



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

January 6, 2000

C. Randy Hutchinson, Vice President  
Operations  
Arkansas Nuclear One  
Entergy Operations, Inc.  
1448 S.R. 333  
Russellville, Arkansas 72801-0967

**SUBJECT: NRC INSPECTION REPORT NO. 50-313/99-16; 50-368/99-16**

Dear Mr. Hutchinson:

This refers to the inspection conducted on December 13-16, 1999, at the Arkansas Nuclear One, Units 1 and 2 facilities. This inspection focused on your solid radioactive waste management and transportation of radioactive materials programs. The enclosed report presents the results of this inspection.

The inspection confirmed that the solid radioactive waste management and radioactive materials transportation programs were implemented properly.

Based on the results of this inspection, the NRC has determined that one Severity Level IV violation of NRC requirements occurred. The violation is being treated as a noncited Violation (NCV), consistent with Section VII.B.1.a of the Enforcement Policy. The NCV is described in the subject inspection report. If you contest the violation or severity level of the NCV, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington DC 20555-0001, with copies to the Regional Administrator, U.S. Nuclear Regulatory Commission, Region IV, 611 Ryan Plaza Drive, Suite 400, Arlington, Texas 76011, the Director, Office of Enforcement, United States Nuclear Regulatory Commission, Washington, DC 20555-0001; and the NRC Resident Inspector at the Arkansas Nuclear One, Units 1 and 2 facilities.

In accordance with 10 CFR 2.790 of the NRC's "Rules of Practice," a copy of this letter, its enclosure(s), and your response, if requested, will be placed in the NRC Public Document Room (PDR).

Entergy Operations, Inc.

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

Sincerely,

**/RA/**

Gail M. Good, Chief  
Plant Support Branch  
Division of Reactor Safety

Docket Nos.: 50-313  
50-368  
License Nos.: DPR-51  
NPF-6

Enclosures:  
NRC Inspection Report No.  
50-313/99-16; 50-368/99-16

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E-Mail report to D. Lange (DJL)  
E-Mail report to NRR Event Tracking System (IPAS)  
E-Mail report to Document Control Desk (DOCDESK)

E-Mail notification of report issuance to the ANO SRI and Site Secretary (RLB3, VLH).

E-Mail notification of issuance of all documents to Nancy Holbrook (NBH).

bcc to DCD (IE06)

bcc distrib. by RIV:

Regional Administrator	ANO Resident Inspector
DRP Director	RIV File
DRS Director	RITS Coordinator
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**ENCLOSURE**

U.S. NUCLEAR REGULATORY COMMISSION  
REGION IV

Docket Nos.: 50-313  
50-368

License Nos.: DPR-51  
NPF-6

Report No.: 50-313/99-16  
50-368/99-16

Licensee: Entergy Operations, Inc.

Facility: Arkansas Nuclear One, Units 1 and 2

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

Dates: December 13-16, 1999

Inspector(s): James S. Dodson, Radiation Specialist  
Plant Support Branch

Approved By: Gail M. Good, Chief, Plant Support Branch

Attachment: Supplemental Information

## EXECUTIVE SUMMARY

Arkansas Nuclear One, Units 1 and 2  
NRC Inspection Report No. 50-313/99-16; 50-368/99-16

The NRC conducted an inspection of the solid radioactive waste management and radioactive material transportation programs. Areas reviewed included: the solid radioactive waste management program, radioactive material transportation program, facilities and equipment, staff knowledge and performance, staff training and qualifications, and quality assurance activities.

### Plant Support

- The licensee met regulatory requirements associated with the solid radioactive waste management program. Radioactive material was correctly stored and controlled. Radioactive waste was correctly classified and stabilized for burial. Waste manifests were prepared in accordance with regulatory requirements (Section R1.1).
- The licensee met regulatory requirements for the packaging and shipping of radioactive materials and radioactive waste. Packages were properly marked, labeled, and radioactive material transport vehicles were properly placarded (Section R1.2).
- There were no deviations noted from commitments in the Updated Final Safety Analysis Report. Material condition and housekeeping were good in the solid radioactive waste facilities and on-site storage areas (Section R2).
- The individuals responsible for training, quality oversight, transfer, packaging, and transport of radioactive material were knowledgeable of procedural requirements and their assigned tasks (Section R4).
- The licensee generally provided solid radwaste and transportation personnel with the appropriate initial training and retraining (Section R5).
- The failure to train and test a radwaste supervisor within three years as required, was a violation of 49 CFR 172.704(d). This Severity Level IV violation is being treated as a noncited violation consistent with Section VII.B.1.a of the NRC Enforcement Policy. The licensee initiated Condition Report CR-ANO-C-1999-0316 (Section R5).
- The quality assurance organization provided effective oversight of radioactive waste management and transportation activities. Quality audits and surveillances of solid radioactive waste management and transportation practices were comprehensive and provided licensee management with detailed information to assess the program's performance (Section R7).

