



UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION IV
612 EAST LAMAR BLVD, SUITE 400
ARLINGTON, TEXAS 76011-4125

November 7, 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 5000313/2008004 AND 05000368/2008004

Dear Mr. Mitchell:

On September 23, 2008, 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 October 9 and November 7, 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 three NRC-identified findings and one self-revealing finding. All of these findings were evaluated under the significance determination process as having very low safety significance (Green). Three of these findings were determined to involve violations of NRC requirements. Additionally, four licensee-identified violations, which were determined to be of very low safety significance, are also 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 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, 612 Lamar Ave, Suite 400, Arlington, Texas 76011-4125; 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 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/

Charles J. Paulk, Chief
Project Branch E
Division of Reactor Projects

Dockets: 50-313
50-368
Licenses: DPR-51
NPF-6

Enclosure:
NRC Inspection Report 05000313/2008004;
05000368/2008004 w/Attachment:

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SUNSI Review Completed: CJP ADAMS: Yes No Initials: CJP
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RIV:RI:DRP/E	SRI:DRP/E	C:DRS/OB	C:DRS/PSB1
JEJosey	AASanchez	RELantz	MPShannon
/RA CPaulk for	/RA CPaulk for/	/RA/	/RA/
11/07/2008	11/07/2008	11/07/2008	11/07/2008
C:DRS/EB2	C:DRS/EM2	C:DRS/PSB2	C:DRP/E
RLBywater	NFO'Keef	GEWerner	CPaulk
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U.S. NUCLEAR REGULATORY COMMISSION
REGION IV

Dockets: 05000313, 05000368

Licenses: DPR-51, NPF-6

Report: 05000313/2008004 and 05000368/2008004

Licensee: Entergy Operations, Inc.

Facility: Arkansas Nuclear One, Units 1 and 2

Location: Junction of Hwy. 64 W and Hwy. 333 South
Russellville, Arkansas

Dates: June 24 through September 23, 2008

Inspectors: A. Sanchez, Senior Resident Inspector
J. Josey, Resident Inspector
Paul J. Elkmann, Senior Emergency Preparedness Inspector
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M. Haire, Senior Operations Engineer
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Approved By: Charles J. Paulk, Chief
Project Branch E
Division of Reactor Projects

SUMMARY OF FINDINGS

IR 05000313/2008004, 05000368/2008004; 06/24/08 - 09/23/08; Arkansas Nuclear One, Units 1 and 2; Integrated Resident Report; Problem Identification and Resolution; Event Follow Up; and Other.

This report covered a 3-month period of inspection by resident inspectors. The inspection identified four Green findings, three of which were noncited violations. The significance of most findings is indicated by their color (Green, White, Yellow, or Red) using Inspection NRC 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 4, dated December 2006.

A. NRC-Identified Findings

Cornerstone: Initiating Events

- Green. Inspectors documented a self-revealing finding for the failure to follow Procedure EN-HU-102, "Human Performance Tools," Revision 4, which required that workers perform self checks and peer checks to ensure that the correct work was being performed on the correct equipment. Specifically, workers, who were returning from a break to resume preoutage preparation for feedwater heater replacement, failed to perform a self check, or obtain a peer check, and worked on the wrong component. They cut two instrument air lines to the Unit 1 Feedwater Heater E-4A high level drain Valve CV-3068. This caused the valve to fail full open and drain the feedwater heater. Plant personnel captured this finding in the corrective action program as Condition Report ANO-1-2008-0924.

The failure to follow Procedure EN-HU-102 was a performance deficiency and, therefore, a finding. This finding was more than minor because it was similar to nonminor Example 4.e in NRC Manual Chapter 0612, Appendix E, "Examples of Minor Issues." Specifically, the failure to comply with the procedure resulted in the valve failing open. The finding was evaluated for significance using NRC Manual Chapter 0609, "Significance Determination Process," and determined to be of very low safety significance (Green) because as a transient initiator, the finding did not contribute to both the likelihood of a reactor trip and the likelihood that mitigation equipment or functions would not be available. Inspectors determined that the finding had a crosscutting aspect in the area of Human Performance associated with Work Practices because the craftsman did not utilize self and peer checking techniques [H.4(a)] (Section 40A3).

Cornerstone: Mitigating Systems

- Green. The inspectors identified a noncited violation of 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Action," for the failure to implement required measures to ensure that conditions adverse to quality were promptly identified and corrected. Specifically, Procedure EN-LI-102, "Corrective Action Process," Revision 8, required that plant personnel write condition reports for conditions adverse to quality. The inspectors identified nine instances where

station personnel were aware of conditions adverse to quality, but failed to enter them into the corrective action program without being prompted by the inspectors. Licensee personnel entered this issue into the corrective action program as Condition Report ANO-C-2008-1536.

The finding was more than minor because it was similar to nonminor Example 3.j in NRC Manual Chapter 0612, Appendix E, "Examples of Minor Issues," in that significant programmatic deficiencies were identified associated with this issue that could lead to worse errors if left uncorrected. Specifically, station personnel's failure to enter conditions adverse to quality into the station corrective action program could result in the failure to recognize that risk-significant equipment is in a degraded condition and, as such, may not be able to perform its specified safety function. Using NRC Manual Chapter 0609, "Significance Determination Process," Phase 1 Worksheet, the finding was determined to have very low safety significance (Green) because the finding: (1) was not a qualification deficiency confirmed not to result in loss of operability; (2) did not lead to an actual loss of system safety function; (3) did not result in the loss of safety function of a single train for greater than its technical specification allowed outage time; (4) did not represent an actual loss of safety function of one or more nontechnical specification trains of equipment designated as risk-significant per 10CFR50.65, for greater than 24 hours; and (5) it did not screen as potentially risk significant due to a seismic, flooding, or severe weather initiating event. This finding had a crosscutting aspect in the area of Problem Identification and Resolution associated with the Corrective Action Program [P.1(a)] in that licensee personnel failed to implement a corrective action program with a low threshold for identifying issues. This also includes identifying such issues completely, accurately, and in a timely manner commensurate with their safety significance (Section 4OA2.4).

- Green. The inspectors identified a noncited violation of 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Action," for the failure of licensee personnel to promptly identify and correct a condition adverse to quality - chill water expansion tank corrosion materials that blocked the Emergency Switchgear Chiller B VCH-4B Level Switch LS-6036 sensing line. The condition caused the chiller to lockout and become inoperable on December 18, 2005, July 21, 2006, and July 25, 2008. Licensee personnel entered this issue in the corrective action program as Condition Report ANO-1-2008-0851.

The finding was more than minor because it was associated with the Mitigating Systems Cornerstone attribute of equipment performance and affected the associated cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Using NRC Manual Chapter 0609, "Significance Determination Process," Phase 1 Worksheet, the finding was determined to have very low safety significance because the finding: (1) was not a qualification deficiency confirmed not to result in a loss of operability of essential Chiller B; (2) did not lead to an actual loss of system safety function; (3) did not result in the loss of one train of technical specification equipment for more than its allowed outage time; (4) did not represent an actual loss of function of one or more nontechnical specification trains of equipment designated as risk-significant per 10CFR50.65, for greater than 24 hours; and (5) it did not screen as potentially risk significant

due to a seismic, flooding, or severe weather initiating event. The inspectors determined that the finding did not have a crosscutting aspect because the first two opportunities to identify and correct the condition were aged and not indicative of current plant performance (Section 4OA2.5).

- Green. The inspectors identified a noncited violation of 10 CFR 50.65(a)(1) for the licensee's failure to monitor Unit 1 auxiliary building roof drains performance in a manner to provide reasonable assurance that the roof drains were capable of fulfilling their intended function. Licensee personnel have never tested, nor checked, the drains for blockages. The failure (or blockage) of these drains could result in excessive roof loading due to accumulation of water during design basis rain events. Licensee personnel entered this issue in the corrective action program as Condition Report ANO-1-2008-1210.

The finding was more than minor because it was similar to nonminor Maintenance Rule, Example 7.a, in NRC Manual Chapter 0612, Appendix E, "Examples of Minor Issues," because significant equipment problems could go undetected. This finding had very low safety significance because the failure to properly categorize failures in accordance with the 10CFR 50.65 did not create, in itself, additional operability or functionality concerns. The inspectors determined that the finding did not have a crosscutting aspect because the opportunity to identify that performance monitoring was inadequate had not occurred recently and, therefore, was not indicative of current licensee performance (Section 4OA5).

B. Licensee-Identified Violations

Violations of very low safety significance which were identified by the licensee have been reviewed by the inspectors. Corrective actions taken or planned by the licensee have been entered into the licensee's corrective action program. These violations and their corrective actions are listed in Section 4OA7 of this report.

REPORT DETAILS

Summary of Plant Status

Arkansas Nuclear One (ANO) Unit 1 operated at essentially 100 percent reactor power for the entire inspection period.

ANO Unit 2 began the inspection period at 100 percent power. On July 3, 2008, Unit 2 reduced power to 49 percent to repair tube leaks in the Feedwater Heater 2E-6A. On July 4, 2008, Unit 2 began ascension to 100 percent power. On July 5, 2008, Unit 2 reached 100 percent power. Unit 2 continued to operate at essentially 100 percent power for the remainder of the inspection period.

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, Barrier Integrity

1R01 Adverse Weather Protection (71111.01)

.1 Readiness for Seasonal Extreme Weather Conditions

a. Inspection Scope

The inspectors completed a review of the licensee's readiness for seasonal susceptibilities involving extreme high temperatures. The inspectors: (1) reviewed plant procedures, the Updated Final Safety Analysis Report (UFSAR), and technical specifications to ensure that operator actions defined in adverse weather procedures maintained the readiness of essential systems; (2) walked down portions of the two systems listed below to ensure that adverse weather protection features (weatherized enclosures, temporary chillers, etc.) were sufficient to support operability, including the ability to perform safe shutdown functions; (3) evaluated operator staffing levels to ensure readiness of essential systems required by plant procedures could be maintained; and (4) reviewed the corrective action program to determine if licensee personnel identified and corrected problems related to adverse weather conditions.

- August 10, 2008, Unit 1 service water and Unit 2 decay heat removal

The inspectors completed one sample.

b. Findings

No findings of significance were identified.

.2 Readiness for Impending Adverse Weather Conditions

a. Inspection Scope

The inspectors completed a review of the licensee's readiness of impending adverse weather conditions associated with Hurricane Ike on September 12, 2008. The remnants of Hurricane Ike were expected to pass over the site on September 13-14, 2008. The inspectors: (1) evaluated implementation of adverse weather preparation procedures and compensatory measures; (2) verified adequate operator staffing; (3) reviewed required surveillances were current and that the weather would not challenge upcoming surveillance deadlines; (4) confirmed that the licensee's planned activities (maintenance, modifications, surveillances, etc.) would not affect or prevent required systems, structures, or components from performing their safety functions; and (5) performed an extensive site walkdown to ensure the site was adequately prepared for the expected weather.

