UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION IV
611 RYAN PLAZA DRIVE, SUITE 400
ARLINGTON, TEXAS 76011-8064

July 19, 2002

Craig G. Anderson, Vice President,
Operations
Arkansas Nuclear One
Entergy Operations, Inc.
1448 S.R. 333
Russellville, Arkansas 72801-0967

SUBJECT: ARKANSAS NUCLEAR ONE, UNITS 1 AND 2 - NRC INTEGRATED INSPECTION REPORT 50-313/02-03; 50-368/02-03

Dear Mr. Anderson:

On March 24 through June 22, 2002, the NRC completed several baseline inspections at the Arkansas Nuclear One, Units 1 and 2, facility. The enclosed report presents the results of those inspections, which were discussed on March 29, April 19, April 26, May 16, June 13, and June 25, 2002, 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 regulation and the conditions of your licenses. Within these areas, the inspections consisted of a selected examination of procedures and representative records, observations of activities, and interviews with personnel.

This report documents three findings of very low significance (Green), which were determined to involve three violations of NRC requirements. However, because of their very low safety significance and because they have been entered into your corrective action program, the NRC is treating the findings as noncited violations consistent with Section VI.A of the NRC Enforcement Policy. If you contest any of 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, Region IV; the Director, Office of Enforcement, U.S. Nuclear Regulatory Commission, Washington DC 20555-0001; and the NRC Resident Inspector at Arkansas Nuclear One.

In accordance with 10 CFR 2.790 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).

The NRC has increased security requirements at Arkansas Nuclear One in response to terrorist acts on September 11, 2001. Although the NRC is not aware of any specific threat against nuclear facilities, the NRC issued an Order and several threat advisories to commercial power reactors to strengthen licensees' capabilities and readiness to respond to a potential attack.

The NRC continues to monitor overall security controls and will issue temporary instructions in the near future to verify by inspection the licensee's compliance with the Order and current security regulations.

Should you have any questions concerning this inspection, we will be pleased to discuss them with you.

Sincerely,

/RA/

Linda Joy Smith, Chief
Project Branch D
Division of Reactor Projects

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

Enclosure:
NRC Inspection Report
50-313/02-03; 50-368/02-03

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ENCLOSURE

U.S. NUCLEAR REGULATORY COMMISSION
REGION IV

Dockets:	50-313 50-368
Licenses:	DPR-51 NPF-6
Report:	50-313/02-03 50-368/02-03
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 24 through June 22, 2002
Inspectors:	R. Bywater, P.E., Senior Resident Inspector D. Carter, Health Physicist, Plant Support Branch C. Clark, Reactor Inspector, Engineering and Maintenance Branch J. Clark, Senior Project Engineer P. Elkmann, Emergency Preparedness Inspector, Plant Support Branch P. Goldberg, Reactor Inspector, Engineering and Maintenance Branch R. Lantz, Senior Emergency Preparedness Inspector, Plant Support Branch J. Nicholas, Ph.D., Senior Health Physicist, Plant Support Branch D. Schaefer, Physical Security Inspector, Plant Support Branch K. Weaver, Resident Inspector G. Werner, Reactor Engineer, Engineering and Maintenance Branch
Approved By:	Linda Joy Smith, Chief, Project Branch D Division of Reactor Projects
Attachment:	Supplemental Information

SUMMARY OF FINDINGS

Arkansas Nuclear One, Units 1 and 2
NRC Inspection Report 50-313/02-03; 50-368/02-03

IR 05000313/02-03, IR 05000368/02-03, on 3/24-6/22/2002; Entergy Operations, Inc.; Arkansas Nuclear One, Units 1 & 2. Refueling and Outages Activities and Access Control to Radiologically Significant Areas. Three Green NCVs.

The report covered a 13-week period of resident inspection and regional inspections by a senior project engineer, two reactor inspectors, a reactor engineer, a senior health physicist, a health physicist, a senior emergency preparedness inspector, an emergency preparedness inspector, and a physical security inspector. The significance of most findings is indicated by their color (Green, White, Yellow, or Red) using IMC 0609, "Significance Determination Process." The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described at its Reactor Oversight Process website at http://www.nrc.gov/NRR/OVERSIGHT/ASSESS/index.html.

A. Inspector Identified Findings

- Green. A noncited violation of Technical Specification 6.2.2.g was identified by the inspectors on May 17, 2002, for failure to adhere to the Technical Specification overtime restrictions as specified in NRC Generic Letter 82-12, "Nuclear Power Plant Staff Working Hours," guidelines. Specifically, prior to the Unit 2 Refueling Outage 2R15, hundreds of staff members who perform safety-related activities received blanket authorization to exceed the Technical Specification required overtime limits for support of Refueling Outage 2R15 which did not constitute appropriate deviation from the guidelines for "very unusual circumstances" as identified in NRC Generic Letter 82-12. In addition, based on a sample review of the Unit 2 Operations station logs, several operations staff members were verified to have exceeded the overtime limits as part of their regular outage work schedule which was previously approved under the inappropriate blanket authorizations. This violation is being treated as a noncited violation consistent with Section VI.A.1 of the NRC Enforcement Policy. This violation is in the licensee's corrective action program as Condition Report ANO-2-2002-01339.

  The finding is more than minor because routine and inappropriate deviations for exceeding the NRC Generic Letter 82-12 guidelines for overtime limits is a significant contributor for worker fatigue and potential for human errors which, if left uncorrected, could become a more significant safety concern. The finding is only of very low safety significance because there were no actual adverse plant or equipment conditions identified that were attributable to worker fatigue.

- Green. A noncited violation of Technical Specification 6.8.1 was identified by the inspectors because radiation workers did not follow procedural guidance related to the radiation work permit system. Section 4.6.1 of Administrative Procedure RP-105, "Radiation Work Permits," Revision 1, states that radiation workers are responsible for reviewing their radiation work permit and complying with the protective requirements. On April 16, 2002, two maintenance personnel working on a scaffold platform on the 335-foot elevation in the Unit 2 reactor building did not comply with the applicable requirements of their radiation work permit when they failed to contact radiation protection personnel to determine the radiological conditions in which they would be working. This violation is being treated as a noncited violation consistent with Section VI.A.1 of the NRC Enforcement Policy. This

violation is in the licensee's corrective action program as Condition Report ANO-2-2002-00778.

This violation was considered more than minor because the failure to comply with the radiation work permit requirements has a credible impact on safety and the potential for unplanned or unintended dose. The safety significance of this violation was determined to be very low by the Occupational Radiation Safety Significance Determination Process because there was no substantial potential for overexposure (Section 2OS1).

- Green. A noncited violation of Technical Specification 6.13.1 was identified by the inspectors on April 18, 2002, because an accessible area of the Unit 2 reactor building in which a individual could receive a dose greater than 1000 millirems in 1 hour was not locked to prevent unauthorized entry. This violation is being treated as a noncited violation consistent with Section VI.A.1 of the NRC Enforcement Policy. This violation is in the licensee's corrective action program as Condition Report ANO-2-2002-00822.

  This violation was more than minor because the failure to prevent unauthorized entry to a locked high radiation area has a credible impact on safety and the potential for unplanned or unintended dose. The safety significance of this violation was determined to be very low by the Occupational Radiation Safety Significance Determination Process because there was no substantial potential for an overexposure (Section 2OS1).

Report Details

Summary of Plant Status

Unit 1 began the inspection period at 100 percent power and remained at or near 100 percent power throughout the inspection period with the exception of a power reduction to approximately 85 percent power on March 29, 2002, to perform turbine valve testing.

