



U.S. Department of Energy  
**Office of River Protection**

P.O. Box 450  
Richland, Washington 99352

04-ESQ-020

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-001 - INDEPENDENT ASSESSMENT, MANAGEMENT ASSESSMENT, AND QUALITY IMPROVEMENT PROGRAM ASSESSMENT, FEBRUARY 9 – 12, 2004

This letter forwards the results of the U.S. Department of Energy, Office of River Protection (ORP) assessment of the CH2M HILL Hanford Group, Inc. (CH2M HILL) Independent Assessment, Management Assessment, and Quality Improvement Program conducted during the period of February 9 – 12, 2004.

The Team concluded the CH2M HILL Independent Assessment, Management Assessment, and Quality Improvement Program were adequate and in conformance with established requirements as identified in TFC-PLN-02, Revision A-3, “Quality Assurance Program Description.” The Team concluded implementation of program elements was effective in assuring required assessments were scheduled and conducted, problems were identified and documented, corrective actions were processed and tracked to completion, and trending was performed to monitor performance and identify potential problems.

This assessment identified one Finding and two Observations. These included:

- Finding A-04-ESQ-TANKFARM-001-F01: Extent of condition determination for Significant Problem Evaluation Request System (PERS) was not always conducted as indicated in the CH2M HILL procedure, or as required by programs such as Price-Anderson Amendments Act, Office of Civilian Radioactive Waste Management, or Waste Isolation Pilot Plant.
- Observation A-04-ESQ-TANKFARM-001-O01: CH2M HILL procedures, TFC-ESHQ-Q-C-C-01, Revision B-4, “Problem Evaluation Request,” and TFC-ESHQ-Q-ADM-C-11, Revision A-3, “Causal Analysis and Corrective Action Planning,” contained portions difficult to follow or were incorrect and/or inconsistent.
- Observation A-04-ESQ-TANKFARM-001-O02: Corrective actions, developed as a result of performing root cause analysis (Significant PERs), do not consistently address all the stated root cause(s), and other causes, as required in the CH2M HILL Quality Assurance Program Description.

The Team also identified potential discrepancies with CH2M HILL's corrective action management system. Examples of these discrepancies included the use of roll up and trending PERs, root cause analysis, and assignment of corrective actions. Observation A-04-ESQ-TANKFARM-001-002 documents this potential problem. The assessment report (Attachment 2) and the assessment notes provide specific examples. ORP expects the Contractor to follow up with an investigation of the concern identified and, if appropriate, implementation of improvements to the corrective action management processes. During the next assessment of this subject, ORP will focus the majority of its assessment resources in determining the effectiveness of the corrective action management processes.

The Team also identified that Radiological Control posting and labeling assessments were not scheduled or performed within the 36-month period required by 10 CFR 835.102. This issue is described in assessment A-04-ESQ-TANKFARM-002, "Rad CON Posting & Labeling."

The attached Assessment Report A-04-ESQ-TANKFARM-001 documents the details of the assessment.

Within 30 days of receipt of this letter, please respond to the Findings and include the corrective action management plan indicating the identified causes and corrective actions identified 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 contact Robert C. Barr, Director, Office of River Protection, (509) 376-7851.

Sincerely,

Roy J. Schepens  
Manager

ESQ:SAV

Attachments:

1. Notice of Finding
2. Assessment Report

cc w/attachs:

R. H. Higgins, CH2M HILL  
W. L. Smoot, CH2M HILL

bcc: ESQ OFF FILE  
ESQ RDG FILE  
MGR RDG FILE  
R. C. Barr, ESQ  
P. P. Carier, ESQ  
S. A. Vega, ESQ  
J. S. O'Connor, OPA  
C. A. Blanchard, TOD  
C. J. Bosted, TOD

RECORD NOTE:

## Notice of Finding

Section C.2 (d) (2) (iii), “Environmental, Safety, Health & Quality (ESH&Q),” of the Contract<sup>1</sup> requires CH2M HILL Hanford Group, Inc. (CH2M HILL, the Contractor) to

“Carry out all activities in a manner that complies with human health, safety, environmental, and quality regulations; minimizes the generation of wastes, releases or emissions into the atmosphere, and releases to soil and surface or groundwater; and complies with applicable regulatory requirements and DOE directives.”