The inspectors completed one sample.

b. Findings

No findings of significance were identified

.3 Readiness to Cope with External Floods

a. Inspection Scope

The inspectors reviewed the licensee's UFSAR to identify areas that can be affected by external flooding as well as the site design to remove heavy water accumulation. The inspectors selected the licensee's site drainage system, including storm drains, culverts, and various underground vaults, for extensive review. The inspectors met with licensee staff, interviewed workers performing water removal activities, and reviewed procedures and recent condition reports.

The inspectors completed one sample.

b. Findings

No findings of significance were identified.

1R04 Equipment Alignment (71111.04)

.1 Partial Walkdown

a. Inspection Scope

The inspectors: (1) walked down portions of the three risk-important systems listed below 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 UFSAR and corrective action program to ensure problems were being identified and corrected.

- July 25, 2008, Unit 1, emergency switchgear chiller valve VCH-4A while chiller valve VCH-4B was out of service
- September 9, 2008, Unit 2, Emergency Feedwater Pump 2P-7A, while the opposite train, emergency feedwater Pump 2P-7B was inoperable due to planned maintenance and surveillance activities, in accordance with Procedure OP-2106.006, "Emergency Feedwater System Operations," Revision 68
- September 15, 2008, Unit 2, emergency feedwater Pump 2P-7B, while the opposite train, emergency feedwater Pump 2P-7A, was out of service for planned maintenance, in accordance with Procedure OP-2106.006, "Emergency Feedwater System Operations," Revision 68

The inspectors completed three samples.

b. Findings

No findings of significance were identified.

.2 Complete Equipment Walkdown (71111.04S)

a. Inspection Scope

The inspectors: (1) reviewed plant procedures, drawings, the UFSAR, technical specifications, and vendor manuals to determine the correct alignment of the system listed below; (2) reviewed outstanding design issues, operator work-arounds, and UFSAR documents to determine if open issues affected the functionality of the system; and (3) verified that licensee personnel were identifying and resolving equipment alignment problems.

- August 29, 2008, Unit 2, Alternate AC (AAC) Emergency Diesel Generator 2K-9

The inspectors completed one sample.

b. Findings

No findings of significance were identified.

1R05 Fire Protection (71111.05)

.1 Quarterly Inspection (71111.05Q)

a. Inspection Scope

The inspectors walked down the four plant areas listed below 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 licensee personnel identified and corrected fire protection problems.

- August 29, 2008, Unit 1, Fire Zone 98-J, Access Corridor 98
- September 4, 2008, Unit 1 Fire Zone 95-O, North battery room
- September 4, 2008, Unit 1 Fire Zone 38-Y, EFW pump area
- September 21, 2008, Unit 2 Fire Zone 2151-A, Fuel Handling Area

The inspectors completed four samples.

b. Findings

No findings of significance were identified.

.2 Annual Fire Drill Inspection (71111.05A)

a. Inspection Scope

On September 2 and September 10, 2008, the inspectors observed a fire brigade drill to evaluate the readiness of licensee personnel to prevent and fight fires, including the following aspects: (1) the number of personnel assigned to the fire brigade, (2) use of protective clothing, (3) use of breathing apparatuses, (4) use of fire procedures and declarations of emergency action levels, (5) command of the fire brigade, (6) implementation of prefire strategies and briefs, (7) access routes to the fire and the timeliness of the fire brigade response, (8) establishment of communications, (9) effectiveness of radio communications, (10) placement and use of fire hoses, (11) entry into the fire area, (12) use of firefighting equipment, (13) searches for fire victims and fire propagation, (14) smoke removal, (15) use of prefire plans, (16) adherence to the drill scenario, (17) performance of the postdrill critique, and (18) restoration from the fire drill. The licensee simulated a fire in the Unit 1 lube oil reservoir room and the Unit 2 emergency diesel generator room access corridor and motor control center.

The inspectors completed one sample.

b. Findings

No findings of significance were identified.

1R06 Flood Protection Measures (71111.06)

Internal Flooding

a. Inspection Scope

The inspectors: (1) reviewed the UFSAR, the flooding analysis, plant procedures, and flooding risk studies to select and assess susceptibilities involving internal flooding; (2) reviewed the UFSAR and corrective action documents to determine if licensee personnel identified and corrected flooding problems; (3) reviewed and evaluated potential sources of internal flooding that had not been analyzed or adequately maintained; (4) performed walkdowns of the selected areas or rooms listed below 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) protection for the drain system from debris, (f) sump pumps, level alarms and control circuits, (g) temporary or removable flood barriers. The inspectors also 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. The inspectors also verified that operator actions for coping with flooding can reasonably achieve the desired outcomes.

- August 15, 2008, Unit 2, North and South emergency diesel generator rooms

The inspectors completed one sample.

b. Findings

No findings of significance were identified.

1R07 Heat Sink Performance

a. Inspection Scope

The inspectors completed the annual sample to review the licensee's program for maintenance and testing of heat exchangers, specifically the Unit 2, Train A shutdown cooling heat exchanger. The inspectors verified that the licensee used an evaluation method (heat transfer method) specified in Electric Power Research Institute Guidance Document NP-7552. The inspectors also discussed the program, testing, and specific results of the Train A shutdown cooling heat exchanger. The inspectors also verified that the heat transfer rate was appropriately categorized against pre-established acceptance criteria.

The inspectors completed one sample.

b. Findings

No findings of significance were identified.

1R11 Licensed Operator Requalification Program (71111.11)

.1 Resident Inspector Quarterly Review (71111.11Q)

a. Inspection Scope

On August 14, 2008, the inspectors observed a dynamic training scenario in which the Unit 1 operations crew responded to a loss on the 500 kV Mabelvale Power Line, reduction of reactor power, control rod lagging, control rod drive temperature excursion, rod drops, and stuck control rods that required a manual reactor trip. The inspectors' observations included: formality and clarity of communications, group dynamics, conduct of operations, procedure usage, command and control, and activities associated with the emergency plan. The inspectors also verified that evaluators and operators were identifying crew performance problems as applicable.

On August 14, 2008, the inspectors also attended classroom training on the Unit 1 control rod drives, normal operations, and control rod malfunctions.

The inspectors completed one sample.

b. Findings

No findings of significance were identified.

.2 Biennial Inspection (Unit 2)

The licensed operator requalification program involves two training cycles that are conducted over a 2-year period. In the first cycle, the annual cycle, the operators are administered an operating test consisting of job performance measures and simulator scenarios. In the second part of the training cycle, the biennial cycle, operators are administered an operating test and a comprehensive written examination. The inspectors reviewed the results of the annual requalification program for Unit 1 and the biennial cycle for Unit 2.

a. Inspection Scope

To assess the performance effectiveness of the licensed operator requalification program, the inspectors conducted personnel interviews, reviewed both the operating tests and written examinations, and observed ongoing operating test activities.

The inspectors interviewed five licensee personnel, consisting of two operators, two instructors, and a training supervisor, to determine their understanding of the policies and practices for administering requalification examinations. The inspectors also reviewed operator performance on the written exams and operating tests. These reviews included observations of portions of the operating tests by the inspectors. The operating tests observed included six job performance measures and four scenarios that were used in the current biennial requalification cycle. These observations allowed the inspectors to assess the licensee's effectiveness in conducting the operating test to ensure operator mastery of the training program content. The inspectors also reviewed medical records of 6 licensed operators for conformance to license conditions and the

licensee's system for tracking qualifications and records of license reactivation for 17 operators.

The results of these examinations were reviewed to determine the effectiveness of the licensee's appraisal of operator performance and to determine if feedback of performance analyses into the requalification training program was being accomplished. The inspectors interviewed members of the training department and reviewed minutes of training review group meetings to assess the responsiveness of the licensed operator requalification program to incorporate the lessons learned from both plant and industry events. Examination results were also assessed to determine if they were consistent with the guidance contained in NUREG-1021, "Operator Licensing Examination Standards for Power Reactors", Revision 9, Supplement 1, and NRC Manual Chapter 0609, Appendix I, "Operator Requalification Human Performance Significance Determination Process."

In addition to the above, the inspectors reviewed examination security measures, simulator fidelity, and existing logs of simulator deficiencies.

On August 5, 2008, the licensee informed the lead inspector that 22 of 24 reactor operators and 34 of 35 senior reactor operators passed the biennial written examination. The individuals that failed were remediated, retested, and passed their retake exams. Ten crews were examined on the simulator and all crews passed.

b. Findings

No findings of significance were identified.

.3 Annual Inspection (Unit 1)

a. Inspection Scope

The inspectors conducted an in-office review of the annual requalification training program to determine the results of this program. Forty-five operators (14 reactor operators and 31 senior reactor operators) were examined during this requalification cycle. In addition, ten operating crews were examined on the facility's simulator. All of the operating crews passed the simulator scenarios and all operators passed the operating tests.

b. Findings

No findings of significance were identified.

1R12 Maintenance Effectiveness (71111.12)

a. Inspection Scope

The inspectors reviewed the maintenance activities listed below to: (1) verify the appropriate handling of system, structure, and component performance or condition problems; (2) verify the appropriate handling of degraded system, structure, and component functional performance; (3) evaluate the role of work practices and common cause problems; and (4) evaluate the handling of system, structure, and component

issues reviewed under the requirements of 10 CFR 50.65; 10 CFR Part 50, Appendix B; and technical specifications.

- August 7, 2008, Units 1 and 2, Annual Maintenance Rule (a)(3) assessment
- September 15-19, 2008, Unit 1, Service water system
- September 15-20, 2008, Unit 2, EFW system

The inspectors completed three samples.

b. Findings

No findings of significance were identified.

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

.1 Risk Assessment and Management of Risk

a. Inspection Scope

The inspectors reviewed the three assessment activities listed below 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 licensee personnel identified and corrected problems related to maintenance risk assessments.

- June 30, 2008, Unit 1, Control rod drive breaker trip testing
- July 21, 2008, Units 1 and 2, Mobile crane use in the vicinity of the service water intake structure
- September 9, 2008, Unit 2, Mobile crane use in the vicinity of the AAC emergency diesel generator

The inspectors completed three samples.

b. Findings

No findings of significance were identified.

.2 Emergent Work Control

a. Inspection Scope

For the five emergent issues listed below, the inspectors: (1) verified that licensee personnel 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 licensee personnel identified and corrected risk assessment and emergency work control problems.

- July 7, 2008, Unit 2, Emergent repair of Feedwater Heater 2E-6A
- July 22, 2008, Unit 1, Emergent maintenance on EFW Pump 2P-7A due to inability of pump to manually trip
- July 22, 2008, Unit 1, EFW Pump 2P-7A tag out during a severe thunderstorm warning
- August 25-26, 2008, Units 1 and 2 scheduled maintenance changes due to the unexpected extended outage of the AAC diesel generator
- September 4, 2008, Unit 2, Unexpected entry into a technical specification shutdown action statement due to the loss of DC power supply to all three inverters that supply power to Vital 120 VAC busses

The inspectors completed five samples.

b. Findings

No findings of significance were identified.

