



UNITED STATES  
**NUCLEAR REGULATORY COMMISSION**

REGION IV  
611 RYAN PLAZA DRIVE, SUITE 400  
ARLINGTON, TEXAS 76011-8064

September 28, 1999

William A. Eaton, Vice President  
Operations - Grand Gulf Nuclear Station  
Entergy Operations, Inc.  
P.O. Box 756  
Port Gibson, Mississippi 39150

SUBJECT: NRC INSPECTION REPORT NO. 50-416/99-11

Dear Mr. Eaton:

This refers to the inspection conducted on August 30 through September 3, 1999, at the Grand Gulf Nuclear Station facility. The purpose of the inspection was to review your solid radioactive waste management and radioactive material transportation programs. The enclosed report presents the results of this inspection.

Based on the results of this inspection, the NRC has determined that two Severity Level IV violations of NRC requirements occurred. These violations are being treated as noncited violations (NCVs), consistent with Appendix C of the Enforcement Policy. These NCVs are described in the subject inspection report. If you contest the violation or severity level of these NCVs, 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 Grand Gulf Nuclear Station facility.

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).

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

Sincerely,

/s/

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

Entergy Operations, Inc.

-2-

Docket No.: 50-416

License No.: NPF-29

Enclosures:

NRC Inspection Report No.

50-416/99-11

cc w/enclosures:

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Entergy Operations, Inc.

-3-

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-4-

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

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Grand Gulf Resident Inspector  
RIV File  
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**ENCLOSURE**

U.S. NUCLEAR REGULATORY COMMISSION  
REGION IV

Docket No.: 50-416  
License No.: NPF-29  
Report No.: 50-416/99-11  
Licensee: Entergy Operations, Inc.  
Facility: Grand Gulf Nuclear Station  
Location: Waterloo Road  
Port Gibson, Mississippi  
Dates: August 30 through September 3, 1999  
Inspector: James S. Dodson, Radiation Specialist  
Plant Support Branch, Division of Reactor Safety  
Approved By: Gail M. Good, Chief, Plant Support Branch  
Division of Reactor Safety  
Attachment: Supplemental Information

## EXECUTIVE SUMMARY

### Grand Gulf Nuclear Station NRC Inspection Report No. 50-416/99-11

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

- With one exception, 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 failure to mark a 55-gallon drum stored in the radwaste evaporator bottoms room as required by Procedure 01-1-08-61, Revision 10, was identified as a violation of Technical Specification 5.4.1.a. This Severity Level IV violation is being treated as a noncited violation, consistent with Appendix C of the NRC Enforcement Policy. This issue was entered in the licensee's corrective action program as Condition Report CR-GGN-1999-0989 (Section R1.1).
- In general, packages were properly marked and labeled, and radioactive material transport vehicles were properly placarded (Section R1.2).
- Several minor shipping documentation errors and inconsistencies were noted with three shipments. For example, forms were not properly completed, and one form did not contain the required signature. This issue was entered in the licensee's corrective action program as Condition Report CR-GGN-1999-1010 (Section R1.2).
- The failure to properly describe the hazardous material in shipment 99-0404 as special form was identified as a violation of 49 CFR 172.202. This Severity Level IV violation is being treated as a noncited violation, consistent with Appendix C of the NRC Enforcement Policy. This issue was entered in the licensee's corrective action program as Condition Report CR-GGN-1999-1011 (Section R1.2).
- Problems with the material condition of the inlet and decant piping of the spent resin pump were noted. There was surface rust in several locations on each of the pipes, and resin was on the floor of the spent resin tank room (Section R2).
- The individuals responsible for training, quality oversight, and implementation of the solid radioactive waste management and transportation programs were knowledgeable of regulatory and procedural requirements (Section R4).
- The licensee provided solid radwaste and transportation personnel with the appropriate initial training and retraining (Section R5).

- The quality assurance organization provided effective oversight of radioactive waste management and transportation activities. Quality audits 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, Chapter 11.4. The inspector verified that, with one exception, randomly selected radioactive material containers were properly labeled and that the licensee's tracking system listed the correct location and status of the containers.

