

ENCLOSURE

U.S. NUCLEAR REGULATORY COMMISSION
REGION IV

Docket Nos.: 50-275
50-323

License Nos.: DPR-80
DPR-82

Report No.: 50-275/99-13
50-323/99-13

Licensee: Pacific Gas and Electric Company

Facility: Diablo Canyon Nuclear Power Plant, Units 1 and 2

Location: 7 1/2 miles NW of Avila Beach
Avila Beach, California

Dates: August 2-6, 1999

Inspector: Larry Ricketson, P. E., Senior Radiation Specialist
Plant Support Branch

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

Attachment: Supplemental Information

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EXECUTIVE SUMMARY

Diablo Canyon Nuclear Power Plant, Units 1 and 2
NRC Inspection Report No. 50-275/99-13; 50-323/99-13

The NRC conducted an inspection to review 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, procedures and documentation, staff knowledge and performance, staff training and qualifications, and quality assurance activities.

Plant Support

- The licensee implemented a good solid radioactive waste management program. Radioactive material was correctly stored and controlled. Radioactive waste was correctly sampled, classified, and stabilized for burial. Waste manifests were prepared in accordance with regulatory requirements (Section R1.1).
- The licensee maintained a good program for packaging and shipping radioactive materials and radioactive waste. Shipments were correctly categorized, packaged, and surveyed. Associated hazards were correctly communicated through shipping documentation, driver briefings, package marking, labeling, and vehicle placarding (Section R1.2).
- The licensee's primary procedure for the transportation of radioactive material provided poor guidance for the transportation of surface contaminated objects (Section R3).
- The individuals responsible for transfer, packaging, and transport of radioactive material possessed a good knowledge of radioactive waste classification requirements, waste classification and transportation computer software usage, and radioactive material transportation regulations (Section R4).
- The licensee provided the required training to radiation workers and specialists that were involved in the transfer, packaging, and transport of low-level radioactive waste and radioactive material (Section R5).
- There was good oversight of the solid radioactive waste management and radioactive material transportation programs. Nuclear Quality Services conducted thorough audits and frequent assessments using auditors with practical experience (Section R7).



Report Details

IV. Plant Support

R1 Radiological Protection and Chemistry Controls

R1.1 Implementation of the Solid Radioactive Waste Program

a. Inspection Scope (86750)

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

- Waste storage
- Waste stream sample results
- 10 CFR Part 61 waste classification
- Waste shipment manifests

b. Observations and Findings

Waste Storage

During tours of the radiological controlled area, the inspector confirmed that radioactive waste was stored in accordance with commitments in Chapter 11.5 of the Final Safety Analysis Report.

Waste Stream Sampling

The inspector reviewed waste stream sampling results and determined that the licensee completed the sampling and analyses at the required intervals. Analyses of waste stream samples were performed by a vendor laboratory. The vendor laboratory's operations were reviewed as part of the licensee's vendor auditing program. The results of the latest vendor audit indicated no problems that would prevent the vendor from providing accurate analytical information.

Waste Classification

The inspector reviewed sample results from selected shipments of radioactive waste and confirmed the waste shipments were properly classified in accordance with 10 CFR 61.55 and met the characteristic requirements of 10 CFR 61.56. The inspector determined through document review that packages were labeled properly with respect to waste classification.



Manifests

The inspector confirmed through random reviews of shipping documentation that the licensee prepared manifests that included the information required by 10 CFR Part 20, Appendix G.

c. Conclusions

The licensee implemented a good solid radioactive waste management program. Radioactive material was correctly stored and controlled. Radioactive waste was correctly sampled, classified, and stabilized for burial. Waste manifests were prepared in accordance with regulatory requirements.

R1.2 Transportation Activities

a. Inspection Scope (86750)

The licensee did not transport radioactive material during the inspection. The inspector reviewed selected examples of the following items:

- Packaging
- Radiation and contamination surveys of packages and vehicles
- Shipping paper documentation
- Package marking and labeling
- Vehicle placarding
- Driver instructions
- Emergency response information
- Consignee licenses

b. Observations and Findings

Packaging

The inspector reviewed selected shipping documents and confirmed that the licensee categorized the radioactive shipments correctly and chose appropriate packaging for the shipment category and total activity. The inspector reviewed packaging documentation and determined the packaging was fabricated in accordance with 49 CFR 173.410 (general design requirements) or 49 CFR 173.411 (industrial packaging requirements), as appropriate. In accordance with 49 CFR 173.415, records were maintained that documented Type A, Department of Transportation Specification 7A, packaging used by the licensee was designed in accordance with 49 CFR 178.350. Shipping records documented that the activity within shipments of low specific activity and surface contaminated objects did not exceed the conveyance activity limits of 49 CFR 173.427, Table 9.

Radiation Surveys

Radiation surveys were conducted to ensure external radiation and contamination levels were within the allowable limits of 49 CFR 173.441 and 173.443.



Shipping Papers

The inspector confirmed that shipping papers included the information required by 49 CFR 172.200 - 172.205.

Package Marking and Labeling

Through a review of documentation (photographs), the inspector confirmed that packages were properly marked, in accordance with 49 CFR 172.300-338, and labeled, in accordance with 49 CFR 172.400-450.

Placarding

The inspector reviewed selected shipping documents and photographs of shipments and confirmed that transport vehicles were properly placarded in accordance with 49 CFR 172.504 and 172.506.

c. Conclusions

The licensee maintained a good program for packaging and shipping radioactive materials and radioactive waste. Shipments were correctly categorized, packaged, and surveyed. Associated hazards were correctly communicated through shipping documentation, driver briefings, package marking, labeling, and vehicle placarding.