1R15 Operability Evaluations (71111.15)

a. Inspection Scope

For the four operability issues listed below, the inspectors: (1) reviewed plants 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 technical specifications; (5) verified that the degraded system, structure, or component, or compensatory measures taken to address the degraded system, structure, or component does not result in changes to the UFSAR; or if there is a change to the UFSAR that a proper evaluation in accordance with 10 CFR 50.59 has been performed; (6) used the significance determination process to evaluate the risk significance of degraded or inoperable equipment; and (7) verified that the licensee personnel identified and implemented appropriate corrective actions associated with degraded components.

- July 24, 2008, Unit 1, Valve CV-1406, Reactor building sump suction valve
- July 28, 2008, Unit 2, EFW Pump 2P-7A

- August 22, 2008, Unit 1, Penetration Room Fan VEF-38B suction check Valve CPV-12
- August 28, 2008, Unit 2, AAC emergency diesel generator

The inspectors completed four samples.

b. Findings

No findings of significance were identified.

1R18 Plant Modifications (71111.18)

.1 Temporary Plant Modifications

a. Inspection Scope

The inspectors reviewed the UFSAR, plant drawings, procedure requirements, and technical specifications to ensure that the temporary modification listed below 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 post installation test results were satisfactory and that the impact of the temporary modification on permanently installed systems, structures, or components 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 personnel identified and implemented any needed corrective actions associated with temporary modifications.

- August 7, 2008, Unit 1, Emergency temporary modification to the Unit 1 turbine

The inspectors completed one sample.

b. Findings

No findings of significance were identified.

1R19 Postmaintenance Testing (71111.19)

a. Inspection Scope

The inspectors selected the seven postmaintenance test activities of risk significant systems or components listed below for review. 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 licensee personnel identified and corrected problems related to postmaintenance testing.

- July 10, 2008, Unit 2, Reactor Building Spray Pump 2P-35A
- July 15, 2008, Unit 2, Low Pressure Safety Injection Valves 2CV-5057-2 and 2CV-5077-2 following scheduled preventative maintenance on their motor operators
- July 23, 2008, Unit 2, EFW Pump 2P-7A
- July 24, 2008, Unit 1, EFW Pump P-7A
- July 24, 2008, Unit 2, High Pressure Safety Injection (HPSI) Flow Control Valve 2CV-5016-2 following cleaning of boric acid and packing adjustments
- August 7, 2008, Unit 2, Containment Sump Suction Isolation Valve 2CV-5649-1
- September 2, 2008, Unit 2, Emergency Diesel Generator 2 following the extended preventative and corrective maintenance outage

The inspectors completed seven samples.

b. Findings

No findings of significance were identified.

1R22 Surveillance Testing (71111.22)

a. Inspection Scope

The inspectors reviewed the UFSAR, procedure requirements, and technical specifications to ensure that the four surveillance activities listed below demonstrated that the systems, structures, or components 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 technical specification operability; (9) test equipment removal; (10) restoration of plant systems; (11) fulfillment of ASME Code requirements; (12) updating of performance indicator data; (13) engineering evaluations, root causes, and bases for returning tested systems, structures, or components not meeting the test acceptance criteria were correct; (14) reference setting data; and (15) annunciators and alarms set points. The inspectors also verified that licensee personnel identified and implemented any needed corrective actions associated with the surveillance testing.

- July 18, 2008, Unit 2, Emergency Diesel Generator 2
- July 29, 2008, Unit 1, Reactor Building Spray Pump P-35B

- August 20, 2008, Unit 2, HPSI T_{hot} Orifice Bypass Valve 2CV-5103-1
- September 10, 2008, Unit 2 EFW Pump 2P-7B

The inspectors completed four samples.

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 an in-office review to Arkansas Nuclear One Emergency Plan Implementing Procedure 1903.010, "Emergency Action Level Classification," Revision 40, submitted June 24, 2008. This revision added notes referencing appropriate security procedures to Emergency Action Levels 7.1, 7.2, 7.3, and 7.4; added an attachment describing compensatory measures for out-of-service monitors and alarms used in emergency action levels; and made minor administrative corrections.

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 standards in 10 CFR 50.47(b), to determine if the revision adequately implemented the requirements of 10 CFR 50.54(q). This review was not documented in a Safety Evaluation Report and did not constitute an approval of the licensee's changes; therefore, the revision is subject to future inspection.

The inspector completed one sample during the inspection.

b. Findings

No findings of significance were identified.

1EP6 Drill Evaluation (71114.06)

.1 Routine Licensee Emergency Drill

a. Inspection Scope

Resident inspectors evaluated the conduct of a licensee emergency drill on August 27, 2008, to identify any weaknesses and deficiencies in classification, notification, and protective action recommendation development activities. This particular emergency drill began with the emergency operations facility unavailable due to tornado damage on August 26, 2008, Unit 2 in an Alert due to a fire affecting one train of emergency safety features, and Unit 1 in day 4 of a refueling outage. The emergency response organization was called out to staff the emergency facilities: Technical Support Center, Operation Support Center, and alternate emergency operations facility. Due to a loss of

offsite power and emergency ac power, Unit 1 declared a site area emergency. The purpose of the drill was to exercise the emergency action level classification procedure OP-1903, "Emergency Action Level Classification," Revision 40, as well as the alternate emergency operations facility. The inspectors attended the licensee critique of the drill to compare any inspector-observed weakness with those identified by the licensee evaluators to ensure that licensee personnel properly identified failures and weaknesses.

The inspectors completed one sample.

b. Findings

No findings of significance were identified.

.2 Notifications Communicator Performance Indicator Evaluations

a. Inspection Scope

The inspectors observed three one-on-one training drills conducted with notifications communicator qualified personnel. These drills were instituted in August of this year as a result of a corrective action, Condition Report ANO-C-2008-1046, stemming from identified weaknesses in the emergency preparedness exercise conducted on May 21, 2008 (See Section 4OA2). Each drill was conducted in an emergency facility, Technical Support Center, or Emergency Operation Facility. The drills consisted of various scenarios, event classifications, and weather conditions. All drills contributed towards the Drill and Exercise Performance Indicator. The inspectors attended critiques to compare any inspector-observed weakness with those identified by the licensee to ensure that the licensee is properly identifying failures and weaknesses.

The inspectors completed three samples.

b. Findings

No findings of significance were identified.

2. RADIATION SAFETY

Cornerstone: Occupational Radiation Safety [OS]

2OS1 Access Control to Radiologically Significant Areas (71121.01)

a. Inspection Scope

This area was inspected to assess the licensee's performance in implementing physical and administrative controls for airborne radioactivity areas, radiation areas, high radiation areas, and worker adherence to these controls. The inspector used the requirements in 10 CFR Part 20, the technical specifications, and the licensee's procedures required by technical specifications as criteria for determining compliance. During the inspection, the inspector interviewed the radiation protection manager, radiation protection supervisors, and radiation workers. The inspector performed independent radiation dose rate measurements and reviewed the following items:

- Self-assessments, audits, licensee event reports, and special reports related to the access control program since the last inspection
- Corrective action documents related to access controls

Either because the conditions did not exist or an event had not occurred, no opportunities were available to review the following items:

- Adequacy of the licensee's internal dose assessment for any actual internal exposure greater than 50 millirem committed effective dose equivalent
- Licensee actions in cases of repetitive deficiencies or significant individual deficiencies

The inspector completed 6 of the required 21 samples.

b. Findings

No findings of significance were identified.

2OS2 ALARA Planning and Controls (71121.02)

a. Inspection Scope

The inspector assessed licensee performance with respect to maintaining individual and collective radiation exposures as low as is reasonably achievable (ALARA). The inspector used the requirements in 10 CFR Part 20 and the licensee's procedures required by technical specifications as criteria for determining compliance. The inspector interviewed licensee personnel and reviewed:

- Current 3-year rolling average collective exposure
- Five work activities from previous work history data which resulted in the highest personnel collective exposures
- Site specific trends in collective exposures, plant historical data, and source-term measurements
- Site specific ALARA procedures
- Five work activities of highest exposure significance completed during the last outage
- ALARA work activity evaluations, exposure estimates, and exposure mitigation requirements
- Intended versus actual work activity doses and the reasons for any inconsistencies

- Interfaces between operations, radiation protection, maintenance, maintenance planning, scheduling and engineering groups
- Integration of ALARA requirements into work procedure and radiation work permit (or radiation exposure permit) documents
- Person-hour estimates provided by maintenance planning and other groups to the radiation protection group with the actual work activity time requirements
- Dose rate reduction activities in work planning
- Postjob (work activity) reviews
- Assumptions and basis for the current annual collective exposure estimate, the methodology for estimating work activity exposures, the intended dose outcome, and the accuracy of dose rate and man-hour estimates
- Method for adjusting exposure estimates, or replanning work, when unexpected changes in scope or emergent work were encountered
- Exposures of individuals from selected work groups
- Records detailing the historical trends and current status of tracked plant source terms and contingency plans for expected changes in the source term because of changes in plant fuel performance issues or changes in plant primary chemistry
- Source-term control strategy or justifications for not pursuing such exposure reduction initiatives
- Specific sources identified by the licensee for exposure reduction actions and priorities established for these actions, and results achieved against since the last refueling cycle
- Declared pregnant workers during the current assessment period, monitoring controls, and the exposure results
- Self-assessments, audits, and special reports related to the ALARA program since the last inspection
- Resolution through the corrective action process of problems identified through post-job reviews and post-outage ALARA report critiques
- Corrective action documents related to the ALARA program and follow-up activities such as initial problem identification, characterization, and tracking
- Effectiveness of self-assessment activities with respect to identifying and addressing repetitive deficiencies or significant individual deficiencies (SAMPLE 15)

The inspector completed 23 of the required 29 samples.

b. Findings

No findings of significance were identified.

4. OTHER ACTIVITIES

4OA1 Performance Indicator Verification (71151)

Cornerstone: Occupational Radiation Safety

.1 Occupational Exposure Control Effectiveness

a. Inspection Scope

The inspector reviewed licensee documents from January 1 through June 30, 2008. The review included corrective action documentation that identified occurrences in locked high radiation areas (as defined in the licensee's technical specifications), very high radiation areas (as defined in 10 CFR 20.1003), and unplanned personnel exposures (as defined in Nuclear Energy Institute 99-02, "Regulatory Assessment Indicator Guideline," Revision 5). Additional records reviewed included ALARA records and whole body counts of selected individual exposures. The inspector interviewed licensee personnel that were accountable for collecting and evaluating the performance indicator data. In addition, the inspector toured plant areas to verify that high radiation, locked high radiation, and very high radiation areas were properly controlled. Performance indicator definitions and guidance contained in Nuclear Energy Institute 99-02, Revision 5, were used to verify the basis in reporting for each data element.

The inspector completed the required sample (1) in this cornerstone.

Cornerstone: Public Radiation Safety

b. Findings

No findings of significance were identified.