Unit 2 began the inspection period at 100 percent power. Unit 2 operators reduced power to 99 percent on April 8, 2002, to support replacement of Heater Drain Pump 2P-8B. On April 11, Unit 2 operators commenced a power reduction in preparation for Refueling Outage 2R15. On April 12, Unit 2 operators manually tripped the reactor and entered into Refueling Outage 2R15. On April 29, at the conclusion of Refueling Outage 2R15, Unit 2 operators commenced a reactor coolant system heatup and achieved Mode 3 on April 30. On April 30, while Unit 2 was in Mode 3, the licensee declared a Notification of Unusual Event due to an indicated reactor coolant system pressure boundary leak on a pressurizer heater nozzle. Unit 2 operators suspended the reactor coolant system heatup and commenced a cooldown back to Mode 5 and exited the Notification of Unusual Event on May 1. Following completion of the pressurizer heater repair, Unit 2 operators commenced reactor coolant system heatup and achieved Mode 3 on May 2. Reactor criticality was achieved on May 3 and Unit 2 entered Mode 1 on May 4. Following low power physics testing, Unit 2 operators commenced a power escalation on May 5. Startup testing activities for the 7.5 percent thermal power uprate project continued during power escalation and at several power plateaus, including 97.5 percent power (formerly 100 percent power prior to Refueling Outage 2R15). On May 14, Unit 2 operators commenced a power increase to 100 percent reactor power. During the power escalation, the Main Turbine Control Valve 1 failed shut and reactor power was subsequently stabilized at approximately 79 percent. On May 15, following repairs to the Main Turbine Control Valve 1, Unit 2 operators commenced a power increase and Unit 2 achieved 100 percent reactor power the same day. Additional oscillations of the Main Turbine Control Valve 1 occurred on May 17-18, which had a minor effect on power. Repairs were completed on May 18 and Unit 2 remained at or near 100 percent power for the remainder of the inspection period.

1. REACTOR SAFETY
Cornerstones: Initiating Events, Mitigating Systems, Barrier Integrity, Emergency Preparedness [REACTOR - R]

1R04 Equipment Alignment (71111.04)

a. Inspection Scope

On April 22, 2002, the inspectors performed a partial system walkdown of the Unit 2 emergency feedwater system. Procedure 2106.006, "Emergency Feedwater System Operations," Revision 54; the Updated Final Safety Analysis Report; and System Training Manual STM 2-25, "Condensate Storage and Transfer System," Revision 5, were used as reference materials for this activity. The inspection included an internal tour of Condensate Storage Tank 2T-41A to assess the condition of the tank, its cleanliness, and integrity of the floating lid.

On May 28-29, 2002, the inspectors performed a partial system walkdown of the Unit 1 and Unit 2 instrument air systems. Unit 2 had removed Compressor 2C-27A from service for maintenance and placed the temporary air compressor in service as a

replacement. The inspectors verified correct system alignment and that adequate controls were in place during the compressor swap to ensure instrument air availability for both Units 1 and 2. This included verification of acceptable communications between the Units 1 and 2 operators prior to manipulating Instrument Air Cross Connect Valve 2CV-3015. The following procedures were referenced during this review: Procedure 1104.024, "Instrument Air System," Revision 26; Procedure 1203.024, "Loss of Instrument Air," Revision 10; Procedure 2104.024, "Instrument Air System," Revision 31; and Procedure 2203.021, "Loss of Instrument Air," Revision 8. System Training Manual STM 2-48, "Instrument Air System," Revision 2, was also used as a reference.

On June 11, 2002, the inspectors performed a partial system walkdown of the Unit 2, Service Water Pumps 2P-4A and 2P-4C and the Loop 1 service water system. The majority of this walkdown was performed after the Service Water System 2P-4A was returned to service following a pump overhaul and Service Water Pump 2P-4C was required to be operable. During this walkdown, the inspectors verified correct valve alignment, electric power availability, and no adverse material condition of system components. Position of valves and electrical power breakers were compared to Procedure 2104.029, "Service Water System Operations," Revision 52.

b. Findings

No findings of significance were identified.

1R05 Fire Protection (71111.05)

a. Inspection Scope

The inspectors referenced the Fire Hazards Analysis Report, Revision 7, during the following inspections to ensure that conditions were consistent with the requirements of the licensee's fire protection program for fire protection systems design, control of transient combustibles and ignition sources, fire detection and suppression capabilities, fire barriers, and any related compensatory measures:

On April 12, 2002, the inspectors performed an inspection of the reactor coolant pump lube oil collection system for Unit 2 Reactor Coolant Pumps 2P-32C and 2P-32D during a Mode 3 walkdown at the start of Refueling Outage 2R15 to ensure that the system had been capable of collecting any leakage of oil from the reactor coolant pump motors during plant operation.

On May 16, 2002, the inspectors walked down the Diesel Fire Water Pump P-6B room and Electric Fire Water Pump P-6A room to assess the licensee's control of transient combustible material, ignition sources, and fire barriers. In addition, the inspectors verified that no adverse material conditions of the fire water system components in these rooms existed which could effect the fire water systems operability.

On May 30, 2002, the inspectors performed a fire protection tour of the Unit 2 charging pump rooms.

On May 30, 2002, the inspectors performed a fire protection tour of the Unit 2 engineered safety features pump rooms.

On June 17-18, 2002, the inspectors performed a fire protection tour of the Unit 1 emergency diesel generator corridor and station battery charger areas.

b Findings

No findings of significance were identified.

1R08 Inservice Inspection Activities (71111.08)

.1 Inspection Activities Other than Steam Generator Tube Inspections

Performance of Nondestructive Examination (NDE) Activities

The Arkansas Nuclear One, Unit 2, inservice inspection program is committed to the ASME Code, Section XI, "Rules for Inservice Inspection of Nuclear Power Plant Components," 1992 Edition, along with portions of the ASME Section XI 1993 Addenda for the third 10-year interval. The Refueling Outage 2R15 inservice inspections will complete the second inspection outage of the first period of the third 10-year interval of the program.

a. Inspection Scope

The inspectors observed portions of the specified Refueling Outage 2R15 inservice inspection examinations listed below:

System	Component/Weld Identification	Examination Method
Reactor Coolant System	Pressurizer / 4" spray nozzle to Head (ISI# 05-010)	Ultrasonic Examination
Reactor Coolant System	Pressurizer / 4" pipe to Valve 2CV-4731-2 (ISI# 43-027)	Ultrasonic Examination
Reactor Coolant System	Pressurizer / 3" tee to pipe (ISI 43-033)	Ultrasonic Examination

During the performance of each examination, the inspectors verified that the correct NDE procedure was used, procedural requirements or conditions were as specified in the procedure, and test instrumentation and equipment were properly calibrated and within the allowable calibration period. The inspectors reviewed the NDE certification packages of the contractor personnel and verified that they had been properly certified in accordance with ASME Code requirements. The inspectors also verified that indications revealed by the examinations were compared against the ASME Code specified acceptance standards and appropriately dispositioned.

The inspectors reviewed the licensee's NDE records for work that was performed for the current outage. This review of NDE records was performed to verify NDE activities were performed in accordance with ASME Boiler and Pressure Vessel Code requirements and indications and defects, if present, were appropriately dispositioned. See the attachment for NDE records reviewed.

b. Findings

No findings of significance were identified.

.2 ASME Code Repair and Replacement Activities

a. Inspection Scope

The inspectors reviewed ASME Section XI Code repair and replacement packages for work performed on Emergency Feedwater Pump 2P-7B (MAI 19175) and Charging Pump Suction Valve 2PSV-4835 (MAI 27673) to verify repairs and replacements met ASME Code requirements.

b. Findings

No findings of significance were identified.

