UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION IV
611 RYAN PLAZA DRIVE, SUITE 400
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June 17, 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 RADIATION SAFETY TEAM INSPECTION REPORT 50-313/02-06; 50-368/02-06

Dear Mr. Anderson:

On May 24, 2002, the NRC completed a radiation safety team inspection at the Arkansas Nuclear One, Units 1 and 2, facility. The enclosed report documents the inspection findings that were discussed with Mr. R. Bement, General Manager, 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, the inspectors evaluated the inspectable areas within the Radiation Protection Strategic Performance Area that are scheduled for review every two years. These areas are:

- Radiation Monitoring Instrumentation
- Radioactive Gaseous and Liquid Effluent Treatment and Monitoring Systems
- Radioactive Material Processing and Transportation
- Radiological Environmental Monitoring Program and Radioactive Material Control Program

This report documents a finding of very low significance (Green), which was determined to involve a violation of NRC requirements. However, because of its very low safety significance and because it is entered into your corrective action program, the NRC is treating the finding as a noncited violation consistent with Section VI.A of the NRC Enforcement Policy. If you contest this noncited violation, 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 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/reading-rm/adams.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/

Gregory A. Pick, Chief
Plant Support Branch
Division of Reactor Safety

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

Enclosure:
NRC Inspection Report
50-313/02-06; 50-368/02-06

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ENCLOSURE

U.S. NUCLEAR REGULATORY COMMISSION
REGION IV

Dockets:	50-313; 50-368
Licenses:	DPR-51; NPF-6
Report No.:	50-313/02-06; 50-368/02-06
Licensee:	Entergy Operations, Inc.
Facility:	Arkansas Nuclear One, Units 1 and 2
Location:	Junction of Hwy. 64W and Hwy. 333 South Russellville, Arkansas
Dates:	May 20 - 24, 2002
Inspectors:	Michael P. Shannon, Senior Health Physicist-Team Leader J. Blair Nicholas, PhD, Senior Health Physicist Larry Ricketson, PE, Senior Health Physicist Daniel R. Carter, Health Physicist
Approved By:	Gregory A. Pick, Chief, Plant Support Branch Division of Reactor Safety
ATTACHMENT:	Supplemental Information

SUMMARY OF FINDINGS

Arkansas Nuclear One, Units 1 and 2
NRC Inspection Report 50-313/02-06; 50-368/02-06

IR 05000313/2002-006, IR 05000368/2002-006; Entergy Operations, Inc.; 05/20/2002-05/24/2002; Arkansas Nuclear One, Units 1 & 2; Radioactive Material Processing and Transportation; Radiation Safety Team Inspection

The inspection was conducted by a team of four region-based inspectors. Based on the results of the inspection, the team identified one finding of very low safety significance (Green). The significance of most findings is indicated by their color (Green, White, Yellow, Red) using IMC 0609, "Significance Determination Process," (SDP). Findings for which the SDP does not apply may be "Green" or be assigned a severity level after NRC management 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. Inspector Identified Findings

Cornerstone: Public Radiation Safety

Green. A noncited violation of 10 CFR 71.5 was identified by the team because the licensee did not comply with the applicable requirements of the U. S. Department of Transportation regulations in 49 CFR Parts 170-189. Specifically, the licensee did not include the proper shipping name on shipping papers, as required by 49 CFR 172.202(a)(1), and did not properly mark packages with the proper shipping name and identification number, as required by 49 CFR 172.301(a). Contaminated equipment and components were shipped as low specific activity material instead of surface contaminated objects.

The failure to properly communicate the hazard involved with a radioactive shipment was a performance deficiency. The finding was more than minor because it was associated with one of the Public Radiation Safety cornerstone attribute (Transportation Program) and affected the associated cornerstone objective. The finding involved occurrences in the licensee's radioactive material transportation program that were contrary to NRC or Department of Transportation regulations. Using the Public Radiation Safety Significance Determination Process, the team determined the finding had very low safety significance because radiation limits were not exceeded, the package was not breached during transit, the licensee was not refused low level burial ground access, waste was not underclassified, the licensee did not fail to make notifications, and no certificate of compliance problems were involved. 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 CR-ANO-2-2002-00413 (Section 2PS2).

