk, Licensing Specialist
R. Walters, Operations Manager

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Opened

0000313/2007005-02; 0000368/2007005-02	URI	External Flooding Susceptibility (Section 1R06)
0000368/2007005-05	URI	Apparent Inadequate Procedure for Containment Air Lock Leakage Testing (Section 1R22)

Opened and Closed

05000368/2007005-01	NCV	Failure to Maintain Fire Barrier for Emergency Feedwater Pump A (Section 1R05)
05000313/2007005-03	NCV	Failure to Adequately Monitor the Performance of the Emergency Switchgear Room Chillers (Section 1R12)
05000313/2007005-04	NCV	Unacceptable Preconditioning of EFW Flow Control Valve Prior to Inservice Testing (Section 1R19)
05000313/2007005-06;	NCV	Failure to Control Combustible Material Brought Into the Auxiliary Building (Section 4OA2.2)
05000313/2007005-07; 05000368/2007005-07	NCV	Communication of an NRC Inspector's Presence by Security Personnel (Section 4OA2.3.1)
05000313/2007005-08	NCV	Failure to Identify and Correct Inadequate Stroke Time Testing of EFW Flow Control Valves (Section 4OA2.3.2)

Closed

None.

Discussed

None.

LIST OF DOCUMENTS REVIEWED

In addition to the documents referred to in the inspection report, the following documents were selected and reviewed by the inspectors to accomplish the objectives and scope of the inspection and to support any findings:

Section 1R04: Equipment Alignment

CRs

ANO-2-2007-0531	ANO-2-2007-1024	ANO-2-2007-1288
ANO-2-2007-0575	ANO-2-2007-1073	ANO-2-2007-1416
ANO-2-2007-0718	ANO-2-2007-1151	ANO-2-2007-1594
ANO-2-2007-0749		

Plant Drawings

M-217 Sheet 1, Revision 89	M-217 Sheet 4, Revision 9	M-2204 Sheet 1, Revision 13
M-217 Sheet 2, Revision 42	M-2210 Sheet 1, Revision 85	M-2236 Sheet 1, Revision 93
M-217 Sheet 3, Revision 23	M-2217 Sheet 3, Revision 16	

Procedures

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
OP-2104.036	Emergency Diesel Generator Operations	56
OP-2416.045	Unit 2 EDG Periodic Maintenance	2
OP-2403.007	Unit 2 EDG Surveillance	18
OP-2104.005	Containment Spray	47

Section 1R05: Fire Protection

Procedures

NUMBER	TITLE	REVISION
FHA	Arkansas Nuclear One Fire Hazards Analysis	11
PFP-U1	ANO Prefire Plan (Unit 1)	9
PFP-U2	ANO Prefire Plan (Unit 2)	9
OP-1000.120	ANO Fire Watch Program	015

Drawings

FZ-1045, Sheet 1, Revision 3	FZ-2035 , Sheet 1, Revision 2
FZ-2022, Sheet 1, Revision 2	FZ-1036 , Sheet 1, Revision 2
FZ-2010 , Sheet 1, Revision 2	FZ-1071 , Sheet 1, Revision 2

Calculations

NUMBER	TITLE	REVISION
CALC-85-E-0053-15	Fire Area B Combustible Loading Calculation	47
CALC-85-E-0053-29	Fire Area CC Combustible Loading Calculation	4
CALC-85-E-0053-22	Fire Area I Combustible Loading Calculation	6
CALC-85-E-0053-40	Fire Area OO Combustible Loading Calculation	5
CALC-85-E-0053-18	Fire Area E Combustible Loading Calculation	3

CRs

ANO-2-2007-1729
ANO-2-2007-1014

ANO-C-2006-0159
ANO-C-2006-0733

ANO-2-2006-0690
ANO-2-2006-0629

Miscellaneous Documents

ER-ANO-2004-0349-000, Evaluation of Electrical Protection in the Combustible Loading Calculations, Revision 0

Section 1R06: Flood Protection Measures

Drawings

M-204 Sheet 5, Revision 16
M-209 Sheet 1, Revision 112
M-217 Sheet 1, Revision 89

M-219 Sheet 1, Revision 80
M-2209 Sheet 1, Revision 119
M-2210 Sheet 1, Revision 85