During performance of an assessment of the CH2M HILL Independent Assessment, Management Assessment, and Quality Improvement programs, the Office of River Protection identified one Finding:

**A-04-ESQ-TANKFARM-001-F01** - Extent of condition determination for Significant Problem Evaluation Requests (PER) was not always conducted as indicated in the CH2M HILL procedure, or as required by programs such as Price-Anderson Amendments Act (PAAA), Office of Civilian Radioactive Waste Management (OCRWM), or Waste Isolation Pilot Plant (WIPP).

### Requirement:

TFC-ESHQ-Q-ADM-C-11, Revision A-3, “Causal Analysis and Corrective Action Planning, Attachment I,” defines what goes in the extent of condition field as: “Provide an explanation of the extent of condition. This is the transportability of the symptoms. Where else do the same or similar conditions exist.”

PAAA Program Operating Procedure: “A noncompliance condition should be corrected for the nuclear facility of radiological activity where the noncompliance occurred, as well as for any other facility or activity under contractor management where Price-Anderson is applicable.”

DOE/RW-0333, Revision 13, “Quality Assurance Requirements and Description,” (OCRWM): “16.2.4.D Responsible management shall perform investigative action to determine the extent and impact of the condition, and document the results.”

DOE/RW-0333, Revision 13, “Quality Assurance Requirements and Description,” (OCRWM): “16.2.4.D Responsible management shall perform investigative action to determine the extent and impact of the condition, and document the results.”

DOE/CBFO-94-1012, Revision 5, “Quality Assurance Program Document”: “1.3.3.4.B Significant conditions adverse to quality shall be investigated, documented (including the extent of the condition and the impact on completed work), and reported to the

management responsible for the condition, their senior management, and the QA organization for tracking.”

Waste Isolation Pilot Plant, U.S. Department of Energy Carlsbad Field Office, “Instructions for completing a corrective action response to a Corrective Action Report Addressing a Condition Adverse to Quality”: “Extent and Impact of the Deficiency- Describe the investigative actions performed to determine the extent and impact of the condition and the results. This will include a determination of the acceptability of any data generated prior to resolution of the deficiency.”

**Discussion:**

The assessor determined that over 25% of the Significant PERs generated since January 2003, did not perform adequate extent of condition reviews as required in the Contractor procedure TFC-ESHQ-Q-ADM-C-11, Revision A-3, “Causal Analysis and Corrective Action Planning” or as required in the PAAA operating procedure.

The assessor found many cases where the dialogue provided in the PER did not satisfy the requirement because a review was not performed, or the review was limited to querying the PER and occurrence reporting databases for already identified similar conditions (should have included identifying unreported activities with potential of having the same problem) or extent of condition was determined and documented, but provided no information how results were addressed. Only in two cases of the 18 PERs reviewed did extent of condition dialog reference a PER or another activity that was initiated to deal with the results. Discussions with CH2M HILL staff indicated PERs were generated when extent of condition results identified potential problem areas, but the assessor could not verify these statements because there were no documented links to follow. The Contractor procedures provided no direction on how to proceed when extent of condition reviews resulted in identifying activities with a potential of having similar problems.

CH2M HILL has in the past identified similar problems:

- PER 2003-4302, PER with Resolution - not performing database reviews; and
- PER 2003-2570, Significant PER - inadequate reviews; the root cause was inadequate extent of condition definition in the procedure.

The assessor determined these PERs addressed a similar problem, but the documented deficiency and the identified corrective actions were not broad enough to resolve the full extent of the concern. CH2M HILL has captured this Finding in PER 2004-0898.

In the course of investigating the extent of condition problem, the assessor found CH2M HILL had established or is in the process of establishing projects required to implement OCRWM, or WIPP requirements. Interview results indicated these projects

intend to use the PER process to meet corrective action management requirements. Current CH2M HILL practices will not satisfy the extend of condition requirements from those programs.

