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

August 7, 2006

Jeffrey S. Forbes
Vice President Operations
Arkansas Nuclear One
Entergy Operations, Inc.
1448 S.R. 333
Russellville, AR 72801-0967

SUBJECT: ARKANSAS NUCLEAR ONE - NRC INTEGRATED INSPECTION REPORT 05000313/2006003 AND 05000368/2006003

Dear Mr. Forbes:

On June 23, 2006, 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 June 27, 2006, 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 one NRC identified finding and three self-revealing findings of very low safety significance (Green). Three findings were determined to involve violations of NRC requirements. Because of the very low safety significance and because the findings are entered into your corrective action program, the NRC is treating the findings as noncited violations (NCVs) consistent with Section VI.A.1 of the NRC Enforcement Policy. In addition, a licensee-identified violation, which was determined to be of very low safety significance, is listed in Section 4OA7 of this report. 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, 611 Ryan Plaza Drive, Suite 400, Arlington, Texas 76011-4005; the Director, Office of Enforcement, U.S. Nuclear Regulatory Commission, Washington DC 20555-0001; and the NRC Resident Inspector at Arkansas Nuclear One, Units 1 and 2, facility.

In accordance with 10 CFR 2.390 of the NRC's “Rules of Practice,” a copy of this letter, its enclosure, and your response (if any) will be made available electronically for public inspection

in the NRC Public Document Room or from the Publicly Available Records (PARS) component of NRC's document system (ADAMS). ADAMS is accessible from the NRC Web site at http://www.nrc.gov/reading-rm/adams.html (the Public Electronic Reading Room).

Sincerely,

/RA/

David N. Graves, Chief
Project Branch E
Division of Reactor Projects

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

Enclosure:
NRC Inspection Report 05000313/2006003 and 05000368/2006003
w/Attachment: Supplemental Information

cc w/enclosure:
Senior Vice President
& Chief Operating Officer
Entergy Operations, Inc.
P.O. Box 31995
Jackson, MS 39286-1995

Vice President
Operations Support
Entergy Operations, Inc.
P.O. Box 31995
Jackson, MS 39286-1995

Manager, Washington Nuclear Operations
ABB Combustion Engineering Nuclear
Power
12300 Twinbrook Parkway, Suite 330
Rockville, MD 20852

County Judge of Pope County
Pope County Courthouse
100 West Main Street
Russellville, AR 72801

Winston & Strawn LLP
1700 K Street, N.W.
Washington, DC 20006-3817

Bernard Bevill
Radiation Control Team Leader
Division of Radiation Control and
Emergency Management
Arkansas Department of Health
4815 West Markham Street, Mail Slot 30
Little Rock, AR 72205-3867

James Mallay
Director, Regulatory Affairs
Framatome ANP
3815 Old Forest Road
Lynchburg, VA 24501

Chairperson
Denton Field Office
Chemical and Nuclear Preparedness
and Protection Division
Office of Infrastructure Protection
Preparedness Directorate
Dept. of Homeland Security
800 North Loop 288
Federal Regional Center
Denton, TX 76201-3698

Electronic distribution by RIV:
Regional Administrator **(BSM1)**
DRP Director **(ATH)**
DRS Director **(DDC)**
DRS Deputy Director **(RJC1)**
Senior Resident Inspector **(RWD)**
Branch Chief, DRP/E **(DNG)**
Senior Project Engineer, DRP/E **(VGG)**
Team Leader, DRP/TSS **(RLN1)**
RITS Coordinator **(KEG)**
DRS STA **(DAP)**
J. Lamb, OEDO RIV Coordinator **(JGL1)**
ROPreports
ANO Site Secretary **(VLH)**
W. A. Maier, RSLO **(WAM)**

SUNSI Review Completed: __DNG____ ADAMS: / Yes ☐ No Initials: __DNG_
/ Publicly Available ☐ Non-Publicly Available ☐ Sensitive / Non-Sensitive

R:_REACTORS_ANO\2006\AN2006-03RP-RWD.wpd

RIV:RI:DRP/E	RI:DRP/E	SRI:DRP/E	PE/DRPE	C:DRS/OB
JLDixon	ELCrowe	RWDeese	JCKirkland	ATGody
E-DNGraves	E-DNGraves	E-DNGraves	/RA/	/RA/
7/11/06	7/11/06	7/11/06	8/3/06	8/4/06

C:DRS/PSB	C:DRS/EMB	C:DRS/PEB	C:DRP/E	
MPShannon	JAClark	LJSmith	DNGraves	
/RA/	/RA/	CFO'Keefe for	/RA/	
8/3/06	8/3/06	8/4/06	8/7/06	

OFFICIAL RECORD COPY T=Telephone E=E-mail F=Fax

U.S. NUCLEAR REGULATORY COMMISSION
REGION IV

Dockets:	50-313, 50-368
Licenses:	DPR-51, NPF-6
Report:	05000313/2006003 and 05000368/2006003
Licensee:	Entergy Operations, Inc.
Facility:	Arkansas Nuclear One, Units 1 and 2
Location:	Junction of Hwy. 64W and Hwy. 333 South Russellville, Arkansas
Dates:	March 25 through June 23, 2006
Inspectors:	R. Azua, Reactor Inspector E. Crowe, Resident Inspector R. Deese, Senior Resident Inspector J. Dixon, Senior Resident Inspector J. Drake, Operations Engineer P. Elkmann, Emergency Preparedness Inspector J. Kirkland, Project Engineer R. Lantz, Senior Emergency Preparedness Inspector D. Livermore, Reactor Inspector J. Nadel, Reactor Inspector S. Rutenkroger, Reactor Inspector D. Stearns, Health Physicist G. Werner, Senior Project Engineer
Others:	R. Egli, Reactor Technology Instructor L. Ellershaw, PE, Consultant J. Keeton, Consultant
Approved By:	David N. Graves, Chief, Project Branch E Division of Reactor Projects

TABLE OF CONTENTS

SUMMARY OF FINDINGS

IR 05000313/2006003, 05000368/2006003; 03/25/06 - 06/23/06; Arkansas Nuclear One, Units 1 and 2; Integrated Resident and Regional Report; Exercise Evaluation, Access Control to Radiologically Significant Areas, Event Followup.

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

A. NRC-Identified and Self-Revealing Findings

Cornerstone: Initiating Events

- Green. The inspectors reviewed a self-revealing finding for an inadequate maintenance procedure which did not include vendor recommended maintenance for the Unit 1 main turbine lube oil ejector discharge check valve. On December 26, 2005, Unit 1 experienced an automatic reactor trip caused by a main turbine trip due to low lube oil pressure. Welds on the main turbine lube oil ejector discharge check valve hinge failed from an overstress condition and allowed the valve disk to partially block oil flow, resulting in low lube oil pressure. During the previous refueling outage, the licensee installed smaller welds than those recommended by the vendor, which led to the overstress condition. This finding had human performance cross-cutting aspects in that the maintenance procedure did not contain a design drawing sufficient to ensure vendor recommended maintenance was conducted. The licensee entered the deficiency into their corrective action program as Condition Report ANO-1-2005-3087.

  The finding is more than minor because it affected the initiating events cornerstone objective of limiting the likelihood of those events that upset plant stability and challenge critical safety functions and affected the cornerstone attribute of procedure quality. The finding was determined to be of very low safety significance because all other systems functioned normally during the turbine trip/reactor trip (Section 4OA3).

Cornerstone: Barrier Integrity

- Green. A self-revealing noncited violation of ANO Unit 1 Technical Specification 3.9.2 was identified for movement of irradiated fuel assemblies with less than the two required operable source range instruments. On December 1, 2005, the licensee loaded four fuel assemblies into the reactor vessel during

core reload activities. Following loading the fourth fuel assembly in the reactor vessel, the operators observed neutron level indication not responding as expected. The power source to Source Range Instrument NI-502 was determined to be failed rendering the instrument inoperable. Core alterations with less than two operable source range instruments is contrary to requirements of Technical Specification 3.9.2. The licensee entered the deficiency into their corrective action program as Condition Report ANO-1-2005-2628.

The finding is more than minor because the configuration control attribute of the reactor safety/barrier integrity cornerstone objective to provide reasonable assurance that physical design barriers (fuel cladding) protect the public from radionuclide releases caused by accidents or events was not met. The finding was determined to be of very low safety significance because the finding did not increase the likelihood of a loss of reactor coolant system inventory, degrade the licensee's ability to terminate a leak path, or degrade the licensee's ability to recover decay heat removal once it had been lost. The finding had problem identification and resolution crosscutting aspects related to corrective actions taken for the April 2004 failure of Source Range Instrument NI-502 (Section 4OA3).

Cornerstone: Emergency Preparedness

- Green. The inspectors identified a noncited violation of 10 CFR 50.54(q), 10 CFR 50.47(b)(5), and 10 CFR Part 50, Appendix E.IV.D.3, for programmatic and procedure inadequacies that allow the licensee to not make immediate offsite notifications for certain situations after a valid emergency classification was made. Specifically, following certain transient events, the licensee developed a practice of not completing immediate notifications to local authorities if the emergency action level conditions cleared before the notifications were completed. The licensee entered the deficiency into their corrective action program as Condition Report ANO-C-2006-0665 for resolution.