.2 Radiological Effluent Technical Specification/Offsite Dose Calculation Manual
Radiological Effluent Occurrences

a. Inspection Scope

The inspector reviewed licensee documents from January 1 through June 30, 2008. Licensee records reviewed included corrective action documentation that identified occurrences for liquid or gaseous effluent releases that exceeded performance indicator thresholds and those reported to the NRC. The inspector interviewed licensee personnel that were accountable for collecting and evaluating the performance indicator data. Performance indicator definitions and guidance contained in Nuclear Energy Institute 99-02, Revision 5, were used to verify the basis in reporting for each data element.

The inspector completed the required sample (1) in this cornerstone.

b. Findings

No findings of significance were identified.

.3 Resident Inspector Quarterly Review

a. Inspection Scope

The inspectors sampled licensee submittals for the 14 performance indicators listed below for the period from July 2007 through June 2008 for Units 1 and 2. The definitions and guidance of Nuclear Energy Institute 99-02, "Regulatory Assessment Indicator Guideline, Revision 5, were used to verify the licensee's basis for reporting each data element in order to verify the accuracy of performance indicator data reported during the assessment period. The inspectors reviewed licensee event reports, monthly operating reports, operating logs, quarterly Technique Sheets (licensee's form to record data for MSPI Unavailability and Reliability), and Consolidated Data Entry MSPI Derivation Reports for Unavailability and Reliability as part of the assessment.

Cornerstone: Barrier Integrity

- Reactor coolant system activity
- Reactor coolant system leakage

Cornerstone: Mitigating Systems

- HPSI systems
- Auxiliary feedwater systems
- Emergency AC power systems
- Residual heat removal systems
- Support cooling water systems

The inspectors completed fourteen samples.

b. Findings

No findings of significance were identified.

4OA2 Problem Identification and Resolution (71152)

.1 Radiation Safety Inspection Activities

a. Inspection Scope

The inspector evaluated the effectiveness of the licensee's problem identification and resolution process with respect to the following inspection areas:

- Access Control to Radiologically Significant Areas (Section 2OS1)
- ALARA Planning and Controls (Section 2OS2)

b. Findings

No findings of significance were identified.

.2 Routine Review of Identification and Resolution of Problems

a. Inspection Scope

The inspectors performed a daily screening of items entered into the licensee's corrective action program. This assessment was accomplished by reviewing corrective maintenance, condition report documents, 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 corrective action program; (2) verified that corrective actions were commensurate with the significance of the issue; and (3) identified conditions that might warrant additional follow up through other baseline inspection procedures.

b. Findings and Observations

No findings of significance were identified.

.3 Semiannual Trend Review

a. Inspection Scope

The inspectors completed a semi-annual trend review of repetitive or closely related issues that were documented in the licensee's corrective action program and associated documents to identify trends that could indicate the existence of a more significant safety issue. The inspectors also performed walkdowns of equipment important to safety to ensure issues were being properly identified and tracked in the corrective action program. The review was focused on repetitive equipment problems, human performance issues, and program implementation issues. 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. The review considered a 6-month period of April through September of 2008. When warranted, some of the samples expanded beyond those dates to fully assess the issue.

- A review of an inspector identified issue associated with conditions adverse to quality not being entered into the licensee's corrective action program as required procedure
- A review of repetitive failures associated with emergency switchgear Chiller Valve VCH-4B's chill water expansion tank level Level Switch LS-6036

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

b. Findings

.4 Failure to Enter Conditions Adverse to Quality Into the Corrective Action Program

Introduction. The inspectors identified a Green noncited violation of 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Action," for the failure to implement required measures to ensure that conditions adverse to quality were promptly identified and corrected. Specifically, Procedure EN-LI-102, "Corrective Action Process," Revision 8, required that plant personnel write condition reports for conditions adverse to quality. The inspectors identified nine instances where station personnel were aware of conditions adverse to quality, but failed to enter them into the corrective action program without being prompted by the inspectors.

Description. On June 2, 2008, licensee personnel initiated Condition Report ANO-C-2008-1114 to identify a potential degrading trend associated with nonconservative functional failure calls. To determine if a negative trend existed, the licensee performed an apparent cause evaluation. During this evaluation, licensee personnel discovered that there had been a modification performed to Unit 2, which installed a high pressure safety injection pressurization system which should have been scoped in accordance with 10 CFR 50.65(b), but had not been.

During their review of the apparent cause evaluation, the inspectors determined that the licensee had not entered the issue of the stations failure to scope the high pressure safety injection pressurization system in accordance with 10 CFR 50.65(b) into the facility's corrective action program. The inspectors questioned this because Procedure EN-LI-102 required, in part:

5.2[1](b) Employees and contractors are encouraged to write condition reports for a broad range of problems. Problems reported must include, but are not limited to, Adverse Conditions. Examples of Adverse Conditions requiring initiation of a condition report are provided in Attachment 9.2.

The inspectors reviewed Procedure EN-LI-102, Attachment 9.2, "Examples of Adverse Conditions," and noted that Item 11, "Regulatory Issues," identified as a condition adverse to quality requiring condition report initiation, potential or actual NRC violations. The inspectors determined that the failure to scope a component in accordance with 10 CFR 50.65(b), when required, was a violation, and as such, should have been entered into the station's corrective action program. The inspectors identified this condition to licensee personnel, who, in turn, initiated Condition Report ANO-C-2008-1433.

In addition, during their review of an issue associated with an unplanned entry into a shutdown limiting condition of operation, the inspectors reviewed the apparent cause evaluation performed by licensee personnel, documented in Condition Report ANO-2-2008-1761, as well as interviewed station personnel associated with the event. During their review, the inspectors determined that the failure of station personnel to follow procedures was the cause of this event, but noted that licensee personnel had determined that: (1) ineffective communication, (2) less than adequate procedural guidance, and (3) less than adequate model work order guidance, were also apparent causes. The inspectors noted that even though licensee personnel were aware of the fact that this event was caused by a failure to follow procedure, it had not been captured in the corrective action program and did not have actions assigned to correct this condition. The inspectors determined that this was contrary to Procedure EN-LI-102, Attachment 9.2, Item 9, "Administrative or Work Practice Conditions," which required that a condition report be initiated for a procedural noncompliance that resulted in a condition adverse to quality. The inspectors identified this to licensee personnel, who, in turn, initiated Condition Report ANO-2-2008-1657 to address this. Licensee personnel subsequently re-performed their apparent cause evaluation and determined that the apparent cause of this event was failure to perform the procedure as written, and implemented corrective actions to address this issue.

Based on the above instances, the inspectors conducted a review of the licensee's corrective action program to assess past performance associated with instances where licensee personnel had failed to enter identified conditions adverse to quality into their corrective action program without being prompted by the inspectors, and identified the following additional deficiencies.

- On July 24, 2007, the inspectors had to prompt licensee personnel to enter a condition adverse to quality into the station's corrective action program for a previously identified issue associated with the failure to establish a firewatch during maintenance on July 17, 2007. This issue was subsequently documented as Condition Report ANO-2-2007-1014.
- On October 23, 2007, the inspectors had to prompt licensee personnel to enter a condition adverse to quality into the station's corrective action program for a previously identified issue associated with scaffolding material being in contact with low pressure safety injection Pump 2P-60B without an evaluation of potential seismic effects on October 20, 2007. This issue was subsequently documented as Condition Report ANO-C-2007-1663.

- On December 28, 2007, the inspectors had to prompt licensee personnel to enter a condition adverse to quality into the station's corrective action program for an issue associated with the failure to establish a continuous firewatch when it was identified that the station had exceeded the transient combustible loading for a Level 1 fire zone on December 27, 2007. This issue was subsequently documented as Condition Report ANO-1-2007-2458.
- On January 16, 2008, the inspectors had to prompt licensee personnel to enter a condition adverse to quality into the station's corrective action program for an issue associated with the failure to follow procedure when performing a procedure deviation on November 13, 2007. This issue was subsequently documented as Condition Report ANO-C-2008-0076.
- On March 24, 2008, the inspectors had to prompt licensee personnel to enter a condition adverse to quality into the station's corrective action program for an issue associated with exceeding the amount of transient combustibles in a fire zone without taking the appropriate actions. This issue was subsequently documented as Condition Report ANO-2-2008-0698.
- On April 17, 2008, the inspectors had to prompt licensee personnel to enter a condition adverse to quality into the station's corrective action program for an issue associated with the failure of the Unit 2 personnel hatch seal during low pressure testing on April 1, 2008. This issue was subsequently documented as Condition Report ANO-2-2008-1287.
- On May 28, 2008, the inspectors had to prompt licensee personnel to enter a condition adverse to quality in the stations corrective action program for an issue associated with the failure of a radiation protection technician to respond to personnel contamination monitor alarms on May 27, 2008. This issue was subsequently documented as CR ANO-C-2008-1077.

The inspectors presented this information, indicating an apparent trend associated with the failure to follow Procedure EN-LI-102 and enter conditions adverse to quality into the station's corrective action program, to licensee representatives. On August 5, 2008, licensee personnel initiated Condition Report ANO-C-2008-1536 to document the issue and perform a review to see if an adverse trend existed.

As part of their review, licensee personnel performed an apparent cause evaluation, as documented in Condition Report ANO-C-2007-1719. During their review of this issue, they identified the following as the apparent causes: (1) expectations for condition report initiation requirements have not been consistently reinforced, (2) site Departmental Performance Improvement Coordinator screenings and Condition Review Group meetings have not consistently monitored untimely condition report initiation during condition report reviews, and (3) management expectations for timely condition report initiation of regulator identified issues are not consistently understood by plant personnel.

The inspectors also noted that licensee personnel determined that there had been a previous NRC identified issue associated with their failure to initiate condition reports for

conditions adverse to quality, as documented in Condition Report ANO-C-2003-1080. The inspectors reviewed this condition report and noted that licensee personnel had performed an apparent cause evaluation for this issue as well, and determined that the cause of the failure to initiate condition reports by station personnel was because the expectations for initiating condition reports had not been communicated and enforced. The inspectors noted that this cause was the same as one of the causes that had been identified for the most recent issue (Condition Report ANO-C-2007-1719).

The inspectors concluded that these examples of station personnel's failure to enter conditions adverse to quality into the facility's corrective action program, individually and collectively, contributed insignificantly to the overall ability of licensee personnel to monitor the condition of station equipment. However, multiple departments, which included supervisors, were responsible for not entering conditions adverse to quality into the corrective action program even when these issues clearly resulted in degraded, nonconforming conditions. Therefore, these instances were indicative of a programmatic issue with proper implementation of the corrective action program with respect to communicating and reinforcing the requirements for condition report initiation.

