



U.S. Department of Energy
Office of River Protection

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05-ESQ-015

Mr. E. S. Aromi, President
and General Manager
CH2M HILL Hanford Group, Inc.
Richland, Washington 99352

Dear Mr. Aromi:

CONTRACT NO. DE-AC27-99RL14047 – ASSESSMENT REPORT A-05-ESQ-TANKFARM-001 – RADIOLOGICAL CONTROL RECORDS PROGRAM, FEBRUARY 14 THROUGH MARCH 2, 2005

This letter forwards the results of the U.S. Department of Energy, Office of River Protection assessment of CH2M HILL Hanford Group, Inc. (CH2M HILL) Radiological Controls Records Program, which was performed from February 14 through March 2, 2005. The Attachment (Assessment Report A-05-ESQ-TANKFARM-001) documents the details of the assessment.

The assessor noted improvements in the CH2M HILL Radiological Controls Records Program (the Program), identified two Findings involving errors in Radiological Survey Reports and had four Observations. CH2M HILL concurred with these Findings. Because CH2M HILL committed to a list of planned corrective actions for the Findings, which are identified in Problem Evaluation Reports, no response to the Findings is required.

If you have any questions, please contact me, or your staff may call Robert C. Barr, Director, Office of Environmental Safety and Quality, (509) 376-7851.

Sincerely,

Roy J. Schepens
Manager

ESQ:LRM

Attachment

cc: See page 2

U.S. DEPARTMENT OF ENERGY
Office of River Protection
Environmental, Safety and Quality

ASSESSMENT: Radiological Control Records Program

REPORT: A-05-ESQ-TANKFARM-001

FACILITY: CH2M HILL Hanford Group, Inc. Tank Farms

LOCATION: Hanford Site

Dates: February 14-March 2, 2005

ASSESSOR: Larry R. McKay, Lead Assessor

APPROVED BY: Patrick P. Carier, Team Lead
Verification and Confirmation

Executive Summary

The U.S. Department of Energy, Office of River Protection evaluated the CH2M HILL Hanford Group, Inc. (CH2M HILL) Radiological Control Records Program from February 14 through March 2, 2005. In conducting this assessment, the assessor evaluated the procedural requirements, interviewed staff who manage and implement the Program, and examined records.

The assessor noted improvements in the CH2M HILL Radiological Controls Records Program, identified two Findings involving errors in Radiological Survey Reports (RSR) and had four Observations.

One Finding identified errors in the CH2M HILL RSRs, which are categorized as quality records. While the assessor noted a decline in the error rate of RSRs from previous years, he found the error rate exceeded the CH2M HILL goal of less than five percent. Management should continue to monitor these quality records to determine the effectiveness of the committed corrective actions. The other Finding identified that two different radiological surveys had been documented with the same survey number. The survey documentation system was designed to ensure each survey activity was captured by a unique identifier (RSR number). When two separate survey activities are issued with the same number, it is indicative of a process malfunction, which CH2M HILL should verify is not systemic. CH2M HILL is not required to respond to these Findings, as corrective actions for the Findings have been documented in Problem Evaluation Reports.

The assessor identified four Observations, which are issues based on the assessor's experience-base, rather than regulatory based. The first Observation, which is considered a program strength because it reduces the possibility of human error, was that CH2M HILL's made extensive use of computer-generated images in RSRs. The other three Observations are areas categorized as areas for improvement and are as follows: CH2M HILL should consider having its Health Physics Technicians initial their entries by the use of trailing initials (currently an inconsistent practice); supervisors should perform timely reviews (currently procedurally required to be completed within two days of survey performance, but not consistently complied with); and the same RSR Form should be used throughout the Tank Farms (currently two different RSR forms BD-6003-343R and BD-6000-010 are used to document the results of routine surveys).

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List of Acronyms

ATS	Analytical Technical Services
CH2M HILL	CH2M HILL Hanford Group, Inc.
CO	Closure Operations
DOE	U. S. Department of Energy
FLM	First-Line Managers
HPT	Health Physics Technician
ORP	DOE Office of River Protection
RadCon	Radiological Control
RSR	Radiological Survey Report
WFO	Waste Feed Operations

Radiological Control (RadCon) Records Program Assessment

From February 14, 2005 through March 2, 2005, the U.S. Department of Energy (DOE), Office of River Protection (ORP) evaluated the CH2M HILL Hanford Group, Inc. (CH2M HILL) RadCon Records Program (the Program). The assessor evaluated the procedural requirements, interviewed staff charged with managing and implementing the Program and examined completed records.

