



U.S. Department of Energy
Office of River Protection

P.O. Box 450, MSIN H6-60
Richland, Washington 99352

04-ESQ-090

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-04-ESQ-TANKFARM-010 – RADIOLOGICAL CONTROL (RADCON) PROGRAM ORGANIZATION AND ADMINISTRATION, SEPTEMBER 20 – 28, 2004

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) RadCon Program Organization and Administration during the period September 20 - 28, 2004. The Attachment (Assessment Report A-04-ESQ-TANKFARM-010) documents the details of the assessment.

The assessors identified two Findings and four Observations, including three Program Strengths, and concluded that additional management attention was warranted to correct identified deficiencies in staff training:

- Deficiencies in Identification of Key RadCon Positions Critical to Effective Management of RadCon Program (A-04-ESQ-TANKFARM-010-F01);
- Deficiencies in Continuing Training and Education for Senior RadCon Staff and Management (A-04-ESQ-TANKFARM-010-F02); and
- Deficiencies in the Education Qualifications for Some Senior RadCon Technical Staff and Management (A-04-ESQ-TANKFARM-010-O01).

The Observations dealing with Program Strengths included:

- Substantive Improvements in the CH2M HILL as low as reasonably achievable Program (A-04-ESQ-TANKFARM-010-O02);
- Efficient Operations of the CH2M HILL RadCon Forum (A-04-ESQ-TANKFARM-010-O03); and
- Augmentation of RadCon Program Technical Staff (A-04-ESQ-TANKFARM-010-O04).

Mr. E. S. Aromi
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Within 30 days of receipt of this letter, please respond to both Findings and Observation A-04-ESQ-TANKFARM-010-O01, including the corrective actions management will take to resolve the program deficiencies discussed in the attached report. The plan should include actions, responsible individual(s), and due dates.

If you have any questions, please contact me, or your staff may call Larry R. McKay, Office of Environmental Safety and Quality, (509) 376-7120.

Sincerely,

Roy J. Schepens
Manager

ESQ:LRM

Attachment

cc w/attach:

E. J. Adams, CH2M HILL
P. B. Brannan, CH2M HILL
J. M. Hobbs, CH2M HILL
J. M. McAuley, CH2M HILL
K. A. Benguiat, RL
W. M. Glines, RL

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

ASSESSMENT: Radiological Control Program Organization & Administration

REPORT: A-04-ESQ-TANKFARM-010

FACILITY: CH2M HILL Hanford Group, Inc. Tank Farms

LOCATION: Hanford Site

Dates: September 20-28, 2004

ASSESSORS: Larry R. McKay, Lead Assessor
Wayne M. Glines, Assessor

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

Radiological Control (RadCon) Program Organization and Administration for the Period of September 20 - 28, 2004

Assessment Purpose and Scope

During the period of September 20 - 28, 2004, the U. S. Department of Energy, Office of River Protection, conducted an assessment of the RadCon Program Organization and Administration (the Program) of CH2M HILL Hanford Group, Inc. (CH2M HILL). The assessors evaluated the procedural requirements, interviewed those charged with implementing the Program, and examined records pertaining to the assessment subject.

The requirements and guidance for organizing and administering the RadCon Program are contained in:

- Code of Federal Regulations, Title 10, Part 835, "Occupational Radiation Protection," Subpart B, Management and Administrative Requirements, November 14, 1998;
- HNF-MP-5184, CH2M HILL – Radiation Protection Program, Revision 2, February 28, 2003, Requirement 34;
- "Hanford Radiological Health and Safety Document (HSD)," Revision 1, December 20, 2001, Articles A.1.-3 and B.1.-3;
- HNF-5183, "Tank Farms Radiological Control Manual (TFRCM)," Revision 1, February 28, 2003, Chapter 1, Articles 141-145;
- DOE G 441.1-1A, "Management and Administration of Radiation Protection Program Guide," October 20, 2003;
- DOE O 5480.20A, Change 1, "Personnel Selection, Qualification, and Training Requirements for DOE Nuclear Facilities," July 12, 2001;
- DOE-STD-1107-97, "Knowledge, Skills, and Abilities for Key Radiation Protection Positions at DOE Facilities," January 1997;
- RPP-7788, Revision 2, "Tank Farms Contractor (TFC) Radiological Control Functional Analysis for Facility Technical Authority Functions, Radiological Control Manager and Technical Staff," August 21, 2002;
- TFC-ESHQ-RP_ADM-D-02, Revision A, "Radiation Protection Interpretive Authority," March 23, 2004;
- TFC-ESHQ-RP_ADM-D-07, Revision A, "Radiological Control Forum," January 28, 2004;

- TFC-PLN-48, Revision A, “ALARA Program Plan,” July 27, 2004;
- TFC-CHARTER-01, Revision A-8, “Tank Farm Contractor Charter,” Sections 3.9 and 3.12, May 3, 2004;
- TFC-CHARTER-02, Revision B-1, “CH2M HILL Safety Councils,” June 23, 2004;
- TFC-CHARTER-13, Revision A-3, “Radiological Control Forum Charter,” September 13, 2004; and
- CH2M HILL Memorandum 04-190, from Ed Aromi, President and General Manager to All CH2M HILL Employees and subcontractors, Subject: Management Commitment to Radiological Excellence, dated June 22, 2004.

The assessors conducted interviews with seven CH2M HILL management or technical staff cognizant of and responsible for implementation of the organization and administration of the RadCon Program:

- RadCon Program Director;
- Analytical Technical Services (ATS) RadCon Director;
- Closure Project RadCon Director;
- Acting Waste Feed Operations (WFO) RadCon Director;
- RadCon Interpretive Authority;
- As low as reasonably achievable (ALARA) Chairperson/Coordinator; and
- RadCon Forum Administrator.

