



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

December 14, 2000

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

**SUBJECT: ARKANSAS NUCLEAR ONE - NRC INSPECTION REPORT
50-313/00-11, 50-368/00-11**

Dear Mr. Anderson:

On November 18, 2000, the NRC completed an inspection at your Arkansas Nuclear One, Units 1 and 2, facility. The enclosed report documents the inspection findings which were discussed on November 21, 2000, with you and other members of your staff.

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

No findings of significance were identified.

In accordance with 10 CFR 2.790 of the NRC's "Rules of Practice," a copy of this letter and its enclosure will be 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/NRC/ADAMS/index.html> (the Public Electronic Reading Room).

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

Entergy Operations, Inc.

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Docket Nos.: 50-313

50-368

License Nos.: DPR-51

NPF-6

Enclosure:

Inspection Report No. 50-313/00-11, 50-368/00-11

Attachments:

(1) Supplemental Information

(2) NRC Revised Reactor Oversight Process

cc w/enclosure:

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& Chief Operating Officer

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 RITS Coordinator (**NBH**)

Only inspection reports to the following:
 Scott Morris (**SAM1**)
 NRR Event Tracking System (**IPAS**)
 ANO Site Secretary (**VLH**)
 Dale Thatcher (**DFT**)

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| RIV:RI:DRP/D | SRI:DRP/D | SRI:DRP/D | PE:DRP/D | SPE:DRP/E |
| KDWeaver | RLBywater | JHMoorman | LMWilloughby | GAPick |
| <i>T - LJSmith</i> | <i>E - LJSmith</i> | <i>E - LJSmith</i> | <i>E - LJSmith</i> | <i>E - LJSmith</i> |
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| C:DRP/D | | | | |
| LJSmith | | | | |
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| 12/14/00 | | | | |

ENCLOSURE

U.S. NUCLEAR REGULATORY COMMISSION
REGION IV

Docket Nos.: 50-313, 50-368

License Nos.: DPR-51, NPF-6

Report No.: 50-313/00-11, 50-368/00-11

Licensee: Entergy Operations, Inc.

Facility: Arkansas Nuclear One, Units 1 and 2

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

Dates: October 1 through November 18, 2000

Inspectors: R. Bywater, Senior Resident Inspector
K. Weaver, Resident Inspector
J. Moorman, Senior Resident Inspector
G. Pick, Senior Project Engineer
L. Willoughby, Project Engineer

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

SUMMARY OF FINDINGS

Arkansas Nuclear One, Units 1 and 2
NRC Inspection Report 50-313/2000-11; 50-368/2000-11

IR 05000313-00-11, 05000368-00-11; on 10/01-11/18/2000; Entergy Operations, Inc.,
Arkansas Nuclear One, Units 1 & 2. Integrated Resident & Regional Report.

The inspection was conducted by resident inspectors and regional project engineers.
The body of the report is organized under the broad categories of reactor safety and other
activities. No findings of significance were identified.

Report Details

Summary of Plant Status

Unit 1 operated at or near 100 percent power throughout the inspection period.

Unit 2 remained shutdown in Refueling Outage 2R14 throughout the inspection period.

1. REACTOR SAFETY Cornerstones: Initiating Events, Mitigating Systems, Barrier Integrity

1R05 Fire Protection

.1 Monthly Routine Inspection

a. Inspection Scope (71111.05)

The inspectors performed fire protection walkdowns to assess the material condition of plant fire protection equipment, proper control of transient combustibles, and operational status of fire barriers used to prevent fire propagation. The following risk significant areas were inspected to confirm compliance with these fire protection program requirements:

- Unit 1 safety-related 4160 volt electrical switchgear rooms
- Unit 1 safety-related 125 volt dc battery rooms
- Unit 2 safety-related 4160 volt electrical switchgear rooms

b. Issues and Findings

No findings of significance were identified.

.2 Drills

a. Inspection Scope (71111.05)

The inspectors observed a fire drill conducted in the oil storage building to evaluate the readiness of the licensee's personnel to prevent and fight fires.

b. Issues and Findings

No findings of significance were identified.

1R12 Maintenance Rule Implementation

a. Inspection Scope (71111.12)

The inspectors reviewed the status of Unit 2 Emergency Diesel Generator 1 to determine if the maintenance rule criteria for this system had been appropriately

applied. The inspectors reviewed the information in the maintenance rule data base and current condition reports and verified that the (a)(2) category was appropriate. In addition, the inspectors reviewed two systems with performance problems to assess the effectiveness of the implementation of the maintenance rule. Specifically, the inspectors reviewed Condition Report ANO-2-1999-0533, which documented oil leakage on the Unit 2 auxiliary transformer, and Condition Report ANO-C-2000-0026, which documented the Bulk Fuel Oil Storage Tank T-25 level decreasing below the minimum administrative limit.

b. Issues and Findings

No findings of significance were identified.