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<sup>1</sup> Contract No. DE-AC27-99RL14047, between the U. S. Department of Energy and CH2M HILL Hanford Group, Inc., dated October 1, 1999.

U.S. DEPARTMENT OF ENERGY  
Office of River Protection

INSPECTION: Independent Assessment, Management Assessment, and Quality  
Improvement Program Assessment

REPORT NO: A-04-ESQ-TANKFARM-001

FACILITY: CH2M HILL Hanford Group, Inc.

LOCATION: 2750 Bldg, 200 Area

DATES: February 9-12, 2004

INSPECTORS: Sam Vega, Assessment Team Leader  
Paul Hernandez, Assessment Team Member  
Larry McKay, Assessment Team Member

APPROVED BY: Pat Carrier, Verification and Confirmation Official  
WTP Safety Regulation Division

**Independent Assessment, Management Assessment, and Quality  
Improvement Program Assessment Report  
for Period of  
February 9 through 12, 2004**

**Introduction**

From February 9-12, 2003, the U.S. Department of Energy, Office of River Protection conducted an assessment of the CH2M HILL Hanford Group, Inc. (CH2M HILL) Independent Assessment, Management Assessment, and Quality Improvement Program. The assessment focused on determining the effectiveness of CH2M HILL's processes for management and independent assessment and quality improvement activities within Tank Farm contractor's scope of work. This assessment was based on the requirements set forth in the contractor's Quality Assurance Program Description (QAPD). Assessment activities included verifying CH2M HILL implementation of associated procedures and processes, reviewing objective evidence demonstrating completion of process activities, observing (where possible) activities being performed, and interviewing key personnel responsible for accomplishing process activities. In addition to assessing overall CH2M HILL coverage of these activities, added emphasis was given to the effectiveness of implementing CH2M HILL management and independent assessments processes within the radiological control function. Specific topics covered during this assessment will include:

- Conducting management assessments;
- Performing independent assessments;
- Initiating stop work orders;
- Identifying conditions adverse to quality;
- Classifying significant conditions adverse to quality;
- Conducting quality trending; and
- Performing follow-up verification.

**Significant Observations and Conclusions**

**Overall Conclusion**

The Team concluded the CH2M HILL Independent Assessment, Management Assessment, and Quality Improvement Program were adequate and in conformance with established requirements as identified in TFC-PLN-02, Revision A-3, "Quality Assurance Program Description." Overall,



implementation of program elements was determined effective in assuring that required assessments were scheduled and conducted, problems were identified and documented, corrective actions were processed, tracked to completion, and trending was performed to monitor performance and identify potential problem areas.

The assessment identified one finding and two observations. These were as follows:

- Finding A-04-ESQ-TANKFARM-001-F01: Extent of condition determination for Significant Problem Evaluation Request (PER) was not always conducted as indicated in the CH2M HILL procedure, or as required by programs such as Price-Anderson Amendments Act (PAAA), Office of Civilian Radioactive Waste Management (OCRWM), or Waste Isolation Pilot Plant (WIPP);
- Observation A-04-ESQ-TANKFARM-001-O01: CH2M HILL procedures, TFC-ESHQ-Q-C-C-01, Revision B-4, "Problem Evaluation Request," and TFC-ESHQ-Q-ADM-C-11, Revision A-3, "Causal Analysis and Corrective Action Planning," were found to contain portions difficult to follow, or were incorrect and/or inconsistent; and
- Observation A-04-ESQ-TANKFARM-001-O02: Corrective actions developed as a result of performing root cause analysis (Significant PERs) do not always address all the stated root cause(s), and other causes, as required in the CH2M HILL Quality Assurance Program Description.