.3 Steam Generator Tube Refueling Outage 2R15 Inspection Activities

a. Inspection Scope

The inspectors reviewed the licensee's in-situ screening criteria to verify that the criteria were in accordance with industry guidelines. The estimated size and number of tube wear flaws identified up to the date of the inspection were compared to the operational assessment predictions from the previous outage when the new steam generators were installed. The inspectors also reviewed the eddy current examination scope and expansion criteria to determine if the Technical Specifications, industry guidelines, and commitments to the NRC were being met.

The inspectors reviewed the areas of potential degradation (based on site-specific and industry experience) to verify that such areas were being inspected. The inspectors also reviewed the leakage history for the first cycle of the new steam generators and noted that the operational leakage rate for both steam generators had been identified as zero leakage per day. The eddy current probes and equipment were reviewed to ascertain if they were properly qualified for the expected types of tube degradation.

The inspectors observed the collection and analysis of eddy current data by licensee personnel to evaluate a possible loose part. The inspectors also reviewed Condition Report ANO-2-2002-00914, the only inspection-related condition report generated during the steam generator eddy current examinations. Condition Report ANO-2-2002-00914 identified that a loose part was found between two tubes in the secondary side of Steam Generator B. The loose part, which was subsequently removed, was identified as a

five-coil metallic cutting shaving. The licensee initiated an investigation to identify a source for the metallic cutting shaving.

b. Findings

No findings of significance were identified.

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

a. Inspection Scope

The inspectors evaluated and discussed with the licensee the risk assessments listed below to verify that assessments were performed when required and appropriate compensatory actions were taken. The inspectors reviewed these assessed risk configurations against actual plant conditions and any in-progress evolutions or external events to verify that the assessments were accurate, complete, and appropriate for the conditions. In addition, the inspectors walked down the control room and plant areas to verify that compensatory measures identified by these risk assessments were appropriately performed.

May 9, 2002	Switchyard Component Impact Statement to address the resetting of the SAM timer relays for breaker failure scheme of the following breakers for the Unit 2 power uprate: B5102 (South Buss - Fort Smith Line) B5106 (500 kV Fort Smith - Mabelvale Line) B5110 (500kV Mabelvale Line & North Buss) B5126(500kVNorth Buss & Autotransformer) B5148(500kV Autotransformer - Pleasant Hill Line) B5122(500kV South Buss - Pleasant Hill Line)
April 10 through May 5, 2002	Arkansas Nuclear One, Shutdown Operations Protection Plan, dated November 8, 2001, and Arkansas Nuclear One, Shutdown Operations Protection Plan, dated April 11, 2002
April 12 through May 5, 2002	Refueling Outage 2R15 Shutdown Operations Protection Plan score cards on a daily basis and compared them to action plant conditions to ensure that the licensee implemented acceptable defense-in-depth strategies for critical safety functions
May 23, 2002	Plant Impact Statement for switchyard maintenance activities for modification to the foundation pad on Breaker B5148

b. Findings

No findings of significance were identified.

1R14 Personnel Performance During Nonroutine Evolutions (71111.14, 71153)

a. Inspection Scope

The inspectors reviewed and observed operator performance and response during portions of the Unit 2 shutdown, cooldown, and transfer to shutdown cooling system operation at the initiation of Refueling Outage 2R15. These activities were conducted in accordance with Procedure 2102.004, "Power Operation," Revision 27; Procedure 2102.010, "Plant Cooldown," Revision 33; Procedure 2103.011, "Draining the Reactor Coolant System," Revision 27; and Procedure 1015.008, "Unit 2 Shutdown Cooling (SDC) Control," Revision 17.

On April 17, 2002, while removing the Unit 2 upper guide structure in preparation for refueling in accordance with Procedure 2505.006, "Upper Guide Structure Removal," Revision 11, Control Element Assembly 65 was observed to be attached and partially withdrawn from its fuel assembly. The inspectors reviewed and observed the licensee's recovery efforts and root cause evaluation documented in Condition Report ANO-2-2002-00793. The control element assembly was determined to not have been unlatched as required by Procedure 2402.008, "Unit 2 CEA Extension Shaft Uncoupling," Revision 12, due to personnel error. The control element assembly was successfully unlatched and the upper guide structure removed from the reactor vessel on April 18.

The inspectors reviewed the licensee's actions following identification of a reactor coolant pressure boundary leak on a Unit 2 pressurizer heater nozzle on April 30, 2002, while the unit was in Mode 3. The inspectors observed portions of the plant cooldown to Mode 5, repair activities in containment on May 1, and heatup to Mode 3 on May 2. The inspectors verified that a Notification of Unusual Event was declared in accordance with emergency plan procedures and that Technical Specification requirements for pressure boundary leakage were met.

On May 14-15, 2002, the inspectors reviewed the licensee's response to the unplanned closure of the Main Turbine Control Valve 1. Operator response occurred in accordance with Abnormal Operating Procedure 2203.004, "Loss of Turbine Load," Revision 4.

b. Findings

No findings of significance were identified.

1R15 Operability Evaluations (71111.15)

a. Inspection Scope

The inspectors reviewed operability determinations to assess the correctness of the evaluations, the use of compensatory measures, if needed, and compliance with the Technical Specifications. The inspectors' review included a verification that the operability determinations were made as specified by the licensee's Procedure LI-102, "Corrective Action Process," Revision 1, and Procedure 1000.104, "Condition Reporting and Immediate Reportability Determinations," Revision 17. The technical adequacy of

the determinations were reviewed and compared to the Technical Specifications, Technical Requirements Manual, Updated Final Safety Analysis Report, associated design-basis documents, and licensing submittals, as appropriate. The operability determinations that were reviewed were documented in the following condition reports or engineering requests (ERs):

- ANO-1-2002-0074 Evaluation of service water/auxiliary cooling water isolation Valve CV-3643
- ANO-1-2002-0420 Evaluation of spare Unit 1 reactor building Penetration P-38
- ANO-2-2002-0947 Evaluation of Fuel Assembly AKT105 and Control Element Assembly C89
- ANO-2-2002-0623 Operability of core protection calculator and Excore Neutron Detector A
- ANO-2-2002-0739 Pressurizer heater nozzle leaks and mechanical nozzle seal assembly installation
- ANO-2-2002-1036 Pressurizer heater nozzle leak and mechanical nozzle seal assembly installation
- ANO-2-2002-0966 Reactor vessel head nozzle indication
- ANO-2-2002-0978 High pressure safety injection system flow testing results

b. Findings

No findings of significance were identified.

1R17 Permanent Plant Modifications (71111.17B)

a. Inspection Scope

The inspectors reviewed procedures governing plant modifications to evaluate the effectiveness of the programs for implementing modifications to risk-significant systems, structures, and components, such that these changes did not adversely affect the design and licensing basis of the facility. The inspectors also reviewed permanent plant modification packages and associated documentation, such as review screens and safety evaluations, to verify that they were performed in accordance with regulatory requirements and plant procedures. Procedures and permanent plant modifications reviewed are listed in attachment to this report.

The inspectors interviewed the cognizant design and system engineers for the identified modifications as to their understanding of the modification packages.

The inspectors evaluated the effectiveness of the licensee's corrective action process to identify and correct problems concerning the performance of permanent plant modifications. In this effort, the inspectors reviewed corrective action documents (listed in the attachment to this report) and the subsequent corrective actions pertaining to licensee-identified problems and errors in the performance of permanent plant modifications.

b. Findings

No findings of significance were identified.

