



U.S. Department of Energy
Office of River Protection

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05-ESQ-055

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-008 – AS LOW AS REASONABLY ACHIEVABLE (ALARA) PROGRAM, JULY 25 THROUGH AUGUST 1, 2005

This letter forwards the results of the U. S. Department of Energy, Office of River Protection (ORP) assessment performed from July 25 through August 1, 2005, of the CH2M HILL Hanford Group, Inc. (CH2M HILL) ALARA Program (the Program). The Attachment (Assessment Report A-05-ESQ-TANKFARM-008) documents the details of the assessment.

The assessors determined the CH2M HILL ALARA Program was functioning effectively and met regulatory and contract requirements. They noted several improvements in the Program, identified no Findings and had three Observations, one of which was a Program Strength (Program improvements since the last ORP assessment in May 2004). The two Observations termed Areas for Improvement dealt with ALARA records deficiencies and poor representation by Operations and Maintenance at ALARA Committee meetings. ORP does not require responses to these Observations.

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: As Low As Reasonably Achievable (ALARA) Program

REPORT: A-05-ESQ-TANKFARM-008

FACILITY: CH2M HILL Hanford Group, Inc. Tank Farms

LOCATION: Hanford Site

Dates: July 25 through August 1, 2005

ASSESSORS: Larry R. McKay, Lead Assessor
Jeanie L. Polehn, Assessor

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

Executive Summary

The U.S. Department of Energy, Office of River Protection (ORP) evaluated the CH2M HILL Hanford Group, Inc. (CH2M HILL) As Low As Reasonably Achievable (ALARA) Program (the Program) from July 25 through August 1, 2005. In conducting this assessment, the assessors evaluated procedures, examined records, and interviewed staff members who managed and implemented the Program, to determine whether requirements were met and what improvements CH2M HILL had made in the Program since the last ORP assessment in May 2004.

The assessors determined the CH2M HILL ALARA Program was functioning effectively and met regulatory and contract requirements. They noted several improvements in the Program; identified no Findings; had three Observations, one a Program Strength (improvements in the Program since the last ORP assessment in May 2004); and closed three Assessment Follow-up Items. The two Observations termed Areas for Improvement dealt with ALARA records deficiencies and poor representation by Operations and Maintenance at ALARA Committee meetings.

CH2M HILL implemented a number of improvements in the ALARA program since the ORP May 2004 assessment. Significant improvements included implementation of ALARA awards and ALARA suggestion programs; revitalization of Project ALARA committees; identification and implementation of ALARA goals; enhancement of ALARA communications with employees; publication of ALARA articles in the company newsletter; standardization of ALARA Joint Review Group meeting minutes; and development of “RadCon Primers” to train Radiological Workers.

ALARA records exhibited errors, omissions, and a lack of clarity and needed improvement. ORP assessors identified such Radiological Control (RadCon) record quality weaknesses in past ORP assessments of RadCon Records and Work Planning and Instrument Programs. Accuracy, completeness, and clarity of ALARA records are important because such records document compliance with the 10 CFR 835, provide a data baseline for dose and contamination reduction, and minimize the risk of negative litigation outcome.

Attendance at ALARA Committee meetings was sporadic by some members, particularly Operations and Maintenance. These representatives were absent from 13 of 16 meetings according to the minutes the assessors reviewed. Increased senior management attention is needed to improve attendance by these two groups, because attendance at the ALARA meetings is important to ensure an integrated safety management approach to work performance.

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List of Acronyms

AFI	Assessment Follow-Up Item
AJRG	ALARA Joint Review Group
ALARA	As Low As Reasonably Achievable
ATS	Analytical Technical Services
CH2M HILL	CH2M HILL Hanford Group, Inc.
CO	Closure Operations
CTA	Company Technical Authority
DOE	U. S. Department of Energy
FTA	Facility Technical Authority
FWS	Field Work Supervisor
ORP	DOE Office of River Protection
PER	Problem Evaluation Report
RadCon	Radiological Control
WFO	Waste Feed Operations

Radiological Control (RadCon) Assessment As Low As Reasonably Achievable (ALARA) Program