### **Conducting Management Assessments**

- The assessor determined the assessment program schedule was well integrated and included independent, management, and specialty assessments. In addition to the integrated schedule, the contractor had implemented a plan of the week process for managing management assessment activities on a more real time basis. No deficiencies were identified related to the performance of management assessments (See assessor notes A-04-ESQ-TANKFARM-001-01);
- The assessor reviewed training requirements, training records, participated in a web-based training course, and observed a qualification interview between the Director of Assessments and a potential assessor. The assessor found no deficiencies related to training and qualification (See assessor notes A-04-ESQ-TANKFARM-001-01); and
- The assessor reviewed management assessment reports and verified that the results are reported to affected organizations and appropriate levels of management. The reports contained adequate information including background information, purpose for the assessment, results, a summary of PERs generated, and the completed Criteria and Review Approach Documents (CRAD). The Assessor found the reports adequately covered the intended scope, the lines of inquiry effectively cover the assessed topics, and findings/issues

were reasonable and captured in the Problem Evaluation Report (PER) database (See assessor notes A-04-ESQ-TANKFARM-001-01).

### **Conclusions:**

The assessor concluded the Contractor had adequately developed and implemented a management assessment program. Management assessment procedures and schedules met QAPD program requirements. The management assessment assessors were knowledgeable of the process and requirements, and the assessment procedures were being implemented effectively.

### **Performing Independent Assessments**

- The assessment program schedule was well integrated and included independent, management, and specialty assessments. In addition to the integrated schedule, the Contractor had developed a topical matrix divided into seven major business and function areas. The matrix spanned a period of three years and demonstrated adequate coverage of required program topics. The assessor also reviewed a detailed short-term independent assessment schedule which identified Lead Assessor and team member assignments. No deficiencies were identified related to assessment planning and scheduling (See assessor notes A-04-ESQ-TANKFARM-001-02);
- The assessor verified assessment plans, identified the scope, requirements, team membership, and activities covered during the assessment and concluded team members had been selected in advance, had been trained adequately, and had knowledge in the areas they assessed (See assessor notes A-04-ESQ-TANKFARM-001-02);
- The assessor reviewed training requirements, participated in a web-based training course, and observed a qualification interview between the Director of Assessments and a potential assessor. CH2M HILL management was addressing the minor weaknesses identified:
  - The training will be modified to include more information on the development and use of CRADs as assessment tools. (See assessor notes A-04-ESQ-TANKFARM-001-02)
  - Rigor in training of independent oversight staff had decreased since last year. CH2M HILL's recent move to consolidate all independent oversight activities into one organization had resulted in moving some assessment activities from organizations requiring Nuclear Quality Assurance (NQA)-1 lead auditor training and qualification into an organization with a less rigorous training and qualification process that is not based on a recognized industry standard. This lack of rigor may limit the acceptability of CH2M HILL independent oversight efforts in activities such as 222-S Lab, or WIPP and OCRWM acceptance. Currently, there is not a problem as there is sufficient existing certified staff and sufficient contracted support. CH2M HILL's management is considering upgrading the training requirements of all independent assessors to meet NQA-1 requirements (See assessor notes A-04-ESQ-TANKFARM-001-02); and

- The assessor reviewed Independent assessment reports and verified that the results are reported to affected organizations and appropriate levels of management. The reports contained adequate information including background information, purpose for the assessment, results, a summary of PERs generated, and the completed CRADs (See assessor notes A-04-ESQ-TANKFARM-001-02).

### **Conclusions:**

The assessor concluded the Contractor had adequately developed and implemented a robust independent assessment program. Independent assessment procedures and schedules were adequate in addressing QAPD program requirements. The independent assessment management and staff were found to be knowledgeable of the process and requirements, and the assessment procedures were being followed. Independent assessment activities were conducted in accordance with the established processes, were properly documented, and findings were captured for processing in the PER database.

Except for the minor training weakness noted above, the assessor concluded that the CH2M HILL independent assessment process was effective.