1R19 PostmaintenanceTesting (71111.19)

a. Inspection Scope

For the maintenance activities and power uprate startup testing activities identified below, the inspectors observed the postmaintenance and Refueling Outage 2R15 startup testing activities in the control room or locally and reviewed the test data obtained from the field. The inspectors observed whether the tests were performed in accordance with procedures, that the procedures' acceptance criteria were consistent with the Technical Specifications and the supporting license change application, and that the results recorded met the test acceptance criteria. In addition, the inspectors verified that startup test deficiencies were recorded and resolved. These activities included:

- Unit 2 High Pressure Safety Injection Pumps 2P-89A, 2P-89B, and 2P-89C testing in accordance with Procedure 2104.039, "High Pressure Safety Injection Pump Operation," Supplement 6, "HPSI Full Flow Test," Revision 41, conducted from April 22-26, 2002

- Unit 1 Service Water Pump P-4B shaft and packing maintenance and testing in accordance with Procedure 1402.061, "Disassembly, Inspection and Reassembly of the Unit 1 Service Water Pump (P-4A,B&C)," Revision 15, conducted on May 1, 2002

- Unit 2 Safety Channel A Excore Monitoring and Gain Factor Calculation/Adjustment, performed in accordance with Engineering Request ANO-2002-0623, on May 11, 2002

- Unit 2 startup testing in accordance with Procedure 2409.725, "Startup and Power Ascension Requirements," Revision 1, conducted from May 3-24, 2002

- Unit 2 startup testing in accordance with Procedure 2409.715, "2R15 Vibration Testing Inside and Outside Containment," Revision 0, conducted from May 5-24, 2002

- Unit 2 startup testing in accordance with Procedure 2409.714, "NSSS Data Collection for Cycle 16," Revision 16, conducted from May 5-24, 2002

b. Findings

No findings of significance were identified.

1R20 Refueling and Outage Activities (71111.20)

a. Inspection Scope

Throughout Unit 2 Refueling Outage 2R15, the inspectors reviewed weekly and daily work schedules to identify risk-significant evolutions and maintenance activities. The inspectors reviewed the Unit 2 Shutdown Operations Protection Plan prior to the outage to ensure that the licensee had considered risk, had developed mitigation strategies for losses of key safety functions, and had adhered to operating license and Technical Specification requirements. The inspectors observed portions of the plant cooldown and reactor coolant system draindown for reactor vessel head removal. The inspectors also reviewed implementation of overtime guidelines or limitations as required by Technical Specifications.

The inspectors observed portions of the Unit 2 reactor refueling activities in accordance with Procedure 2502.001, "Refueling Shuffle," Revision 30, on April 24, 2002, to verify that fuel handling activities were accomplished in accordance with the procedure and that Technical Specification requirements were met.

The inspectors observed portions of the Unit 2 reactor startup in accordance with Procedure 2106.016, "Reactor Startup," Revision 8, on May 3, 2002, to verify that the reactor startup activities were performed safely and in accordance with the procedure and Technical Specifications.

b. Findings

Introduction

A noncited violation of Technical Specification 6.2.2.g was identified by the inspectors on May 17, 2002, for failure to adhere to the Technical Specification overtime restrictions as specified in NRC Generic Letter 82-12, "Nuclear Power Plant Staff Working Hours," guidelines.

Description

Unit 2 Technical Specifications 6.2.2.g., states that, "Administrative control shall be established to limit the amount of overtime worked by plant staff performing safety-related functions. These administrative controls shall be in accordance with the guidance provided by the NRC Policy Statement on working hours (Generic Letter 82-12, "Nuclear Power Plant Staff Working Hours")."

Generic Letter No. 82-12, states, in part, "Enough plant operating personnel should be employed to maintain adequate shift coverage without routine heavy use of overtime . . . However, in the event that unforeseen problems require substantial amount of overtime

to be used, or during extended periods of shutdown for refueling, major maintenance or major plant modifications, on a temporary basis, the following guidelines shall be followed:

1. An individual should not be permitted to work more than 16 hours straight (excluding shift turnover time).

2. An individual should not be permitted to work more than 16 hours in any 24-hour period, nor more than 24 hours in any 48-hour period, nor more than 72 hours in any seven day period (all excluding shift turnover time).

3. A break of at least eight hours should be allowed between work periods (including shift turnover time).

4. Except during extended shutdown periods, the use of overtime should be considered on an individual basis and not for the entire staff on shift.

Recognizing that very unusual circumstances may arise requiring deviation from the above guidelines, such deviation shall be authorized by the plant manager or his deputy, or high levels of management."

The inspectors found, based on the review of a sample of overtime approval authorizations prior to the Unit 2 Refueling Outage 2R15, that hundreds of staff members who perform safety-related activities received blanket authorization to exceed the Technical Specification required overtime limits for support of Refueling Outage 2R15, which did not constitute appropriate deviation from the guidelines for "very unusual circumstances" as identified in NRC Generic Letter 82-12. In addition, based on a sample review of the Unit 2 operations station logs, the inspectors found that several operations staff members had exceeded the overtime limits as part of their regular outage work schedule which was previously approved under the inappropriate blanket authorizations.

Analysis

The finding was evaluated as more than minor because routine and inappropriate deviations for exceeding the NRC Generic Letter 82-12 guidelines for overtime limits is a significant contributor for worker fatigue and potential for human errors, which if left uncorrected, could become a more significant safety concern. This finding cannot be evaluated by an existing Significant Determination Process. However, the finding was determined to be green and of only very low safety significance because there were no actual adverse plant or equipment conditions identified that the licensee attributed to worker fatigue.

Enforcement

The blanket authorizations to exceed Technical Specification 6.2.2.g required overtime limits, which were given to hundreds of staff members who performed safety-related activities for support of Refueling Outage 2R15, did not constitute appropriate deviation

from the NRC Generic Letter 82-12 guidelines for "very unusual circumstances," and is considered a violation of Technical Specification 6.2.2.g. This violation is being treated as a noncited violation consistent with Section VI.A of the NRC Enforcement Policy. This violation is in the licensee's corrective action program as Condition Report ANO-2-2002-1339 (NCV 050-368/2002-03-01).

1R22 Surveillance Testing (71111.22)

a. Inspection Scope

The inspectors observed from either the control room or locally the performance of, and/or reviewed the documentation for, the following surveillance tests. This was done to verify that the surveillance tests were performed in accordance with approved licencee procedures and met Technical Specification requirements. In addition, the applicable test data was also reviewed to verify whether they met Technical Specifications, Updated Final Safety Analysis Report, and licensee procedure requirements.

- Procedure 1402.184, "Reactor Building Walkdown," Revision 0, conducted on April 12-13, 2002
- Procedure 2104.039, "High Pressure Safety Injection Pump Operation," Supplement 6, "HPSI Full Flow Test," Revision 41, conducted from April 22-26, 2002, for three Unit 2 High Pressure Safety Injection Pumps 2P-89A, 2P-89B, and 2P-89C
- Procedure 1015.036, "Containment Building Closeout," Revision 9, conducted on May 1, 2002
- Procedure 1104.036, "Emergency Diesel Generator Operations," Supplement 2, "DG2 Monthly Test," Revision 40, conducted on May 6, 2002
- Procedure 1106.006, "Emergency Feedwater Pump Operation," Supplement 12, "Steam Driven Emergency Feedwater (P-7A) Test (Quarterly)," Revision 62, conducted on May 7, 2002
- Procedure 2302.060, "Safety Channel A Excore Monitoring and Gain Factor Calculation," Revision 0, conducted on June 18, 2002

b. Findings

No findings of significance were identified.