  The finding was assessed through the emergency preparedness significance determination process. The finding is a performance deficiency in that the current interpretation and implementation of Emergency Plan Implementing Procedure 1903.010, "Emergency Action Level Classification," could result in failure to conduct a 15-minute notification following declaration of an emergency condition, potentially delaying offsite emergency response. Because the finding affected the reactor safety emergency preparedness cornerstone objective, the finding is greater than minor. The finding was determined to have very low safety significance because it represented a degradation and not a loss of the notification emergency planning standard function (Section 1EP1).

Cornerstone: Occupational Radiation Safety

- Green. The inspector reviewed a self-revealing, noncited violation of Technical Specification 5.4.1.a., resulting from a chemistry technician's failure to follow written procedures. On November 8, 2005, while performing an annual liquid

alpha crosscheck of Am-241, a chemistry technician inadvertently left the planchet containing the evaporated standard in the gas flow proportional counting system. This was contrary to Chemistry Procedure 1604.001, "Gross Alpha Measurement", Change 014-01. On November 30, 2005, a second chemistry technician placed a ventilation filter into the same planchet that contained the Am-241 residue. During the subsequent investigation, it was discovered that the gas flow proportional counter was contaminated with Am-241. Bioassays were performed on the individuals involved in the investigation and it was determined that four individuals had been internally contaminated with Am-241. Dose calculations based on bioassay results determined that the highest exposure received by any one individual was 68 milliRem committed effective dose equivalent. The licensee made procedure enhancements and conducted training to ensure that future sample planchets are properly disposed.

The finding was greater than minor because it was associated with one of the occupational radiation safety cornerstone attributes of exposure control, and the finding affected the cornerstone objective in that a failure to follow written procedures resulted in unplanned and unintended radiation dose. The inspector determined that the finding had very low safety significance because: (1) it did not involve an as low as is reasonably achievable finding, (2) there was no personnel overexposure, (3) there was no substantial potential for personnel overexposure, and (4) the finding did not compromise the licensee's ability to assess dose. The finding also had crosscutting aspects related to human performance, in that the chemistry technician's failure to follow written procedures directly resulted in the finding (Section 2OS1).

B. Licensee-Identified Violations

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

REPORT DETAILS

Summary of Plant Status

Unit 1 began the inspection period at 100 percent rated thermal power and remained at full power for the inspection period.

Unit 2 began the inspection period at 100 percent rated thermal power and remained at full power for the inspection period.

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, Barrier Integrity

1R01 Adverse Weather Protection (71111.01)

.1 Readiness for Seasonal Susceptibilities

a. Inspection Scope

The inspectors completed a review of the licensee's readiness for impending adverse weather involving severe thunderstorm and tornado warnings. The inspectors: (1) reviewed plant procedures, the Updated Final Safety Analysis Report (UFSAR), and Technical Specifications (TSs) to ensure that operator actions defined in adverse weather procedures maintained the readiness of essential systems; (2) walked down portions of the below listed three systems to ensure that adverse weather protection features were sufficient to support operability, including the ability to perform safe shutdown functions; (3) reviewed maintenance records to determine that applicable surveillance requirements were current before the anticipated severe thunderstorms and tornadoes developed; and (4) reviewed plant modifications, procedure revisions, and operator workarounds to determine if recent facility changes challenged plant operation.

- April 4-5, 2006, Units 1 and 2, 480 volt ac safety-related electrical distribution, emergency feedwater, and switchgear ventilation systems

Documents reviewed by the inspectors are listed in the attachment.

The inspectors completed one sample.

b. Findings

No findings of significance were identified.

1R02 Evaluations of Changes, Tests, or Experiments (71111.02)

a. Inspection Scope

The inspectors reviewed the effectiveness of the licensee's implementation of changes to the facility structures, systems, and components (SSCs); risk-significant normal and emergency operating procedures; test programs; and the UFSAR report in accordance with 10 CFR 50.59. The inspectors utilized Inspection Procedure 71111.02 for this inspection.

The inspectors reviewed six 10 CFR 50.59 evaluations performed by the licensee since the last NRC inspection of this area at Arkansas Nuclear One. The evaluations were reviewed to verify that licensee personnel had appropriately considered the conditions under which the licensee may make changes to the facility or procedures or conduct tests or experiments without prior NRC approval. The inspectors reviewed 15 licensee-performed 10 CFR 50.59 applicability determinations and screenings in which licensee personnel determined that neither screenings nor evaluations were required, to ensure that the exclusion of a full evaluation was consistent with the requirements of 10 CFR 50.59. Procedures, evaluations, screenings, and applicability determinations reviewed are listed in the attachment.

The inspectors reviewed and evaluated a sample of recent licensee condition reports (CRs) to determine whether the licensee had identified problems related to 50.59 evaluations, entered them into the corrective action program (CAP), and resolved technical concerns and regulatory requirements.

The inspection procedure specifies inspector review of a required minimum sample of six licensee safety evaluations and 12 applicability determinations and screenings (combined). The inspectors completed review of six licensee safety evaluations and 15 applicability determinations and screenings (combined).

b. Findings

No findings of significance were identified.

1R04 Equipment Alignment (71111.04)

.1 Partial Walkdown

The inspectors: (1) walked down portions of the four 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 walkdown to the licensee's UFSAR and CAP to ensure problems were being identified and corrected.

- April 5, 2006, Unit 2, emergency feedwater alignment during maintenance on Emergency Feedwater Pump 2P-7A

- April 10, 2006, Unit 1, service water alignment during circulating water/service water intake Bay B outage

- April 25, 2006, Unit 1, makeup system alignment during maintenance on Makeup Pump P-36C

- June 6, 2006, Unit 2, ac distribution system during a 24-month overhaul of Emergency Diesel Generator 2K-4A

Documents reviewed by the inspectors are listed in the attachment.

The inspectors completed four samples.

.2 Complete Walkdown

The inspectors conducted a detailed inspection of Unit 1 Startup Transformer SU2 and support systems to verify the functional capability of the system as described in the design basis documents. The inspectors verified that system components such as hangers and supports were correctly installed and functional. This inspection was conducted during a complete teardown, refurbishment, and reassembly of the transformer and support systems.

The inspectors reviewed recent corrective action documents, system health reports, outstanding work requests, and design issues to determine if any of these items could effect the system's ability to perform as designed. The inspectors interviewed appropriate plant staff regarding the system's maintenance history. A field walkdown was completed during the week of June 19, 2006.

Documents reviewed by the inspectors are listed in the attachment.

The inspectors completed one sample.

b. Findings

No findings of significance were identified.

1R05 Fire Protection (71111.05)

.1 Quarterly Inspection

The inspectors walked down the seven 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 the licensee identified and corrected fire protection problems.

- March 27, 2006, Unit 2, Fire Zone 2025-JJ, emergency feedwater pump room (electric-driven)
- March 30, 2006, Unit 2, Fire Zone 2081- HH, upper north piping penetration room and lower north piping penetration room
- April 12, 2006, Unit 1, Fire Zone 100-L, south battery charger room
- April 14, 2006, Unit 1, Fire Zone 95-O, north battery room
- April 14, 2006, Unit 2, Fire Zone 2103-V, west battery room
- June 6, 2006, Unit 2, Fire Zone 2154-E, control element drive mechanism equipment room
- June 6, 2006, Unit 2, Fire Zone 2152-D, computer room

Documents reviewed by the inspectors are listed in the attachment.

The inspectors completed seven samples.

b. Findings

No findings of significance were identified.

.2 Annual Fire Drill Inspection

On May 1, 2006, 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 2 electrical equipment room containing 480 volt electrical Buses 9 and 10.

Documents reviewed by the inspectors are listed in the attachment.

The inspectors completed one sample.

b. Findings

No findings of significance were identified.

1R06 Flood Protection Measures (71111.06)

Annual External Flooding

a. Inspection Scope

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

- Underground service water piping
- External fire protection equipment and piping
- Underground ac distribution
- Units 1 and 2 intake structures
- Condensate storage tank sumps
- Underground fuel oil vaults

Documents reviewed by the inspectors are listed in the attachment.

The inspectors completed one sample.

b. Findings

No findings of significance were identified.

1R11 Licensed Operator Requalification Program (71111.11)

a. Inspection Scope

On March 30, 2006, the inspectors observed testing and training of Unit 2 senior reactor operators and reactor operators to identify deficiencies and discrepancies in the training, to assess operator performance, and to assess the evaluator's critique. The training scenario involved an excessive steam demand event.

Documents reviewed by the inspectors are listed in the attachment.

The inspectors completed one sample.

b. Findings

No findings of significance were identified.

1R12 Maintenance Effectiveness (71111.12)

a. Inspection Scope

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

- May 19, 2006, Unit 2, High Pressure Injection Pump 2P-89C
- June 14, 2006, Unit 1, reactor building spray system

Documents reviewed by the inspectors are listed in the attachment.

The inspectors completed two samples.

b. Findings

No findings of significance were identified.

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

a. Inspection Scope

Risk Assessment and Management of Risk

The inspectors reviewed the five 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 the licensee identified and corrected problems related to maintenance risk assessments.

