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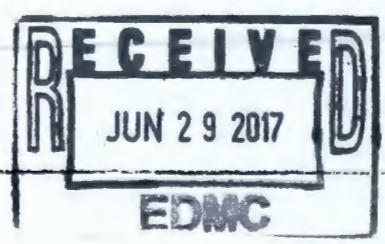
242-A Evaporator Facility Environmental Compliance Assessment

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Analysis & Evaluation Division Surveillance A&E-00-ASS-073



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Executive Summary

The U.S. Department of Energy, Richland Operations Office (RL), Analysis and Evaluation Division (A&E) performed an environmental regulations compliance assessment at the 242-A Evaporator (Evaporator) October 23 through 26, 2000. The scope of the assessment was the contractor's compliance with the Hanford Site Resource Conservation and Recovery Act (RCRA) Permit Number WA7890008967 requirements covering the treatment, storage, and disposal of mixed waste.

An entrance meeting was conducted on October 23, 2000, at the 200-A Effluent Treatment Facility (ETF). The A&E assessment team and Fluor Hanford, Inc. (FHI) points of contact and subject matter experts attended the meeting. The specific areas that comprised the assessment were reduced because the Evaporator is one of the three main facilities that comprise the FHI Liquid Waste Processing Facilities (LWPF) program. The other two, ETF, and the Liquid Effluent Retention Facility (LERF), were assessed in September 2000, and share the same personnel and procedures, with the Evaporator facility. Therefore, this assessment focused primarily on the Evaporator operations pertaining to the management of mixed waste. The exit meeting was held on November 6, 2000, at the ETF.

The assessment identified no findings and one observation. The observation identified an issue relating to the absence of documentation for the waste designation of personal protective equipment (PPE [gloves]) used during routine entries to the Evaporator facility condenser room.

The facility's management and workers provided the assessment team with individual courtesy and cooperation, and demonstrated a commitment to working safely and providing a quality product. The remaining requirements of the facility RCRA permit that were reviewed by the assessment team were acceptably met.

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I. Introduction and Scope

A. Background

The Evaporator is defined as a "Final Status," treatment, storage, and disposal (TSD) unit per RCRA and the Dangerous Waste Regulations of Washington State Administrative Code (WAC). The Evaporator is permitted to treat mixed waste presently stored in double shell tanks (DSTs) in accordance with the conditions of the Hanford Site RCRA Dangerous Waste Permit, the applicable provisions of the WAC Chapter 173-303, and 40 CFR. The Evaporator is one unit of a multi-part aqueous waste treatment system. Aqueous mixed waste streams pumped from a DST, are treated at the Evaporator. The effluent that is removed from the DST waste is pumped to the LERF and eventually to the ETF for final treatment and disposal. The slurry remaining after waste treatment at the Evaporator is returned to a DST.

B. Assessment

This assessment covers the permittee's program for compliance with the RCRA permit requirements pertaining to the receipt, handling, storage, and treatment of mixed waste at the Evaporator. The purpose of this assessment was to evaluate the Evaporator for compliance with the Hanford Facility RCRA Permit Number WA7890008967 and to meet a commitment of Ecology, "Final Determination Pursuant to the Hanford Federal Facility Agreement and Consent Order (HFFACO) regarding the U.S. Department of Energy's (DOE) compliance with the Land Disposal Restriction (LDR) Requirements of Washington State's Hazardous Waste Management Act (HWMA), RCRA, DOE's Annual Land Disposal Restrictions (LDR) Report, and HFFACO Milestone M-26-01."

The success of any organization at Hanford depends upon the extent to which its products or services satisfy DOE requirements and expectations. Delivery of products, or expectations, occurs through the implementation of programs, systems, and processes. The responsibility for satisfying the program requirements lies with each member of an organization. The intent of this assessment is to provide objective evidence of the areas in which management and workers need to improve on their ability to perform mission objectives and achieve management's goals.

Third party assessments are conducted by DOE to evaluate the total picture of how well the Hanford contractor's (in this case, FHI) management system complies with the applicable regulatory requirements and standards. This assessment was applied using a graded approach. The assessment was tailored to the specific activities being performed at the Evaporator.

II. Method

An assessment entry meeting was held at the ETF on October 23, 2000. The assessment team members were identified. The purpose of the assessment was declared, and the scope of the assessment was described. The assessment process was reviewed along with the assessment schedule.

