ENCLOSURE

U.S. NUCLEAR REGULATORY COMMISSION
REGION IV

Docket No.:	50-382
License No.:	NPF-38
Report No.:	50-382/99-10
Licensee:	Entergy Operations, Inc.
Facility:	Waterford Steam Electric Station, Unit 3
Location:	Hwy. 18 Killona, Louisiana
Dates:	July 19 to 23, 1999
Inspector(s):	James S. Dodson, Radiation Specialist Plant Support Branch
	J. Blair Nicholas, Ph.D., Senior Radiation Specialist Plant Support Branch
Approved By:	Gail M. Good, Chief, Plant Support Branch Division of Reactor Safety
Attachment:	Supplemental Information

EXECUTIVE SUMMARY

Waterford Steam Electric Station, Unit 3
NRC Inspection Report No. 50-382/99-10

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).

- With one exception, the licensee met regulatory requirements for the packaging and shipping of radioactive materials and radioactive waste (Section R1.2).

- On October 20, 1998, the package integrity of radioactive waste shipment 98-1017 was breached because a fuel rack was not properly secured. As a result, a violation of 49 CFR 173.427 was identified. This Severity Level IV violation is being treated as a noncited violation, consistent with Appendix C of the NRC Enforcement Policy. This violation is in the licensee's corrective action program as Condition Report CR-WF3-1998-1365 (Section R1.2).

- Housekeeping in the solid radwaste facilities was poor in that the floors were littered with piles of dirt, broken light bulbs, lifting slings, scaffold parts, hoses, tools, and spare parts. There were also problems with material condition within the licensee's radwaste facilities; some areas of the spent resin tank and piping supports showed signs of surface rust, and there were indications of resin spillage (Section R2).

- The individuals responsible for training, oversight, transfer, packaging, and transport of radioactive material were appropriately knowledgeable of training and retraining requirements. Additionally, these individuals were knowledgeable of waste classification, packaging, marking, labeling, storage, documentation, vendor supplied computer software operation, and radioactive material transportation regulations (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 assurance evaluations 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 inspectors 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 inspectors confirmed that radioactive waste was stored in accordance with commitments in the Updated Final Safety Analysis Report, Chapter 11.4. A revision to Chapter 11.4 was in process to allow both radioactive material and radioactive waste to be stored in the low-level radwaste storage facility. The inspectors 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 inspectors reviewed the analysis results and the associated evaluations for the five identified waste streams. The inspectors 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. Analyses were performed by a vendor laboratory and the licensee as required.

Waste Classification

The licensee used a vendor supplied computer software code to perform the calculations necessary to classify radioactive waste. The inspectors 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 inspectors confirmed that the licensee met the structural integrity requirements of 10 CFR 61.56 (b)(1) by using high integrity containers. The inspectors verified that the licensee maintained records documenting the time high integrity containers were subjected to ultraviolet radiation. No adverse findings related to the licensee's radioactive waste characteristics had been identified by burial site representatives.

Manifests

The inspectors reviewed random 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

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 inspectors 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 inspectors checked A_2 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.

49 CFR 173.427(6)(ii) states, in part, when the conveyance is the packaging there must be no leakage of Class 7 radioactive material from the conveyance. On October 20, 1998, Manufacturing Sciences Corporation in Oak Ridge, Tennessee, identified that the package in radioactive waste shipment No. 98-1017 was breached. The package contained a fuel rack that was not properly secured. The state of Tennessee determined that contamination levels on the outside of the package were approximately 8,000 disintegrations per minute. The licensee initiated Condition Report CR-WF3-1998-1365. Radiation survey records for the shipment documented that the maximum dose rate levels at 1 meter from the container were 20 millirems per hour. Accordingly, this breach of package integrity was identified as a violation of 49 CFR 173.427. This Severity Level IV violation is being treated as an NCV consistent with Appendix C of the NRC Enforcement Policy (50-382/9910-01).

The inspectors reviewed corrective actions, procedural requirements, and shipping documentation. There were no repeat occurrences.