1R13 Maintenance Risk Assessments and Emergent Work Control

.1 Risk Assessments

a. Inspection Scope (71111.13)

The inspectors reviewed and evaluated the effectiveness of the plant impact statement which documented the controls and contingencies that were established to reduce plant risk during maintenance activities for Switchyard 500 kV Unit 1 Output Breaker B5114, Unit 2 Output Breaker B5134, and Autotransformer Breaker B5126.

The inspectors reviewed and evaluated the risk assessment performed for scheduled maintenance on a Unit 1 Train B decay heat removal room cooler combined with the routine monthly surveillance of the Train B emergency feedwater instrument channel. The maintenance was performed in accordance with Maintenance Action Item 35804 and involved a weld repair of cooler coils. The surveillance was performed in accordance with Procedure 1304.206, "EFIC Channel B Monthly Test - Steam Generator Pressure Greater Than 750 lbs." The licensee did not have to establish any special controls for this maintenance/surveillance combination since the risk did not change from that established for performing the surveillance alone.

The inspectors reviewed the 2R14 Shutdown Operations Protection Plan, Revision 3. This plan communicates a simplified list of available safety functions to Arkansas Nuclear One personnel during the Unit 2 outage. The inspectors reviewed the licensee's work prioritization and risk determination to verify that activities were properly planned, controlled, and executed.

b. Issues and Findings

No findings of significance were identified.

.2 Emergent Work Control (71111.13)

a. Inspection Scope

The inspectors observed the troubleshooting and repair of the local indication for total reactor coolant system Flow Channel A of the reactor protection system. The maintenance was performed using Maintenance Action Item 35528.

b. Issues and Findings

No findings of significance were identified.

1R16 Operator Workarounds

.1 Review of the Cumulative Effects of Operator Workarounds

a. Inspection Scope (71111.16)

The inspectors reviewed the Unit 1 and shared unit operator workarounds to assess the cumulative effect of the workarounds on plant operators' ability to implement abnormal and emergency operating procedures. The inspectors also interviewed operators and reviewed the night order log and shift turnover sheets to determine if any workarounds existed that were not on the workaround list.

b. Issues and Findings

No findings of significance were identified.

1R19 Postmaintenance Testing

a. Inspection Scope (71111.19)

The inspectors evaluated the following postmaintenance testing activities to determine whether the testing activities adequately confirmed equipment operability:

- Procedure 5120.010, "Unit 1 and Unit 2 MOV Testing Utilizing the VOTES Test System," Supplement 6, Differential Pressure Test, conducted following maintenance on Valve 2-CV-5015, high pressure safety injection cold leg isolation valve. The licensee performed the testing in accordance with Maintenance Action Item 4903. The inspectors verified that the dynamic testing demonstrated that the motor-operated valve developed the required thrust to close the valve at the maximum expected differential pressure (Unit 2).
- The inspectors evaluated the postmaintenance testing for the Train A high pressure safety injection pump following rebuild of the pump. The licensee collected the pump curve data as part of the high pressure safety injection flow balance test, which was performed in accordance with Procedure 2104.039, "HPSI System Operation," Supplement 6, Full Flow Test (Unit 2).

- The inspectors observed the local indication of total reactor coolant system Flow Channel A postmaintenance tests to determine whether the test adequately confirmed equipment operability following the troubleshooting and repair.

b. Issues and Findings

No findings of significance were identified.

1R23 Temporary Plant Modifications

a. Inspection Scope (71111.23)

The inspectors reviewed the 10 CFR 50.59 screening, engineering request, and revisions to plant procedures associated with Temporary Alteration 99-1-001 installed in Unit 1. This temporary alteration disabled an interlock between treated water discharge solenoid Valve SV-4642 and circulating water Valves CV-3618, CV-3622, CV-3626, and CV-3630. A jumper was installed to disable the interlock that would terminate or prevent a radioactive liquid discharge to the circulating water discharge flume if Valves CV-3618, CV-3622, CV-3626, and CV-3630 were not fully open. Throttling the circulating water valves minimized the impact of shad runs on the traveling screens. The interlock had been established to ensure adequate dilution of the liquid radioactive waste discharge. A computer alarm was established to alarm on low circulating water flow and administrative controls established to prohibit or secure a radioactive waste release on receipt of the alarm. The computer alarm point was chosen substantially above the minimum circulating water flow rate assumed in the Offsite Dose Calculation Manual. Valve SV-4642 would still function to isolate a radioactive liquid discharge on high radiation levels.