The method used for this assessment was a combination of document review, facility walkdown/inspection, and interviews. Regulatory documents were reviewed to develop the areas of primary focus for the assessment. The specific areas and activities assessed were reduced because the Evaporator is one of the three facilities that comprise the FHI LWPF program, and share the same personnel and procedures. Therefore, this assessment focused primarily on the Evaporator operations. Some of the areas of focus listed below were adequately covered in the ETF and LERF assessments, as stated in the "general results" and "specific results" areas in this report. The documents used to develop the checklist for the assessment included the Part B permit application, WAC 173-303, 40 CFR, RL Facility Representative (FR) surveillances, contractor self-assessments, and independent assessments. This assessment focused on the following specific areas:

- Facility records;
- procedures;
- facility contingency plan;
- personnel training and qualification;
- waste analysis plan;
- operating log and log-keeping practices;
- facility security; and
- management and independent assessments.

The RL contractor oversight and evaluation planning process provides the mechanism whereby RL personnel (mission element, mission support, and support service) evaluate contractor performance to ensure work is performed in accordance with the applicable requirements. This process also provides the mechanism to evaluate the adequacy of the contractors' management and independent assessment program, and fulfills an important part of the feedback and improvement function of the RL Integrated Management System (RIMS). This process supports implementation of DOE M 411.1A, "Safety Functions, Responsibilities and Authorities Manual," DOE P 450.5, "Line Environment, Safety, and Health Oversight," and DOE O 224.1, "Contractor Performance Based Business Management Process."

III. Results

A. General

1. General Operations (Permit Section II. O): The facility's general housekeeping was acceptable. There was no evidence of discarded waste containers, remains of labels or residual waste equipment, or unpermitted waste discharges. The personal protective equipment (PPE) was present, appropriately staged, and was provided to the visitors. Radiation survey maps were current. Prior to the facility tour, a brief facility orientation was provided to review visitor safety requirements and emergency response actions.

The assessment team questioned the use of surgeon gloves and lab coats as required PPE for routine entry to the condenser room. Fluor Hanford (FH) staff told the assessment team that the PPE was provided in response to an employee concern after a mercury spill in the condenser room several years ago. FH's concern was that personnel could be contaminated by low level of residual mercury that remains in the facility since the spill. The assessment team was told that the glove waste generated as a result of this practice was disposed of as Low Level Waste. The assessment team requested to review the records that justified this waste designation. FH told the assessment team that the designation was based on process knowledge, and that no records formally evaluated and documented this designation. Observation noted.

2. Inspections (WAC-173-303-320): There was a written facility inspection plan with specified frequencies. A review of records showed that the daily operator rounds for the weekly, monthly, quarterly, and annual health and safety inspections were performed and documented as required. Documents reviewed included:

- POP-30-001, "Outside Operator Rounds";
- POP-60K-005, "Inspect Waste Management Areas"; and
- WMP-200, Section 1.13, "Health and Safety Self-Inspection Program."

No issues were found.

B. Specific

1. Facility Records (WAC-173-303-380): The facility records of the information related to the waste treatment operations were reviewed. The waste profile sheets, waste acceptance checklists, and sampling chain-of-custody data sheets are retained at the LWPF Records Control Center as required by WMH-331, Section 3.11. All other records pertaining to the waste analysis, inspections, waste receipt, waste handling, and waste shipping were acceptable.

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No issues were found.

2. Procedures (WAC-173-303-320 (1)(2)): The procedures for the Evaporator are part of the FHI LWPF program, and were reviewed during the ETF and LERF assessments (A&E-00-ASS-070 and 071). Procedures covering waste receiving, treatment operations, drum handling, drum storage, and designation of waste storage areas were up-to-date and readily accessible. Procedures reviewed were:

- TF-OR-A-01, "Evaporator control Room Round";
- TO-630-001, "Obtain 242-A Feed and Slurry Samples";
- TO-630-080, "Operate 242-A RC-3 Sampling System"; and
- TO-630-060, "Sample Cooling Water From 242-A, Flush RC-2 Receiver Carboy, Monitoring Pig."

No issues were found.

3. Facility Contingency Plan (WAC 173-303-340 & 350): The facility's emergency preparedness plan was established, and fire pull boxes, fire extinguishers, emergency exit signs, and emergency egress maps were in their correct locations. The facility uses a public announcement system in lieu of sirens for emergency notifications. The on-shift duty operators remain in constant communication with the control room via radios.

No issues were found.

4. Personnel Training and Qualifications (WAC-173-303-330): Training records indicated that the training coordinator was assigned, that applicable courses were listed, and personnel requiring training in their particular areas were current as required in the permit. The written training plan had the necessary content, training frequencies and training techniques. Job descriptions were matched to the training requirements covering requisite skills, education, qualifications, and duties for each position. It was clear that the training was relevant to the positions.
5. Waste Analysis Plan (WAP) (WAC-173-303-300): The WAP was reviewed and found satisfactory to ensure waste at the 242-A Evaporator was maintained within specified limits. The waste data quality objectives (DQO) analysis was performed on all streams at the 242-A Evaporator. Sampling and analysis identified in the DQO analysis were included in the WAP.