B. Licensee Identified Violations

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

2. RADIATION SAFETY

2OS3 Radiation Monitoring Instrumentation (71121.03)

a. Inspection Scope

The team evaluated the adequacy of the programs to calibrate radiation monitoring instruments and to provide self-contained breathing apparatus. The team interviewed cognizant licensee personnel, observed instrumentation in the field, and compared the following items to regulatory requirements:

- Operability, performance checks and alarm setpoints, when applicable, of selected radiation detection instrumentation (whole-body counters, PM-7 personnel portal monitors, and RO-2 and tele-pole portable radiation instruments), continuous air monitors, electronic alarming dosimeters, personnel contamination monitors, and area radiation monitors

- Calibration and alarm setpoint of selected area and process radiation monitoring instrumentation (Unit 1: Fuel Handling Area, Decay Heat Loops A and B, South Penetration Room Ventilation System, and Service Water Loop 2; Unit 2: Radwaste Area, Fuel Pool Heat Exchanger, Hydrogen Purge, and North Penetration Room Discharge)

- Calibration source traceability

- Calibration expiration and source response check currency of pre-staged radiation detection instruments

- Status and associated surveillance records of self-contained breathing apparatuses pre-staged in the plant

- Capability for refilling and transporting self-contained breathing apparatus air bottles to and from the control room and operations support center during emergency conditions

- Control room operator and emergency response personnel training and qualifications for use of self-contained breathing apparatus

- Quality Assurance Audit Report QA-14-2001-ANO-1 and Quality Assurance Surveillance Reports SR-018-2000 and QS-2001-ANO-005

- Selected corrective action documents that involved radiation monitoring instrument deficiencies or self-contained breathing apparatuses initiated since the previous inspection in this area in September 2001 (CR-ANO-1-2001-1054, 1-2001-1168, 1-2002-0260, 1-2002-0268, 2-2001-1255, 2-2001-1350 and 2-2002-0477)

b. Findings

No findings of significance were identified.

2PS1 Radioactive Gaseous and Liquid Effluent Treatment and Monitoring Systems (71122.01)

a. Inspection Scope

The team interviewed cognizant personnel and walked down the major components of the gaseous and liquid release systems to observe ongoing activities, equipment material condition, and system configuration, as compared to the description in the Updated Final Safety Analysis Report. The team reviewed and compared the following items with regulatory requirements to determine whether the licensee had ensured adequate protection of public health and safety from exposure to radioactive material released into the public domain:

- 2000 and 2002 Radiological Effluent Release Reports
- Changes to the Offsite Dose Calculation Manual and to the radioactive waste system design and operation
- Anomalous results and unplanned releases reported in the Radiological Effluent Release Reports
- 2000 and 2001 radiochemistry quality control program results
- Effluent radiological occurrence performance indicator incidents
- Sample collection and analysis of gaseous and liquid effluents (auxiliary building extension vent and Boric Acid Condensate Tank 2T69A)
- Selected radioactive liquid and gaseous waste releases with associated projected doses to members of the public (LR2002-015, LR2002-020, LR2002-053, GR2001-078, LR2001-112, and GR2001-113)
- Compensatory sampling and radiological analyses conducted when effluent monitors were declared out of service
- Monthly, quarterly, and annual dose calculations
- Air cleaning system and plant stack and vent flow rates surveillance test results
- Records of instrument calibrations performed since the last inspection of selected discharge effluent radiation monitor and flow measurement devices
- Effluent radiation monitor alarm set point values
- Calibration records of counting room instrumentation associated with effluent monitoring and release activities

- Quality control records for the counting room instruments
- Quality Assurance Audit QAP-28-2000, “Environmental Monitoring Audit,” related to the radioactive effluent treatment and monitoring program
- Corrective action documents related to the radioactive effluent treatment and monitoring program (CR-ANO-1-2001-015, 2-2001-256, 2-2001-662, C-2001-687, and 2-2002-1006)

b. Findings

No findings of significance were identified.

2PS2 Radioactive Material Processing and Transportation (71122.02)

a. Inspection Scope

The team interviewed radiation workers and radiation protection personnel involved in material processing and transportation activities. The team walked down the liquid and solid radioactive waste processing systems to verify that the current system configuration and operation agreed with the descriptions contained in the Final Safety Analysis Report and in the Process Control Program. The licensee did not process a radioactive material shipment during the inspection; however, the team reviewed and compared the following items with regulatory requirements:

- Adequacy of any changes made to the radioactive waste processing systems since the last inspection
- Waste stream sampling procedures and radio-chemical sample analysis results for each radioactive waste stream
- Scaling factors and calculations used to account for difficult-to-measure radionuclides
- 10 CFR Part 20, Appendix G, Quality Assurance Program
- Documentation for six non-excepted package shipments (RSR 01-013, RSR 01-025, RSR 01-042, RSR 02-019, RSR 02-024, and RSR 02-025) that demonstrated shipment packaging, surveying, labeling, marking, placarding, vehicle checks, emergency instructions, disposal manifest, shipping papers provided to the driver, and licensee verification of shipment readiness
- Transferee licenses
- Training to personnel responsible for the conduct of radioactive waste processing and radioactive material shipment preparation activities