- April 10-13, 2006, Unit 1, scheduled maintenance activities for the week

- May 1, 2006, Unit 1, plant cumulative risk associated with maintenance on Motor-Operated Valves CV-1219 and CV-1278

- May 16, 2006, Unit 2, plant cumulative risk associated with maintenance to Emergency Feedwater Pump 2P-7B

- June 2, 2006, Unit 2, plant cumulative risk associated with alternate ac diesel generator during transfer of fuel oil from temporary storage tanks to bulk fuel oil storage Tank T-25 coincident with exercising control element assemblies

- June 20, 2006, Units 1 and 2 cumulative risk associated with maintenance to Startup Transformer 2

Documents reviewed by the inspectors included Unit 1 operating logs for dates listed above, Unit 2 operating logs for dates listed above, and Units 1 and 2 equipment out-of-service monitors.

The inspectors completed five samples.

b. Findings

No findings of significance were identified.

1R14 Operator Performance During Nonroutine Plant Evolutions and Events (71111.14, 71153)

a. Inspection Scope

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

- May 31, 2006, Unit 2, tilt pit overflow into new fuel vault and subsequent flooding of auxiliary building on Elevation 335' and auxiliary building extension on Elevations 335' and 354'

- June 12, 2006, Unit 2, elevated unidentified reactor coolant system leakage due to a packing leak of Loop 1A charging isolation Valve Loop 2CV-4827-2

Documents reviewed by the inspectors included: Procedure OP-2305.002, “Reactor Coolant System Leak Detection,” Revision 13, and above listed documents.

The inspectors completed two samples.

b. Findings

No findings of significance were identified.

1R15 Operability Evaluations (71111.15)

a. Inspection Scope

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 TSs; (5) used the significance determination process to evaluate the risk significance of degraded or inoperable equipment; and (6) verified that the licensee has identified and implemented appropriate corrective actions associated with degraded components.

- April 24, 2006, Unit 1, seismic qualification of the tendon surveillance cranes (L-28)
- May 12, 2006, Unit 2, failure of the K-1 relay to reset the exciter for Emergency Diesel Generator 2K4-A
- May 30, 2006, Unit 2, abnormal firing pressures and cylinder temperatures of Emergency Diesel Generator 2K-4B
- June 7, 2006, Unit 1, service water system operability due to excessive leak-by of Valve SW-4026A
- June 19, 2006, Unit 1, control room habitability concern associated with loss of loop seal to control room air conditioning Unit VUC-9
- June 19, 2006, Unit 1, borated water storage tank low-low level alarm
- June 22, 2006, Unit 1, steam supply to turbine-driven emergency feedwater pump solenoid operated Valves SV-2613 and SV-2663

Documents reviewed by the inspectors are listed in the attachment

The inspectors completed seven samples.

b. Findings

Unit 1 Tendon Surveillance Cranes (L-28)

On April 24, 2006, the inspectors reviewed the licensee's final safety analysis report (FSAR) as the document relates to Seismic Class 1 and Seismic Class 2 structures, systems, and equipment. The FSAR states, in part, that seismic design of Class 2 structures is in accordance with the uniform building code. The FSAR further states that Class 2 systems and equipment are designed to withstand normal design loads combined with a horizontal acceleration of 0.05g. The Unit 1 tendon surveillance

cranes are designated by the licensee as Seismic Class 2 equipment. The licensee was asked for documentation that the Unit 1 tendon surveillance cranes met the Seismic Class 2 designation. To date, the licensee has only found/located procurement documents stating the requirements for work platform assembly of the tendon surveillance cranes. This documentation requires the assemblies to meet the safety requirements in the states of Arkansas, California, New York, Michigan, Maryland, and Connecticut. The licensee has not found an evaluation of these codes as they compare to the uniform building code nor has the licensee produced documentation of inspections performed after receipt or installation of these cranes. The licensee entered the failure to produce documentation into their CAP as CR ANO-1-2005-3109. Pending the licensee's completion of an evaluation of these cranes and the NRC's review of this evaluation, this finding is considered an Unresolved Item (URI) 05000313/2006003-01, "Failure to Retrieve Required Records of Activities Affecting Quality."

1R17 Permanent Plant Modifications (71111.17B)

a. Inspection Scope

The inspectors reviewed nine permanent plant modification packages and associated documentation, such as implementation reviews, safety evaluation applicability determinations, and screenings, to verify that they were performed in accordance with regulatory requirements and plant procedures. The inspectors also reviewed the procedures governing plant modifications to evaluate the effectiveness of the program for implementing modifications to risk-significant systems (SSCs), such that these changes did not adversely affect the design and licensing basis of the facility. Procedures and permanent plant modifications reviewed are listed in the attachment to this report. Further, the inspectors interviewed certain of the cognizant design and system engineers for the identified modifications as to their understanding of the modification packages and process. Finally, the inspectors conducted walkdowns on selected permanent plant modifications to verify that the existing as-built conditions were consistent with the applicable piping and instrumentation drawings.

The inspectors evaluated the effectiveness of the licensee's corrective action process to identify and correct problems concerning the performance of permanent plant modifications by reviewing a sample of related CRs. The reviewed CRs are identified in the attachment.

The inspection procedure specifies inspector review of a required minimum sample of five permanent plant modifications. The inspectors completed review of nine permanent plant modifications.

b. Findings

No findings of significance were identified.

1R19 Postmaintenance Testing (71111.19)

a. Inspection Scope

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

- April 14, 2006, Units 1 and 2, diesel-driven fire pump following repairs
- May 12, 2006, Unit 1, 125 volt Inverter Y-28 following ground fault alarms
- June 2, 2006, Unit 2, Emergency Diesel Generator 2K-4B following a 24-month overhaul
- June 16, Unit 1, penetration room north duct Damper CV-2104 stroked in accordance with Maintenance Work Order 50240459 following replacement of Solenoid-Operated Valve SV-2104 in accordance with Work Order 90021-01

Documents reviewed by the inspectors are listed in the attachment.

The inspectors completed four 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 TSs to ensure that the three surveillance activities listed below demonstrated that the SSCs tested were capable of performing their intended safety functions. The inspectors either witnessed or reviewed test data to verify that the following significant surveillance test attributes were adequate: (1) preconditioning; (2) evaluation of testing impact on the plant; (3) acceptance criteria; (4) test equipment; (5) procedures; (6) jumper/lifted lead controls; (7) test data; (8) testing frequency and method demonstrated TS operability; (9) test equipment removal; (10) restoration of plant systems; (11) fulfillment of American Society of Mechanical Engineers Code requirements; (12) updating of

performance indicator (PI) data; (13) engineering evaluations, root causes, and bases for returning tested SSCs not meeting the test acceptance criteria were correct; (14) reference setting data; and (15) annunciators and alarms setpoints. The inspectors also verified that the licensee identified and implemented any needed corrective actions associated with the surveillance testing.

- April 4, 2006, Unit 1, P-7A to Loop A Once-Though Steam Generator Control Valve CV-2645
- April 12, 2006, Unit 2, Emergency Diesel Generator 2K-4A monthly surveillance
- May 10, 2006, Unit 1, high pressure injection to reactor coolant Loop C discharge control Valve CV-1219 and high pressure injection Loop A Isolation Valve CV-1278

Documents reviewed by the inspectors are listed in the attachment.

The inspectors completed three samples.

b. Findings

No findings of significance were identified.

1R23 Temporary Plant Modifications (71111.23)

a. Inspection Scope

The inspectors reviewed the UFSAR, plant drawings, procedure requirements, and TSs 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 postinstallation test results were satisfactory and that the impact of the temporary modification on permanently installed SSCs 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 the licensee identified and implemented any needed corrective actions associated with temporary modifications.

- June 5, 2006, Unit 2, modification to swap the Reactor Coolant Pump D speed sensor input to the core operating limit system to the core protection calculator

Documents reviewed by the inspectors included Temporary Alteration Package 06-2-004, Work Order 88630, and Engineering Requests (ERs) ANO-2006-0255-000 and ANO-2006-0255-002.

The inspectors completed one sample.

b. Findings

No findings of significance were identified.

Cornerstone: Emergency Preparedness

1EP1 Exercise Evaluation (71114.01)

a. Inspection Scope

The inspectors reviewed the objectives and scenario for the 2006 Biennial Emergency Preparedness Exercise to determine if the exercise would acceptably test major elements of the emergency plan. The scenario included a seismic event with resultant fuel failures and loss of reactor coolant to the reactor containment. A subsequent seismic event increased the reactor coolant loss to containment and caused a rupture in the containment building, resulting in an ongoing radioactive steam release to the environment. The licensee activated all of their emergency facilities to demonstrate their capability to implement the emergency plan.

The inspectors evaluated exercise performance by focusing on the risk-significant activities of classification, notification, protective action recommendations, and assessment of offsite dose consequences in the simulator control room and the following emergency response facilities:

- Technical Support Center
- Operations Support Center
- Emergency Operations Facility

The inspectors also assessed personnel recognition of abnormal plant conditions, the transfer of emergency responsibilities between facilities, communications, protection of emergency workers, emergency repair capabilities, and the overall implementation of the emergency plan to verify compliance with the requirements of 10 CFR 50.47(b), 10 CFR 50.54(q), and Appendix E to 10 CFR Part 50.