Analysis. The inspectors determined that the failure of station personnel to follow Procedure EN-LI-102, "Corrective Action Process," and enter conditions adverse to quality into the corrective action program without being prompted by the inspectors was a performance deficiency. The finding was more than minor because it was similar to nonminor Example 3.j in NRC Manual Chapter 0612, Appendix E, "Examples of Minor Issues," in that significant programmatic deficiencies were identified associated with this issue that could lead to worse errors if left uncorrected. Specifically, station personnel's failure to enter conditions adverse to quality into the station corrective action program could result in the failure to recognize that risk-significant equipment is in a degraded condition and, as such, may not be able to perform its specified safety function. Using NRC Manual Chapter 0609, "Significance Determination Process," Phase 1 Worksheet, the finding was determined to have very low safety significance (Green) because the finding: (1) was not a qualification deficiency confirmed not to result in loss of operability; (2) did not lead to an actual loss of system safety function; (3) did not result in the loss of safety function of a single train for greater than its technical specification allowed outage time; (4) did not represent an actual loss of safety function of one or more nontechnical specification trains of equipment designated as risk-significant per 10CFR50.65, for greater than 24 hours; and (5) it did not screen as potentially risk significant due to a seismic, flooding, or severe weather initiating event. This finding had a crosscutting aspect in the area of Problem Identification and Resolution associated with the Corrective Action Program [P.1(a)] in that licensee personnel failed to implement a corrective action program with a low threshold for identifying issues. This also includes identifying such issues completely, accurately, and in a timely manner commensurate with their safety significance.

Enforcement. 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Action," requires, in part, that measures shall be established to assure that conditions adverse to quality, such as failures, malfunctions, deficiencies, deviations, defective material and equipment, and nonconformances are promptly identified and corrected. The licensee documented the required measures to identify conditions adverse to quality in Procedure EN-LI-102, which required, in part, "All personnel working at EN facilities are responsible for documenting problems by initiating condition reports in accordance with this procedure." Contrary to the above, between July 24, 2007, and August 21, 2008, the

inspectors identified nine examples where licensee personnel failed to enter identified conditions adverse to quality into the facilities corrective action program. Because this finding was of very low safety significance and has been entered into the corrective action program as Condition Report ANO-C-2008-1536, this violation is being treated as an NCV consistent with Section VI.A of the NRC Enforcement Policy: NCV 05000313;368/2008004-01, "Failure to Enter Conditions Adverse to Quality Into the Corrective Action Program."

.5 Failure to Promptly Identify and Correct a Condition Adverse to Quality Associated with Emergency Switch Gear Chiller Valve VCH-4B

Introduction. The inspectors identified a Green noncited violation of 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Action," for the failure of licensee personnel to promptly identify and correct a condition adverse to quality - chill water expansion tank corrosion materials that blocked the Emergency Switchgear Chiller B VCH-4B Level Switch LS-6036 sensing line. The condition caused the chiller to lockout and become inoperable on December 18, 2005, July 21, 2006, and July 25, 2008.

Description. On December 18, 2005, operators received alarm "Emergency Chiller Valve VCH-4A/B Malfuction" in the control room. During investigation of this alarm, licensee personnel identified that Chiller Valve VCH-4B's expansion tank low-level alarm was locked in, but that actual expansion tank level was above the alarm set point. This condition made Chiller Valve VCH-4B nonfunctional due to the loss of auto start capability because of an interlock associated with Level Switch LS-6036. (Chiller Valve VCH-4B provides emergency cooling to one train of safety related electrical equipment, batteries, and battery chargers.) This interlock lockout prevented Chiller Valve VCH-4B from operating under normal or accident conditions.

Licensee personnel found the level switch differential pressure detector's high-pressure sensing line clogged with corrosion products. Licensee maintenance personnel removed the corrosion products from the line by blowing them back into the expansion tank and returned the chiller to a functional status. This issue was entered into the licensee's corrective action program as Condition Report ANO-1-2005-2961. This condition report was closed to Work Request 66741. Work Request 66741 resulted in the expansion tank being flushed until clear water was observed in March 2006. No other actions or investigation was performed by licensee personnel at that time. The inspectors considered this the first opportunity for licensee personnel to have identified the adverse condition as the corrosion products, based on the fact that the level switch had not failed, but had improperly actuated due to a sensed low level.

On July 21, 2006, operators again received alarm "Emergency Chiller Valve VCH-4A/B Malfuction" in the control room. Licensee personnel subsequently identified that Chiller Valve VCH-4B's expansion tank low-level alarm was again locked in with actual level above the alarm set point. As before, licensee personnel found the level switch differential pressure detector's high-pressure sensing line clogged with corrosion products. Licensee personnel entered this into the corrective action program as Condition Report ANO-1-2006-0955. In addressing this issue, licensee personnel performed an apparent cause evaluation.

During the investigation, licensee personnel noted that for this instance, Condition Report ANO-1-2006-0955, as well as the instance documented in Condition

Report ANO-1-2005-2961, corrosion products had been found clogging the level switch differential pressure detector's high-pressure sensing line and that, once the blockage was removed, the level switch functioned properly. However, licensee personnel incorrectly determined that this was not the cause of the switches improper level output. They concluded that the failure was due to improperly venting the level switch sensing line. They based this on the assumptions that air may have been introduced during either a previous calibration, where the switch had not been vented properly, or from anti-corrosion chemicals, which could have produced gas. Subsequently, based on this identified apparent cause licensee personnel changed the venting procedure.

The inspectors reviewed the apparent cause evaluation and determined that the assumptions associated with potential air binding of the level switch were not factually based on any evidence that had been found associated with these failures. Specifically, the assumptions that air may have been introduced during either a previous calibration or from anti-corrosion chemicals were not based on documented as-found conditions associated with these failures. The inspectors noted that there had been no recent switch calibration activities and the use of the anti-corrosion chemicals had been discontinued in 2005. As such, the inspectors determined that this resulted in the licensee personnel's failure to identify that the expansion tank sloughing corrosion products into the chill water was the condition adverse to quality causing the level switch to inappropriately sense a low level and actuate the low level alarm, which also resulted in the licensee personnel's failure to implement appropriate corrective actions.

On July 28, 2008, operators received alarm "Emergency Chiller Valve VCH-4A/B Malfunction" in the control room again. Operators subsequently identified that Chiller Valve VCH-4B's expansion tank low-level alarm was locked-in with actual level above the set point. During subsequent investigation, the licensee maintenance personnel again discovered that the level switch differential pressure detector's high-pressure sensing line was blocked with corrosion products. Licensee personnel entered this issue into their corrective action program as Condition Report ANO-1-2008-0851. This condition report was subsequently closed to Condition Report ANO-1-2007-0580, and licensee personnel performed an apparent cause evaluation.

Licensee engineers determined that the apparent cause of the improper actuation of the level switch was due to blockage of the differential pressure detector's high-pressure sensing line with corrosion products which were introduced into the system as a result of corrosion product sloughing from the expansion tank. The blockage caused an inappropriately low differential pressure which was translated into an inappropriately low level signal.

Analysis. The inspectors determined that the licensee personnel's failure to promptly identify and correct a condition adverse to quality associated with the improper actuation of Level Switch LS-6036, which resulted in the inability of Chiller Valve VCH-4B to perform its specified safety function, was a performance deficiency. The finding was more than minor because it was associated with the Mitigating Systems Cornerstone attribute of equipment performance and affected the associated cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Using NRC Manual Chapter 0609, "Significance Determination Process," Phase 1 Worksheet, the finding was determined to have very low safety significance because the finding: (1) was not a qualification deficiency confirmed not to result in a loss of operability of essential Chiller B; (2) did not

lead to an actual loss of system safety function; (3) did not result in the loss of one train of technical specification equipment for more than its allowed outage time; (4) did not represent an actual loss of function of one or more nontechnical specification trains of equipment designated as risk-significant per 10CFR50.65, for greater than 24 hours; and (5) it did not screen as potentially risk significant due to a seismic, flooding, or severe weather initiating event. The inspectors determined that the finding did not have a crosscutting aspect because the first two opportunities to identify and correct the condition were aged and not indicative of current plant performance.

Enforcement. 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Actions," requires, in part, that "Measures shall be established to assure that conditions adverse to quality, such as failures, malfunctions, deficiencies, deviations, defective material and equipment, and nonconformance are promptly identified and corrected." Contrary to the above, licensee personnel failed to promptly identify and correct a condition adverse to quality, associated with the improper actuation of Level Switch LS-6036, on at least two separate occasions, December 18, 2005, and July 25, 2006. Specifically, licensee personnel failed to identify that the condition adverse to quality was the presence of corrosion products in the chill water expansion tank, which resulted in blockage of Chiller Valve VCH-4B's high-pressure sensing line for the differential pressure instrument (Level Switch LS-6036) which resulted in the switch sensing a low differential pressure, translating this to a low level and actuating the low level alarm. Thus the corrective actions that were implemented did not correct the condition adverse to quality. Because this finding was of very low safety significance and has been entered into the corrective action program as Condition Report ANO-1-2008-0851, this violation is being treated as an NCV, consistent with Section VI.A of the NRC Enforcement Policy: NCV 05000313/2008004-02, "Failure to Promptly Identify and Correct a Condition Adverse to Quality associated with Emergency Switch Gear Chiller Valve VCH-4B."

.6 Select Issue Followup Inspections: Units 1 and 2, Cumulative Effects of Operator Workarounds

a. Inspection Scope

The inspectors selected this issue for review to verify that licensee personnel were identifying operator workaround problems at an appropriate threshold and entering them in the corrective action program, and has proposed or implemented appropriate corrective actions. The inspectors reviewed and evaluated the licensee's operator workaround log, for both Units 1 and 2, operator logs and associated condition reports. The inspectors considered the following, as applicable, 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.

b. Findings and Observations

No findings of significance were identified.

.7 Select Issue Followup Inspections: Extent of Condition Review for the Missed Maintenance Rule Functional Failure Determinations Associated with the Alternate ac Emergency Diesel Generator

a. Inspection Scope

The inspectors selected this issue for review because the failure to accurately classify and count functional failures would have a negative impact on the station's ability to accurately monitor equipment performance. The inspectors reviewed and evaluated Condition Report ANO-C-2008-1114, the associated apparent cause evaluation, and corrective actions (taken and planned). The inspectors considered the following, as applicable, 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.

b. Findings and Observations

No findings of significance were identified. However, the inspectors determined that the extent of condition review performed by licensee personnel was very narrowly focused and as such, failed to identify an additional functional failure associated with the alternate ac emergency diesel generator. Licensee personnel entered this issue into their corrective action program as Condition Report ANO-2-2008-2099.

.8 Select Issue Followup Inspections: Implementation of Corrective Actions to Identify and Evaluate Maintenance Activities that have the Potential to Cause Preconditioning Prior to Testing

a. Inspection Scope

The inspectors selected this issue for review because preconditioning of components prior to testing could mask indication of degrading equipment performance. The inspectors considered the following, as applicable during the review of the licensee' 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.

b. Findings and Observations

No findings of significance were identified.