1R23 Temporary Plant Modifications (71111.23)

a. Inspection Scope

The inspectors confirmed that two modifications were correctly installed as authorized per Maintenance Action Instructions (MAIs) 59377 and 49444, Procedure 1000.103,

"Plant Modification Process," Revision 8, and Engineering Request ANO-2-2000-2796-008, "Contingency Package for Unit 2 Pressurizer Nozzle Repairs." These modifications were installed to repair the six Unit 2 pressurizer heater nozzles that were found with indications of reactor coolant system pressure boundary leakage.

b. Findings

No findings of significance were identified.

Emergency Preparedness (EP)

1EP1 Exercise Evaluation (71114.01)

a. Inspection Scope

The inspectors reviewed the objectives and scenario for the 2002 Biennial Emergency Preparedness Exercise to determine if the exercise would acceptably test major elements of the emergency plan. The scenario included rod control problems, equipment and electrical power failures, an intersystem loss of coolant accident and containment breach, fuel damage, and a radiological release to demonstrate the licensee's capabilities 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 attended the formal presentation of critique items to plant management.

b. Findings

No findings of significance were identified.

2. RADIATION SAFETY
Cornerstone: Occupational Radiation Safety [OS]

2OS1 Access Control to Radiologically Significant Areas (71121.01)

a. Inspection Scope

The inspectors interviewed radiation workers and radiation protection personnel involved in high dose rate and high exposure jobs during Refueling Outage 2R15. The inspectors also conducted plant walkdowns within the station's radiologically controlled area and conducted independent radiation surveys of selected work areas. The following items were reviewed and compared with regulatory requirements:

- Area postings and other controls for airborne radioactivity areas, radiation areas, high radiation areas, locked high radiation areas, and very high radiation areas

- Radiation work permits (RWPs) and radiological surveys involving airborne radioactivity areas and high radiation areas

- Access controls, surveys, and RWPs for the following five potential high radiation dose work areas during the Unit 2 Refueling Outage 2R15: (1) locked high radiation activities (RWP 2002-2412), (2) remove/replace reactor head (RWP 2002-2431), (3) defuel/refuel reactor (RWP 2002-2436), (4) reactor vessel head inspection (RWP 2002-2452), and (5) remove/replace A and D excore detectors (RWP 2002-2462)

- ALARA prejob briefings for the following three potential high radiation dose jobs; (1) reactor vessel head inspection, (2) remove/replace Excore Detectors A and D, and (3) defuel/refuel the reactor

- Dosimetry placement for work involving a potential significant dose gradient

- Controls involved when handling highly radioactive items (inspection of the reactor vessel head, RWP 2002-2452)

- Controls involved with the storage of highly radioactive items in the spent fuel pools

- Access controls portion of Quality Assurance Audit QA-14-2001-ANO-1 and Quality Assurance Surveillances QS-2000-ANO-032, QS-2000-ANO-055, QS-2000-ANO-062, QS-2000-ANO-065, QS-2000-ANO-066, QS-2001-ANO-016, QS-2001-ANO-0129, QS-2001-ANO-0173, QS-2001-ANO-0200, QS-2002-ANO-0006, and QS-2002-ANO-0041

- Radiation protection department quarterly self-assessments performed during the fourth quarter 2000 and the second quarter 2001 and the ANO comprehensive self-assessment performed in August and September 2001

- A summary of access controls and high radiation area work practice related condition reports written since September 2000, and selected specific examples

- CR-ANO-2-2001-00666, CR-ANO-2-2001-01209, CR-ANO-C-2002-00020, CR-ANO-2-2002-00060, CR-ANO-2-2002-00249, CR-ANO-C-2002-00283, CR-ANO-1-2002-00294, CR-ANO-2-2002-00628, and CR-ANO-2-2002-00720

b. Findings

.1 A noncited violation with very low safety significance (Green) was identified for failure to comply with the protective requirements listed on the RWP. On April 16, 2002, during a tour of the Unit 2 reactor building, the inspectors found two maintenance personnel who had entered an overhead area and were working on a scaffold platform on the 335-foot elevation. The scaffold had not been tagged with radiological survey information. When questioned by the inspectors, the two workers did not know the radiological conditions of the work area on the scaffold platform and they had not contacted radiation protection personnel to determine the radiological conditions prior to starting work as required by RWP 2002-2462, "Delta Excore Replacement," Task 1.

The issue is more than minor because the failure to comply with the RWP requirements has a credible impact on safety and the potential for unplanned or unintended dose. The safety significance of this violation was determined to be very low by the Occupational Radiation Safety Significance Determination Process because the situation did not involve a substantial potential for overexposure.

Technical Specification 6.8.1 requires the implementation of procedures listed in Regulatory Guide 1.33, Revision 2, Appendix A. Section 7.e(1) of the regulatory guide requires procedures for access control to radiation areas including the RWP system. Section 4.6.1 of Administrative Procedure RP-105, "Radiation Work Permits," Revision 1, states that radiation workers are responsible for reviewing their RWP and complying with the protective requirements. RWP 2002-2462 required workers to contact radiation protection personnel to determine the radiological conditions prior to starting work. The failure to comply with requirements listed on the RWP is a violation. This violation is being treated as a noncited violation consistent with Section VI.A.1 of the NRC Enforcement Policy. This violation is in the licensee's corrective action program as Condition Report ANO-2-2002-00778 (NCV 05-368/2002-03-02).

.2 A noncited violation with very low safety significance (Green) was identified for failure to properly control a high radiation area in which dose rates were greater than 1000 millirems per hour. On April 18, 2002, during a tour of the Unit 2 reactor building, 335-foot elevation, an inspector identified unexpectedly high radiation dose rates in an unlocked area on the outside of a wall of temporary shielding blankets. These lead blankets were used to shield vacuum cleaners containing radioactive material collected during the steam generator eddy current testing. The temporary shielding was not fixed in place but was hung to allow access to the vacuum cleaners by sliding the blankets to the side. Because the blankets were hung in this manner, the inspectors concluded that an individual could gain unauthorized entry to the space behind the shielding blankets. At the inspectors' request, a radiation protection technician measured dose rates in the A and B

steam generator vacuum cleaner areas and determined that the contact dose rate on the B vacuum cleaner was 2700 millirem per hour and that the 30 centimeter dose rate was 1060 millirem per hour. From these dose rate measurements, the inspectors concluded that an individual present in the area could receive a deep dose equivalent exposure greater than 1000 millirems in 1 hour.

The issue was more than minor because the failure to prevent unauthorized entry into a locked high radiation area has a credible impact on safety and the potential for unplanned or unintended dose. The safety significance of this violation was determined to be very low by the Occupational Radiation Safety Significance Determination Process because the situation did not involve a substantial potential for overexposure.

Technical Specification 6.13.1 requires that areas accessible to personnel with dose rates in excess of 1000 millirem per hour be provided with locked doors to prevent unauthorized entry. The failure to provide a locked door that would prevent unauthorized entry is a violation. This violation is being treated as a noncited violation consistent with Section VI.A.1 of the NRC Enforcement Policy. This violation is in the licensee's corrective action program as Condition Report ANO-2-2002-00822 (NCV 50-368/2002-03-03).