The inspectors attended the postexercise critiques in each of the above emergency response facilities to evaluate the initial licensee self-assessment of exercise performance. The inspectors also attended the formal presentation of critique items to plant management. The inspectors completed one sample during the inspection.

b. Findings

Introduction: A Green noncited violation (NCV) of 10 CFR 50.54(q), 10 CFR 50.47(b)(5), and 10 CFR Part 50, Appendix E.IV.D.3., was identified for programmatic and procedure inadequacies that would allow the licensee to not make the required 15-minute notifications for certain situations after a valid emergency classification was made.

Description: The inspectors conducted a review of prior emergency preparedness drill evaluations and noted two scenario evaluations which raised questions concerning transient event notification practices at Arkansas Nuclear One.

In the first evaluated drill of May 17, 2005, the emergency director (shift manager in the simulated control room) declared a notification of unusual event and completed the required 15-minute notifications to offsite authorities. The notification form contained a comment that the station was currently in a site area emergency condition as well. The drill continued for approximately 20 more minutes and the inspectors noted that no additional offsite notification was made during the drill. The inspectors expected that an emergency classification of site area emergency would have been declared and that a 15-minute notification would have then been made and evaluated. The inspectors were informed that a declaration was likely made (although not evaluated for this drill), but that no additional 15-minute notification was made since the conditions that required the site area emergency declaration had cleared prior to completion of the 15-minute notification and since a 1-hour notification would be completed as required in 10 CFR 50.72.

In the second evaluated drill of June 14, 2005, the emergency director (shift manager in the simulated control room) had previously declared and notified offsite authorities of a notification of unusual event. Later in the scenario when all feedwater was lost, conditions were met for a site area emergency classification. Six minutes later, feedwater was restored. Five minutes after restoration of feedwater, the shift manager completed his assessment and declared a site area emergency. The emergency director was aware that the conditions for site area emergency had existed and that the conditions for the emergency action level (EAL) were no longer met at the time of his declaration. A 1-hour notification was planned to be completed as required in 10 CFR 50.72. A 15-minute notification was not conducted since the event had cleared prior to completion of the notification form.

The inspectors reviewed Emergency Plan Implementing Procedure (EPIP) 1903.010, “Emergency Action Level Classification,” Change 037-04-0, step 6.1.2, which states, in part, “Due to the speed in which events sometimes progress . . . an event may occur which was classifiable as an emergency, however, prior to offsite notifications the corrective actions taken may have removed the conditions that would have resulted in an emergency declaration. In this situation, it is not necessary to make an actual declaration of the emergency class, but an ENS notification to the NRC within one hour of the discovery of the undeclared event will provide an acceptable alternative. . . .”

The inspectors questioned the licensee on the implementation of this step in the procedure. The licensee stated that the 15-minute notification would only need to be made if the conditions that required the emergency declaration still existed when the notification was ready to be sent and that, if the conditions cleared, the 15-minute notification could be replaced with a 1-hour notification to the NRC and local authorities. The inspectors noted that this interpretation was contrary to federal guidance as well as the regulations and the licensee's EPIPs. NUREG 1022, “Event Reporting Guidelines 10 CFR 50.72 and 50.73,” Section 3.1.1, states that an emergency event that is discovered after the event conditions no longer meet the event classification EAL does not need to be declared, but 1-hour notifications need to be made to the NRC and local

authorities. Appendix E.IV.D.3 of 10 CFR Part 50 states that, after an emergency declaration is made, a notification to local authorities must be made within 15 minutes. Step 6.1.1 E.3. of EPIP 1903.010 states, in part, "Assess the information available from valid indications . . . then . . . . Declare the emergency classification that is indicated . . ." and step 6.1.4 of EPIP 1903.010 states, in part, "Upon declaration of an emergency classification . . . ensure that immediate notification requirements are met. . . ."

The inspectors noted that by not making the 15-minute notification based on an evaluation that the emergency conditions no longer existed, the licensee was in effect downgrading the classification immediately after making the emergency declaration. Step 6.2 of EPIP 1903.010, "Downgrading the Emergency Classification," step 6.2.1C states, in part, "Assess the current plant conditions, . . . compare it to the given EALs. Obtain concurrence from NRC and State officials that downgrading is appropriate (if their emergency response organizations have been activated as a result of this event). . . . Downgrade to the emergency classification that is indicated." The inspectors noted that assessment of plant conditions following declaration of an emergency was an essential part of the decision to downgrade the emergency and that evaluation of continuing applicability of the EAL is only a subset of that evaluation. It would be inappropriate to downgrade from a valid declared emergency condition based solely on a change in the conditions which originally met the EAL. An assessment of plant conditions must be made to determine the actual or potential affect of the emergency condition on associated plant systems. The assessment of plant conditions, in addition to some level of review with affected offsite agencies, is required prior to downgrading the declared emergency.

Based on the inspector's evaluation of the May 17 and June 14, 2005, drills, discussions with licensee staff, and review of licensee procedures, the inspectors determined that offsite notification capability had degraded such that for certain events the licensee would not inform the offsite authorities of an emergency condition at the site as required, potentially delaying a needed offsite response.

Analysis: The finding was assessed through the "Failure to Meet Regulatory Requirement" branch of the emergency preparedness significance determination process. The finding is a performance deficiency in that the current interpretation and implementation of EPIP 1903.010 could result in failure to conduct 15-minute notifications following declaration of an emergency condition. Because the finding affected the reactor safety emergency preparedness cornerstone objective, the finding is greater than minor. The finding was determined to have very low safety significance because it represented a degradation and not a loss of the notification planning standard function.

Enforcement: 10 CFR 50.54(q) provides, in part, that a ". . . licensee authorized to possess and operate a nuclear power reactor shall follow . . . emergency plans which meet the standards in §50.47(b) . . . ." 10 CFR 50.47(b)(5) requires, in part, that "Procedures have been established for notification, by the licensee, of State and local response organizations. . . ." Appendix E.IV.D.3 of 10 CFR Part 50 requires, in part, that "A licensee shall have the capability to notify responsible State and local governmental agencies within 15 minutes after declaring an emergency."

Contrary to the above, EPIP 1903.010, “Emergency Action Level Classification,” Change 037-04-0, step 6.1.2, was inadequate in that the procedure allowed, and the licensee established a practice of, not making the required 15-minute notifications for certain situations after a valid emergency classification was made. Failure to follow the emergency plan resulted in degradation of risk significant planning standard 10 CFR 50.47(b)(5) and is a violation of 10 CFR 50.54(q).

Because of the very low safety significance and the licensee's action to enter this issue into its CAP as CR ANO-C-2006-00665, this violation is being treated as an NCV in accordance with Section VI.A.1 of the Enforcement Policy: NCV 05000313; 368/2006003-02, “Failure to meet immediate notification requirements during transient events.”

1EP4 EAL and Emergency Plan Changes (71114.04)

a. Inspection Scope

The inspector performed in-office reviews of Revision 32 to the Arkansas Nuclear One, Units 1 and 2, Emergency Plan, and Revision 37-04-0 to EPIP OP-1903.010, “Emergency Action Level Classification,” both submitted February 2006.

These revisions changed emergency classification level descriptions and revised EALs as described in NRC Bulletin 2005-002, “Emergency Preparedness and Response Actions for Security-Based Events,” and made other editorial changes.

These revisions were compared to their previous revisions 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; Nuclear Energy Institute (NEI) 99-01, “Methodology for Development of Emergency Action Levels,” Revision 2; NRC Bulletin 2005-02; and to the requirements of 10 CFR 50.47(b) and 50.54(q) to determine if the licensee adequately implemented 10 CFR 50.54(q).

This review was not documented in a safety evaluation report and did not constitute approval of licensee changes; therefore, these changes are subject to future inspection.

The inspector completed two samples during this inspection.

b. Findings

No findings of significance were identified.

1EP6 Drill Evaluation (71114.06)

a. Inspection Scope

For the drill and simulator-based training evolution listed below that contributed to drill/exercise performance, emergency response organization, and PIs, the inspectors: (1) observed the training evolution to identify any weaknesses and deficiencies in

classification, notification, and protective action requirements development activities; (2) compared the identified weaknesses and deficiencies against licensee identified findings to determine whether the licensee is properly identifying failures; and (3) determined whether licensee performance is in accordance with the guidance of the NEI 99-02, "Voluntary Submission of Performance Indicator Data," acceptance criteria.

- June 22, 2006, Unit 2, operator response in the control room simulator facility to Dynamic Scenario SES-2-018 which involved a main steam line break inside containment with failure of the automatic reactor protection system actuation

Documents reviewed by the inspectors included Dynamic Scenario SES-2-018.

The inspectors completed one sample.

b. Findings

No findings of significance were identified.

2. RADIATION SAFETY

Cornerstone: Occupational Radiation Safety

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 TSs, and the licensee's procedures required by TSs 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:

- PI events and associated documentation packages reported by the licensee in the occupational radiation safety cornerstone

- Radiation work permits, procedures, engineering controls, and air sampler locations

- Adequacy of the licensee's internal dose assessment for any actual internal exposure greater than 50 millirem committed effective dose equivalent

- Self-assessments, audits, licensee event reports (LERs), and special reports related to the access control program since the last inspection. (There were no LERs or special reports to review.)