Radiation Surveys

Radiation surveys were conducted by inspectors 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 inspectors 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 inspectors reviewed shipping documentation packages and determined that packages 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 inspectors reviewed 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 inspectors verified that shipping permits, licenses, certificates of compliance, and user lists were current. However, the qualified shipper did not have current copies of the shipping regulations. The licensee acknowledged the inspectors' observation and began the process of obtaining current copies of the shipping regulations.

c. Conclusions

With one exception, the licensee met regulatory requirements for the packaging and shipping of radioactive materials and radioactive waste. On October 20, 1998, the package integrity of radioactive waste shipment 98-1017 was breached because a fuel

rack was not properly secured. As a result, a violation of 49 CFR 173.427 was identified. This Severity Level IV violation is being treated as an NCV, consistent with Appendix C of the NRC Enforcement Policy. This violation is in the licensee's corrective action program as Condition Report CR-WF3-1998-1365.

R2 Status of Radiological Protection and Chemistry Facilities and Equipment

a. Inspection Scope (86750)

The inspectors reviewed associated documentation and toured the solidification building, radioactive material storage building, and low-level radwaste storage facility. The inspectors also viewed the spent resin storage tank and resin transfer pump rooms via remote cameras.

b. Observations and Findings

The licensee made no significant changes to solid radwaste facilities. Changes in equipment were reflected in the current versions of the Process Control Program and implementing procedures. The inspectors noted no deviations from the commitments in the Updated Final Safety Analysis Report, Chapter 11.4.

During the tours of the low-level radwaste storage building, radioactive material storage building, and vendor solidification building, inspectors noted that the housekeeping was poor. In the low-level radwaste storage building, there were piles of dirt and broken light bulbs on the floor, lifting slings, open tool boxes, and tube lock scaffold parts laying on storage containers. In the solidification building, there were hoses, tools, and spare parts scattered on the floor. The licensee acknowledged the inspectors' observations.

To selectively review the material conditions in the licensee's radwaste facility, the inspectors asked to see the spent resin storage tank and resin transfer pump rooms. Since the rooms were controlled as locked, high radiation areas, the inspectors viewed the rooms through two of the licensee's television cameras. The inspectors noted that there were problems with the material condition of the licensee's spent resin tank and piping supports. There were signs of surface rust on some areas on the spent resin tank, tank supports, and piping supports. Additionally, there were indications of resin spillage in the spent resin tank room. The licensee's system engineer, who had been assigned this system for approximately 18 months, had not observed the material condition of system components. The licensee acknowledged the inspectors' observations.

c. Conclusions

Housekeeping in the solid radwaste facilities was poor in that the floors were littered with piles of dirt, broken light bulbs, lifting slings, scaffold parts, hoses, tools, and spare parts. There were also problems with material condition within the licensee's radwaste facilities; some areas of the spent resin tank and piping supports showed signs of surface rust, and there were indications of resin spillage.

R4 Staff Knowledge and Performance

a. Inspection Scope (86750)

The inspectors interviewed the quality specialist, qualified shipper, and the two training instructors involved in the radioactive material transportation program.

b. Observations and Findings

The quality specialist responsible for quality assurance audits and surveillances was knowledgeable of regulatory and procedural requirements for solid radioactive waste management and transportation. The two training instructors responsible for radwaste personnel training were knowledgeable of the regulatory training and retraining requirements. The qualified shipper was 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, oversight, transfer, packaging, and transport of radioactive material were appropriately knowledgeable of training and retraining requirements. Additionally, these individuals were knowledgeable of waste classification, packaging, marking, labeling, storage, documentation, vendor supplied computer software operation, and radioactive material transportation regulations.

R5 Staff Training and Qualification

a. Inspection Scope (86750)

The inspectors reviewed initial training lesson plans, retraining lesson plans, and training records for the qualified shipper, lead quality assurance auditor, and three randomly selected radwaste 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 regulatory requirements. Additionally, the training and retraining programs included instructions and a review of operating procedures for all personnel involved in the transfer, 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 inspectors 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 one audit since the previous NRC inspection of solid radioactive waste management and transportation activities. This audit was comprehensive, provided the appropriate level of depth to identify problems, and provided good oversight of radwaste management and transportation activities. Problems identified were properly placed in the licensee's corrective action program.