2OS2 ALARA Planning and Controls (71121.02)

a. Inspection Scope

The inspectors interviewed radiation workers and radiation protection personnel throughout the controlled access area of both units and conducted independent radiation surveys of selected work areas. The following items were reviewed and compared with regulatory requirements to assess the licensee's program to maintain occupational exposure as low as is reasonably achievable (ALARA):

- ALARA program procedures and ALARA committee meeting minutes from October 2001
- Processes used to estimate and track exposures
- Plant collective exposure history for the past 3 years, current exposure trends, and 3-year rolling average dose information
- Four ALARA work packages and RWPs for current high dose jobs RWP 2002-2420, "Remove/Replace Scaffold and Insulation"; RWP 2002-2442, "Remove/Replace S/G manways, full and partial entries, and S/G support activities"; RWP 2002-2507, "Pressurizer Heater Repair"; and RWP 2002-2404, "Routine Activities"
- Use of engineering controls including temporary shielding installations to achieve dose reductions

- Hot spot tracking and reduction program
- Radiological work planning
- A summary of ALARA and radiological worker performance-related corrective action reports written since October 1, 2001 and 10 specific Condition Reports (ANO-1-2001-01262, ANO-1-2002-00139, ANO-1-2002-00140, ANO-2-2002-00249, ANO-2-2002-00494, ANO-C-2002-00140, ANO-C-2002-00217, ANO-C-2002-00218, ANO-C-2002-00219, and ANO-2-2002-00220)
- ALARA program portion of Quality Assurance Audit QA-14-2001-ANO-1 and Quality Assurance Surveillance Reports QS-2001-ANO-0129, QS-2001-ANO-173, QS-2001-ANO-200, QS-2002-ANO-006, and QS-2002-ANO-041
- Prejob ALARA briefs for Radiation Work Permit 2002-2452, "Partial Entry Under Vessel Head," and RWP 2002-2436, "Fuel Movement"
- Declared pregnant worker dose monitoring controls

b. Findings

No findings of significance were identified.

3. SAFEGUARDS
Cornerstone: Physical Protection [PP]

3PP1 Access Authorization (71130.01)

a. Inspection Scope

The inspector performed the following inspection activities:

- Reviewed licensee event reports and safeguards event logs to identify problems in the access authorization program
- Reviewed procedures, audits, and self-assessments for behavior observation, access authorization, fitness-for-duty, supervisor and escort training, and requalification training
- Interviewed six supervisors/managers and five individuals who had escorted visitors into the protected and/or vital areas to determine their knowledge and understanding of their responsibilities in the behavior observation program
- Reviewed condition reports, licensee event reports, safeguards event logs, audits, selected security event reports, and self-assessments for the licensee's access authorization program to determine the licensee's ability to identify and resolve problems

- Interviewed security management concerning use of overtime and plant limitations regarding maximum hours of weekly overtime for security officers to confirm potential worker fatigue issues were being adequately addressed per 10 CFR Part 26

b. Findings

No findings of significance were identified.

3PP2 Access Control (71130.02)

a. Inspection Scope

The inspector performed the following inspection activities:

- Reviewed licensee event reports and safeguards event logs to identify problems with access control equipment

- Reviewed procedures and audits for testing and maintenance of access control equipment and for granting and revoking unescorted access to protected and vital areas

- Interviewed security personnel concerning the proper operation of the explosive and metal detectors, X-ray devices, and key card readers

- Observed licensee testing of access control equipment and the ability of security personnel to control personnel, packages, and vehicles entering the protected area

- Reviewed procedures to verify that a program was in place for controlling and accounting for hard keys to vital areas

- Reviewed the licensee’s process for granting access to vital equipment and vital areas to authorized personnel having an identified need for that access

- Reviewed condition reports, licensee event reports, safeguards event logs, audits, selected security event reports, and self-assessments for the licensee's access control program in order to assess the licensee's ability to identify and resolve problems with the access control program

- Interviewed key security department and plant support personnel to determine their knowledge and use of the corrective action reports and resolution of problems regarding repair of security equipment

b. Findings

No findings of significance were identified.

4. OTHER ACTIVITIES [OA]

4OA1 Performance Indicator Verification (71151)

.1 Drill and Exercise Performance

a. Inspection Scope

The inspectors verified the licensee's reported results for the drill and exercise performance indicator by reviewing a 100 percent sample of records for exercises, actual declared emergencies, drills, and simulator training scenarios conducted from the first calendar quarter 2001 through the fourth calendar quarter 2001 to verify the accuracy of the reported performance indicator data. The inspectors evaluated licensee performance indicator collection and reporting practices against the standards of NEI 99-02, "Regulatory Assessment Performance Indicator Guideline."

b. Findings

No findings of significance were identified.

.2 Emergency Response Organization Drill Participation

a. Inspection Scope

The inspectors verified the licensee's reported results for the emergency response organization drill participation performance indicator from the first calendar quarter 2001 through the fourth calendar quarter 2001 by reviewing drill participation attendance records for a sample of eight key emergency responders. The inspectors evaluated licensee performance indicator collection and reporting practices against the standards of NEI 99-02, "Regulatory Assessment Performance Indicator Guideline."

b. Findings

No findings of significance were identified.

.3 Alert and Notification System Reliability

a. Inspection Scope

The inspectors verified the licensee's reported results for the alert and notification system reliability performance indicator by reviewing a 100 percent sample of offsite siren test results performed from the first calendar quarter 2001 through the fourth calendar quarter 2001 to verify the accuracy of the reported performance indicator data. The inspectors evaluated licensee performance indicator collection and reporting practices against the standards of NEI 99-02, "Regulatory Assessment Performance Indicator Guideline."

b. Findings

No findings of significance were identified.

.4 Occupational Exposure Control Effectiveness

a. Inspection Scope

The inspectors reviewed corrective action program records involving locked high radiation areas (as defined in Technical Specification 6.13.1), very high radiation areas (as defined in 10 CFR 20.1003), and unplanned exposure occurrences (as defined in NEI 99-02) for the past 12 months to confirm that these occurrences were properly recorded as performance indicators (Condition Reports ANO-C-2001-00085, ANO-1-2001- 00330, ANO-1-2001-00481, ANO-1-2001-00387, ANO-1-2001-00531, ANO-2-2001-00666, and ANO-2-2002-00406). Controlled access area entries with exposures greater than 100 millirems within the past 12 months were reviewed and selected examples were examined to determine whether they were within the dose projections of the governing RWPs. Whole-body counts or dose estimates were reviewed if the radiation worker received a committed effective dose equivalent of more than 100 millirems.

b. Findings

No findings of significance were identified.

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

a. Inspection Scope

The inspectors reviewed radiological effluent release program corrective action records, licensee event reports, and annual effluent release reports documented during the past 4 quarters to determine if any doses resulting from effluent releases exceeded the performance indicator thresholds (as defined in NEI 99-02).

b. Findings

No findings of significance were identified.

.6 Security Equipment, Personnel Screening, and Fitness-For-Duty Program Areas Performance Indicator Verification (71151)

a. Inspection Scope

The inspectors reviewed the program for collection and submittal of performance indicator data. Specifically, a random sampling of security event logs and corrective action reports, from January 2001 through June 2002, were reviewed for the following program performance areas:

- Protected area security equipment
- Personnel screening program performance
- Fitness-for-duty program performance

b. Findings

No findings of significance were identified.

4OA3 Event Followup (71153)

(Closed) Licensee Event Report 50-313;-368/2002-S01-00: Removal of Compensatory Measures When a Zone of the Perimeter Intrusion Detection System Remained Disarmed.

The inspectors reviewed the licensee's event report and no findings of significance were identified. The inspectors verified the licensee's corrective actions. This event was determined to be a minor violation of the licensee's Industrial Security Plan, Section 3.1.4.4.A, "Compensatory Measures."