- Posting and locking of entrances to all accessible high dose rate - high radiation areas and very high radiation areas

The inspector completed 6 of the required 21 samples.

b. Findings

Introduction: The inspector reviewed a self-revealing NCV of TS 5.4.1.a, resulting from a chemistry technician's failure to follow written procedures during performance of an annual liquid alpha laboratory crosscheck of Am-241, which resulted in internal contamination of four individuals.

Description: On November 8, 2005, a chemistry technician improperly left a planchet containing an evaporated liquid alpha laboratory standard in the gas flow proportional counter. Chemistry Procedure 1604.001, "Gross Alpha Measurement," Section 6.2.5, Change 014-01, states, "When analysis is complete, place planchet and sample into a sealable pouch and seal pouch prior to disposal." This action was not performed. On November 30, 2005, a second chemistry technician placed a ventilation sample into the same planchet that contained the residue of the evaporated Am-241 standard. When the sample results were evaluated on December 4, 2005, unusually high alpha counts were noted on the ventilation filter. The chemist removed the ventilation sample filter from the contaminated planchet, placed the filter in its original envelope, and placed the filter in storage. The contaminated planchet was properly disposed of in contaminated trash.

During the subsequent investigation, it was determined that the gas flow proportional counter detector had become contaminated with Am-241. Bioassays of the individuals involved in the investigation revealed that four of the individuals had become internally contaminated with Am-241. Dose calculations based on bioassay results determined that the four individuals received doses of 68 mRem, 61 mRem, 33 mRem, and 30 mRem committed effective dose equivalent, respectively. Four other individuals were also evaluated for internal contamination with negative results.

Analysis: The failure to follow site procedures is a performance deficiency which resulted in internal contamination of four individuals. The violation is more than minor because it involves unplanned and unintended dose and is associated with one of the occupational radiation safety cornerstone attributes of exposure control. When the finding was processed through the occupational significance determination process, the violation was of very low safety significance because it: (1) did not involve an as low as is reasonably achievable (ALARA) finding, (2) did not result in an overexposure, (3) did not involve a substantial potential for overexposure, and (4) did not compromise the licensee's ability to assess dose. In addition, the violation had crosscutting aspects associated with human performance because the failure to follow written procedures directly contributed to the violation.

Enforcement: TS 5.4.1.a requires written procedures be established, implemented, and maintained covering the activities specified in Regulatory Guide 1.33, Appendix A. Regulatory Guide 1.33, Appendix A, Section 10, requires procedures for chemical and radiochemical control. Contrary to the requirements of Chemistry Procedure 1604.001, the licensee did not properly dispose of the planchet containing the evaporated Am-241

standard, resulting in internal contamination of four individuals. Because the finding was of very low safety significance and has been entered into the licensee's CAP as CR-ANO-C-2005-02309 and CR-ANO-C-2005-02344, this violation is being treated as an NCV consistent with Section VI.A of the NRC Enforcement Policy:
NCV 050313/2006003-03, "Failure to Follow Written Chemistry Procedures."

2OS2 ALARA Planning and Controls (71121.02)

a. Inspection Scope

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

- Current 3-year rolling average collective exposure
- Seven outage or online maintenance work activities scheduled during the inspection period and associated work activity exposure estimates which were likely to result 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
- Person-hour estimates provided by maintenance planning and other groups to the radiation protection group with the actual work activity time requirements
- Shielding requests and dose/benefit analyses
- 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

- Records detailing the historical trends and current status of tracked plant source terms and contingency plans for expected changes in the source term due to 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, priorities established for these actions, and results achieved against since the last refueling cycle

- Self-assessments, audits, and special reports related to the ALARA program since the last inspection. (There were no special reports to review.)

- Corrective action documents related to the ALARA program and followup activities such as initial problem identification, characterization, and tracking

The inspector completed 11 of the required 15 samples and 6 of the optional samples.

b. Findings

No findings of significance were identified.

4. OTHER ACTIVITIES

4OA1 PI Verification (71151)

.1 Mitigating Systems and Barrier Integrity

a. Inspection Scope

The inspectors sampled licensee submittals for the three PIs listed below for the period from April 1, 2004, through March 31, 2006, for Units 1 and 2. The definitions and guidance of NEI 99-02, "Regulatory Assessment Indicator Guideline, Revision 2, were used to verify the licensee's basis for reporting each data element in order to verify the accuracy of PI data reported during the assessment period. The inspectors reviewed LERs, monthly operating reports, and operating logs as part of the assessment. Licensee PI data were also reviewed against the requirements of Procedure EN-LI-114, "Performance Indicator Process," Revision 1.

- safety system functional failures
- reactor coolant system specific activity
- reactor coolant system leakage

b. Findings

No findings of significance were identified.

.2 Emergency Preparedness Cornerstone

a. Inspection Scope

The inspectors sampled submittals for the PIs listed below for the period from April 2005 through March 2006. The definitions and guidance of NEI 99-02, "Regulatory Assessment Indicator Guideline," Revision 3, were used to verify the licensee's basis for reporting each data element in order to verify the accuracy of PI data reported during the assessment period.

- Drill and exercise performance
- Emergency response organization participation
- Alert and notification system reliability

The inspectors reviewed a 100 percent sample of drill and exercise scenarios, licensed operator simulator training sessions, notification forms, and attendance and critique records associated with training sessions, drills, and exercises conducted during the verification period. The inspectors reviewed the qualification, training, and drill participation records for a sample of 10 emergency responders. The inspectors reviewed alert and notification system maintenance records and procedures, and a 100 percent sample of siren test results. The inspectors also interviewed licensee personnel that were responsible for collecting and evaluating the PI data. The inspectors completed three samples during this inspection.

b. Findings

No findings of significance were identified.

.3 Occupational Radiation Safety Cornerstone

a. Inspection Scope

The inspector reviewed licensee documents from October 2005 through March 2006. 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 NEI 99-02). 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 PI data. In addition, the inspector toured plant areas to verify that high radiation, locked high radiation, and very high radiation areas were properly controlled. PI definitions and guidance contained in NEI 99-02, "Regulatory Assessment Indicator Guideline," Revision 3, were used to verify the basis in reporting for each data element.

- Occupational exposure control effectiveness

The inspector completed one required sample in this cornerstone.

b. Findings

No findings of significance were identified.

.4 Public Radiation Safety Cornerstone

a. Inspection Scope

The inspector reviewed licensee documents from October 2005 through March 2006. Licensee records reviewed included corrective action documentation that identified occurrences for liquid or gaseous effluent releases that exceeded PI thresholds and those reported to the NRC. The inspector interviewed licensee personnel that were accountable for collecting and evaluating the PI data. PI definitions and guidance contained in NEI 99-02, "Regulatory Assessment Indicator Guideline," Revision 3, were used to verify the basis in reporting for each data element.

- Radiological Effluent Technical Specification/Offsite Dose Calculation Manual Radiological Effluent Occurrences

The inspector completed one required sample in this cornerstone.

b. Findings

No findings of significance were identified.

4OA2 Identification and Resolution of Problems (71152)

.1 Daily Reviews

The inspectors performed a daily review of all CRs entered into the licensee CAP during this inspection period to identify repetitive failures and human performance issues. These daily reviews also assessed licensee identification of issues at the appropriated threshold and entry of these issues into their CAP.

.2 Semiannual Trend Review

a. Inspection Scope

The inspectors completed a semiannual trend review of repetitive or closely related issues that were documented in corrective action documents to identify trends that might indicate the existence of more safety significant issues. The inspectors' review consisted of the 6-month period of January 1 through June 23, 2006. When warranted, some of the samples expanded beyond those dates to fully assess the issue. The inspectors also reviewed CAP items associated with emergency feedwater initiation and control (EFIC) opto-isolators and super particulate, iodine, and noble gas (SPING) monitors. The inspectors compared and contrasted their results with the results contained in the licensee's quarterly trend reports. Corrective actions associated with a sample of their issues identified in the licensee's trend report were reviewed for adequacy.

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

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

Documents reviewed by the inspectors are listed in the attachment.

b. Findings

During the period from January 1 through June 23, 2006, licensee personnel documented six instances of low light intensity of EFIC opto-isolators, two of which led to trip conditions for bistables. CR ANO-1-2006-0135 documents a potential adverse trend with the opto-isolators. The bistables in their trip condition placed the EFIC system in a half trip condition and the failure of a second opto-isolator had the potential to result in EFIC system generating an emergency feedwater actuation or main steam isolation signal. Licensee management was aware of this performance issue and implemented actions to monitor light intensity during regularly scheduled surveillance of the EFIC system.

During the period May 1, 2005, through June 1, 2006, licensee personnel documented the following problems with the Units 1 and 2 SPING monitors:

- 16 channel failures
- 12 low flow conditions resulting in inoperable monitors
- 6 sample pump failures
- 7 miscellaneous problems resulting in inoperable monitors

The SPING monitors radiological conditions in the containment, auxiliary building, fuel handling area, and containment penetration rooms. Indications provided by these monitors are used in the emergency operating procedures to develop mitigating strategies. Licensee management was aware of these issues and completed a higher

tier apparent cause evaluation (CR ANO-2-2006-398). Corrective actions were being developed to address this issue.