.9 Selected Issue Followup Inspection: Incorrect Information on General Emergency Notification During Emergency Exercise

a. Inspection Scope

The inspectors selected this issue for review because dissemination of correct information to offsite authorities during a station emergency can have far reaching implications to the public health and safety. The inspectors reviewed and evaluated Condition Reports ANO-C-2008-1046 and -1047, the associated apparent cause evaluations, corrective actions (taken and planned), and interviewed emergency preparedness staff. The inspectors considered the following, as applicable, 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.

b. Findings and Observations

No findings of significance were identified. During the emergency exercise critique on May 21, 2008, licensee personnel identified that incorrect information on an offsite notification message upon declaration of a General Emergency and constituted a missed opportunity in accordance to NEI 99-02, "Regulatory Assessment Indicator Guideline, Revision 5. The licensee's apparent cause evaluations identified: (1) lack of self checking, (2) knowledge and training, (3) Offsite Notification form formatting, and (4) noise and distractions in the general area of the communicator, and (5) time pressure for communicating the message within 15 minutes.

Licensee personnel have implemented corrective action in regards to self checking and knowledge and training. The inspectors have reviewed the required reading material for stressing the importance of timely and accurate communication internally as well as externally. The inspectors also observed three emergency communication drills and associated critiques. Proposed corrective actions for the notification form and the noise in the general locations of the communicator were also reviewed by the inspectors. The inspectors also noted that, while there will always be time pressure in these instances, the offsite communications were completed with enough time to spare as to allow a more thorough form review. Licensee actions appeared to be adequate to resolve the issue.

4OA3 Event Follow Up

a. Inspection Scope

The inspectors reviewed an event in which licensee workers inadvertently severed instrument air line to the Unit 1 feedwater Heater E-4A high level drain Valve CV-3068 causing the valve to fail open. The error caused a response from the control room as feedwater was being discharged to the condenser. Operations conservatively reduced reactor power by 0.5 percent to support the closure of this drain valve. The inspectors gathered information on specific event details, event timeline, and the effect on plant operations and equipment. The inspectors also reviewed reporting requirements in

accordance with NUREG-1022, "Event Reporting Guidelines," Revision 2. The inspectors also reviewed the licensee's apparent cause evaluation and proposed corrective actions.

b. Findings

Introduction. Inspectors documented a Green self-revealing finding for the failure to follow Procedure EN-HU-102, "Human Performance Tools," Revision 4, which required that workers perform self checks and peer checks to ensure that the correct work was being performed on the correct equipment. Specifically, workers, who were returning from a break to resume preoutage preparation for feedwater heater replacement, failed to perform a self check, or obtain a peer check, and worked on the wrong component. They cut two instrument air lines to the Unit 1 Feedwater Heater E-4A high level drain Valve CV-3068. This caused the valve to fail full open and drain the feedwater heater.

Description. On August 6, 2008, at 12:43 p.m., Unit 1 control room operators identified that feedwater Heater E-4A high level drain Valve CV-3068 indicated open. Operations then dispatched an auxiliary operator to investigate. The auxiliary operator reported back to the control room that the instrument air line to the feedwater Heater E-4A high level dump valve had been severed. The valve had failed full open and was dumping to the condenser. At 1:05 p.m., control room operators reduced reactor power by 0.5 percent in preparation to "hand jack" the feedwater Heater E-4A high level dump valve closed. At 1:55 p.m., the valve was successfully closed and the normal level control valve was maintaining level. At 2:09 p.m., the reactor was returned to 100 percent power.

At the time of the event, licensee personnel were in the process of working on preoutage preparations for the feedwater heater replacement project, scheduled for Refueling Outage 1R21. This included the removal of stainless steel tubing and tubing trays located under the feedwater Heater E-4A. Workers had performed a prejob brief, decided that the material to be removed would be walked down hand over hand, and due to the high temperatures, defined a stay time of approximately 50 minutes. Workers had performed most of the work prior to the required stay time limit being reached. Upon returning from the break, workers returned to the scaffold work area and proceeded to cut the wrong air lines. Work was immediately stopped and a stand down was conducted to stress human performance tool use and adherence.

The feedwater heater water level and pressure was reduced for approximately 1.5 hours, which allowed two phase flow within the heater. System engineering evaluated the potential effects on the feedwater heater and determined that, due to the already degraded condition of the heater, there existed the possibility of tube leaks. Unit 1 has not detected any abnormal conditions or degrading trends that would suggest there was any damage due to this event.

The inspectors reviewed the control room logs, temperature indications of the feedwater Heater E-4A and the licensees' apparent cause evaluation. It was determined that the workers inadvertently severed the instrument air lines to the feedwater Heater E-4A high level dump valve because they failed to follow procedures. Corporate Procedure EN-HU-102, "Human Performance Tools," Revision 4, required that workers perform self checks and peer checks to ensure that the right work is performed on the right equipment. Corporate Procedure EN-HU-105, "Managed Defenses," Revision 5,

provided guidelines for incorporating robust barriers and flagging to prevent work from being performed on incorrect equipment was not used but could have helped prevent this event.

Analysis. The failure to follow Procedure EN-HU-102 was determined to be a performance deficiency and therefore a finding. The failure to follow Procedure EN-HU-102 was a performance deficiency and, therefore, a finding. This finding was more than minor because it was similar to nonminor Example 4.e in NRC Manual Chapter 0612, Appendix E, "Examples of Minor Issues." Specifically, the failure to comply with the procedure resulted in the valve failing open. The finding was evaluated for significance using NRC Manual Chapter 0609, "Significance Determination Process," and determined to be of very low safety significance (Green) because as a transient initiator, the finding did not contribute to both the likelihood of a reactor trip and the likelihood that mitigation equipment or functions would not be available. Inspectors determined that the finding had a crosscutting aspect in the area of Human Performance associated with Work Practices because the craftsman did not utilize self and peer checking techniques [H.4(a)].

Enforcement. Although the inspectors identified a performance deficiency during preoutage preparations for feedwater heater replacement on August 6, 2008, no violation of NRC requirements occurred. The affected components were not safety related. The licensee has entered the issue into the corrective action program as Condition Report ANO-1-2008-0924. FIN 050000313/2008004-03, "Failure of Feedwater Heater High Level Drain Valve Due to Maintenance."

4OA5 Other Activities

.1 Quarterly Resident Inspector Observations of Security Personnel and Activities

a. Inspection Scope

During the inspection period, the inspectors conducted the following observations of security force personnel and activities to ensure that the activities were consistent with licensee security procedures and regulatory requirements relating to nuclear plant security. These observations took place during both normal and off-normal plant working hours.

- Tours of operations within the Central and Secondary Security Alarm Stations
- Tours of selected security towers/security officer posts
- Direct observation of personnel entry screening operations within the plant's Primary Access Point;
- Security force shift turnover activities

The quarterly resident inspector observations of security force and activities did not constitute any additional inspection samples. Rather, they were considered an integral part of the inspectors' normal plant status review and inspection activities.

b. Findings

No findings of significance were identified.

.2 (Closed) Unresolved Item 05000313;368/2007005-02: External Flooding Susceptibility

Introduction. The inspectors identified a Green noncited violation of 10 CFR 50.65(a)(1) for the licensee's failure to monitor Unit 1 auxiliary building roof drains performance in a manner to provide reasonable assurance that the roof drains were capable of fulfilling their intended function. Licensee personnel have never tested, nor checked, the drains for blockages. The failure (or blockage) of these drains could result in excessive roof loading due to accumulation of water during design basis rain events.

Description. During an inspection of the facilities capabilities to respond to an external flooding event (NRC Inspection Report 05000313/2007005;05000368/2007005), the inspectors identified an apparent issue, associated with the Unit 1 auxiliary building roof, that called into question its ability to withstand a flooding event. Specifically, the inspectors noted that in Calculation CALC-94-E-0079-01, "Evaluation of Unit 1 Safety-Related Structures for the Effects of Local Intense Precipitation," Revision 0, the licensees' engineering staff had identified the need to install five roof scuppers that were 12 inches tall by 40 inches wide to prevent the collapse of the roof structure due to excess water accumulation from local intense precipitation. However, during walkdowns, the inspectors determined that only four scuppers had been installed and these were only 16 inches tall by 6 inches wide. Licensee personnel entered this issue into the corrective action program as Condition Report ANO-C-2008-0052. The inspectors determined that this potential vulnerability would be treated as an unresolved item pending further review.

During subsequent review, the inspectors determined that the recommended scupper sizing called for by Calculation CALC-94-E-0079-01 had not been explicitly followed. Instead, Engineering Request ER963184E101 directed that the Unit 1 scuppers be installed exactly as those provided for Unit 2, including sizing and configuration. The inspectors determined that, even though the two unit roofs were similar, they were not the same and, as such, the licensee engineer failed to perform a thorough review of Unit 1 design. The inspectors noted that the Unit 1 auxiliary building roof had been designed to the Uniform Building Code, 1967 edition, for a live load of 20 pounds per square foot. Furthermore, the inspectors noted that Safety Analysis Report Figure 9-36, "Histogram of Probable Maximum Precipitation," indicated that that the total rainfall for a 2-hour period was 19.5 inches.

Based on this, the inspectors questioned the ability of the Unit 1 scuppers to provide, on their own, sufficient drainage to prevent excessive roof loading due to water accumulation during design basis rain events. The inspectors presented this information to licensee personnel, who initiated Condition Report ANO-1-2008-1210 to document the issue and perform a review. Subsequently, licensee personnel determined that the capacity of roof framing/decking members in the Unit 1 auxiliary building would be exceeded if the sole means of drainage was the existing scuppers. As such, the roof drains in addition to the existing scuppers are required to provide sufficient drainage to prevent excessive roof loading.

The inspectors noted that, during the review of a previous issue associated with the roof drains on the Unit 2 intake structure, licensee personnel had determined that the roof

drains for structures were not explicitly included within the scope of the Maintenance Rule since a functional basis was used to determine what is within Maintenance Rule scope. However, since the roof drains were considered to be part of the structure, which is a safety-related structure with a Maintenance Rule function to maintain structural integrity to protect safety-related equipment, the roof drains are considered to be inherently within the scope of the Maintenance Rule.

Based on the identification of the need for the functionality of the roof drains to protect safety-related equipment, and knowledge of how licensee personnel considered the drains for Maintenance Rule purposes, the inspectors questioned how these were being controlled and what type of preventative maintenance was being performed to them. During the inspectors' review of the licensee's Maintenance Rule scoping and classification of the Unit 1 facilities structural walls and supports, which encompasses the auxiliary building, they identified a concern with how the roof drains were being controlled. Specifically, the Maintenance Rule scoping document did not identify the roof drains as serving a Maintenance Rule function and there were no preventative maintenance actions for licensee personnel to verify that the roof drains were capable of performing their intended function of protecting the roof during a flooding event. The inspectors also determined that the only preventative maintenance actions associated with the drains was a visual inspection on a 5-year periodicity as detailed in Engineering Standard CES-19, "Maintenance Rule Structural Monitoring at Arkansas Nuclear One," Revision 4.