### **Stop Work Authority and Nonconformance Reporting**

- The assessor reviewed Contractor procedures and interviewed contractor personnel to verify employees had authority to stop work if determined a situation represented an imminent hazard and placed personal safety, the safety of coworkers, or the environment at risk. In addition to stop work authorization, the assessor found workers had the ability to temporarily suspend work activities by means of a work clarification pause in situations where there existed a lack of understanding of procedure steps, or if members of the work crew lacked adequate training, or for when inconsistencies in a procedure was identified and needed to be fixed (See assessor notes A-04-ESQ-TANKFARM-001-03);
- The assessor reviewed the Work for Others system shift office logbook and observed the “red arrow” entries which described stop work actions initiated by employees. The employees who initiated the stop work actions concurred with the logbook entries by means of initialing the red arrow entries. PERs were written to resolve the stop work issues. The employees have been provided positive feedback for having the courage to stop work and have been ensured no retaliation or retribution would result from the raising of stop work issues. The assessor determined that employees have the authority to stop or pause work activities, the overall process described in the procedure was followed and adequate, and the management of CH2M HILL supports the process (See assessor notes A-04-ESQ-TANKFARM-001-03);
- The assessor also reviewed documentation and interviewed contractor personnel to verify nonconforming items were controlled to prevent their inadvertent installation or use, Nonconformance Reports (NCR) or equivalent documents are used to document the description; disposition; action; verification and closure of nonconforming items, and

affected organizations are notified of the nonconforming circumstance (See assessor notes A-04-ESQ-TANKFARM-001-03);

- The assessor observed the retrieval of two randomly selected NCRs from a locked fire-rated cabinet and interviewed the Quality Assurance (QA) engineers responsible for dispositioning the nonconforming items and verified proper control of the reported items. For Nonconformance Report # CH-04-NCR-005, “B&W Relay,” the item had been properly tagged and segregated while awaiting disposition. In the case of the Nonconformance Report # CH-04-NCR-004, “New AW Exhausters “A” and “B,” the unit was too large to be stored in a segregated area. When moisture was discovered inside the cabinets, the units were tagged and the immediate area was properly roped off until workers complete corrective actions. Repairs were to be made in accordance with the recovery plan furnished by the manufacturer, Premier Technology, Inc. The assessor identified no concerns (See assessor notes A-04-ESQ-TANKFARM-001-03); and
- The assessor interviewed CH2M HILL personnel responsible for reviewing and dispositioning nonconformances and verified QA support staff had adequate technical understanding of the items or activities involved (See assessor notes A-04-ESQ-TANKFARM-001-03).

### **Conclusions:**

The assessor concluded the Contractor had adequately developed and implemented stop work and nonconformance reporting processes. Procedures met program requirements, and the stop work and nonconformance reporting processes were effective. CH2M HILL staff was found knowledgeable of the processes and requirements.

### **Identifying Conditions and Significant Conditions Adverse to Quality**

- A detailed review of Contractor procedures TFC-ESHQ-Q-ADM-C-11, Revision A-3, “Causal Analysis and Corrective Action Planning,” and TFC-ESHQ-Q-C-C-01, Revision B-4, “Problem Evaluation Request” by the assessor resulted in the determination that portions of these procedures contained several disconnects, were hard to follow (and misleading at times), did not provide sufficient direction to complete key actions, and failed to provide pointers to other procedures necessary to adequately complete the processes described. CH2M HILL had actions already in place to address deficiencies in these procedures (example, PER 2003-2570). Because these corrective actions lacked specific details, the assessor reviewed the details of the procedure deficiencies identified with the QA Program Manager. CH2M HILL committed to address all the deficiencies identified by the assessor, and had initiated PER 2004-0906 to capture this commitment. These procedure related concerns resulted in Observation A-04-ESQ-TANKFARM-001-O01. (See assessor notes A-04-ESQ-TANKFARM-001-04)
- When Initiated, a PER goes through a series of reviews to validate the PER, to establish the significance of the PER, and to implement any immediate actions that may be required. These reviews include a Shift Operations review, a PER Screening Team review, and an

Operations management review. If approved, the PER corrective actions were determined and corrected based on the significance level assigned to the PER. The assessor observed all screening actions mentioned and found no deficiencies with these activities. (See assessor notes A-04-ESQ-TANKFARM-001-04)