Scope

From July 25 through August 1, 2005, the U.S. Department of Energy (DOE), Office of River Protection (ORP) evaluated the CH2M HILL Hanford Group, Inc. (CH2M HILL) ALARA Program (the Program). The assessors evaluated the Program procedures, examined records, and interviewed staff members who managed and implemented the Program to determine if CH2M HILL met the requirements and guidance listed below, and what improvements CH2M HILL had made in the Program since the last ORP assessment in May 2004. In addition, the assessors evaluated corrective actions for three Assessment Follow-up Items (AFI). Assessment Note A-05-ESQ-TANKFARM-008-01 provides details of requirements, records, interviews and AFI closure.

Details

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

- Code of Federal Regulations, Title 10, Part 835, “Occupational Radiation Protection,” Subparts B, “Management and Administrative Requirements” and H, “Records,” November 14, 1998;
- HNF-MP-5184, “CH2M HILL Hanford Group, Inc. – Radiation Protection Program,” Revision 3, February 28, 2003;
- DOE G 441.1-2, “Occupational ALARA Program Guide,” March 17, 1999;
- “Hanford Radiological Health and Safety Document,” Revision 1, December 20, 2001;
- HNF-5183, “Tank Farms Radiological Control Manual,” Revision 1, February 28, 2003;
- TFC-ESHQ-RP_ADM-C-13, “ALARA Goals,” Revision B-1, May 25, 2005;
- TFCESHQ-RP-STD-03, “ALARA Decision Making Methods,” Revision A, July 8, 2005;
- TFC-ESHQ-RP_ADM-C-11, “ALARA Joint Review Group,” Revision C-1, June 13, 2005;
- TFC-ESHQ-RP_RWP-C-01, “Radiological Risk Screening,” Revision A-3, July 31, 2005;
- TFC-ESHQ-RP_RWP-C-03, “ALARA Work Planning,” Revision F-10, July 8, 2005;

- ATS-310, Section 7.9, “ALARA Program,” Revision 5, July 2005; and
- ATS-310, Section 7.10, “Radiological High-Risk Review,” Revision 4, July 7, 2005.

The assessors also examined:

- ALARA Committee meeting minutes for Analytical Technical Services (ATS), Closure Operations (CO) and Waste Feed Operations (WFO), as well as for the CH2M HILL ALARA Committee;
- ALARA Joint Review Group (AJRG) meeting minutes;
- Formal lesson plans & Trainee Guides for Radiological Work Permit Preparer and for ALARA Management Worksheet Preparer courses;
- “RadCon Primers,” ALARA Posters & other training material; and
- CH2M HILL ALARA accomplishments.

The assessors interviewed the following six CH2M HILL management and staff employees cognizant of, and responsible for, implementation of the Program:

- Director, Radiological Control;
- Company technical authority (CTA) – ALARA;
- Facility Technical Authority (FTA) – ALARA (ATS);
- FTA – ALARA (CO);
- FTA – ALARA (WFO); and
- WFO Health Physics Manager.

Results

Based on the information provided below, the assessors determined the Program was functioning effectively and met regulatory and contract requirements. They noted several improvements in the Program, identified no Findings, and had three Observations; one a Program Strength.

Observation (Program Strength): CH2M HILL made several significant improvements in the ALARA Program.

CH2M HILL implemented a number of improvements in the ALARA program since the ORP May 2004 assessment. The major improvements included:

- implementation of an ALARA recognition and awards programs;
- revitalization of the Project ALARA committees;
- more consistent development of ALARA goals;
- enhancement of the ALARA suggestion program;
- improvements to AJRG process and records; and
- development of an ALARA awareness program, including “RadCon Primers.”

Observation (Area for Improvement): CH2M HILL ALARA records exhibited errors, omissions and a lack of clarity.