- Quality Assurance Audit QA-15-2001-ANO-1 and Self Assessments QS-2001-ANO-004, QS-2001-ANO-112, QS-2001-ANO-121, QS-2002-ANO-049, and QS-2002-ANO-175

- Summary of corrective action reports written since September 2000 involving the radioactive material and shipping programs and selected examples (CR-ANO-2-2002-00628, 2-2002-00720, and 2-2002-00434)

b. Findings

The team identified a noncited violation of very low safety significance because the licensee did not comply with the U. S. Department of Transportation hazard communication requirements. The licensee did not use the proper shipping name on shipping papers and did not mark packages with the proper shipping name and identification number.

The team reviewed the master shipping log and noted that none of the items listed were shipped as surface contaminated objects (SCOs). Typically, this is a very common shipping description. Instead, licensees routinely ship items such as contaminated equipment or components as low specific activity (LSA) material.

49 CFR 173.403 defines LSA as material in which the radioactive material is distributed throughout. SCO is defined as a solid object, which is not itself radioactive but has radioactive material distributed on any of its surfaces. Each category is provided a separate shipping name and identification number by the Hazardous Material Table in 49 CFR 172.101. The terms are not interchangeable.

During interviews, the team identified 16 examples of items that were shipped in 2001 and 2002 that met the definition of SCO but were shipped as LSA. This meant that the incorrect shipping name was included on shipping papers and the packages were marked with the incorrect shipping name and identification number. The shipping name “Radioactive material - LSA,” was used instead of “Radioactive material - SCO,” and the identification number UN 2912 was used instead of UN 2913. Specific examples included radioactive shipments RSR 01-019, RSR 01-025, and RSR 01-026. Shipping documents for these shipment, listed the contents as, “Metal oxides on equipment,” but the packages were shipped as “Radioactive material - LSA” instead of “Radioactive - SCO.”

The team determined that the failure to properly communicate the hazard involved with a radioactive shipment was a performance deficiency. The finding was more than minor because it was associated with one of the Public Radiation Safety cornerstone attributes (Transportation Program) and affected the associated cornerstone objective. The finding involved occurrences in the licensee’s radioactive material transportation program that were contrary to NRC or Department of Transportation regulations. Using the Public Radiation Safety Significance Determination Process, the team determined the finding had very low safety significance because radiation limits were not exceeded, the package was not breached during transit, the licensee was not refused low level burial ground access, waste was not underclassified, the licensee did not fail to make notifications, and no certificate of compliance problems were involved.

10 CFR 71.5 requires that each licensee who delivers licensed material to a carrier for transport shall comply with the applicable requirements of the Department of Transportation regulations in 49 CFR Parts 170 through 189. 49 CFR Part 172 provides requirements for hazard communications. 49 CFR 172.202(a)(1) requires that the shipping description of a hazardous material on the shipping papers must include the proper shipping name, as prescribed for the material in Column 2 of the 49 CFR 172.101 table. 49 CFR 172.301(a) requires that each person that offers for transportation a hazardous material mark the package with the proper shipping name and identification number (preceded by "UN" or "NA", as appropriate) for the material as shown in the 49 CFR 172.101 table. 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 CR ANO-C-2002-00413 (NCV 50-313; 50-368/2002-06-01).

2PS3 Radiological Environmental Monitoring Program and Radioactive Material Control Program (71122.03)

a. Inspection Scope

The team reviewed the Radiological Environmental Monitoring and Meteorological Monitoring Programs to verify that the licensee implemented them consistent with the licensee's Technical Specifications, Offsite Dose Calculation Manual, and Technical Requirements Manual. The team interviewed cognizant licensee staff personnel, reviewed the following areas or items, and compared the results to regulatory requirements:

- Preparation of airborne particulate and charcoal sample holders for sample collection and shipment
- Meteorological instrument data displays at the Unit 2 control room and the Technical Support Center
- Five environmental air sampling stations (1, 2, 6, 7, and 56), one surface water sampling station (8), one drinking water sampling station (57), two broadleaf vegetation sampling stations (13 and 55), and seven thermoluminescent dosimetry (TLD) stations (1, 2, 6, 7, 56, 127, and 137)
- Implementing procedures for the radiological environmental monitoring program
- Number and location of the environmental sampling stations as specified in the Offsite Dose Calculation Manual
- Selected environmental sample analytical results
- Calibration records for environmental air sampling equipment
- Changes to the radiological environmental monitoring program for the period of 2000 through 2001