R2 Status of Radiological Protection and Chemistry Facilities and Equipment

The inspector toured the radioactive material and radioactive waste storage areas. The areas were as described in Chapter 11.5 of the Final Safety Analysis Report.

R3 Radiological Protection and Chemistry Procedures and Documentation

a. Inspection Scope (86750)

The inspector reviewed the implementing procedures listed in the attachment to this report.

b. Observations and Findings

RCP D-631, "Radioactive Material Shipments," Revision 4, provided little practical guidance to aid radiation protection personnel in determining which items qualified as surface contaminated objects. The licensee had documented in a "white paper," or basis document, an acceptable process for making the determination. However, Procedure RCP D-631 did not reference the process or the white paper. The procedure simply provided the definition of surface contaminated objects from 49 CFR 173.403.

The radioactive waste supervisor acknowledged that Procedure RCP D-631 provided poor guidance with respect to determining if items met the requirements for shipping them as surface contaminated objects. Action Request A0482823 was initiated to



address the need for better procedural guidance related to surface contaminated objects.

c. Conclusions

The licensee's primary procedure for the transportation of radioactive material provided poor guidance for the identification of items that qualify to be shipped as surface contaminated objects.

R4 Staff Knowledge and Performance in Radiological Protection and Chemistry

The inspector interviewed the radwaste supervisor and the cognizant radiation protection engineer. These individuals were primarily responsible for transfer, packaging, and transport of radioactive material. Both individuals possessed a good knowledge of radioactive waste classification requirements, waste classification and transportation computer software usage, and radioactive material transportation regulations.

R5 Staff Training and Qualification

The inspector interviewed training representatives and reviewed training records. The inspector determined that the licensee provided training and periodic retraining in the Department of Transportation and NRC regulatory requirements, the waste burial license requirements, and instructions and operating procedures for all personnel involved in the transfer, packaging, and transport of radioactive material. Employees involved in processes that generated radioactive waste were trained to minimize the waste.

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 audits and checklists
- Quality assurance surveillances
- Auditor qualifications
- Quality control reviews
- Self-assessments
- Problem identification documentation

b. Observations and findings

Since the previous NRC review of solid radioactive waste management and transportation activities, the licensee conducted an audit and quarterly assessments of the solid radioactive waste and radioactive materials transportation programs. Audit 981690022 was conducted July 7-17, 1998. The audit team included four members, including a technical specialist from another utility. The inspector reviewed resumes of

selected team members and noted that one of the site's auditors was formerly a radioactive waste foreman and radiation protection instructor. The inspector determined that this auditor's experience was an asset to the team.

The audit scope was comprehensive. The audit team did not identify any major adverse findings; however, minor findings were identified and recommendations were made. The level of findings indicated that the audit was of sufficient depth. The findings were properly placed into the licensee's corrective action program. The audit team concluded that solid radioactive waste and radioactive material transportation programs were effectively implemented.

The program audit was supplemented by frequent Nuclear Quality Services assessments. The assessments were observations of significant activities related to either solid radioactive waste management or transportation of radioactive materials. The assessments were conducted by an auditor with practical experience in the activities observed. The level of findings demonstrated that the auditor possessed a good knowledge of the applicable requirements. The findings documented by the assessments were also properly placed into the licensee's corrective action program.

c. Conclusions

There was good oversight of the solid radioactive waste management and radioactive material transportation programs. Nuclear Quality Services conducted thorough audits and frequent assessments using auditors with practical experience.

R8 Miscellaneous Radiological Protection and Chemistry Issues

8.1 (Open) Inspection Followup Item 50-275/9911-02; 50-323/9911-02 - Decline in radiation worker practices

The licensee identified a decline in radiation worker practices during Refueling Outage 1R9. Action Request A0484208 was initiated to develop and track corrective actions addressing the negative trend. The licensee had made insufficient progress to warrant closing this item.

V. Management Meetings

X1 Exit Meeting Summary

The inspector presented the inspection results to members of licensee management at an exit meeting on August 6, 1999. The licensee acknowledged the findings presented. No proprietary information was identified.





LIST OF DOCUMENTS REVIEWED

Audits

Audit 981690022 Solid Low Level Radioactive Waste Management and Radioactive Material
Transportation Program (conducted July 7-17, 1998)

Solid Radioactive Waste and Radioactive Material Transportation Assessment Reports

980080101, 980630055, 981840001, 983490005, 990970002, 991890023

Procedures

RCP D-610 Control of Radioactive Materials, Revision 10A
RCP D-631 Radioactive Material Shipments, Revision 4
RCP RW-1 Collection and Packaging of Low-Level Radioactive Waste, Revision 12
RCP RW-3 Radioactive Waste Nuclide Fractions and Correlation Factor Determination,
Revision 13
RCP RW-4 Radioactive Waste Shipment, Revision 16B
RCP RW-7 Burial Site Disposal Criteria & Classification of Radwaste, Revision 8
RCP RW-13 Storage and Accountability of Low-Level Radioactive Waste, Revision 1
RP1.ID5 Radioactive Material Shipments, Revision 2
RP2 Solid Low-Level Radioactive Waste Management, Revision 1
RP2.DC1 Radioactive Waste Classification Program, Revision 2
RP2.DC2 Process Control Program, Revision 5

Miscellaneous

Conversion of SCO-II Limit to Dose-Rate and Count-Rate Units, Revision 1 (7/02/96)

Surface Contaminated Object Classification - Documentation of the Diablo Canyon Approach
(6/07/99)