.3 Annual Sample Review

a. Inspection Scope

The inspectors reviewed CR summaries for the period June 1, 2005, through April 25, 2006, associated with emergency preparedness exercises. CRs associated with event classification, notification of offsite authorities, and processes for providing protective action recommendations were reviewed in detail to ensure that the full extent of the issues were identified, an appropriate evaluation was performed, and appropriate corrective actions were specified and prioritized.

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.

.4 Cross-References to Problem Identification and Resolution Findings Documented Elsewhere

Section 4OA3 documents a condition where corrective actions taken for the April 2004 failure of Source Range Instrument NI-02 did not address all plant conditions that required Source Range Instrument NI-502 to be operable.

4OA3 Event Followup (71153)

.1 (Closed) LER 05000313/2005001-00: "Movement of Irradiated Fuel Assemblies in the Reactor Building with Reactor Building Purge Effluent Monitor Inoperable and Purge Isolation Valves Open Resulted in Operation Prohibited by Technical Specifications"

a. Inspection Scope

The inspectors reviewed the LER, corrective action documents, Unit 1 station operating logs, plant procedures, and licensing memoranda. This review verified that the cause of the inoperable monitor was identified and corrective actions were appropriate.

b. Findings

The enforcement aspects of this finding are discussed in Section 4OA7.

.2 (Closed) LER 05000313/2005002-00: "Movement of Irradiated Fuel Assemblies with One Channel of Source Range Nuclear Instrumentation Inoperable due to a Power Supply Failure Resulted in Operation Prohibited by Technical Specifications"

a. Inspection Scope

The inspectors reviewed the LER, corrective action documents, Unit 1 station operating logs, plant procedures, and licensing memoranda. This review verified that the cause of the instrument failure was identified and corrective actions were appropriate.

b. Findings

Introduction: A self-revealing Green NCV of Unit 1 TS 3.9.2 occurred for movement of irradiated fuel assemblies with less than the two required operable source range instruments during core reload.

Description: On December 1, 2005, Unit 1 personnel loaded fuel into the reactor vessel as part of core reloading activities. The core reload plan required fuel assemblies be loaded into the reactor vessel in front of each of the source range instrument detectors in an alternating manner. Source Range Instrument NI-502 provided no increased count rate indication when the third fuel assembly was placed in front of its detector. The licensee loaded a fourth fuel assembly in the core directly in front of the detector for Source Range Instrument NI-501. Instrument NI-501 displayed an increased count rate which resulted in licensee personnel evaluating the operability of Source Range Instrument NI-502. Upon opening the signal processing drawer of Source Range Instrument NI-502, personnel discovered the "nonoperate" alarm light inside the drawer illuminated. It was subsequently determined that the high voltage power supply for the source range instrument had failed.

Analysis: The inspectors determined that the movement of fuel assemblies with less than the required two operable source range instruments was a performance deficiency. This finding is more than minor because the configuration control attribute of the reactor safety/barrier integrity cornerstone objective of providing reasonable assurance that physical design barriers (fuel cladding) protect the public from radio nuclide releases caused by accidents or events was not met. Using Appendix G of Manual Chapter 0609 "Significant Determination Process," the finding was determined to be of very low safety significance because the finding did not increase the likelihood of a loss of reactor coolant system inventory, degrade the licensee's ability to terminate a leak path, or degrade the licensee's ability to recover decay heat removal once it had been lost. The finding had problem identification and resolution crosscutting aspects related to corrective actions taken for the April 2004 failure of Source Range Instrument NI-502.

Enforcement: ANO Unit 1 TS 3.9.2 "Refueling Operations," states, in part, that one source range neutron flux monitor shall be operable and one additional source range neutron flux monitor shall be operable during core alterations. Contrary to the above, on December 1, 2005, the licensee performed core alterations moving a fourth fuel assembly into the reactor vessel without Source Range Instrument NI-502 operable. Because of the very low safety significance and because the licensee entered this event into their CAP as CR ANO-1-2005-2628, this violation is being treated as a NCV,

consistent with Section IV.A of the NRC Enforcement Policy:
NCV 05000313/2006003-04, "Movement of Irradiated Fuel with Less Than Required Source Range Instruments."

.3 (Closed) LER 05000313/2005003-00. "Reactor Trip Due to Automatic Actuation of the Reactor Protection System on Main Turbine Trip and Invalid Actuation of the Emergency Feedwater System"

a. Inspection Scope

The inspectors reviewed the LER, corrective action documents, Unit 1 station operating logs, plant procedures, and licensing memoranda. This review verified that the cause of the reactor trip on main turbine trip was identified and corrective actions were appropriate.

b. Findings

Introduction: A self-revealing Green finding was identified for an inadequate maintenance procedure which did not include vendor recommended maintenance for Unit 1 main turbine lube oil ejector discharge check Valve LO-79.

Description: On December 26, 2005, Unit 1 experienced an automatic actuation of the reactor protection system due to a main turbine trip caused by a low lube oil pressure condition. The low lube oil condition was caused by the failure of lube oil ejector discharge check Valve LO-79, whose disk separated from the hinge and became lodged in the valve body, causing low lube oil flow to the point that the main turbine low lube oil trip setpoint was reached. Examination of the valve after the trip identified that the welds failed from an overstress condition because the welds were too small for the as-installed conditions. Maintenance was last performed on this valve during Refueling Outage 1R19 in October 2005, which repaired the hinge sleeve and the disc wear pad. While performing the vendor recommended maintenance, the licensee failed to satisfy the like-for-like requirement since a detailed design drawing for the valve was not in the licensee's records. Consequently, the valve weld was only about half the length it should have been. Adequate design information for construction of the hinge-to-disc weld had not been developed, or applied, since initial construction.

Analysis: The inspectors determined that the licensee's failure to perform vendor recommended maintenance due to inadequate documentation was a performance deficiency. This finding is more than minor because it affected the initiating events cornerstone objective of limiting the likelihood of those events that upset plant stability and challenge critical safety functions, and affected the cornerstone attribute of procedural quality because an inadequate maintenance procedure due to lack of a detailed design drawing increased the failure probability of the main turbine lube oil ejector valve to fail. Using the Phase 1 worksheets in Manual Chapter 0609, the issue was determined to have very low safety significance because all other systems functioned normally during the turbine trip reactor trip. This finding had human performance cross-cutting aspects in that the maintenance procedure did not contain a design drawing sufficient to ensure vendor recommended maintenance was conducted.

Enforcement: No violation of regulatory requirements occurred. The inspectors determined that the finding did not represent a noncompliance because it occurred on nonsafety-related plant equipment. Licensee personnel entered this issue into the CAP as CR ANO-1-2005-3087. Finding 05000313/2006003-05, "Reactor Trip due to Automatic Actuation of the Reactor Protection System on Main Turbine Trip and Invalid Actuation of the Emergency Feedwater System," is closed.

4OA5 Other

.1 (Closed) URI 05000313/2005008-05; 05000368/2005008-05: "Emergency Cooling Pond Dam Operability Evaluation"

This issue was determined to be unresolved pending completion of additional NRC inspection and completion of a significance determination. Upon identification of this issue, the licensee obtained the services of Paul C. Rizzo and Associates, a geotechnical engineering firm specializing in dam design and rehabilitation.

The Paul C. Rizzo and Associates firm was contracted to perform a static and dynamic finite element analysis to provide an alternate evaluation method of the slope stability of the ANO emergency cooling pond spillway that supplements the existing conventional stability analysis. This effort was documented in Engineering Report A-CS-2005-004, "Dynamic Slope Stability Evaluation Spillway Section Emergency Cooling Pond," Revision 0, dated October 14, 2005.

The scope and objectives of the report encompassed the concerns identified in the URI. The report's summary of results and conclusions stated that the soils of the site are not susceptible to liquefaction, and the results of the static and dynamic finite element analysis indicate that the conditions of the emergency cooling pond spillway have adequate factors of safety under static and earthquake loading conditions.

The NRC inspectors reviewed the assumptions, detailed discussion, results, and conclusions contained in the report and determined that the analyses was adequate to address the concern of the URI.

.2 Operational Readiness of Offsite Power and Impact on Plant Risk (Temporary Instruction 2515/168)

The objective of Temporary Instruction 2515/165, "Operational Readiness of Offsite Power and Impact on Plant Risk," is to gather information to support the assessment of nuclear power plant operational readiness of offsite power systems and impact on plant risk. During this inspection, the inspectors interviewed licensee personnel, reviewed licensee procedures, and gathered information for further evaluation by the Office of Nuclear Reactor Regulation.

4OA6 Meetings, Including Exit

On April 7, 2006, the inspector presented the access controls inspection results to Mr. J. Kowalewski, Director and Acting Vice President, and other members of his staff who acknowledged the findings. The inspector asked the licensee whether any of the

material examined during the inspection should be considered proprietary. No proprietary information was identified.

On April 10, 2006, the inspector conducted a telephonic exit meeting to present the emergency plan change review inspection results to Mr. R. Holleyfield, Supervisor, Emergency Planning, who acknowledged the findings. The inspector confirmed that proprietary information was not provided or examined during the inspection.