Technical Specification 5.4.1.a requires, in part, that written procedures be established, implemented, and maintained covering the activities recommended in Appendix A of Regulatory Guide 1.33, Revision 2, February 1978. Section 7.b(3) of Appendix A of this Regulatory Guide includes procedures for solid waste system drum handling and storage. Administrative Procedure 01-1-08-61, "Waste Container Accountability and Waste Permits," Revision 10, stated, in part, that the generator (of the waste) marks the container with the waste permit number, responsible supervisor's name, extension, contents of the container, and appropriate hazard communication information. The inspector identified a 55-gallon drum stored in the radwaste evaporator bottoms room that was not marked as required by Procedure 01-1-08-61. The maximum dose rate levels at contact with the container were 350 millirems per hour. The failure to follow Procedure 01-1-08-61 was identified as a violation of Technical Specification 5.4.1.a. This Severity Level IV violation is being treated as a noncited violation, consistent with Appendix C of the NRC Enforcement Policy. This issue was entered in the licensee's corrective action program as Condition Report CR-GGN-1999-0989 (50-416/9911-01).

###### Waste Stream Sampling

The inspector reviewed the analysis results and the associated evaluations for the four identified waste streams. 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 reviews 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 randomly selected shipping documentation and confirmed that the licensee prepared manifests included the information required by 10 CFR Part 20, Appendix G. The shipment manifests included a certification that the transported material was properly classified, described, packaged, marked, labeled, and that it was in proper condition for transport. The certification was signed and dated by an authorized licensee representative.

#### c. Conclusions

With one exception, 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.

The failure to mark a 55-gallon drum stored in the radwaste evaporator bottoms room as required by Procedure 01-1-08-61, Revision 10, was identified as a violation of Technical Specification 5.4.1.a. This Severity Level IV violation is being treated as a noncited violation, consistent with Appendix C of the NRC Enforcement Policy. This issue was entered in the licensee's corrective action program as Condition Report CR-GGN-1999-0989.

## 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 reviewed A<sub>2</sub> values for selected radionuclides in the licensee's waste classification computer data base and confirmed that they matched the values in 49 CFR 173.435. The licensee maintained records that documented Type B packages used by the licensee were designed to meet the applicable requirements specified in 10 CFR 71.12.

#### Radiation Surveys

The inspector conducted radiation surveys during tours of the radioactive waste processing and storage facilities to ensure that external radiation levels were within the allowable limits of 49 CFR 173.441. The inspector verified 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 12 shipping documentation packages for review. From this review, the inspector determined that packages prepared for transport were properly marked and labeled and that radioactive material transport vehicles were properly placarded in accordance with 49 CFR 172.504 and 172.506.

#### Shipping Papers and Documentation

The inspector reviewed 12 randomly selected examples of shipping documentation and confirmed that the licensee generally 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.

The inspector noted several minor documentation errors associated with Radioactive Material Shipments 99-0408, 99-0603, and 99-0708. These packages contained errors and inconsistencies such as: Form 540, Block 17, stated LSAII instead of N/A; Form 541, Block 16 U, was lined out in error; and the exclusive use shipment briefing form was signed by the truck driver, instead of the briefing person. The licensee initiated Condition Report CR-GGN-1999-1010 to address this issue.

49 CFR 172.202 states, in part, that the shipping description of a hazardous material on the shipping paper must include the proper shipping name in Column 2 and the identification number in Column 4. The inspector noted that Radioactive Material Shipment 99-0404 was incorrectly described as Radioactive Material, n.o.s., 7, UN2982, rather than Radioactive Material, special form, n.o.s., 7, UN2974. The failure to properly describe the hazardous material on the shipping papers was identified as a violation of 49 CFR 172.202. This Severity Level IV violation is being treated as a noncited violation, consistent with Appendix C of the NRC Enforcement Policy. This issue was entered in the licensee's corrective action program as Condition Report CR-GGN-1999-1011 (50-416/9911-02).

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

c. Conclusions

In general, packages were properly marked and labeled, and radioactive material transport vehicles were properly placarded.