Calculations

NUMBER	TITLE	REVISION
CALC-94-E-0079-01	Evaluation of Unit 1 Safety Related Structures for the Effects of Local Intense Precipitation	0
CALC-94-E-0079-02	Evaluation of Unit 2 Safety Related Structures for the Effects of Local Intense Precipitation	0
5.8.2	Effects of Local Intense Precipitation of Safety Related Roofs	0
CALC-92-R-0024-01	Flooding Evaluation INPO SOER 85-5	0
CALC-92-R-0034-01	Flooding Evaluation INPO SOER 85-5 2nd Iteration	0
CALC-83-D-2057-03	Corridor 2104 Flooding Chronology	2

Section 1R07: Heat Sink Performance

Procedures

NUMBER	TITLE	REVISION
2311.008	EDG Heat Exchanger Performance Test	004-02-0

Calculations

NUMBER	TITLE	REVISION
CALC-91-R-2013-01	Service Water Performance Testing Methodology	20
CALC-91-D-2003-01	Emergency Diesel Generator Capacity Ratings	6

CR

ANO-2-2007-1228

Miscellaneous Documents

EIC 3680, "Unit 2 EDG, 2K-4A & 2K-4B, Thermal Test Results For Cycle 19," Revision 0
VLD-2-SYS-01, "ANO-2 Emergency Diesel Generator System," Revision 8
VLD-2-SYS-10, "ANO-2 Service Water System," Revision 11

Miscellaneous Documents

EIC 3680, "Unit 2 EDG, 2K-4A & 2K-4B, Thermal Test Results For Cycle 19," Revision 0

Section 1R12: Maintenance Effectiveness

Procedures

NUMBER	TITLE	REVISION
OP-1104.027	Battery and Switchgear Emergency Cooling System	26
EN-DC-204	Maintenance Rule Scope and Basis	0
OP-1104.004	Decay Heat Removal Operating Procedure	76
EN-DC-205	Maintenance Rule Monitoring	
EN-DC-206	Maintenance Rule (a)(1) Process	0
EN-DC-207	ANO Maintenance Rule Periodic Assessment	

Drawings

NUMBER	TITLE	REVISION
M-221	Piping & Instrument Diagram Emergency Chilled Water System Auxiliary Building Electrical Rooms	27
M-230	Piping & Instrument Diagram Reactor Coolant System	114

Miscellaneous Documents

Letter 1CAN097710, dated September 20, 1977

Letter 1CAN107817, dated October 31, 1978

Arkansas Nuclear One Upper Level Document ANO-1 Auxiliary Building HVAC System
VLD-1-SYS-30, Revision 4

EN 43435, San Onofre Instrument Air Header Failure

EN 43049, Perry Loss of Instrument Air

Section 1R13: Maintenance Risk Assessments and Emergent Work Control

Procedures

NUMBER	TITLE	REVISION
COPD-024	Risk Assessment Guidelines	018

CRs

ANO-C-2007-1641	ANO-C-2007-1624	ANO-1-2007-2459
ANO-C-2001-0456		

WO

00126869

Miscellaneous Documents

Plant Impact Statement dated September 12, 2007

Plant Risk Assessment dated October 11, 2007

Section 1R15: Operability Evaluations

Procedures

NUMBER	TITLE	REVISION
EN-OP-104	Operability Determinations	2
OP-2304.258	Unit 2 Escape Airlock Leak Rate Test	16
ENN-DC-185	Through Wall Leaks in ASME Section IX Class 3 Moderate Energy Piping Systems	0
OP-1032.036	Service Water Piping Leak Evaluation and Monitoring	0
OP-1104.027	Battery and Switchgear Emergency Cooling System	28

CRs

ANO-1-2007-2440	ANO-C-2007-1448
ANO-2-2007-1687	ANO-C-2007-0289
ANO-2-2007-1693	

WO

51050428

Miscellaneous Documents

LIC-00-041, Guidance on Application of GL 90-05 on Service Water Leaks, dated April 28, 1999