Assessment Scope

The assessor evaluated the Program to the applicable requirements and guidance from the following documents:

- Code of Federal Regulations, Title 10, Part 835, “Occupational Radiation Protection;” November 14, 1998, Subpart H, “Records;”
- DOE-STD-1098-99, “Radiological Control,” Chapter 7, “Radiological Control Records;”
- HNF-MP-5184, “CH2M HILL Hanford Group, Inc. – Radiation Protection Program,” Revision 3, February 28, 2003, requirements;
- “Hanford Radiological Health and Safety Document,” Revision 1, December 20, 2001, Section J., “Radiological Records;”
- HNF-5183, “Tank Farms Radiological Control Manual (TFRCM),” Revision 1, February 28, 2003, Chapter 7, “Radiological Records;”
- DOE G 441.1-11, “Occupational Radiation Protection Record-Keeping and Reporting Guide,” May 20, 1999, with an emphasis on Section 4.1.2, “Monitoring and Workplace Records;”
- CH2M HILL Plan TFC-PLN-02, Revision B, “Quality Assurance Program Description,” December 1, 2004, Section 2.4, “Documents and Records;”
- TFC-ESHQ-RP_ADM-P-09, “Documentation of Radiological Surveys,” Revision C-1, January 3, 2005; and
- Interoffice Memorandum 7B800-EJA-04-013, E. J. Adams, Director, Radiological Control to RadCon Directors, “Expectations for Radiological Survey Reports,” July 1, 2004.

The assessor examined the following Radiological Survey Report forms to the applicable requirements of the above documents:

- BD-6003-343R (12/03): “Tank Farm Contractor Radiological Survey Report;”

- BD-6003-343R (02/02): “Tank Farm Contractor Radiological Survey Report;” and
- BD-6000-010 (5/02), “Project Hanford Radiological Survey Report.”

The assessor interviewed the below five CH2M HILL management or technical staff cognizant of and responsible for implementation of the Routine Survey Program:

- Company Technical Authority – Records;
- Closure Operations (CO) First Line Manager (FLM);
- Analytical Technical Services (ATS) Health Physicist; and
- Waste Feed Operations (WFO) Lead Health Physics Technicians (HPT) – 2.

(Assessment Note A-05-ESQ-TANKFARM-001-01 provides the details of the interviews.)

Assessment Details

The assessor noted improvements in the CH2M HILL RadCon Records Program, identified two Findings involving errors in Radiological Survey Reports (RSR) and had four Observations.

A-05-ESQ-TANKFARM-001-F01 (Finding) - Radiological Survey Reports (RSR) contained quality errors.

Requirements:

CH2M HILL Plan TFC-PLN-02, Revision B, “Quality Assurance Program Description,” December 1, 2004, Section 2.4, “Documents and Records.”

“2.4.2.2. Records 12. Records found to contain errors or discrepancies shall be corrected and the corrections shall be reviewed and approved by the originating organization. The correction shall include the date and the identification of the person authorized to make the change, and shall be made in such a manner that the recorded information being corrected is not obliterated.”

“2.5.2.3 General Requirements for Work Process Documents

Work process documents shall be controlled documents that:

8. Provide for proper documentation of work completion and generation and maintenance of applicable records.”

“Hanford Radiological Health and Safety Document,” Revision 1, December 20, 2001, Section J., “Radiological Records”:

2. The Contractor shall ensure that permanent radiological records are accurate...
3. The Contractor shall ensure that completed records contain sufficient detail to be understandable to those that may utilize the record in the future...”

TFC-ESHQ-RP_ADM-P-09, “Documentation of Radiological Surveys,” Revision C-1, January 3, 2005:

“4.1.5 Ensure for completeness the following is observed when documenting/reviewing radiological surveys:

- The RSR form contains sufficient detail to be meaningful after the originator is no longer available;
- Entries are accurate and legible;
- Corrections are identified by a single lineout, initialed, and dated; and
- All spaces/boxes are filled in...”

Discussion:

The assessor examined 150 completed RSR forms (50 from each major CH2M HILL Project – WFO, CO and ATS) and found error rates in completed RSRs from two to 10 percent, rates in excess of the stated Company goal of less than or equal to five percent.

Examples of errors included:

- Full HPT name not entered (last name only);
- Box not checked to indicated if status board had been updated;
- Confidence Level of survey not entered;
- Payroll number entered instead of date;
- Percentage efficiency entered instead of decimal; and
- Error not corrected in “QA-approved” method (single line, initial, date).

The implementation of the Visual Survey Data System should reduce RSR errors.