Several minor shipping documentation errors and inconsistencies were noted with three shipments. For example, forms were not properly completed, and one form did not contain the required signature. This issue was entered in the licensee's corrective action program as Condition Report CR-GGN-1999-1010.

The failure to properly describe the hazardous material in shipment 99-0404 as special form was identified as a violation of 49 CFR 172.202. This Severity Level IV violation is being treated as a noncited violation, consistent with Appendix C of the NRC Enforcement Policy. This issue was entered in the licensee's corrective action program as Condition Report CR-GGN-1999-1011.

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

a. Inspection Scope (86750)

The inspector reviewed associated documentation and toured the radwaste building and on-site storage areas. The inspector also viewed radwaste storage tanks, pumps, valves, and associated piping.

b. Observations and Findings

The licensee made no significant changes to solid radwaste 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 Report, Chapter 11.4.

During the tours of the radwaste building and on-site storage areas, the inspector noted that the housekeeping was generally acceptable. However, resin beads were observed on the floor of the spent resin tank room. The licensee initiated a trouble ticket to clean up the resin.

To selectively review the material conditions in the licensee's radwaste facility, the inspector conducted a walkdown of radwaste storage tanks, pumps, valves, and associated piping. No problems were noted with the chemical waste receiving tank, equipment drain tanks Nos A and B, floor drain sample tanks Nos. A and B, or their associated pumps and piping. However, the inspector noted that there were problems with the material condition of the inlet and decant pipes of the spent resin pump. Surface rust was observed in several locations on each of the pipes. The licensee initiated a maintenance action item to evaluate and resolve the problem.

c. Conclusions

Problems with the material condition of the inlet and decant piping of the spent resin pump were noted. There was surface rust in several locations on each of the pipes, and resin was on the floor of the spent resin tank room.

**R4 Staff Knowledge and Performance**

a. Inspection Scope (86750)

The inspector interviewed a quality specialist/lead auditor, health physics supervisor radwaste, health physics/chemistry specialist, and the training instructor involved in the radioactive material transportation program.

b. Observations and Findings

The quality specialist who conducted quality assurance audits was knowledgeable of regulatory and procedural requirements for solid radioactive waste management and transportation. The training instructor responsible for radwaste personnel training had a good understanding of the regulatory training and retraining requirements. The health physics supervisor and radwaste and health physics/chemistry specialist 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, and implementation of the solid radioactive waste management and transportation programs were knowledgeable of regulatory and procedural requirements.

**R5 Staff Training and Qualification**

a. Inspection Scope (86750)

The inspector reviewed training lesson plans and verified current and past training records for the health physics supervisor, radwaste and health physics/chemistry specialist, lead quality auditor, training instructor, dewatering system vendor technician, six radwaste technicians, and five health physics technicians.

b. Observations and Findings

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

c. Conclusions

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

**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
- Vendor audits
- Self-assessments
- Condition Reports

b. Observations and Findings

The licensee conducted two audits since the previous NRC inspection of solid radioactive waste management and transportation activities. These audits were comprehensive and provided the appropriate level of depth to identify problems and provide oversight of radwaste management and transportation activities. Problems identified were properly entered in the licensee's corrective action program.

Since the previous inspection, quality assurance personnel conducted two surveillances in this inspection area. The surveillances were based on selected observations of program activities. No deficiencies were identified by the evaluator.

Three vendor audits were conducted. The results of the vendor audits were satisfactory.

The inspector reviewed a summary of condition reports related to solid radioactive waste and transportation and selected eight 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 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 September 3, 1999. The licensee acknowledged the findings presented. No proprietary information was identified.