4OA5 Circumferential Cracking of Reactor Pressure Vessel Head Penetration Nozzles (Temporary Instruction 2515/145)

.1 NRC Bulletin 2001-01 Response and Inspection Overview

a. Inspection Scope

On April 15-19, 2002, the inspectors performed NRC Inspection Manual Temporary Instruction 2515/145 for Unit 2 during Refueling Outage 2R15. They reviewed the licensee's inspection plan, and the NRR assessment in response to NRC Bulletin 2001-01. The inspectors noted that ANO Unit 2 was considered a Moderate-Susceptible Plant (Bin 3) according to the bulletin. The inspectors noted that NRC Bulletin 2001-01 recommended a 100 percent effective visual examination of the surface of the reactor vessel head and the annulus area around each penetration nozzle. However, the licensee expressed excessive difficulty in visually inspecting the area above the reactor vessel head, under the permanent insulation package. Therefore, the licensee committed to a 100 percent under head volumetric examination of each control element drive mechanism nozzle, the incore instrumentation nozzles, and the reactor vessel head vent. The licensee's methodology employed both ultrasonic and eddy current examination of the under head sections of each nozzle. Their plan also considered that no significant amounts of boric acid had leaked onto the head or insulation in the past and that a detailed visual inspection of the top of the head insulation at the beginning of this outage showed very minimal amounts of boric acid staining. The licensee also performed a visual inspection of the reactor vessel head flange area in which no signs of boric acid leakage or trails were identified. Through discussions with the licensee, and conferences with NRR, the inspectors assessed the validity of this methodology to meet the intent of NRC Bulletin 2001-01.

b. Findings

No findings of significance were identified.

.2 Volumetric Examinations

a. Inspection Scope

The inspectors verified that the licensee's volumetric inspection plan and critical performance objectives were incorporated into site procedures. They also interviewed plant inspection personnel and contractors performing the inspections to determine their understanding of NRC Bulletin 2001-01 and the specific inspection plan. The inspectors reviewed the following Westinghouse Field Service Procedures, which were approved by the licensee for site use, governing the volumetric testing:

- MRS-SSP-1282, "Reactor Vessel Head Penetration Inspection Tool Operations for Waterford 3/ANO," Revision 1
- WCAL-002, "Pulser/Receiver Linearity Procedure," Revision 1
- WDI-ET-003, "IntraSpect Eddy Current Imaging Procedure for Inspection of Reactor Vessel Head Penetrations," Revision 2
- WDI-ET-004, "IntraSpect Eddy Current Analysis Guidelines for Inspection of Reactor Vessel Head Penetrations," Revision 0
- WDI-UT-010, "IntraSpect Ultrasonic Procedure for Inspection of Reactor Vessel Head Penetrations, Time of Flight Ultrasonics & Longitudinal Wave," Revision 2
- WDI-UT-011, "IntraSpect Ultrasonic Procedure for Inspection of Reactor Vessel Head Vent Tubes," Revision 0

NRR personnel, in conjunction with the inspectors, reviewed the demonstration of these methods and their ability to determine flaws in j-groove welds and base metals associated with primary water stress corrosion cracking. The inspectors conducted interviews with plant engineers and Westinghouse contractors to determine their training, background, and expertise in conducting and analyzing these examinations, including questions regarding the methods used to ensure complete documentation and review of all findings. The inspectors observed the equipment operation and a sample of the actual nozzle testing. They also observed Westinghouse contractors perform analyses of the scanned data for several nozzles.

b. Findings

No findings of significance were identified.

4OA6 Management Meetings, including Exit

The inspectors presented the inspection results of the emergency preparedness inspection activities inspection to Mr. C. Anderson, Vice President, Operations on March 29, 2002. The licensee acknowledged the findings presented.

The results of the access control to radiologically significant areas, ALARA planning and controls, and performance indicator verification inspection were presented to Mr. C. Anderson, Vice President, Operations on April 19, 2002. The licensee acknowledged the findings presented.

The inspectors presented the inspection results of the inservice inspection activities inspection to Mr. C. Anderson, Vice President, Operations on April 26, 2002. The licensee acknowledged the findings presented.

The inspectors presented the inspection results of the permanent plant modifications inspection to Mr. C. Anderson, Vice President, Operations on May 16, 2002. The licensee acknowledged the findings presented.

The inspectors presented the inspection results of the physical security inspections to Mr. C. Anderson, Vice President, Operations, and other members of licensee management at the conclusion of the inspection on June 13, 2002. The licensee acknowledged the findings presented.

The resident inspectors presented the inspection results of the resident inspections to Mr. C. Anderson, Vice President, Operations, and other members of the licensee's management staff on June 25, 2002. The licensee acknowledged the findings presented.

The inspectors noted that while proprietary information was reviewed, none would be included in this report.

ATTACHMENT
SUPPLEMENTAL INFORMATION

PARTIAL LIST OF PERSONS CONTACTED

Licensee

E. Addision, Steam Generator NDE Specialist
C. Anderson, Vice President, Operations
G. Ashley, Manager, Licensing
R. Bement, General Manager
E. Blackard, Design Engineering Supervisor
D. Boyd, Acting Licensing Manager
R. Byford, Supervisor, Operations Training
M. Cooper, Licensing Specialist
S. Cotton, Director, Nuclear Safety Assurance
J. Davidson, Acting Supervisor, Access Authorization, Fitness-for-Duty
G. Dobbs, Electrical Design Engineering Supervisor
C. Dunn, Security
N. Eggemeyer, Manager, Technical Support
C. Eubanks, Manger, Maintenance
R. Fowler, Senior Emergency Planner
R. Freeman, Emergency Planner
G. Frix, Radiation Protection Specialist, Quality Assurance
R. Fuller, Manager, Emergency Preparedness
M. Ginsberg, Minor Modifications Supervisor
B. Gordon, Manger, Unit 2 Work Management
D. Harris, Emergency Planner
D. Hawkins, Licensing Specialist
C. Hayes, Emergency Preparedness Project Manager, Entergy
M. Higgins, Superintendent, Plant Security
P. Higgins, Supervisor, Technical Training
J. Hoffpauir, Plant Manager, Operations
D. James, Manager, Engineering Programs and Components
K. Jeffery, Supervisor, Security Operations
S. Kaufman, Coordinator, Access Authorization, Fitness-for-Duty
J. Kowalewski, Director, Engineering
R. Lane, Director, Engineering Projects
D. Lomax, Outage Manager, Unit 1
D. Meatheany, Steam Generator Specialist
J. Miller, Manager, Training
M. Moser, Procurement Engineering
K. Nichols, Manager, Design Engineering
T. Nickels, Superintendent, Radiation Protection
C. Parker, Manager, Entergy Security Operations
R. Partridge, Superintendent, Chemistry
M. Paterak, Quality Implementor
D. Phillips, Unit 1 Systems Engineering Supervisor
S. Pyle, Licensing Specialist
L. Schwartz, Unit 2 System Engineer
D. Stoltz, Supervisor, Outage Support

D. Stringer, Nondestructive Examination Specialis
K. Tate, Supervisor, Access Authorization, Fitness-for-Duty, Medicalt
C. Tyrone, Manager, Quality Assurance
F. Van Buskirk, Nuclear Safety and Licensing Specialist
P. Weaver, Quality Assurance Audit Group
D. White, Emergency Planner
H. Young, Senior Emergency Planner
C. Zimmerman, Plant Manager, Support