Regulatory and safety issues addressed in the WAP established the boundary conditions for waste to be received and treated at the 242-A Evaporator. The boundary conditions were limits for items such as reactivity, waste compatibility, and control of vessel vent organic emissions. Waste that exceeded the boundary conditions was not acceptable for processing without further actions, such as blending with other waste.

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The WAP discussed RCRA sampling and analysis of the waste in selected DST system tanks to determine the acceptability of the waste for processing at the 242-A Evaporator.

No issues found.

6. **Operating Logs and Log-keeping Practices (WAC-173-303-320 (2)):** The Evaporator logbooks from operations and radiation control were reviewed and found acceptable. The necessary entries were made in the appropriate logbook whenever waste was received, processed, moved, stored or shipped. The logbooks also recorded safety and process equipment inspections, and radiation protection activities. In an interview with the control room Nuclear Chemical Operator (NCO), the normal system operation was reviewed. The NCO stationed in the control room maintained radio contact with NCOs doing equipment inspection rounds, and any work crews in the facility. Several computer terminals report facility processing status and tank farm conditions.

No issues were found.

7. **Facility Security (WAC-173-303-310):** The facility has posted the correct warning signs on the outside of the facility, and at all entry points. Doors to secured areas were locked. The main treatment and storage areas were posted as radiological buffer areas, and entry required processing through the Access Control/Entry System (ACES) station. The appropriate Radiological Work Permit (RWP) was read and signed by all members of the assessment group prior to entering the radiological areas.

No issues were found.

8. **Management and Independent Assessments (DOE P 450.5):** The facility self-assessment program contained in the Administration Manual, WMP-200, Section 1.13, was reviewed. Every month, each Facility Manager and the Facility Corrective Action Management Coordinator meet with the Company Management Assessments Director, as well as the Vice Presidents for Operations and Environmental Safety and Health, and Quality Assurance, to review status of deficiencies, discuss corrective action commitments, and develop company level assistance where appropriate. The attention and time that facility and senior company management provide to the status and correction of identified deficiencies ensure a continuing awareness of facility conditions, and serve as a catalyst for continuing improvement.

The Facility Evaluation Board (FEB) last completed an independent assessment in September 1998 as a follow-up to a previous assessment done in August 1997. There were no recurring issues from the 1997 FEB Assessment. There were no discrepancies in the area of Clean Air Act, Emergency Planning, Community Right to Know Act, National Environmental Protection Act, and Packaging and Transportation.

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Since the 1998 FEB assessment, the facility's Dangerous Waste Training plan has been implemented. Deficiencies noted with the documentation of Facility Training Matrix requirements were resolved.

The team noted that within the past year there have been no documented DOE oversight activities by FRs or by the mission element. FR program staff told the team that this was due to the low risk and hazard associated with the facility, and was therefore, not included in base coverage. They also noted that this was consistent with DOE-STD-1063-2000 "Facility Representatives" guidelines.

IV. Findings and Observations

A. No Findings.

Requirements: N/A

Discussion: N/A

B. Observation A&E-00-ASS-073-001 – Waste Designation of PPE

Discussion:

The assessment team questioned the use of surgeon gloves and lab coats as required PPE for routine entry to the condenser room. FH Management staff told the assessment team that the PPE was provided in response to an employee concern after a mercury spill in the condenser room several years ago. The assessment team was told that the glove waste generated as a result of this practice was disposed of as Low Level Waste. The assessment team requested the records that justified this waste designation. FH told the assessment team that the designation was based on process knowledge and there were no records that formally evaluated and documented this designation.

The assessment team agrees that the PPE probably is not a mixed waste based on the process knowledge. However, best management practice requires that this waste designation should be formally documented as identified in HNF-PRO-5121 "Waste Designation and Land Disposal Restrictions."

V. Personnel Interviewed

Roger Szelmeczka, Environmental Compliance Officer
Mark Bowman, RCRA Inspection Program
Greg Millward, Self-Assessments, Corrective Actions, Occurrence Reports
Tim W. Renz, Radiation Control Technician
Brent Joyce, Nuclear Control Room Operator
Elvis Le, Process Engineer

VI. Signatures



S.E. Chalk, Assessment Team Leader

12-11-2000
Date



R.W. Roha, Team Member

12-11-2000
Date