**ATTACHMENT**

**SUPPLEMENTAL INFORMATION**

PARTIAL LIST OF PERSONS CONTACTED

Licensee

- J. Roberts, Director, Nuclear Safety and Assurance
- C. Lambert, Director, Engineering
- D. Cupstid, Manager, Technical Support
- R. Wilson, Superintendent, Radiation Protection
- R. Benson, Health Physics Supervisor, Radwaste
- P. Stokes, Health Physics/Chemistry Specialist, Radwaste
- M. Michalski, Radwaste Coordinator
- D. Coulter, Quality Specialist
- R. Sumrall, Training Instructor
- M. Larson, Senior Licensing Specialist
- C. Brooks, Senior Licensing Specialist

NRC

- J. Dixon-Herrity, Senior Resident Inspector
- P. Alter, Resident Inspector

INSPECTION PROCEDURES USED

86750            Solid Radioactive Waste Management and Transportation of Radioactive Material

ITEMS OPENED AND CLOSED

Opened and Closed

- |                |     |   |
|----------------|-----|---|
| 50-416/9911-01 | NCV | The failure to follow Procedure 01-1-08-61, Revision 10, was identified as a violation of Technical Specification 5.4.1.a (Section R1.1).   |
| 50-416/9911-02 | NCV | The failure to properly describe the hazardous material on the shipping papers of Radioactive Material Shipment 99-0404 was identified as a violation of 49 CFR 172.202 (Section R1.2). |

PARTIAL LIST OF DOCUMENTS REVIEWED

Summary list of Condition Reports related to the inspection areas (8/1/97 to 8/31/99)

Condition Reports

CR-GGN-1997-0488  
CR-GGN-1998-0715  
CR-GGN-1997-0791  
CR-GGN-1998-0816  
CR-GGN-1998-0839  
CR-GGN-1997-0874  
CR-GGN-1998-0890  
CR-GGN-1999-0941

Quality Program Audit Report QPA 32.01-97

Quality Program Audit Report QPA 15.01-98

Quality Surveillance Reports GIN97: 01463 and GIN: 99/00124

Vendor Audits

CIN-98/00066, Molten Metal Technology  
CIN-98/00824, GTS Duratech  
CIN-99/00124, Thermo Nutech

Procedures

Administrative Procedure	01-1-08-61	"Waste Container Accountability and Waste Permits," Revision 10
Administrative Procedure	01-S-08-21	"Cask Handling for the 14-190 and 14-210 Series Casks," Revision 13
Administrative Procedure	01-S-08-22	"Operating Guidelines for the Use of Polyethylene High Integrity Containers," Revision 5
Radiation Protection Procedure	08-S-01-25	"Radwaste Resin Transfer," Revision 5
Radwaste Procedure	08-S-05-2	"Shipping Radioactive Materials," Revision 19
Radwaste Procedure	08-S-06-10	"Radioactive Shipment Classification," Revision 9
Radwaste Instruction	08-S-06-11	"Classification of Radwaste," Revision 12
Radwaste Instruction	08-S-06-12	"Verifying Scaling Factors," Revision 7

Radwaste Instruction	08-S-06-20	"Packaging Radioactive Materials," Revision 15
Radwaste Instruction	08-S-06-21	"Laundry Handling and Shipment Preparation," Revision 12
Radwaste Instruction	08-S-06-30	"Radioactive Material Shipment Surveys," Revision 17
Radwaste Instruction	08-S-06-40	"Marking, Labeling and Placarding Radioactive Material Shipments," Revision 11
Radwaste Instruction	08-S-06-50	"Loading Radioactive Material," Revision 7
Radwaste Instruction	08-S-06-71	"Sampling Procedures for Waste Classification," Revision 4
Radwaste Instruction	08-S-06-74	"Operation of the Radman Computer Program," Revision 3
Radwaste Instruction	08-S-06-75	"Operation and Maintenance of the NUPAC Remote Liner Grapples and Remote Closure Device," Revision 1
Radwaste Instruction	08-S-06-76	"Cask Handling for the Pacific Nuclear 10-142 Cask," Revision 6
Radwaste Instruction	08-S-06-78	"Cask Handling for the SEG 14-215 Cask," Revision 2

Training Lesson Plans

GG-1-OTH-HPH-RWHPF.03	"Radwaste Handling Practical Factor," Revision 3
GG-1-LP-HPH-CONSP.00	"Confined Space Technician," Revision 0
TE-APS-FUN-LP-028-00	"Safety at Work," Revision 0
GG-1-LP-HP-HAZRV-00	"Hazard Communications Review," Revision 0
GG-1-LP-HPH-CTRWH	"Radwaste Handling," Revision 2