## Report Details

### IV. Plant Support

#### **R1 Radiological Protection and Chemistry Controls**

##### R1.1 Solid Radioactive Waste Management Program

###### a. Inspection Scope (86750)

The inspector interviewed licensee personnel and reviewed the following program areas:

- Waste storage and container accountability
- Waste stream sampling results
- Waste classification
- Waste characteristics
- Waste shipment manifests

###### b. Observations and Findings

###### Waste Storage and Container Accountability

During tours of the radiological controlled areas, the inspector confirmed that radioactive waste was stored in accordance with commitments in the Updated Final Safety Analysis Report, Chapters 11.1.3.3.8 and 11.5.6. The inspector verified that randomly selected radioactive material containers were properly labeled and confirmed that the licensee's tracking system listed the correct location and status of the containers.

###### Waste Stream Sampling

The analysis results and the associated evaluations for the identified waste streams were reviewed. The inspector determined that sampling and analyses were completed at the required intervals. The scaling factors used in the vendor supplied computer code were verified with current analysis results as required by procedure. Analyses were performed by a vendor laboratory and the licensee as required by procedure.

###### Waste Classification

The licensee used a vendor supplied computer software code to perform the calculations necessary to classify radioactive waste. The inspector reviewed sample results from selected radioactive waste shipments and confirmed that the waste shipments were properly classified in accordance with 10 CFR 61.55.

### Waste Characteristics

Through record review and observations, the inspector confirmed that the licensee met the structural integrity requirements of 10 CFR 61.56 (b)(1) by using high integrity containers. No adverse findings related to the licensee's radioactive waste characteristics had been identified by burial site representatives.

### Manifests

The inspector reviewed twelve randomly selected shipping documentation packages and confirmed that the licensee prepared manifests included the information required by 10 CFR Part 20, Appendix G.

#### c. Conclusions

The licensee met regulatory requirements associated with the solid radioactive waste management program. Radioactive material was correctly stored and controlled. Radioactive waste was correctly classified and stabilized for burial. Waste manifests were prepared in accordance with regulatory requirements.

### R1.2 Radioactive Material Transportation Program

#### a. Inspection Scope (86750)

The inspector interviewed licensee personnel and reviewed selected examples of the following materials:

- Packaging
- Radiation surveys
- Shipping paper documentation
- Package marking and labeling
- Loading and storage, blocking, and bracing
- Vehicle placarding
- Driver instructions
- Emergency response information

#### b. Observations and Findings

##### Packaging

The inspector verified that the certificate of compliance and user's lists were current for the Type B shipping cask used by the licensee. The licensee maintained records that documented Type B packages used were designed to meet the applicable requirements specified in 10 CFR 71.12.

##### Radiation Surveys

Independent radiation surveys were conducted by the inspector during tours of the radioactive waste processing and storage facilities to verify that external radiation levels



were within the allowable limits of 49 CFR 173.441. The inspector determined that radioactive waste package external radiation levels were within allowable limits for randomly selected packages.

#### Package Marking, Labeling, and Loading and Vehicle Placarding

The inspector randomly selected twelve shipping documentation packages for review and observed the marking, labeling, and loading of radioactive material shipment No. 61-99. From this review, the inspector determined that packages prepared for transport were properly marked, labeled, and radioactive material transport vehicles were properly placarded in accordance with 49 CFR 172.504 and 172.506.

#### Shipping Papers and Documentation

The inspector reviewed twelve randomly selected examples of shipping documentation and confirmed that the licensee provided the shipping papers and information required by 49 CFR Part 172, Subpart C, and the emergency response information required by 49 CFR Part 172, Subpart G.