The inspectors reviewed Engineering Instruction TAP 00-2-013 and work accomplished to install temporary power to Spent Fuel Pool Cooling Pump 2P-40B while the pumps normal power supply, Motor Control Center 2B-22, was unavailable.

b. Issues and Findings

No findings of significance were identified.

4. OTHER ACTIVITIES

4OA6 Meetings

.1 Exit Meeting Summary

The inspectors presented the inspection results of the resident inspections to Mr. C. Anderson, Vice President, Operations, and other members of licensee management on November 21, 2000.

The inspectors asked the licensee whether any materials examined during the inspection should be considered proprietary. No proprietary information was identified.

ATTACHMENT 1

Supplemental Information

KEY POINTS OF CONTACTS

Licensee

C. Anderson, Vice President, Operations
G. Ashley, Technical Assistant
B. Bement, General Manager, Plant Operations
M. Chisum, Manager, Unit 2 Systems Engineering
M. Cooper, Licensing Specialist
N. Eggemeyer, Manager, Technical Support
P. Higgins, Supervisor, Nuclear Training
J. Hoffpauir, Unit 2 Plant Manager
D. James, Manager, Licensing
J. Kowalewski, Manager, Unit 1 Systems Engineering
R. Lane, Director, Engineering
J. Miller, Manager, Unit 1 Operations
T. Mitchell, Manager, Unit 1 Operations
T. Morrison, Superintendent, Modifications
C. Tyrone, Manager, Quality Assurance
J. Vandergrift, Director, Nuclear Safety
C. Zimmerman, Unit 1 Plant Manager

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Opened

None

Closed

None

ATTACHMENT 2 NRC'S REVISED REACTOR OVERSIGHT PROCESS

The federal Nuclear Regulatory Commission (NRC) revamped its inspection, assessment, and enforcement programs for commercial nuclear power plants. The new process takes into account improvements in the performance of the nuclear industry over the past 25 years and improved approaches of inspecting safety performance at NRC licensed plants.

The new process monitors licensee performance in three broad areas (called strategic performance areas): reactor safety (avoiding accidents and reducing the consequences of accidents if they occur), radiation safety (protecting plant employees and the public during routine operations), and safeguards (protecting the plant against sabotage or other security threats). The process focuses on licensee performance within each of seven cornerstones of safety in the three areas:

| Reactor Safety | Radiation Safety | Safeguards |
|---|---|--|
| <ul style="list-style-type: none">•Initiating Events•Mitigating Systems•Barrier Integrity•Emergency Preparedness | <ul style="list-style-type: none">•Occupational•Public | <ul style="list-style-type: none">•Physical Protection |

To monitor these seven cornerstones of safety, the NRC used two processes that generate information about the safety significance of plant operations: inspections and performance indicators. Inspection findings will be evaluated according to their potential significance for safety, using the Significance Determination Process, and assigned colors of GREEN, WHITE, YELLOW, or RED. GREEN findings are indicative of issues that, while they may not be desirable, represent very low safety significance. WHITE findings indicate issues that are of low to moderate safety significance. YELLOW findings are issues that are of substantial safety significance. RED findings represent issues that are of high safety significance with a significant reduction in safety margin.

Performance indicator data will be compared to established criteria for measuring licensee performance in terms of potential safety. Based on prescribed thresholds, the indicators will be classified by color representing varying levels of performance and incremental degradation in safety: GREEN, WHITE, YELLOW, or RED. GREEN indicators represent performance at a level requiring no additional NRC oversight beyond the baseline inspections. WHITE corresponds to performance that may result in increased NRC oversight. YELLOW represents performance that minimally reduces safety margin and requires even more NRC oversight. RED indicates performance that represents a significant reduction in safety margin but still provides adequate protection to public health and safety.

The assessment process integrates performance indicators and inspections so the agency can reach objective conclusions regarding overall plant performance. The agency will use an Action Matrix to determine in a systematic, predictable manner which regulatory actions should be taken based on a licensee's performance. The NRC's actions in response to the significance (as represented by the color) of issues will be the same for performance indicators as for inspection findings. As a licensee's safety performance degrades, the NRC will take more and increasingly significant action, which can include shutting down a plant, as described in the Action Matrix.

More information can be found at: <http://www.nrc.gov/NRR/OVERSIGHT/index.html>