The assessors reviewed CH2M HILL’s ALARA Program records for May 2004 to present and discussed the records with the CH2M HILL staff. The assessors found CH2M HILL’s ALARA records contained a number of errors, omissions and a lack of clarity. This issue was identified in past ORP assessments (Radiological Control Records Program [A-05-ESQ-TANKFARM-001] and Radiological Work Planning Program [A-05-ESQ-TANKFARM-005]). Accuracy, clarity, and completeness of ALARA records are important because records document compliance with the law [10 CFR 835.704(b)], provide an opportunity to reduce dose and contamination for future work, and, can help minimize the risk of negative litigation outcome.

The assessors provided a list of records reviewed with these problems to the CTA – ALARA who agreed with this issue. Contractor management took action to address the issue via a memorandum directing appropriate improvements (CH2M HILL Interoffice Memorandum, 7000-VMP-05-003, July 28, 2005). The assessors reviewed and agreed with the actions prescribed to improve records.

Some records contained incomplete information or errors which represented areas for improvement. For example:

- Training presentations had: no dates, no revision or course numbers, inaccurate information, or missing information (“Training Information for MD-038,” “222-S Laboratory ALARA CY¹ 2004 Accomplishments”). At least one event, on the accomplishments list, identified an estimated dose significantly different from the actual dose (a factor of 19 higher) but there was no indication of whether the difference was acceptable, met requirements, or how the information would be used to obtain more accurate estimates for future similar work;
- Some AJRG minutes and Field Work Supervisor (FWS) approval forms were missing signature dates, had information deleted via line-through but no initials or dates, or illegible dates. AJRG minutes lacked due dates for action items. “CH2M HILL ALARA Joint Review Group Additional FWS Approval” forms had no location for approval date; and

¹ Calendar Year

- Procedure TFC-ESHQ-RP-ADM-C-11, “ALARA Joint Review Group,” was not clear whether the AJRG-approved FWS was approved for specific work packages or whether the approval was a blanket approval for any work.

CH2M HILL agreed this was an issue and took action to address it via a memorandum directing appropriate improvements (CH2M HILL Interoffice Memorandum, 7000-VMP-05-003, July 28, 2005).

Observation (Area for Improvement): Operations and Maintenance ALARA committee members were consistently absent from ALARA Committee meetings.

The assessors reviewed project and central ALARA Meeting Minutes and found attendance by ALARA Committee members for ALARA Committee meetings was sporadic. Specifically, Operations and Maintenance ALARA Committee Meeting members consistently were absent from ALARA Committee Meetings. Of 16 ALARA Committee Meeting Minutes reviewed, 13 had no Operations or Maintenance representatives.

Attendance at the ALARA meetings is important to assure an integrated safety management approach to work performance. Operations and Maintenance input is critical to assure incorporation of discipline specific information into the ALARA program. Their attendance helps ensure ALARA program activities are communicated to work groups to minimize dose and contamination events during work activities. The CTA – ALARA agreed with the issue and said Problem Evaluation Reports (PER) had been written to correct the weakness (PERs 2004-5456, 2005-0388 and 2005-0514) and that CH2M HILL would evaluate correction in the September 2005 CH2M HILL ALARA assessment.

Closed Items

The assessors evaluated CH2M HILL actions, found them adequate, closed the following AFIs and provided brief justification summaries:

A-04-ESQ-TANKFARM-005-A01	AFI	Several elements of the ALARA Program were not implemented in a consistent manner to ensure that ALARA concepts are adequately performed and documented.
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Project ALARA Committees met more regularly; goals were developed and reviewed more consistently; and the CTA – ALARA mentored the FTAs to adopt a more uniform approach to conducting ALARA reviews, holding review meetings and incorporating proven radiological engineering methods into ALARA planning.

A-04-ESQ-TANKFARM-005-A02 AFI The implementation and administration of the AJRG needed improvement.

AJRG meetings occurred at greater frequency with improved attendance, and records to document AJRG actions were more consistently generated and maintained.

A-04-ESQ-TANKFARM-005-A03 AFI The ALARA Program did not have the necessary visibility and support to ensure effective implementation.

Management clearly expressed its expectations for CH2M HILL ALARA Program; placed the Program on the President's Accident Prevention Council; fully staffed the ALARA CTA and FTA positions, and encouraged the development of an active ALARA awareness and suggestion campaign.

Discussed Items

None