The inspectors reviewed Engineering Standard CES-19, and based on this review, as well as discussions with personnel who performed the inspections, the inspectors determined that this visual inspection was not sufficient to demonstrate that the roof drains were capable of performing their intended function of protecting safety-related equipment. Specifically, personnel were not aware of the need to inspect the roof drains, and the inspectors determined that there were failure mechanisms that would not be apparent to a cursory visual inspection.

Analysis. The inspectors determined that the failure of the licensee to effectively monitor the performance of the Unit 1 auxiliary building roof drains in accordance with 10 CFR 50.65(a)(1) was a performance deficiency. The finding was more than minor because it was similar to nonminor Maintenance Rule, Example 7.a, in NRC Manual Chapter 0612, Appendix E, "Examples of Minor Issues," because significant equipment problems could go undetected. This finding had very low safety significance because the failure to properly categorize failures in accordance with the 10CFR 50.65 did not create, in itself, additional operability or functionality concerns. The inspectors determined that the finding did not have a crosscutting aspect because the opportunity to identify that performance monitoring was inadequate had not occurred recently and, therefore, was not indicative of current licensee performance

Enforcement. 10 CFR 50.65(a)(1) requires Entergy, in part, to monitor the performance or condition of components, against licensee-established goals, in a manner sufficient to provide reasonable assurance that these components are capable of fulfilling their intended functions. 10 CFR 50.65(a)(2) stipulates that monitoring as specified in paragraph (a)(1) is not required where it has been demonstrated that the performance or condition of a component is being effectively controlled through the performance of appropriate preventive maintenance, such that the component remains capable of performing its intended function. Contrary to the above, between November 1997 and

October 2008, licensee personnel failed to monitor the performance or condition of Unit 1 auxiliary building roof drains against licensee-established goals, in a manner sufficient to provide reasonable assurance that these components were capable of fulfilling their intended functions and did not demonstrate that the performance or condition of the roof drains was being effectively controlled through the performance of appropriate preventive maintenance, such that the drains and scuppers remained capable of performing their intended function of protecting safety related equipment during design basis rain events. Because the finding was of very low safety significance and has been entered into the licensee's corrective action program as Condition Report ANO-1-2008-1210, this violation is being treated as an NCV consistent with Section VIA of the Enforcement Policy: NCV 05000313/2008004-04, "Failure to Adequately Monitor the Performance of the Unit 1 Auxiliary Building Roof Drains."

4OA6 Meetings, Including Exit

On July 11, 2008, the inspectors briefed Ms. S. Cotton and other members of the licensee's staff of the results of the licensed operator requalification program inspection. The licensee representatives acknowledged the findings presented. After final review of the overall biennial requalification examinations on Unit 2 and the annual requalification examinations on Unit 1, the inspectors conducted a teleconference exit with licensee representatives on August 5, 2008. The inspectors asked whether any materials examined during the inspection should be considered proprietary. No proprietary information was identified.

On August 5, 2008, the inspector conducted a telephonic exit meeting to present the results of the in-office inspection of the licensee's changes to their emergency action levels to Mr. R. Holyfield, Manager, Emergency Preparedness, who acknowledged the findings.

On September 19, 2008, the radiation safety inspector presented the inspection results to Mr. T. Mitchell and other members of his staff who acknowledged the findings. The inspector confirmed that proprietary information was not provided nor examined during the inspection.

On October 9, 2008, the resident inspectors presented the inspection results to Mr. T. Mitchell, Vice President, Operations, and other members of the Entergy management staff. On November 7, 2008, the resident inspectors conducted a final exit meeting with Mr. T. Mitchell and other members of the Entergy staff. The licensee acknowledged the findings presented. The inspectors confirmed that no proprietary information was provided or reviewed during this inspection.

4OA7 Licensee-Identified Violations

The following items of very low safety significance (Green) were identified by licensee personnel and are violations of NRC requirements which meet the criteria of Section VI of the NRC Enforcement Policy for being dispositioned as noncited violations.

- 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 the above requirement, licensee personnel failed to adequately implement Procedure OP-1412.001, "Preventative Maintenance of Limitorque SB/SMB Motor Operators," Revision 18. Specifically, Supplement 2, steps 2.2.6 and 2.2.7 of this procedure directs that, with no thrust load on the actuator, check the fasteners and bolting for tightness. If the component remains closed, then proceed to the next step and record this in the exceptions section. Licensee personnel identified that on July 8, 2008, station maintenance personnel failed to correctly perform these steps which resulted in the unplanned entry into a 72-hour shutdown limiting condition of operation. This was licensee identified because operations personnel identified this issue during review and discussion with maintenance personnel following the performance of the work. In accordance with NRC Manual Chapter 0609, "Significance Determination Process," Phase 1 Worksheet, the finding was determined to have very low safety significance because: (1) the finding was not a qualification deficiency that resulted in a loss functionality of Chiller Valve VCH-4B; (2) it did not lead to an actual loss of safety function of the system or train; (3) it did not result in the loss of one or more trains of nontechnical specification equipment; (4) it did not represent an actual loss of safety function of one or more nontechnical specification trains of equipment designated as risk-significant per 10 CFR 50.65, for greater than 24 hours; (5) it did not screen as potentially risk significant due to a seismic, flooding, or severe weather initiating event. This issue was entered into the licensee's corrective action program as Condition Reports ANO-C-2008-1657 and ANO 2-2008-1761.

- 10 CFR Part 50.65(b)(2)(ii) requires, in part, that both safety-related and nonsafety-related systems, structures, or components whose failure could prevent safety-related systems, structures, or components from fulfilling their safety-related function be scoped in the Maintenance Rule monitoring program. Contrary to the above, licensee personnel failed to incorporate the high pressure safety injection pressurization system into the Maintenance Rule monitoring program. Specifically, licensee personnel performed a modification of the high pressure safety injection system to incorporate a pressurization system on the discharge piping to ensure that void formation could not occur. However, during a subsequent review licensee personnel determined that the modification had not been reviewed for inclusion in the Maintenance Rule monitoring program and determined that it should have been included in the monitoring program. In accordance with NRC Manual Chapter 0609, "Significance Determination Process," Phase 1 Worksheet, the finding was determined to have very low safety significance because: (1) the finding was not a qualification deficiency that resulted in a loss functionality of Chiller Valve VCH-4B; (2) it did not lead to an actual loss of safety function of the system or train; (3) it did not result in the loss of one or more trains of nontechnical specification equipment; (4) it did not represent an actual loss of safety function of one or more nontechnical specification trains of equipment designated as risk-significant per 10 CFR 50.65, for greater than 24 hours; and (5) it did not screen as potentially risk significant due to a seismic, flooding, or severe weather initiating event. This issue was entered into the licensee's corrective as Condition Report ANO-C-2008-1433.
- 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 a system, structure, or component is being effectively controlled through

appropriate preventative maintenance, such that a system, structure, or component remains capable of performing its intended function. Contrary to the above, licensee personnel failed to demonstrate the performance of the Unit 2 component cooling water system through appropriate preventative maintenance. Specifically, licensee personnel determined that a component cooling water system failure was incorrectly counted. Licensee personnel subsequently determined that the component cooling water system should have been evaluated in accordance with 10 CFR 50.65(a)(1). The finding was determined to have 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 issue was entered into the licensee's corrective action program as Condition Reports ANO-2-2008-1395 and ANO-2-2008-1396.

- 10 CFR 50.65(a)(4) requires, in part, that before performing maintenance activities, licensee personnel shall assess and manage the increase in risk that may result from the proposed maintenance activities. Contrary to the above, licensee personnel failed to assess the increase of risk associated with the use of a mobile crane in the vicinity of the Unit 2 transformer yard while the alternate ac diesel was out of service for maintenance. The finding was determined to have 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 issue was entered into the licensee's corrective action program as Condition Report ANO-C-2008-1684.

ATTACHMENT: SUPPLEMENTAL INFORMATION

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee Personnel

D. Bauman, Senior Project Manager
D. Bentley, Acting Design Manager
B. Berryman, General Manager, Plant Operations
B. Byford, Supervisor, Simulator Training
R. Carter, Unit 2, Assistant Operations Manager
S. Cotton, Manager, Training & Development
S. Cupp, Supervisor, Simulator Support
G. Doran, Quality Assurance Auditor
D. Eichenberger, Licensing Specialist
W. Greenson, Supervisor, Engineering
R. Holeyfield, Manager, Emergency Planning
D. James, Licensing Manager
R. Martin, Operations Training Support
D. Marvel, Acting, Radiation Protection Manager
J. McCoy, Programs and Components Manager
T. Mitchell, Vice President, Operations
D. Moore, Manager, Radiation Protection
N. Mosher, Licensing Engineer
R. Pace, Manager, Planning, Scheduling, and Outages
S. Pyle, Licensing Specialist
C. Reasoner, Engineering Director
T. Rolniak, Specialist, Health Physics
R. Scheide, Licensing Specialist
C. Simpson, Operations Training Support
J. Smith, Quality Assurance Manager
D. Stoltz, Senior Specialist, Health Physics
F. Van Buskirk, Licensing Specialist
R. Walters, Operations Manager

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Opened and Closed

05000313;368/2008004-01	NCV	Failure to Enter Conditions Adverse to Quality Into the Corrective Action Program (Section 4OA2.1)
05000313/2008004-02	NCV	Failure to Promptly Identify and Correct a Condition Adverse to Quality associated with Emergency Switch Gear Chiller Valve VCH-4B (Section 4OA2.2)
05000313/2008004-03	FIN	Failure of Feedwater Heater High Level Drain Valve Due to Maintenance (Section 4OA3)
05000313/2008004-04	NCV	Failure to Adequately Monitor the Performance of the Unit 1 Auxiliary Building Roof Drains (4OA5)

Closed

05000313;368/2007005-02	URI	External Flooding Susceptibility
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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 1R01: Adverse Weather Protection

Calculations

NUMBER	TITLE	REVISION
CALC-83-D-1007-02	Intake Structure Heat Load Assessment	0
Calc-94-E-0095-18	Room 2007, 2009 Heat Load	0
Calc-94-E-0095-19	Room 2010 Heat Load	0
Calc-94-E-0095-20	Room 2013, 2014 Heat Load	0

Condition Reports
ANO-C-2008-1789

Section 1R04: Equipment Alignment

Procedure

NUMBER	TITLE	REVISION
OP-1104.027	Battery and Switchgear Emergency Cooling System	31
OP-2106.006	Emergency Feedwater System Operations	68

Work Order

159948

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-1000.152	Unit 1 & 2 Fire Protection System Specifications	7

Condition Report

ANO-1-2008-1042

Drawings

FZ-1032, Sheet 1, Revision 2

Calculations

NUMBER	TITLE	REVISION
CALC-85-E-0053-22	Fire Area I Combustible Loading Calculation	6

Section 1R06: Flood Protection Measures

Calculations

NUMBER	TITLE	REVISION
Calc-83-E-0063-01	South EDG Room Elev 368 Room 2093-P Ponding Evaluation	0
Calc-83-E-0063-02	North EDG Room Elev 368 Room 2094-Q Ponding Evaluation	0