- The assessor determined that over 25% of the Significant PERs generated since January 2003, did not perform adequate extent of condition reviews as required in the Contractor procedure TFC-ESHQ-Q-ADM-C-11, Revision A-3, “Causal Analysis and Corrective Action Planning” or as required in the Price-Anderson Amendments Act operating procedure:
  - TFC-ESHQ-Q-ADM-C-11, Revision A-3, “Causal Analysis and Corrective Action Planning, Attachment I,” defines what goes in the extent of condition field as: “Provide an explanation of the extent of condition. This is the transportability of the symptoms. Where else do the same or similar conditions exist”
  - PAAA Program Operating Procedure: “A noncompliance condition should be corrected for the nuclear facility of radiological activity where the noncompliance occurred, as well as for any other facility or activity under contractor management where Price-Anderson is applicable.” (See assessor notes A-04-ESQ-TANKFARM-001-04)
- The assessor found cases where the dialogue provided in the PER did not satisfy the requirement because a review was not performed, or the review was limited to querying the PER and occurrence reporting databases for already identified similar conditions (should have include identifying unreported activities with potential of having the same problem) or extent of condition was determined and documented, but provided no information how results were addressed. The Contractor procedures provided no direction on how to proceed when extent of condition reviews resulted in identifying activities with a potential of having similar problems. CH2M HILL has identified similar problems with extent of condition in the past:

PER 2003-4302, PER with Resolution - not performing database reviews

PER 2003-2570, Significant PER - inadequate reviews; the root cause was inadequate extent of condition definition in the procedure.

- The assessor determined the PERs relating to extent of condition initiated by CH2M HILL identified a similar problem to the one identified by the assessor, but the determined causes of the deficiency and the identified corrective actions were not broad enough to resolve the full extent of the concern. This deficiency in meeting requirements resulted in Finding A-04-ESQ-TANKFARM-001-F01. CH2M HILL has captured this assessment finding in PER 2004-0898. (See assessor notes A-04-ESQ-TANKFARM-001-04)
- In the course of investigating the extent of condition problem, the assessor found CH2M HILL had established or is in the process of establishing projects required to implement OCRWM, or WIPP requirements. Interview results indicated to the assessor these projects intend to use the PER process to meet corrective action management

requirements. Current CH2M HILL practices will not satisfy the following requirements from those programs:

- DOE/RW-0333, Revision 13, “Quality Assurance Requirements and Description” (OCRWM): “16.2.4.D Responsible management shall perform investigative action to determine the extent and impact of the condition, and document the results.”
- DOE/CBFO-94-1012, Revision 5, “Quality Assurance Program Document”: “1.3.3.4.B Significant conditions adverse to quality shall be investigated, documented (including the extent of the condition and the impact on completed work), and reported to the management responsible for the condition, their senior management, and the QA organization for tracking.”
- Waste Isolation Pilot Plant, U.S. Department of Energy Carlsbad Field Office, “Instructions for completing a corrective action response to a Corrective Action Report Addressing A Condition Adverse to Quality”: “Extent and Impact of the Deficiency- Describe the investigative actions performed to determine the extent and impact of the condition and the results. This will include a determination of the acceptability of any data generated prior to resolution of the deficiency.” (See assessor notes A-04-ESQ-TANKFARM-001-04)
- The assessor reviewed the root cause analysis reports and associated corrective action plans for nine Significant PERS to determine the effectiveness of the contractor’s efforts in determining the problem cause(s) and assigning corrective actions as indicated in the CH2M HILL QA Program Description and implementing procedure. The assessor found indications that corrective actions developed for Significant PERs did not always completely address the cause(s) as required in the CH2M HILL QA Program Description and operating procedures. The assessor identified some examples of this, but because of time constraints, was not able to investigate this concern sufficient to support a conclusive finding. The assessor did not find any instance where failure to address a cause resulted in a significant oversight. This resulted in Observation A-04-ESQ-TANKFARM-001-002. (See assessor notes A-04-ESQ-TANKFARM-001-04)

**Conclusion:**

The assessor determined, with the exceptions noted above, the contractor had implemented an effective process for identifying conditions and significant conditions adverse to quality as required in the QAPD, and had established an adequate process with the PER system to track and correct these type deficiencies.