On February 22, 2005, CH2M HILL provided ORP an update on the ongoing radiological survey report improvement initiative, see CH2M-0400597 R2. In that correspondence, CH2M HILL noted significant record quality improvements during a six-month review campaign by the RadCon Program organization. However, the project RadCon organizations did not consistently meet the target error rate of 5% or less. The referenced correspondence committed each project

RadCon organization to monthly radiological survey report reviews for an additional six months, effectively continuing the records improvement initiative and securing line ownership for the effort. The RadCon Program also committed to provide oversight of this effort by completing spot reviews every three months during the six month review period.

Contractor Corrective Action:

CH2M HILL concurred with this Finding, updated PER-2004-1810 and committed to the following corrective actions:

1. For a six-month period, project RadCon directors will perform monthly RSR quality reviews of at least 20% of completed RSRs. Review the sample against the 5% error rate and report results to the RadCon Program. (Due: August 18, 2005);
2. During the six-month project review period, RadCon Program will perform RSR quality reviews of at least 20% of completed RSRs every three months. The RSR sample will be reviewed against the 5% error rate. (Due: July 31, 2005); and
3. RadCon Program will assess the effectiveness of the RSR improvement process after six months and document additional corrective actions if the error rate continues to be greater than 5%. If the error rate is less than or equal to 5%, RadCon Program will recommend closure of these actions. (Due: September 23, 2005).

A-05-ESQ-TANKFARM-001-F02 (Finding) - The Same RSR Number Was Issued for Two Different Surveys.

Requirements:

TFC-ESHQ-RP_ADM-P-09, "Documentation of Radiological Surveys," Revision C-1, January 3, 2005, Section 4.1. General, Step 1 states:

"Ensure that radiological survey data is documented for only one assignment..."

Discussion:

The assessor examined two completed WFO RSR forms, both numbered WF005730, for surveys in Bldg. 204-AR. The RSR pages were numbered (Page 1 of 2, Page 2 of 2) as if two-page surveys had been recorded. As a result, the same number was used for two different RSRs, a condition the system should have prevented.

Contractor Corrective Action:

CH2M HILL concurred in this Finding, initiated PER-2005-1125, and committed to analyze the deficiency, determine the magnitude and scope of the issue, and ensure that effective corrective action(s) is (are) identified.

A-05-ESQ-TANKFARM-001-O01 (Observation - Program Strength) - Use of Computer-Generated Images in RSRs.

Of the 150 RSRs examined, roughly one-third employed a computer-generated image (facility or area drawing, digital photograph) that was incorporated into the RSR. This was considered a good practice because it reduced the possibility of human error.

A-05-ESQ-TANKFARM-001-O02 (Observation – Area for Improvement) - Use of Trailing Initials by HPTs on RSRs.

The assessor noted that about one-third of the HPTs who complete RSRs insert their initials at the end of text entries. When interviewed, the HPTs stated CH2M HILL requirements for making logbook entries included acknowledging the entry by writing their initials at the end of the entry. This prevents the addition of information at a later time. Technicians and supervisors were uncertain if this logbook requirement applied to RSR entries. The assessor reviewed TFC-ESHQ-RP_ADM-P-09, “Documentation of Radiological Surveys,” Revision C-1, January 3, 2005, and did not find this listed as a required practice. As a result, the assessor considered this an issue of consistency.

A-05-ESQ-TANKFARM-001-O03 – Tardy Supervisory Reviews of Completed RSRs.

Of the records reviewed, the assessor noted that three of four RadCon FLMs completed their reviews of RSRs within the two-day requirement of procedure TFC-ESHQ-RP_ADM-P-09, “Documentation of Radiological Surveys,” one did not. In ATS and CO, the managers generally met the two-day review standard. However, in WFO, one FLM averaged two days, with another four days (including one RSR aged 24 days).

A-05-ESQ-TANKFARM-001-O04 – Different RSR Forms Were In Use.

CH2M HILL continued to utilize two different RSR forms, BD-6003-343R (12/03) & BD-6000-010 (5/02), to document the results of routine surveys. As a result, 17 months after CH2M HILL assumed responsibility for 222-S Laboratory operations (through its ATS organization), two different RSR forms are used throughout the Tank Farm projects.

In addition, WFO and CO used two different versions of the RSR form BD-6003-343 specified in TFC-ESHQ-RP_ADM-P-09, “Documentation of Radiological Surveys,” Revision C-1, January 3, 2005. Section 6.0, First Bullet, specified the use of “Tank Farm Contractor Radiological Survey Report (BD-6003-343) or equivalent.” The assessor found completed BD-6003-343 forms dated 02/02, and others 12/03. HPTs had open access to RSR forms bearing either date.

Closed Findings

None.

Discussed Items

None

Signature

Larry R. McKay
Assessor

Date