On April 27, 2006, at the conclusion of the inspection, the inspectors presented the emergency preparedness exercise inspection results to Mr. Tim Mitchell, General Manager Plant Operations, and other staff members. The licensee acknowledged the findings presented. The inspector verified no proprietary information was discussed during the inspection.

On May 4, 2006, the inspector presented the inspection results to Mr. Richard Scheide, Licensing Specialist, who acknowledged the finding.

On June 27, 2006, the resident inspectors presented the results of the resident inspections to Mr. J. Forbes, Vice President, Operations, and other members of the licensee's management staff. The licensee acknowledged the findings presented. The inspectors noted that while proprietary information was reviewed, none would be included in this report.

4OA7 Licensee-Identified Violations

The following violation of very low significance (Green) was identified by the licensee and is a violation of NRC requirements which meet the criteria of Section VI of the NRC Enforcement Policy, NUREG-1600, for being dispositioned as an NCV.

- ANO Unit 1 TS 3.9.3.c.3 requires that each penetration of the reactor building providing direct access from the reactor building atmosphere to the outside atmosphere be capable of being closed by an operable reactor building purge isolation valve with the purge exhaust radiation monitoring channel operable during movement of irradiated fuel assemblies within the reactor building. Contrary to this, on October 13, 2005, the Unit 1 control room operators allowed chemistry personnel to remove SPING 1 from service for 1 hour and 43 minutes with fuel movement in progress in the reactor building. The licensee entered this event into their CAP as CR ANO-1-2005-1710. This finding is of very low safety significance because the event did not increase the likelihood of a loss of reactor coolant system inventory or degrade the licensee’s ability to recover decay heat removal if lost.

ATTACHMENT: SUPPLEMENTAL INFORMATION

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee Personnel

B. Berryman, Manager, Operations Unit 1
J. Browning, Manager, Operations Unit 2
J. Eichenberg, Manager, Corrective Actions
J. Forbes, Vice President
R. Fowler, Emergency Planner
R. Freeman, Emergency Planner
J. Giles, Manager, Tech Support
R. Gresham, Emergency Planner
D. Harris, Emergency Planner
J. Hoffpauir, Manager, Maintenance
R. Holleyfield, Supervisor, Emergency Planning
D. James, Licensing Manager
T. Marlow, Director
J. Miller, Jr., Manager, System Engineering
T. Mitchell, General Manager
C. Tyrone, Manager, Quality Assurance
F. Van Buskirk, Licensing Specialist
D. White, Emergency Planner

NRC

D. Graves, Branch Chief, Region IV, Project Branch E

Other

M. Guynn, Manager, Emergency Planning, Grand Gulf
C. Hayes, Project Manager, Emergency Planning, Echelon-Entergy
K. Bruckerhoff, Manager, Emergency Planning, Callaway

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Opened

05000313/2006003-01	URI	Failure to Retrieve Required Records of Activities Affecting Quality (Section 1R15)

Opened and Closed

05000313/2006003-02 05000368/2006003-02	NCV	Failure to Meet Immediate Notification Requirements during Transient Events (Section 1EP1)
05000313/2006003-03	NCV	Failure to Follow Written Chemistry Procedures (Section 2OS1)
05000313/2006003-04	NCV	Movement of Irradiated Fuel with Less than Required Source Range Instruments (Section 4OA3)

05000313/2006003-05	FIN	Reactor Trip due to Automatic Actuation of the Reactor Protection System on Main Turbine Trip and Invalid Actuation of the Emergency Feedwater System (Section 4OA3)

Closed

05000313/2005001-00	LER	Movement of irradiated Fuel Assemblies in the Reactor Building with Reactor Building Purge Effluent Monitor Inoperable and Purge Isolation Valves Open Resulted in Operation Prohibited by Technical Specifications (Section 4OA3)
05000313/2005002-00	LER	Movement of Irradiated Fuel Assemblies with One Channel of Source Range Nuclear Instrumentation Inoperable due to a Power Supply Failure Resulted in Operation Prohibited by Technical Specifications (Section 4OA3)
05000313/2005003-00	LER	Reactor Trip due to Automatic Actuation of the Reactor Protection System on Main Turbine Trip and Invalid Actuation of the Emergency Feedwater System (Section 4OA3)
05000313/2005008-05 05000368/2005008-05	URI	Emergency Cooling Pond Dam Operability Evaluation (Section 4OA5)

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 1R02: Evaluations of Changes, Tests, or Experiments

Procedures

NUMBER	TITLE	REVISION
ENS-LI-101	10 CFR 50.59 Review Program	7
ENS-DC-112	ER & Project Initiation Process	4
ENS-DC-115	ER Response Development	9
ENS-DC-116	ER Response Installation	3
ENS-DC-117	Post Modification Testing and Special Instructions	6
ENS-DC-118	ER Response Closure	3
EN-LI-100	Process Applicability Determination	1
EN-LI-101	10 CFR 50.59 Review Program	2

10 CFR 50.59 Evaluations

NUMBER	TITLE	REVISION
ER-ANO-2003-0532-004	U2 EFW - Install New Orifice Design at 2FO-0714A and 2FO-0798A for EFW Pumps' Minimum Recirculation Lines	0
ER-ANO-2000-2804-017	HPSI Pump Bearing Housing Upgrade, Precision Pump Element Installation and Schnoor Spring Kit Installation for 2P89-C	0
ER-ANO-2003-0537-000	Emergency Feedwater System Modification to Recirculation Valves FW-10A and FW-10B	0
ER-ANO-2002-0528-005	Modification to Reduce Hydraulic Resistance of the HPSI Suction Header in Order to Improve Available Net Positive Suction Head (NPSH)	0
ER-ANO-2000-2768-002	Modification to Provide Circuit Isolation for EDG Room Exhaust Fans	0
ER-ANO-2003-0063-000	Addition of RCS Zinc Injection System	0

10 CFR 50.59 Screenings

NUMBER (Identified by Initiating Source Document)	TITLE	REVISION
CR-ANO-2-2004-01171	ANO Unit 1 & 2 SAR Changes & Changes to E-52 Sht 2, “Cable and Wire Installation Procedures”	1
CR-ANO-C-2006-00003	Revision to P&ID —2232 Sht 1 to Depict Installation N/AÑ on of HPSI Gage Indicators	N/A
ER-ANO-2005-0010-000	Alternate Replacement & Routing of HP N2 Supply Piping Due to a Leak	N/A
ER-ANO-2005-0200-000	Reevaluation of Adjustment of 2CV-5650-2 Open Travel Limit to a Position Less Than 100%	N/A
ER-ANO-2005-0228-000	Setup MOV 2CV-5648-2 to Close On Limit	N/A
OP-5120.520	MIC Program Implementation	N/A
OP-1000.115	Preventive Maintenance Program	N/A
ER-ANO-2004-0373-000	EFW Check Valve Spring Replacement and Stem Material Change	N/A
ER-ANO-1999-2143-007	RCS High Point Vent Valve Modifications	N/A
ER-ANO-2003-0094-000	Increase Supply Breaker Instantaneous Trip Setting for Chilled Water System Lube Oil Pumps 2P218A and 2P218B	N/A
ER-ANO-2004-0098-001	Installation of Anchor Bolts in the ECP Service Water Discharge Structure	N/A
ER-ANO-2005-0158-001	Replace ANO Unit 1Main Generator Switchyard 500kV Output Breakers B5114 and B5118, Autotransformer Surge Arrestors, and Switchyard Control House Relay and Bus Differential Panels	N/A

Applicability Determinations

NUMBER (Identified by Initiating Source Document)	TITLE	REVISION
CR-ANO-2-2004-01171	Changes to SAR in Order to Eliminate the Names of Types of Cables (e.g., Hypalon Jacketed)	N/A
OP-1000.152	Changing Classification of Fire Protection Equipment	N/A
P&ID M-232	Revision of P&ID to Reflect Addition of Flow Gage Indicators for Certain HPSI Valves	N/A

Miscellaneous Documents

NUMBER	TITLE	REVISION
N/A	2004 - 50.59 Screening/Exemption Log	N/A
N/A	2005 - 50.59 Screening/Exemption Log	N/A
N/A	2006 - 50.59 Screening/Exemption Log	N/A
N/A	2004 - 50.59 Evaluation Log	N/A
N/A	2005 - 50.59 Evaluation Log	N/A
N/A	2006 - 50.59 Evaluation Log	N/A
CALC-92-E-0078-04	U2 EFW System Pump Performance Requirements	1PC-2
CALC-89-D-2043-22	Hydraulic Calculation for EFW System	0
CALC-89-E-0076-02	Minimum Recirculation Flow Orifice Sizing	0
CALC-89-D-0076-01	Determination of Flow Rate Through 2FO-0714A and 2FO-0798A	0
Attachment to 1000.104F AI 7 CR-2-89-0002	Letter to Mr. Erik B. Fiske (Byron Jackson Pumps) from Bill Eaton (Arkansas Power and Light)	N/A
Drawing No. M 2231	Piping and Instrumentation Diagram - Chemical & Volume Control System	142
Engineering Report A-CS-2004-004	Dynamic Slope Stability Evaluation Spillway Section Emergency Cooling Pond	0