Calc-83-D-2057-01	Maximum Flow Due to Actuation of Deluge System in Corridor 2104	0
Calc-83-D-2057-03	Corridor 2104 Flooding Chronology	2
Calc-92-R-0024-01	Flooding Evaluation INPO SOER 85-5	0
Calc-92-R-0034-01	Flooding Evaluation INPO SOER 85-5 2 nd Iteration	0

Condition Reports

ANO-C-2003-0067
ANO-C-2008-1219
ANO-C-2008-1983

Section 1R07: Heat Sink Performance

OP-2311.001 Shutdown Cooling Heat Exchanger Performance Test, Revision 6

Engineering Report 91-R-2013-01: Service Water Performance Testing Methodology, Revision 20

Engineering Change EC-7511

Section 1 R11: Licensed Operator Requalification

Dynamic Exam Scenario, SES-2-026, Revision 6
Dynamic Exam Scenario, SES-2-003, Revision 7
Dynamic Exam Scenario, SES-2-021, Revision 5
Dynamic Exam Scenario, SES-2-019, Revision 10

Job Performance Measure, A2JPM-RO-SIT09, Revision 2, "Isolate SITs following SIAS Actuation"

Job Performance Measure, A2JPM-RO-Elecxt, Revision 1, "Perform Synchronized Cross Connect of 480 VAC Load-centers 2B1 and 2B2"

Job Performance Measure, A2JPM-RO-SW01, Revision 8, "Shift Service Water Discharge to the Emergency Pond"

Job Performance Measure, A2JPM-RO-SWPSA-Revision 3, "Switch Power Supplies for 'B' Service Water Pump Sluice Gates to Loop 1"

Job Performance Measure, A2JPM-RO-AACFO, Revision 6, "Control AAC Diesel Engine Fuel Oil Day Tank Level Manually"

Job Performance Measure, A2JPM-SRO-EAL14, Revision 0, "Determine Emergency Action Level/ Protective Action Recommendation"

Quarterly Training Review Group Meeting Minutes for the two year Requalification training period

Remediation Plans and Records for the two year Requalification training period

Section 1R12: Maintenance Effectiveness

Procedures

NUMBER	TITLE	REVISION
EN-LI-102	Corrective Action Process	12
EN-DC-203	Maintenance Rule Program	1
EN-DC-204	Maintenance Rule Scope and Basis	1
EN-DC-205	Maintenance Rule Monitoring	2
EN-DC-206	Maintenance Rule (a)(1) Process	1
EN-DC-207	Maintenance Rule Periodic Assessment	1
OP-2311.002	Service Water System Flow Test	16

Calculations

NUMBER	TITLE	REVISION
CALC-91-R-2013-01	Service Water Performance Testing Methodology	20

Condition Reports

ANO-1-2003-0796 0987	ANO-2-2003-1339 ANO-2-2007-0212 0508	ANO-C-2003-0934 ANO-C-2008-0312 0931
ANO-1-2007 0081	0864	1035
773	1281	1211
794	1322	1540
982	1402	
1148	1409	
1167	0932	
1210	1709	
ANO-1-2008-1042 0036	ANO-2-2008-2081 1492	
0694	1447	
1033	0020	
0415	0148	
0198	0149	
	0275	
	0494	
	0612	
	0667	

Miscellaneous Documents

Engineering Report A-SE-2005-001, "ANO 2004 Maintenance Rule Periodic Assessment," Revision 0

Engineering Report ANOC-SE-06-00003, "ANO Unit 1 & 2 and Structures 2005 Maintenance Rule Periodic Assessment," Revision 0

Engineering Report ANOC-SE-07-00001, "Maintenance Rule 10CFR50.65(a)(3) Periodic Assessment July 2005 to December 2006," Revision 0

ER-ANO-2005-0287-004, "2R17 As-Found Service Water Flow Test Results," Revision 0

ER-ANO-2005-0287-000, "As Left Test Evaluation," Revision 0

0CAN109205, Revised Approach for Compliance to NRC Generic Letter 89-13; Service Water

ER-ANO-2003-0781-000, "Minimum Service Water Flow Rate to LPSI Pump Seal Cooler 2E-52A and 2E -52B," Revision 0

ER-ANO-2003-0793-000, "U2 SDC – Minimum Service Water Flow Rate to LPSI Pump Seal Coolers 2E-52A and 2E-52B," Revision 0

Section 1R13: Maintenance Risk Assessments and Emergent Work Control

Procedures

NUMBER	TITLE	REVISION
COPD-024	Risk Assessment Guidelines	24
OP-1203.025	Natural Emergencies (Unit 1)	25
2203.008	Natural Emergencies (Unit 2)	16

Condition Reports

ANO-1-2008-0833	ANO-2-2008-1447
ANO-1-2008-0934	ANO-2-2008-2081
ANO-1-2008-0786	ANO-2-2008-1763
ANO-1-2007-1657	ANO-C-2008-0312

Work Order

00146013

Miscellaneous Documents

Unit 1 and Unit 2 Station Logs for July 22, 2008 (Day and Night Shift)

Technical Risk Assessment for Crane Activities in the Vicinity of Units 1 and 2 Service Water Intake Structure

Section 1R15: Operability Evaluations

Procedure

NUMBER	TITLE	REVISION
EN-OP-104	Operability Determinations	2

CRs

ANO-1-2008-0846	ANO-2-2008-1477
ANO-1-2008-0990	ANO-2-2008-2018

Drawings

M-2204, Sheet 4, Revision 66	M-2206, Sheet 1, Revision 149
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Section 1R18: Plant Modifications

Procedures

NUMBER	TITLE	REVISION
EN-DC-136		

Miscellaneous Document

EC9092, "Securing Unit 1 Test Lever Into The Test Position," Revision 0

Work Order

00120063

Section 1R19 Postmaintenance Testing

Procedures

NUMBER	TITLE	REVISION
OP-2104.005	Containment Spray	52
OP-1412.083	Rotorque Valves and Valvops Inspection and Lubrication	6
OP-1412.001	Preventative Maintenance of Limitorque SB/SMB Motor Operators	18
OP-2106.006	Emergency Feedwater System Operations	67

NUMBER	TITLE	REVISION
OP-1106.006	Emergency Feedwater Pump Operation	73
OP-2306.005	Maintenance Surveillance on Unit 2 Emergency Diesel Generator 2K-4A	23

Condition Reports

ANO-2-2007-1073	ANO-2-2008-1898
1024	1818
0718	1691
1151	1672
1701	1642
1151	1663
	1669

Work Orders

00082103	00140057	00141006
00099387	00140045	00140054
00152635	00140232	00091761
51203442	00133486	00127162
51203443	00108258	00140119
51647711	00118942	
51648740	00118946	
51651990	00140047	
51055580	00140356	
00140029	00133286	

Section 1R22: Surveillance Testing

Procedures

NUMBER	TITLE	REVISION
OP-2104.036	Emergency Diesel Generator Operations	59
OP-1104.005	Reactor Building Spray System Operation	51
OP-1015.001	Conduct of Operations	66
OP-1000.115	Preventative Maintenance Program	14
EN-MA-101	Conduct of Maintenance	6
OP-1412.001	Preventative Maintenance of Limitorque SB/SMB Motor Operators	18
OP-2106.006	Emergency Feedwater System Operations	68

Work Orders

51085213-01	51646702-01
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Condition Reports

ANO-2-2008-1657
ANO-2-2008-2007

ANO-2-2008-1761
ANO-2-2008-2005

ANO-2-2008-1993

Section 2OS1: Access Controls to Radiologically Significant Areas

Procedures

NUMBER	TITLE	REVISION
EN-RP-101	Access Control for Radiologically Controlled Areas	3
EN-RP-102	Radiological Control,	2
EN-RP-106	Radiological Survey Documentation	1

Section 2OS2: ALARA Planning and Controls

Corrective Action Documents

CR-ANO-1-2008-01098	CR-ANO-C-2008-01181	CR-ANO-2-2008-00822
CR-ANO-C-2008-01771	CR-ANO-C-2008-01522	CR-ANO-2-2008-01762
CR-ANO-C-2008-01694	CR-ANO-2-2008-00896	CR-ANO-2-2008-01833
CR-ANO-C-2008-00981	CR-ANO-C-2008-01181	CR-ANO-2-2008-00747
CR-ANO-C-2008-01770	CR-ANO-C-2008-01181	CR-ANO-2-2008-00822

Radiation Work Permits

RWP 2008-2472, Alloy 600 Mitigation (Weld Overlay)
RWP 2008-2430, Refueling Path Activities
RWP 2008-2401, Radiation Protection Activities 2R19
RWP 2008-2404, 2R19 Routine Maintenance Activities
RWP 2008-2500, 2R19 Reactor Vessel Closure Head Lift Rig Modification

Procedures

NUMBER	TITLE	REVISION
EN-RP-100	Radworker Expectations	2
EN-RP-101	Access Control for Radiologically Controlled Areas	4
EN-RP-105	Radiation Work Permits	4
EN-RP-108	Radiation Protection Posting	6
EN-RP-110	ALARA Program, Revision	5
EN-RP-203	Dose Assessment	2
1000.031	Radiation Protection Manual	Change 020

ALARA Committee Minutes

ALARA Manager's Meeting, ANO-2008-0049 dated April 3, 2008
 ALARA Manager's Meeting, ANO-2008-0049 dated August 26, 2008
 ALARA Sub-Committee Meeting, ANO-2008-0049 dated February 27, 2008
 ALARA Sub-Committee Meeting, ANO-2008-0068 dated June 30, 2008

Miscellaneous

Five Year ALARA Plan 2008 - 2012

Section 4OA1: Performance Indicator VerificationProcedure

NUMBER	TITLE	REVISION
EN-RP-112	Radiation Protection Performance Indicator Program	2

Section 4OA2: Identification and Resolution of ProblemsCondition Reports

ANO-1-2005-2961	ANO-2-2008-1287	ANO-C-2008-1084
ANO-1-2005-3031	ANO-2-2008-1395	ANO-C-2008-1089
ANO-1-2005-3033	ANO-2-2008-1396	ANO-C-2008-1114
ANO-1-2006-0955	ANO-C-2007-0785	ANO-C-2008-1142
ANO-1-2007-0580	ANO-C-2007-1346	ANO-C-2008-1433
ANO-1-2007-2416	ANO-C-2007-1361	ANO-C-2008-1433
ANO-1-2008-0851	ANO-C-2007-1663	ANO-C-2008-1440
ANO-1-2008-2458	ANO-C-2008-0076	ANO-C-2008-1536
ANO-2-2007-1014	ANO-C-2008-0084	ANO-C-2008-1693
ANO-2-2008-0231	ANO-C-2008-0251	ANO-C-2008-1709
ANO-2-2008-0698	ANO-C-2008-0481	ANO-C-2008-1709
ANO-2-2008-1265	ANO-C-2008-0482	