Additionally, the inspector verified that shipping permits, licenses, certificates of compliance, user lists, and shipping regulations were current. No problems were noted.

#### c. Conclusions

The licensee met regulatory requirements for the packaging and shipping of radioactive materials and radioactive waste. Packages were properly marked, labeled, and radioactive material transport vehicles were properly placarded.

### **R2 Status of Radiological Protection and Chemistry Facilities and Equipment**

#### a. Inspection Scope (86750)

The inspector reviewed associated documentation and toured the low level radioactive waste storage building and on-site storage areas. The inspector also viewed the Unit 1 resin transfer area, Unit 2 boric acid tanks, Unit 2 ion exchanger room valve gallery, waste condensate tanks, and waste gas decay tank room.

#### b. Observations and Findings

The licensee made no significant changes to solid radioactive waste facilities. Changes in equipment were minor and reflected in the current versions of the Process Control Program and implementing procedures. The inspector noted no deviations from commitments in the Updated Final Safety Analysis Reports for, Unit 1, Chapter 11.1.3.3.8 or Unit 2, Chapter 11.5.6.

During the tours of the solid radioactive waste facilities and on-site storage areas, the inspector noted that the housekeeping was good.

To selectively review the material condition in the licensee's solid radioactive waste facilities, the inspector conducted a tour of the Unit 1 resin transfer area, Unit 2 boric acid tanks, Unit 2 ion exchanger room valve gallery, waste condensate tanks, and waste gas decay tank room. No problems were noted.

c. Conclusions

There were no deviations noted from commitments in the Updated Final Safety Analysis Report. Material condition and housekeeping were good in the solid radioactive waste facilities and on-site storage areas.

**R4 Staff Knowledge and Performance**

a. Inspection Scope (86750)

The inspector interviewed the quality assurance supervisor, quality assurance specialist, and radioactive waste supervisor. The inspector observed the performance of two radioactive waste technicians and one radwaste supervisor during radioactive material shipment No. 61-99.

b. Observations and Findings

The quality assurance specialist which was assigned to the radioactive waste management and transportation audit team was knowledgeable of regulatory and procedural requirements for solid radioactive waste management and transportation. The radioactive waste supervisor was the training instructor responsible for radwaste personnel training. This individual had an understanding of the regulatory training and retraining requirements. The radioactive waste supervisor and radwaste technicians responsible for shipping were knowledgeable of radioactive waste classification, packaging, marking, labeling, storage, documentation, vendor supplied computer software operation, and radioactive material transportation regulations.

c. Conclusions

The individuals responsible for training, quality oversight, transfer, packaging, and transport of radioactive material were knowledgeable of procedural requirements and their assigned tasks.

**R5 Staff Training and Qualification**

a. Inspection Scope (86750)

The inspector reviewed training lesson plans and verified current and past training records for two radioactive waste supervisors, four radwaste technicians, and two quality assurance specialists.

b. Observations and Findings

Training lesson plans and records confirmed that, with one exception, the licensee provided the appropriate initial training and periodic retraining in Department of Transportation and NRC regulatory requirements. Additionally, the training and retraining programs included a review of industry lessons learned and procedures for personnel involved in the transfer, storage, packaging, and transport of radioactive material.

49 CFR 172.704(d) states, in part, the record of current training inclusive of the preceding 3 years shall include certification that the hazmat employee has been trained and tested, as required by this subpart. On December 15, 1999, the inspector determined from a review of training records that a radwaste supervisor had last been certified and tested on March 27, 1996. The failure to train and test a radwaste supervisor within three years as required was a violation of 49 CFR 172.704(d). This Severity Level IV violation is being treated as a noncited violation, consistent with Section VII.B.1.a of the NRC Enforcement Policy. The licensee initiated Condition Report CR-ANO-C-1999-0316 documenting this issue (50-313/9916-01).

c. Conclusions

The licensee generally provided solid radwaste and transportation personnel with the appropriate initial training and retraining.

The failure to train and test a radwaste supervisor within three years as required was a violation of 49 CFR 172.704(d). This Severity Level IV violation is being treated as a noncited violation consistent with Section VII.B.1.a of the NRC Enforcement Policy. The licensee initiated Condition Report CR-ANO-C-1999-0316.