Section 1R04: Equipment Alignment

Drawings

E-1 Sheet 1, Revision 52	M-209 Sheet 1, Revision 106	M-2217 Sheet 1, Revision 63
E-3 Sheet 1, Revision 20	M-231 Sheet 1, Revision 109	M-2217 Sheet 2, Revision 34
E-2001 Sheet 1, Revision 27	M-231 Sheet 2, Revision 46	M-2217 Sheet 3, Revision 16
E-2003 Sheet 1, Revision 19	M-2204 Sheet 4, Revision 64	
E-2005 Sheet 1, Revision 29	M-2206 Sheet 1, Revision 144	

Procedures

NUMBER	TITLE	REVISION
1104-002	Makeup and Purification System Operation	58
1104.029	Service Water and Auxiliary Cooling System	59
1104.036	Emergency Diesel Generator Operation	44
2104.036	Emergency Diesel Generator Operation	49
2106.006	Emergency Feedwater System Operations	57

Section 1R05: Fire Protection

Drawings

FP-103, Sheet 1, Revision 25	FP-2103, Sheet 1, Revision 27
FP-2101, Sheet 1, Revision 14	FP-2104, Sheet 1, Revision 29
FP-2102, Sheet 1 Revision 33	FP-2105, Sheet 1, Revision 24

Procedures

NUMBER	TITLE	REVISION
	Arkansas Nuclear One Fire Hazards Analysis	9

Section 1R06: Flood Protection Measures

Drawings

M-204 Sheet 3, Revision 31	M-219 Sheet 1, Revision 78
M-204 Sheet 5, Revision 15	M-2209 Sheet 1, Revision 116
M-209 Sheet 1, Revision 106	M-2210 Sheet 1, Revision 84
M-212 Sheet 2, Revision 58	M-2212 Sheet 4, Revision 21
M-217 Sheet 1, Revision 89	M-2217 Sheet 1, Revision 63

Section 1R12: Maintenance Effectiveness

CRs

ANO-1-2005-0088	ANO-1-2006-0561	ANO-2-2006-0209
ANO-1-2005-0507	ANO-2-2005-1773	ANO-2-2006-0241
ANO-1-2005-1031	ANO-2-2005-2006	ANO-2-2006-0495
ANO-1-2006-0559	ANO-2-2005-2240	
ANO-1-2006-0560	ANO-2-2006-0151	

Miscellaneous

Entergy System PI Database

Work Orders

00059305-01
00067044-01

Section 1R14: Operator Performance During Nonroutine Plant Evolutions and Events

Drawings

A-2631, Revision 9	A-2730, Revision 8	A-2804, Revision 7
A-2632, Revision 9	A-2731, Revision 12	A-2805, Revision 2
A-2633, Revision 12	A-2802, Revision 4	
A-2634, Revision 19	A-2803, Revision 3	

Procedures

NUMBER	TITLE	REVISION
2305.002	Reactor Coolant System Leak Detection	13

Section 1R15: Operability Evaluations

CRs

ANO-1-2003-0346	ANO-1-2006-0736	ANO-2-2006-0729
ANO-1-2004-0296	ANO-1-2006-0819	ANO-C-2004-0159
ANO-1-2004-0545	ANO-2-2006-0533	ANO-C-2006-0988
ANO-1-2005-3109	ANO-2-2006-0614	ANO-C-2006-0992
ANO-1-2006-0584	ANO-2-2006-0728	

Correspondence

1CAN048605, “ANO-1 Seismic Design”	0CNA020003
1CNS078606	0CNA020113

ERs

ER-ANO-1998-0393
ER-ANO-2000-2956

Procedures

NUMBER	TITLE	REVISION
2104.007	Control Room Emergency Air Conditioning and Ventilation	27
5220.011	ANO 1 & 2 Containment Building Tendon Surveillance and Concrete Inspection	3

Section 1R17: Permanent Plant Modifications

CRs

ANO-1-2002-01381	CR-ANO-1-2004-00242	CR-ANO-C-2003-00301
ANO-1-2003-00406	CR-ANO-2-2002-00978	CR-ANO-C-2003-01058
ANO-1-2003-00568	CR-ANO-2-2004-01171	CR-ANO-C-2004-01555
ANO-1-2003-00780	CR-ANO-C-2000-00129	CR-ANO-C-2006-00003
ANO-1-2003-00789	CR-ANO-C-2003-00067	

ERs

NUMBER	TITLE	REVISION
ANO-2003-0532-004	U2 EFW - Install New Orifice Design at 2FO-0714A and 2FO-0798A for EFW Pumps' Minimum Recirculation Lines	0
ANO-2004-0373-000	EFW Check Valve Spring Replacement and Stem Material Change	0
ANO-1999-2143-007	RCS High Point Vent Valve Modifications	0
ANO-2000-2804-017	HPSI Pump Bearing Housing Upgrade, Precision Pump Element Installation and Schnoor Spring Kit Installation for 2P89-C	0
ANO-2003-0537-000	Emergency Feedwater System Modification to Recirculation Valves FW-10A and FW-10B	0
ANO-2002-0528-005	Modification to Reduce Hydraulic Resistance of the HPSI Suction Header in Order to Improve Available Net Positive Suction Head (NPSH)	0
ANO-2003-0063-000	Addition of RCS Zinc Injection System	0

ANO-2000-2768-002	Modification to Provide Circuit Isolation for EDG Room Exhaust Fans	0
ANO-2003-0259-000	Replacement of Autostop Trip System with Electronic Trip System for Main Turbine	0

Section 1R19: Postmaintenance Testing

CRs

ANO-1-2006-0505	ANO-1-2006-0569	ANO-2-2006-0729
ANO-1-2006-0506	ANO-1-2006-0687	
ANO-1-2006-0567	ANO-2-2006-0728	

Procedures

NUMBER	TITLE	REVISION
1104.032	Fire Protection Systems	57

Work Orders

00064487 01	50240459 01	51022042 01
00081637 01	50966708 01	
00090021 01	51013262 01	

Section 1R22: Surveillance Testing

CRs

ANO-1-2005-0370	ANO-2-2006-0728	ANO-C-2005-0364
ANO-1-2006-0456	ANO-C-2005-0271	ANO-C-2005-0849
ANO-1-2006-0463		

Miscellaneous

NUMBER	TITLE	REVISION
CEP-IST-1	IST Bases Document	3
CEP-IST-2	IST Plan	3
LER-96-021	Harris Nuclear Plant Unit 1 Inadequate Post Maintenance Testing Following Repairs on Containment Isolation Valve 1 SP-208	0
	Target Rock Corporation Training Manual 82G	

Procedures

NUMBER	TITLE	REVISION
1104.002	Makeup & Purification System Operation	58
1106.006	Emergency Feedwater Pump Operation	65
2104.036	Emergency Diesel Generator Operation	49

Work Orders

50966708 01
50983447 01
51013262 01
51027578 01

1EP1: Exercise Evaluation

EPIPs

NUMBER	TITLE	CHANGE
1903.010	Emergency Action Level Classification	037-04-0
1903.011-Y	Emergency Class Initial Notification Message	030-00-0
1903.011-Z	Emergency Class Followup Notification Message	032-00-0
1903.064	Emergency Response Facility - Control Room	007-03-0
1903.065	Emergency Response Facility - Technical Support Center	016-06-0
1903.066	Emergency Response Facility - Operations Support Center	013-02-0
1903.067	Emergency Response Facility - Emergency Operations Facility	020-00-0
1904.002	Offsite Dose Projections - RDACS Computer Method (Radiological Dose Assessment Computer System)	031-00-0
1905.001	Emergency Radiological Controls	014-00-0
1905.002	Offsite Emergency Monitoring	015-01-0
1905.003	Rad Protection Requirements For Post-Accident Sampling of RC	08-02-0
1905.004	EOF Radiological Controls	007-01-0
1905.031	Airborne Iodine-131 Determination Using a Frisker	005-00-0

Other Procedures

NUMBER	TITLE	CHANGE
1203.025	Natural Emergencies	20-1-0
1404.016	Post Earthquake Data Acquisition and Measurement	Revision 24

Exercise Reports

September, October, and November 2004, June and July 2005, and March 2006

Section 4OA3: Event Followup

CRs

ANO-1-2005-1713
ANO-1-2005-3075
ANO-1-2005-3086
ANO-1-2005-3087
ANO-1-2006-0071

ER

ANO-2005-0741-000

LIST OF ACRONYMS

ALARA	as low as is reasonably achievable
ANO	Arkansas Nuclear One
CAP	correction action program
CFR	*Code of Federal Regulations*
CR	condition report
EAL	emergency action level
EFIC	emergency feedwater initiation control
EPIP	emergency plan implementing procedure
ER	engineering request
FSAR	Final Safety Analysis Report
LER	licensee event report
NCV	noncited violation
NEI	Nuclear Energy Institute
PI	performance indicator
SPING	super particulate, iodine, and noble gas
SSC	structure, system, and component
TS	Technical Specification
UFSAR	Updated Final Safety Analysis Report
URI	unresolved item