- 2000 and 2001 Annual Radiological Environmental Operating Reports
- The Entergy environmental laboratory's performance in the interlaboratory comparison program for the period 2000 through 2001
- Implementing procedures for the meteorological monitoring program
- Meteorological instrument operability, reliability, and annual meteorological data recovery
- ANO Quality Assurance Audit Reports QAP-28-2000 and QA-6-2001-ANO-1, Waterford Quality Assurance Audit Report QA-14-2001-W3-1, River Bend Station Quality Assurance Audit Report QA-6-2001-RBS-1, and ANO Radiological Environmental Monitoring Program Assessment CEO-2001-0050
- Selected corrective action documents initiated since April 1, 2001, involved with the radiological environmental monitoring program (CR-ANO-C-2001-00017, C-2001-00036, C-2001-00199, C-2002-00264, C-2002-00267, C-2002-00365, and C-2001-00381) and the meteorological monitoring program (CR-ANO-C-2001-00213, C-2001-00569, C-2001-00585, C-2001-00704, 2-2001-01058, 2-2002-00627, 2-2002-00849, C-2002-00215, C-2002-00265, and C-2002-00297)

The team did not observe the release of material from the controlled access area during the inspection. However, to ensure that the licensee's surveys and controls could prevent the inadvertent release of licensed materials into the public domain, the team reviewed and compared the following items with regulatory requirements:

- Procedures, methods, and instruments used to survey, control, and release materials from the controlled access areas
- Calibration procedures and records for instruments used to perform radiological surveys prior to material release
- Detection sensitivities of radiation survey instruments used for the release of potentially contaminated materials from the controlled access areas
- Criteria used for the unrestricted release of potentially contaminated material from the controlled access areas
- Selected corrective action documents initiated since May 20, 2000, involved with the radioactive material control program (CR-ANO-C-2001-00054, 1-2001-00139, C-2001-00194, and 2-2002-00905)

b. Findings

No findings of significance were identified.

4. OTHER ACTIVITIES

4OA6 Meetings

Exit Meeting Summary

The inspectors presented the inspection results to Mr. R. Bement, General Manager, and other members of licensee management at an exit meeting on May 24, 2002. The licensee acknowledged the findings presented.

The inspectors asked the licensee whether or not any materials examined during the inspection should be considered proprietary. No proprietary information was identified.

4OA7 Licensee Identified Violations

The following violation of very low safety significance was identified by the licensee and is a violation of NRC requirements which meets the criteria of Section VI of the NRC Enforcement Policy, NUREG-1600, for being dispositioned as a noncited violation.

Technical Specification 6.8.1.a requires written procedures be established, implemented, and maintained covering the activities referenced in Appendix A of Regulatory Guide 1.33, Revision 2, February 1978. Appendix A, Section 7 references procedures for control of radioactivity. Section 6.9.1 of Procedure 1012.020, "Radioactive Material Control," Change 006-02-0, states, in part, that any item or material may be unconditionally released from radiological restrictions when it has been evaluated to have no accessible areas that may have become contaminated and no detectable contamination. On October 22, 2000, November 16, 2000, February 27, 2001, and April 16, 2001, the licensee identified examples in which detectable radioactive materials were inadvertently released from the controlled access area. These events were entered into the licensee's corrective action program as Condition Reports C-2000-00335, 2-2001-00274, C-2001-00080, and C-2001-00201, respectively. This violation is being treated as a noncited violation.

Using the Public Radiation Safety Significance Determination Process, the team determined that this finding had very low safety significance because there were not more than 5 occurrences and the exposure associated with each item was less than 5 millirem.

ATTACHMENT

SUPPLEMENTAL INFORMATION

PARTIAL LIST OF PERSONS CONTACTED

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D. Hawkins, Licensing Specialist, Licensing
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D. Moore, Corporate Health Physicist, Radiation Protection
T. Nickels, Superintendent, Radiation Protection
R. Partridge, Superintendent, Chemistry
B. Patrick, Supervisor, Radiation Protection
C. Zimmerman, Plant Manager, Support

NRC
K. Weaver, Resident Inspector, ANO

ITEMS OPENED, CLOSED, AND DISCUSSED

Opened

None.

Opened and Closed During this Inspection

50-313/368/0206-01	NCV	Failure to comply with DOT hazard communication requirements (Section 2PS2).

Previous Items Closed

None