**R7 Quality Assurance in Radiological Protection and Chemistry Activities**

a. Inspection Scope (86750)

The inspector interviewed licensee personnel and reviewed the following items:

- Quality assurance audit
- Quality assurance surveillances
- Assessments
- Condition Reports

b. Observations and Findings

The licensee conducted one audit since the previous NRC inspection of solid radioactive waste management and transportation activities. This audit was comprehensive and provided the appropriate level of depth to identify problems and provide oversight of radwaste management and transportation activities. Problems identified were immediately corrected.

Quality personnel conducted five surveillances within this inspection area since the previous inspection. The surveillances were based on selected observations of program activities. Minor deficiencies were transmitted to radiation protection management for evaluation and resolution.

The inspector reviewed a summary of condition reports relating to solid radioactive waste and transportation, and selected four condition reports for a detailed review. The inspector verified that the corrective actions were appropriate and completed in a timely manner.

c. Conclusions

The quality assurance organization provided effective oversight of radioactive waste management and transportation activities. Quality audits and surveillances of solid radioactive waste management and transportation practices were comprehensive and provided licensee management with detailed information to assess the program's performance

## **V. Management Meetings**

### **X1 Exit Meeting Summary**

The inspector presented the inspection results to members of licensee management at an exit meeting on December 16, 1999. The licensee acknowledged the findings presented. No proprietary information was identified.

**ATTACHMENT**

**SUPPLEMENTAL INFORMATION**

**PARTIAL LIST OF PERSONS CONTACTED**

Licensee

- C. Anderson, General Manager, Plant Operations
- J. Vandergrift, Director, Nuclear Safety
- R. Lane, Director, Engineering
- W. Perks, Manager, Technical Support
- J. Smith, Jr., Manager, Radiation Protection
- H. Bishop, Supervisor, Radwaste
- D. Hicks, Supervisor, Radwaste
- D. Fowler, Supervisor, Quality Assurance
- D. Wagner, Quality Specialist
- S. Cotton, Manager, Training
- D. James, Manager, Licensing
- S. Pyle, Licensing Specialist

NRC

- M. Shannon, Senior Radiation Specialist
- K. Weaver, Resident Inspector

**INSPECTION PROCEDURES USED**

86750            Solid Radioactive Waste Management and Transportation of Radioactive  
Material

**ITEMS OPENED AND CLOSED**

Opened and Closed

50-313/9916-01      NCV    The failure to train and test a radwaste supervisor as required,  
was a violation of 49 CFR 172.704 (Section R5).

## PARTIAL LIST OF DOCUMENTS REVIEWED

Summary list of Condition Reports relating to the inspection areas (2/1/97 to 12/13/99)

### Condition Reports

CR-ANO-C-1998-0208  
CR-ANO-C-1999-0259  
CR-ANO-C-1999-0282  
CR-ANO-C-1999-0289

Quality Program Audit Report QAP-1-98

Corporate Assessment Report, ANO Radioactive Material Control Assessment, Dated 3/22/99

Quality Surveillance Reports: 047-97, 014-98, 012-99, 015-99, 046-99

### Procedures

1000.141 "Solid RW Management Process Control Program for ANO Units 1 and 2,"  
Change 002-00-0

1012.020 "Radioactive Material Control," Change 006-00-0

1601.500 "Radioactive Material (RAM) Shipments," Change 001-02-0

1601.501 "Classification, Marking and Labeling of Radioactive Material," Change 002-00-0

1601.502 "Radioactive Material Control at Radwaste," Revision 2

1601.503 "Radioactive Material Packaging," Revision 1

1601.504 "Curie Content of Radioactive Material Containers," Revision 0

1601.505 "Processing of Spent Radioactive Resin," Revision 2

1601.506 "Radioactive Waste Management Program Surveillances," Revision 1

1601.507 "Solidification of Radioactive Liquids Using Fluid Tech Media," Revision 0

1601.508 "Segregation of Radioactive Waste," Revision 0

1601.509 "Maint and Operation of the Container Products Corp. (CPC) Compactor,"  
Change 001-00-0

1601.510 "Anti-C Laundry Handling and Monitoring," Revision 1

1601.511 "Development of Scaling Factors," Change 000-01-0

Training Lesson Plans

ANO-S-LP-HPRW-61094  
AH10610-094, Attachment 1

“Radwaste Requalification,” Revision 2  
“Industry Events,” Revision 1