Since the previous inspection, quality assurance personnel conducted three surveillances within this inspection area. These surveillances were based on selected observations of program activities and practices. The evaluators identified deficiencies and initiated condition reports which were placed in the licensee's corrective action program.

Two vendors audits were conducted for radwaste management related support functions. The vendor services were for the waste stream analysis laboratory and radwaste processing. The results of the vendor audits were satisfactory for both vendors.

One self assessment was conducted by the radiation protection department during this inspection period. The scope of this assessment was radioactive material labeling, storage, and integrity. The inspectors noted no problems with the assessment.

The inspectors reviewed a summary of condition reports related to solid radioactive waste and transportation activities. The inspectors reviewed selected condition reports and verified that the corrective actions were completed in a timely manner.

c. Conclusions

The quality assurance organization provided effective oversight of radioactive waste management and transportation activities. Quality assurance evaluations 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 inspectors presented the inspection results to members of licensee management at an exit meeting on July 23, 1999. The licensee acknowledged the findings presented. No proprietary information was identified.

ATTACHMENT

SUPPLEMENTAL INFORMATION

PARTIAL LIST OF PERSONS CONTACTED

Licensee

C. Dugger, Vice President, Nuclear Operations
E. Ewing, Director, Nuclear Safety and Regulatory Affairs
P. Kelly, Supervisor, Radiation Protection
R. Killian, Supervisor, Quality Engineering
S. Landry, Radwaste Specialist, Radiation Protection
T. Leonard, Generai Manager, Plant Operations
T. Lett, Superintendent, Radiation Protection
D. Newman, Quality Assurance
J. Noehl, Radiation Protection Instructor
R. Prados, Senior Lead Engineer, Licensing
M. Van Der Horst, Radiation Protection Instructor

NRC

T. Farnholtz, Senior Resident Inspector
J. Keeton, Resident Inspector

INSPECTION PROCEDURES USED

86750	Solid Radioactive Waste Management and Transportation of Radioactive Material

ITEMS OPENED AND CLOSED

Opened

50-382/9910-01	NCV	Failure to maintain package integrity of radioactive waste shipment No. 98-1017 (Section 1.2).

Closed

50-382/9910-01	NCV	Failure to maintain package integrity of radioactive waste shipment No. 98-1017 (Section 1.2).

PARTIAL LIST OF DOCUMENTS REVIEWED

1997 and 1998 Waterford-3 SES Annual Radiological Effluent Release Report, Section 5.0, "Solid Wastes," and Section 8.1, "Changes to the Process Control Program"

List of Condition Report Summaries relating to the inspection areas (1/1/98 to 6/30/99)

Condition Report CR-WF3-1998-1365
Condition Report CR-WF3-1998-1374
Condition Report CR-WF3-1998-1373
Condition Report CR-WF3-1998-0712
Condition Report CR-WF3-1998-0465
Condition Report CR-WF3-1998-0156
Condition Report CR-WF3-1997-2776

Waterford-3 Radioactive Material Self Assessment dated November 17, 1998

Waterford-3 Quality Assurance Audit Schedules for 1996, 1997, 1998, and 1999

Quality Assurance Audit Report SA-99-024.1

Quality Assurance Surveillance Reports QS-98-020, QS-98-062, and QS-99-037

Vendor Audits 97-26, AR-98-GTSDK-01, and R98-3

Procedures

RW-001-210	"Process Control Program," Revision 8
RW-002-110	"Waste Sample Collection," Revision 6
RW-002-200	"Collection and Packaging of Solid Radioactive Waste," Revision 12
RW-002-220	"Packaging Radwaste Filters for Disposal," Revision 5
RW-002-300	"Receipt, Storage, and Loading of Shipping Containers," Revision 12
RW-002-402	"Use of Radioactive Material and Waste Shipping Computer Codes," Revision 1
RW-002-501	"Radioactive Material/Waste Shipments," Revision 7
QAP-024	"QA Surveillances and Assessments," Revision 4
QAP-302	"Audit Program," Revision 19
NTP-207	"Radwaste Services Training," Revision 6
NTC-237	"Course Description Radwaste Services Training," Revision 13
NTC-238	"Radwaste Services Continuing Training," Revision 8