



U.S. Department of Energy
Office of River Protection

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

JUL 08 2008

08-TOD-064

Mr. John C. Fulton, President
and Executive Officer
CH2M HILL Hanford Group, Inc.
2440 Stevens Center Place
Richland, Washington 99354

Dear Mr. Fulton:

CONTRACT NO. DE-AC27-99RL14047 – U.S. DEPARTMENT OF ENERGY, OFFICE
OF RIVER PROTECTION (ORP) ASSESSMENT OF TANK FARM PROJECT
OPERATIONS, APRIL 2008 (A-08-AMTF-TANKFARM-013)

The ORP Tank Farm Project Facility Representatives and technical staff conducted evaluations of the Tank Farm and 222-S Laboratory operations and activities during April 2008. The attached report documents the results of the evaluations, which identified two strengths, two findings, one non-cited finding, and four observations.

Within 30 days of receipt of this letter you should respond to the assessment findings and non-cited findings. The response should include:

- the causes of the findings;
- the corrective actions that have been taken to control or remove any adverse impact from noncompliant conditions (remedial actions) and the results achieved;
- the corrective actions that will be taken to identify the extent of condition, correct the cause(s), and prevent further findings; and
- the date when all corrective actions will be completed, verified, and compliance to applicable requirements achieved.

If you have any questions, please contact me, or your staff may contact Brian A. Harkins, Director, Tank Farm Operations Division, (509) 373-9150.

Sincerely,

Stacy L. Charboneau, Assistant Manager
for Tank Farms Project

TOD:GDT

Attachment

cc: See Page 2

Mr. J. C. Fulton
08-TOD-064

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JUL 08 2008

cc w/attach:

E. J. Adams, CH2M HILL
C. E. Anderson, CH2M HILL
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R. G. Quirk, DNFSB
CH2M HILL Correspondence

Attachment
08-TOD-064

Tank Farm Project Monthly Report
for April 2008
A-08-AMTF-TANKFARM-013.

Consisting of 11 pages including coversheet

ACRONYMS

ALARA	As Low As Reasonably Achievable
ATL	Advanced Technologies and Laboratories
ATS	Analytical Technical Services
BED	Building Emergency Director
FR	Facility Representative
FWS	Field Work Supervisor
HMI	Human Machine Interface
HPT	Health Physics Technician
HRA	High Radiation Area
ISMS	Integrated Safety Management System
JRG	Joint Review Group
MBD	Material Balance Discrepancy
MRT	Mobile Retrieval Tool
ORP	Office of River Protection
SM	Shift Manager
TFC	Tank Farm Contractor

Office of River Protection

Tank Farm Project Monthly Report for April 2008

A-08-AMTF-TANKFARM-013

I. Introduction/Summary

During the month of April 2008, the U.S. Department of Energy, Office of River Protection (ORP) Facility Representative (FR) and technical staff reviewed maintenance and operations at the Tank Farms and 222-S Laboratory. For this reporting period, 104 entries were made in the Operational Awareness database. Figure 1 groups the entries by functional area since some entries cover more than one functional area they may be represented in the graph more than once. Two strengths, two findings, one non-cited finding, and four observations were reported during the month. These strengths and issues are discussed in Section IV of this report.

Figure 1 - Number of OA Entries by Category

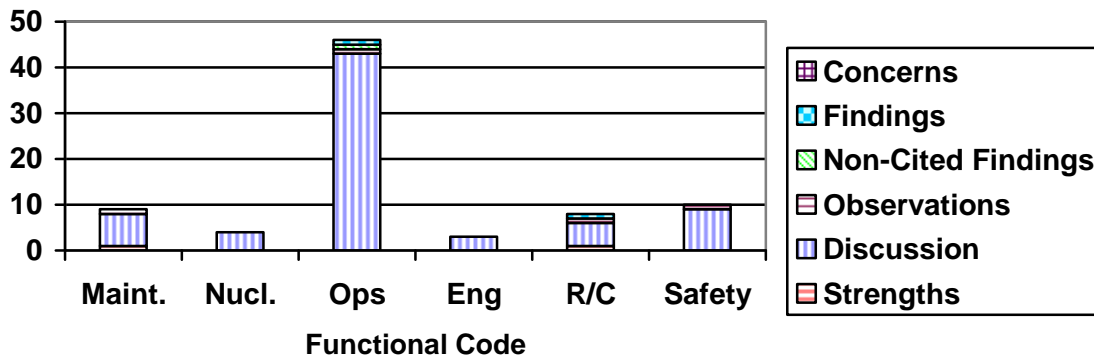
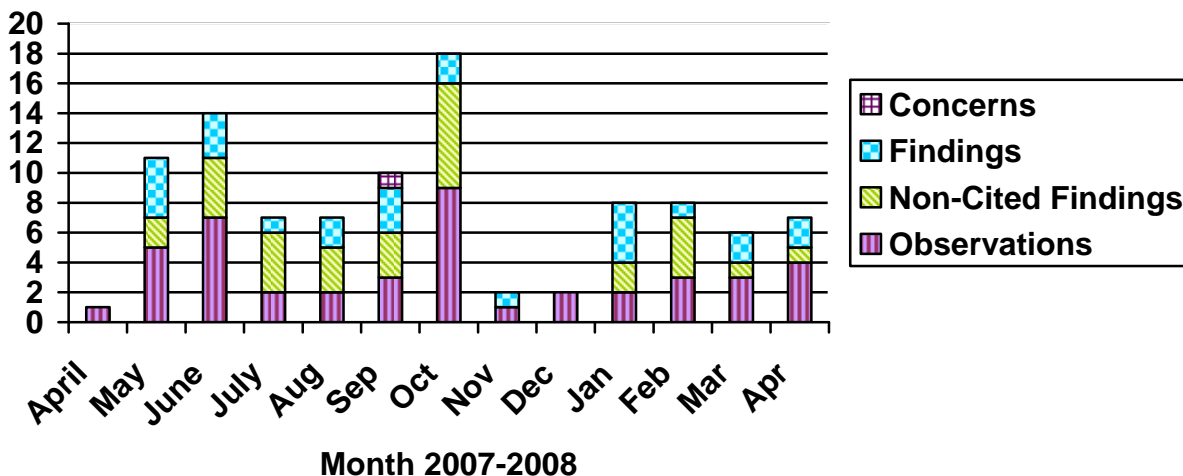