## **Conducting Quality Trending**

- The assessor determined Procedure TFC-ESHQ-Q-C-C-02, Revision A-1, “PER Tracking and Trending Analysis Program,” which described the process for performing quality trending, did not adequately describe the trending activities performed by CH2M HILL. When this was discussed with the QA Program Manager, the assessor was provided with details of process improvements to the trending process that were in various stages of implementation. Procedure changes were planned but not yet implemented. The assessor determined these changes (many of which were already in place) would significantly improve the trending process. (See assessor notes A-04-ESQ-TANKFARM-001-04)
- The assessor reviewed CH2M HILL trending reporting, which included weekly, monthly and quarterly trend reports. Weekly trending was reported by department and tracked open actions, delinquency rates for corrective actions, and provided delinquency status by action owner of the top 10 most delinquent. Distribution of these reports was to each department manager. (See assessor notes A-04-ESQ-TANKFARM-001-04)
- Monthly and quarterly trending involved statistical analysis of a wide range of indicators (some examples: DOE cause codes, occurrence report categories, PAAA, consequence codes, organization and programmatic and work processes). Trend reports focus on analyzed categories determined to be of most significance. Trending information was reported via charts which contained upper and lower limits, averages, highlighted areas where potential concerns existed, indicated PERs generated to assess the potential problem, and provided analysis dialogue. The difference between monthly and quarterly reports was the focus of the report. The quarterly reports focused on a more global, company level look of the trend information. Distribution was at the senior management level. The assessor identified no deficiencies with the trending reporting activities performed by CH2M HILL. (See assessor notes A-04-ESQ-TANKFARM-001-04)
- The assessor reviewed several PERs generated to evaluate potential trends. This review was not a detailed review due to the limited resources available. The assessor found most of the performed evaluations indicated there was no adverse trend identified. What concerned the assessor was these determinations, in most of the cases reviewed, were primarily based on efforts to disqualify the provided data (as apposed to evaluating the data for similarities). The assessor was not able to determine a reason or cause for this approach, but when the concern was brought to the attention of CH2M HILL, the Contractor agreed to further assess the concern by the end of March 2004. This, and the intended changes to Procedure TFC-ESHQ-Q-C-C-02, Revision A-1, “PER Tracking and Trending Analysis Program” will be tracked as follow up items. (See assessor notes A-04-ESQ-TANKFARM-001-04)

## **Conclusion:**

The assessor concluded, with the exceptions noted above, the Contractor had put in place an effective trending program adequate in meeting program requirements. Many of the activities observed were part of the process improvement activities being implemented during the time of the assessment and were not included in the current procedure.

### **Performing Follow-up Verification**

- Procedure TFC-ESHQ-Q-ADM-C-11, Revision A-3, “Causal Analysis and Corrective Action Planning” identified the use of “End Point Assessments” to perform follow up verification of completed corrective actions. These assessments were conducted a few months after completion of the last corrective action for a significant PER. End point assessment plans identified the criteria to be evaluated, and were approved by the Corrective Action Review Board (CARB) prior to conducting the assessment. End point assessment results were also reviewed and approved by the CARB before any significant PER was closed. The assessor reviewed the procedure, PER closure packages and end point assessment reports, as well as discussed the process with responsible Contractor staff, and identified no deficiencies associated with this process. (See assessor notes A-04-ESQ-TANKFARM-001-04)

### **Conclusion:**

The assessor concluded the Contractor had put in place an effective process for conducting follow up verification that meets QAPD program requirements.