Significant Observations and Conclusions

Overall Conclusions

After completing its review of procedures and documents, and management and technical staff interviews, the assessors identified two Findings and four Observations, including three Program Strengths:

A-04-ESQ-TANKFARM-010-F01

Deficiencies in Identification of Key RadCon Positions Critical to Effective Management of RadCon Program

Article B.1 of the HSD requires that CH2M HILL “identify those key radiation protection positions critical to effective management of the radiological health and safety program.” Section 2.0 “Key Radiation Protection Positions” of RPP-7788 provides a list of positions considered key radiation protection positions. However, this listing is outdated and includes positions, e.g., Area Manager, which no longer exists in the CH2M HILL RadCon Program. Additionally, this list does not include the current positions of Director, RadCon Program, or the Directors of RadCon for the ATS, Closure Project, or WFO Project.

A-04-ESQ-TANKFARM-010-F02 Deficiencies in Continuing Training and Education for Senior RadCon Staff and Management

Article 143.1 of the TFRCM states that: “Personnel (i.e., senior staff of the Radiological Control Organization) shall [830.120(c)(1)(ii)] be provided continuing training to ensure that job proficiency is maintained.” Table 1 of Section 7.0 of RPP-7788 provides continuing education requirements for select RadCon technical staff and managers. Contrary to these requirements there are no established continuing training or education programs for senior CH2M HILL RadCon staff or management.

A-04-ESQ-TANKFARM-010-O01 Deficiencies in the Education Qualifications for Some Senior RadCon Technical Staff and Management

Article 143.1 of the TFRCM states that: “The senior staff of the Radiological Control Organization should include health physicists and other professionals with four-year degrees in science or engineering.” DOE O 5480.20A and DOE-STD-1107-97 provide selection criteria which include a four-year degree in science, health physics, or engineering for RadCon senior technical staff and management. Of the seven CH2M HILL RadCon staff and management interviewed by the assessors only one had a four-year degree in science, health physics, or engineering. Both DOE O 5480.20A and DOE-STD-1107-97 contain comparable alternative criteria for this educational criterion, and CH2M HILL has used these alternative criteria for senior RadCon technical staff and management. There are no indications that this lack of individuals with four-year degrees has impacted the performance of the CH2M HILL RadCon Program. However, there are key scientific concepts and methodologies which underlie the discipline of health physics and its implementation in a radiation protection program. Formal educational training in these key scientific concepts and methodologies greatly enhances the likelihood that a radiation protection program will adequately incorporate these concepts and methodologies.

Program Strengths

A-04-ESQ-TANKFARM-010-O02 Substantive Improvements in the CH2M HILL ALARA Program

The CH2M HILL RadCon Program has recently appointed an experienced, fulltime ALARA Chairperson and Coordinator. This individual has revised the ALARA Program Plan and

incorporated the RadCon Program ALARA Committee into the Safety Councils Charter. This individual has helped establish ALARA Committees within the ATS, Closure, and WFO projects, and is providing mentoring to strengthen these project ALARA Committees. A clear understanding and flow of responsibilities, recommendations, and information has been established between the project ALARA Committees and the RadCon Program ALARA Committee.

A-04-ESQ-TANKFARM-010-003 Efficient Operations of the RadCon Forum

The structure of the CH2M HILL RadCon Forum is well established, and the operations of the Forum are efficiently managed. The Forum charter has been recently revised to clearly provide the purpose and responsibilities of the Forum. The Forum is operating well and effectively to provide for discussion and resolution of common RadCon issues across all CH2M HILL projects.

(Note: The efficient operation of the Forum is due in large part to the current Forum Administrator. However, this individual is scheduled to retire in the next six - nine months, and no replacement has been identified or trained.)

(Note: None of the senior RadCon staff or management interviewed by the assessors were aware of any CH2M HILL Differing Professional Opinion process or procedure. Such a process or procedure would be very helpful in the resolution of issues before the Forum for which agreement could not be reached. Currently, the CH2M HILL RadCon Forum charter directs all such disagreements to the RadCon Program Director for resolution.)

A-04-ESQ-TANKFARM-010-004 Augmentation of RadCon Programs Technical Staff

Within the past six months, the Director, RadCon Program, has added four staff members to the organization serving as Company Technical Authorities in the following functional areas:

- ALARA Coordination Methods/Operational ALARA Practices; Temporary Shielding & Work Planning;
- Fixed/Portable Instrumentation & Release of Materials and Equipment;
- Internal Dosimetry & Work Place Air Sampling;
- Policies – Requirements Compliance & Interpretation; Radiological Records; & Self-Assessment.

These additional staff members have significantly augmented the technical expertise and knowledge of the RadCon Program organization.

Conclusions:

The assessors concluded that the organization and administration of the CH2M HILL RadCon Program were generally adequate to provide the bases for a sound and compliant program. The assessors offered the following recommendations for improving this function:

- Identify and establish a current and complete list of key RadCon positions critical to effective management of the RadCon Program;
- Establish continuing training and education programs for senior CH2M HILL RadCon staff and management;
- Consider the recruitment of individuals with a four-year degree in science, health physics, or engineering for future senior RadCon positions;
- Develop a Differing Professional Opinion process or procedure.

List of Items Opened, Closed and Discussed

Opened

A-04-ESQ-TANKFARM-010-F01	Finding	Deficiencies in Identification of Key RadCon Positions Critical to Effective Management of RadCon Program
A-04-ESQ-TANKFARM-010-F02	Finding	Deficiencies in Continuing Training and Education for Senior RadCon Staff and Management

Closed

None

Discussed

None