Letter OCNA039919, dated March 31, 1999

Section 1R19: Postmaintenance Testing

Procedures

NUMBER	TITLE	REVISION
OP-2104.005	Containment Spray	47
OP-1104.027	Battery and Switchgear Emergency Cooling System	27
OP-2104.029	Service Water System Operation	66
OP-2104.039	HPSI System Operation	48
OP-2104.007	Control Room Emergency Air Conditioning and Ventilation	33
OP-1000.009	Surveillance Test Program Control	031-01-0
OP-1025.033	Control Of Post-Maintenance Testing	008-01-0
OP-1000.024	Control Of Maintenance	52
EN-WM-101	Online Work Management Process	1
OP-2104.040	LPSI System Operation	42
OP-1404.002	EFW Flow Control Valves Maintenance	010-00-0
OP-1106.006	Emergency Feedwater Pump Operation	71

CRs

ANO-1-2007-0272	ANO-1-2007-2323	ANO-2-2007-1402
ANO-1-2007-2286	ANO-1-2007-2416	

WOs

50240090	51203079	85348
51046389	51209628	

Miscellaneous Documents

SEP-IST-4, "EN-S Standard on IST," IST Position No. 3, "Position on Component Preconditioning," Revision 1

Section 1R22: Surveillance Testing

Procedures

NUMBER	TITLE	REVISION
OP-2304.258	Unit 2 Escape Airlock Leak Rate Test	16
OP-1104.005	Reactor Building Spray System Operation	48

CRs

ANO-2-2007-1687 ANO-2-2007-1693

WOs

51050428 51207338

Miscellaneous Documents

LCP-94-6001, Operation and Maintenance Instructions for Emergency Airlock, Revision 1

SEP-APJ-002, "Arkansas Nuclear One Primary Containment Leakage Rate Testing (Appendix J) Program Section," Revision 0

1R23: Temporary Plant Modifications

Procedures

NUMBER	TITLE	REVISION
OP-2104.005	Containment Spray	48

Calculations

NUMBER	TITLE	REVISION
Calc-91-E-0116-01	NPSH calculation for HPSI and RB spray	5
Calc-98-0044-01	RWT Draindown Analysis	4

CR

ANO-2-2007-1622

WOs

125797 125798

Miscellaneous Documents

EIC-3340

Section 4OA1: PI Verification

Procedures

NUMBER	TITLE	REVISION
EN-LI-114	Performance Indicator Process	2

Miscellaneous Documents

EN-LI-114 Attachment 9.2, "NRC Performance Indicator Technique/Data Sheets
INPO MSPI Derivation Reports
NEI 99-02, "Regulatory Assessment Indicator Guideline," Revision 5

Section 4OA2: Identification and Resolution of Problems

Procedures

NUMBER	TITLE	REVISION
OP-1106.006	Emergency Feedwater Pump Operation	71
CEP-IST-1	Inservice Testing Bases Document	4
CEP-IST-2	Inservice Testing Plan, ENS, CEP	307
EN-DC-161	Control of Combustibles	1

CRs

ANO-1-2006-0456	ANO-1-2007-2458	ANO-C-2007-1508
ANO-1-2006-0463	ANO-C-2003-0104	ANO-C-2007-1719
ANO-1-2007-1225	ANO-C-2003-0821	ANO-C-2008-0004
ANO-1-2007-2127	ANO-C-2005-0940	
ANO-1-2007-2286	ANO-C-2007-0755	

Miscellaneous Documents

ASME Section XI, Rules for Inservice Testing of Nuclear Power Plant Components, 1989 Edition

ASME OM Code-1987/OMa-1988 Addenda, Part 10 – Inservice Testing of Valves in Light Water Reactor Power Plants

LIST OF ACRONYMS

ANO	Arkansas Nuclear One
ASME	American Society of Mechanical Engineers
CAP	corrective action program
CEP	central alarm system
CFR	Code of Federal Regulations
CR	condition report
EDG	emergency diesel generator
EFW	emergency feedwater
HIC	hand indicating controller
IR	inspection report
LLRT	local leak rate test
NCV	noncited violation
NRC	Nuclear Regulatory Commission
PI	performance indicator
RTP	rated thermal power
SAS	secondary alarm system
SSC	structure, system or component
TS	Technical Specifications
UFSAR	Updated Final Safety Analysis Report
WO	work order