ITEMS OPENED AND CLOSED

Opened

50-368/2002-03-01	NCV	Failure to adhere to Technical Specification overtime restrictions as specified in NRC Generic Letter 82-12 (Section 1R20)
50-368/2002-03-02	NCV	Failure to follow RWP requirements (Section 2OS1)
50-368/2002-03-03	NCV	Failure to prevent unauthorized entry into locked high radiation area (Section 2OS1)

Closed

50-368/2002-03-01	NCV	Failure to adhere to Technical Specification overtime restrictions as specified in NRC Generic Letter 82-12 (Section 1R20)
50-368/2002-03-02	NCV	Failure to follow RWP requirements (Section 2OS1)
50-368/2002-03-03	NCV	Failure to prevent unauthorized entry into locked high radiation area (Section 2OS1)
50-313;-368/2002-S01-00	LER	Removal of compensatory measures when a zone of the perimeter intrusion system remained disarmed (Section 4OA3)

DOCUMENTS REVIEWED

In addition to the documents called out 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:

N/A	Arkansas Nuclear One Emergency Plan	Revision 25

Emergency Plan Implementing Procedures:

1903.10	Emergency Action Level Classification	036-04-0
1903.11	Emergency Response/Notification	026-02-0
1903.064	Emergency Response Facility - Control Room	007-01-0
1903.065	Emergency Response Facility - Technical Support Center (TSC)	015-05-0
1903.066	Emergency Response Facility - Operation Support Center (OSC)	012-01-0
1903.067	Emergency Response Facility - Emergency Operations Facility (EOF)	015-04-0

Other Documents

Drill and Exercise Reports from January 2001 through December 2001

Technical Specifications

Emergency Action Level Classification Bases

Letters of Agreement Between Entergy Operations, Inc. and
Conway County, Arkansas: signed December 8, December 20, 1990
Johnson County, Arkansas: signed December 8, December 26, 1990
Logan County, Arkansas: signed December 8, December 26, 1990
Pope County, Arkansas: signed December 8, December 19, 1990
Yell County, Arkansas: signed December 8, December 20, 1990

Miscellaneous

NUMBER	TITLE	REVISION/ DATE
CEP-ISI-004	Arkansas Nuclear One Unit 2 Inservice Inspection Plan	1
	Operational Assessment of ANO-2 Steam Generator Tubing for Cycle 15 (ER 981220 E207)	2/03/01
	Steam Generator Preoutage Degradation Assessment and Repair Criteria for 2R15 (ER-ANO-1997-4855-004)	1

Miscellaneous

NUMBER	TITLE	REVISION/ DATE
	EPRI ISI Guidelines	5
	ANO Unit 2 Technical Specification 3/4.4.5.0 - Steam Generator Augmented Inservice Inspection Program	
82-0034	Tubesheet Foreign Object Search and Retrieval-Delta 109 Steam Generators	1
ANO-2-OTH-ESP-SGMAN	Arkansas Nuclear One Unit-2 Steam Generator Eddy Current Training Manual	0
CARK2-SG-001	Rolled Mechanical Tube Plugging and Stabilizer Installation for Arkansas 2 Steam Generators with 0.6875" O.D. x 0.040" Wall Tubes	0
HES-28	ANO-2 Steam Generator Eddy Current Examination Guidelines	15
HES-29	ANO Steam Generator ECT Performance Demonstration Guidelines	7
HES-41	ANO Steam Generator Secondary Side Potential Loose Part Tracking	5
MRS 2.2.2 GEN-12	Steam Generator Tubesheet Marking	7
MRS 2.3.2 GEN-25	Remotely Operated Service Arm (ROSA) III Operating Procedure	9
MRS 2.4.2 GEN-35	Eddy Current Inspection of Preservice and Inservice Heat Exchanger Tubing	10
MRS 2.4.2 GEN-29	Video Inspection and Tube Identification of Steam Generator Tubesheet	1
SGMS 2.2.1 GEN-011	Steam Generator Data Management	6
STD-FP-1997-8053	Field Procedure for In Situ Testing of 11/16" Steam Generator Tubes	4

Procedures

NUMBER	TITLE	CHANGE
1000.061	Control of Site NDE	007-00-0
1415.031	Ultrasonic Examination for Vessel Nozzle Inside Radius Sections	004-00-0
1415.38	Manual Ultrasonic Examination of Pressure Vessel Welds	006-00-0
5120.500	Steam Generator Integrity Program	009-03-0
5120.509	Steam Generator Inservice Inspection Implementation Procedure	001-01-01
5120.518	ANO Steam Generator Testing and Repair	000-04-0
5120.519	ANO Steam Generator Tube In-Situ Testing	000-01-0
DC-122	Entergy Steam Generator Program	0

Examinations Records for Inservice Inspections (ISI #)

05-008	05-122	25-003	40-005
05-010	05-123	25-004	40-008
05-011	05-124	28-040	43-027
05-012	22-071W	28-041	45-033
05-013	23-006	28-042	A-100903
05-121	23-007	34-S-001-016	

DOCUMENTS REVIEWED FOR PERMANENT PLANT MODIFICATIONS INSPECTION

MODIFICATIONS

ER-010182-E101, "Replacement Valve for Decay Heat Cooler Vent Valve," Revision 0

ER-003050-N201, "Upgrade Design Pressure Rating of Bellows in 2PSV4742 and 2PSV4732 (LTOP Relief Valves), Revision 004-03-0

ER-ANO-2002-0141, "Remove autostart capability of 2 2VEF-56A/B while maintaining Control Room alarms of 2A3/2A4 switchgear rooms high temperature," Revision 0

ER-975069-N202, "Main Steam Safety Valve Flexidisc Modification," Revision 0

ER-991642-N101, "ANO-1 EFW Steam Supply Check Valve Replacement," Revision 2

ER-ANO-2002-0528-000, "Unit 2 'B' HPSI Pump Runout Limits," Revision 0

ER-ANO-2002-0528-004, "I&C Support for Increased HPSI Flow," Revision 0

CONDITION REPORTS

ANO-1-2002-00621	Equivalency Evaluation Engineering Request 010182-E101 observations
ANO-2-2002-00929	HPSI pump flow balance issues involving performance of Pumps 2P-89B and 2P-89C
ANO-2-2002-00978	HPSI Pump 2P-89C net positive suction head during hot leg injection
ANO-2-2002-00988	HPSI Pump 2P-89A exceeded recommended flow rate
ANO-2-2002-01027	Evaluation of HPSI Pump 2P-89A performance CR-ANO-2-2001-00594
ANO-2-2001-00594	Discrepancies found with the Unit 2 ISI program
ANO-2-2002-00914	A loose part was identified in Steam Generator B by eddy current

MAINTENANCE ACTION ITEMS

25761
25671
57299
57300

PROCEDURES

1000.153, "Engineering Request Process," Revision 6
DC-115, "Engineering Request Response Development," Revision 1
2107.002, "ESF Electrical System Operation," Revision 16
2203.012H, "Annunciator 2K08 Corrective Action," Revision 26
2203.012I, "Annunciator 2K09 Corrective Action," Revision 23
2104.039, "HPSI System Operation," Revisions 38, 39, and 41
2202.003, "Loss of Coolant Accident," Revision 6
2202.009, "Functional Recovery," Revision 6
2202.010, "Standard Attachments," Revision 7

DRAWINGS

6600-M114AC-4-8, "Globe Valve," Revision 8
W0025674, "Split Wedge Gate Valve," Revision A

CALCULATIONS

91-E-0090-12, "Effects of loss of 4160V Switchgear Exhaust Ventilation," Revision 1