### **Radiological Control Management and Independent Assessments**

- CH2M HILL did not assess the Radiological Control (RadCon) Posting & Labeling activities at the frequency required by 10 CFR 835.102 for each major functional element of the Radiation Protection Plan. The latest assessment report provided was dated December 1999. The required assessment period was within 36 months, or by December 2002. Although CH2M HILL prepared a May 2002 corrective action plan for improving posting & labeling, the plan did not result from a formally documented 10 CFR 835.102 assessment. Consequently, Posting & Labeling was not assessed by the required December 2002 date. This Finding is also identified in a separate U.S. Department of Energy, Office of River Protection RadCon Assessment A-04-ESQ-TANKFARM-002, “Rad CON Posting & Labeling” (Finding A-04-ESQ-TANKFARM-002-F-01) and will not be addressed further in this assessment report. (See assessor notes A-04-ESQ-TANKFARM-001-05)
- The assessor found Procedure TFC-ESHQ-RP\_ADM-C-05, Revision A-1, “Radiological Control Assessments,” December 18, 2003, listed as active procedures. In September 2003, CH2M HILL transferred the assessment functions described in this procedure from the RadCon Program Manager to the Director of Assessment. As a result the procedure became outdated and was no longer in use, but had not been canceled. When brought to the Contractor’s attention, CH2M HILL resolved the problem by canceling the procedure on February 12, 2004. (See assessor notes A-04-ESQ-TANKFARM-001-05)
- The assessor interviewed CH2M HILL employees who were responsible for planning or implementing the Management/Independent Assessment Programs, in order to evaluate



training and qualification effectiveness. The assessor also observed the Director of Assessment conduct a qualification interview with a RadCon manager who was qualifying to perform management assessments. The assessor concluded employees performing assessments for the Director of Assessment were veteran, experienced individuals hand-selected for their specialized knowledge. (See assessor notes A-04-ESQ-TANKFARM-001-05)

- The assessor reviewed five assessment reports and determined they were high-quality, value-added documents of professional content and appearance. The assessor determined the assessments generated by the Director of Assessment were properly maintained as records, as were those generated by the RadCon Program Manager prior to the September 2003 transfer of responsibilities. Utilization of the PER system was effective as a corrective action management tool with which RadCon problems were identified, cause(s) were determined and corrective actions were documented. No findings or observations resulted from the interviews or from the document reviews. (See assessor notes A-04-ESQ-TANKFARM-001-05)
- During the procedure/document review and interviews, the assessor noted the following program strengths related to the performance of RadCon independent assessment and the PER trending process, respectively:
  - A cadre of seasoned assessors staffed the organization which produced high-quality and value-added assessment reports; and
  - The Collective Significance Review Committee was effective in increasing management awareness of problems having a common source or exhibiting negative trends.

### **Conclusions:**

The assessor concluded the planning and performance of CH2M HILL independent assessments, the training provided to assessor, and the quality of the assessment reports was effective. The assessor attributed this primarily to an assessment staff which consists of veteran, experienced individuals hand-selected for their specialized knowledge. The assessor also concluded that additional management attention is needed to ensure assessment scheduling meets all RadCon oversight requirements such as the posting and labeling 10 CFR 835.102 deficiency mentioned above and covered in more detail in assessment A-04-ESQ-TANKFARM-002, “RadCon Posting & Labeling.”

**Findings and Observations:**

The assessment identified one Finding and two Observations. These include:

Opened

A-04-ESQ-TANKFARM-001- F01	Finding	Extent of condition determination for Significant PERs was not always conducted as indicated in the CH2M HILL procedure, or as required by programs such as PAAA, OCRWM, or WIPP.
A-04-ESQ-TANKFARM-001-O01	Observation	CH2M HILL procedures, TFC-ESHQ-Q-C-C-01, Revision B-4, "Problem Evaluation Request" and TFC-ESHQ-Q-ADM-C-11, Revision A-3, "Causal Analysis and Corrective Action Planning," were found to contain portions difficult to follow, or were incorrect and/or inconsistent.
A-04-ESQ-TANKFARM-001-O02	Observation	Corrective actions developed as a result of performing root cause analysis (Significant PERs) do not always address all the stated root cause(s), and other causes, as required in the CH2M HILL QA Program Description.

Closed

None