Figure 2 - Number of Deficiencies by Type



II. Analysis and Discussion

In April 2008, the ORP FRs and technical staff performed 27 surveillances in areas that included conduct of operations, radiological control practices, industrial safety, integrated safety management, emergency response, configuration control, quality assurance, training and qualification, nuclear safety, and maintenance.

While this report does include data from the oversight of S-102 recovery actions and uses it in the overall assessment of contractor operations, it does not use that data to provide a detailed analysis of the S-102 recovery. This will be done in a separate document.

One finding, one non-cited finding and one of the observations depicted in Figure 1 are in the area of Operations. This indicates that Conduct of Operations still warrants continued Tank Farm Contractor (TFC) management attention. Also, ORP recognizes a strength at 222-S in significantly beating its as low as reasonably achievable (ALARA) goals for calendar year 2007. However, one finding and one observation shown in Figure 1 involve management and control of high radiation areas (HRA). This indicates that this is an area in need of increased management attention.

Figure 2 indicates an increase, with respect to the month of March, in the quantity of issues identified in April 2008. Given the month to month variation in available FR resources, this is not viewed as representing a statistically significant change from the previous months.

The oversight performed by the FRs during April included, but was not limited to:

- Observed the pre-job briefing and field work for the AZ-102 pump installation;
- Observed the pre-job briefing and the field work for replacement of the AP-107 ENRAF drum and displacer;
- Observed tank dome deflection surveys in AN Farm;
- Observed field work on PB-1 at 242-A;
- Observed several emergency preparedness drills;
- Observed the Joint Review Group (JRG) meeting for CLO-WO-07-1345 - *241-C-109 Riser 6, Install Fold Track Mobile Retrieval Tool*;
- Walked down the T Farm interim barrier site;
- Observed Ground Penetrating Radar survey at TY Farm;
- Observed the in-process ALARA review for the AZ-102 pump installation;
- Observed the Base Operations Vice-President's pre-transfer approval meeting for the AP-107 to AP-105 transfer;
- Attended a Process Hazards Analysis/Procedure Analysis for TO-220-112, *Over-Ground Transfer from 241-C-109 to 241-AN-106 and Sluicing of Tank 241-C-109*;
- Attended pre-job briefing and conducted field oversight for CLO-01-1348 , *Perform Construction Acceptance Test for C-109 Fold Track System*;
- Walked down Vadose Zone site at UPR 86;
- Observed manual tape replacement at AX-152;
- Observed 242-A HVAC control system removal work by Washington Closure personnel;
- Observed 242-A evaporator control station operations;
- Observed fabrication of equipment for Vadose Zone sampling at C Farm;
- Participated in walkdown for CLO-WO-08-0106, *C-104 Remove A Pit and C Pit Top Cover Blocks and Bail Inspection*;
- Observed pre-job briefing for transfer from 241-AP-107 to 241-AP-105;
- Observed pre-job briefing for CLO-WO-07-1990, 241-S, *Survey and Video Pits for HIHTL Removal*;
- Walked down equipment set-up at CR-151 Vadose Zone sampling site;
- Observed the pre-job briefing, installation, and post-job briefing for the 222-S Laboratory P7 Pump installation located in Building 219-S;
- Observed the pre-job briefing for AN-101 pit work;
- Observed pre-job briefing for CLO-WO-08-0563, *241-SX-101, Replace Breather w/ Radial Filter* & CLO-WO-08-0564, *241-SX-113, Replace Breather w/ Radial Filter*;
- Observed technical response team's response to a 90 ton crane operational issue at AZ-102;
- Observed pre-job briefing and field oversight of CLO-WO-07-1345, *241-C-109, Install into Riser 6 FTMRT Mobil Retrieval Tool*;
- Walked down the 2713 WB Green Hut building with a TFC safety representative;
- Observed pre-job briefing and field oversight of CLO-WO-08-0581, *241-C-109, Transfer System Leak Detector Functional Test*;
- Walked down the Foldtrack mobile retrieval tool (MRT) equipment at C-109;

- Observed the pre-job briefing for the CR-151 Vadose Zone sampling site;
- Reviewed TE-08-014, the technical evaluation for the AW-106 to AP-105 transfer;
- Reviewed procedure TO-270-365, *Transfer from 241-AW-106 to 241-AP-105*;
- Toured S-Farm with DNFSB site representative and board staff member;
- Reviewed C-109 readiness assessment documents;
- Reviewed C-109 facility readiness plan;
- Reviewed TO-220-112, *Over-Ground Transfer from 241-C-109 to 241-AN-106 and Sluicing of Tank 241-C-109*;
- Reviewed ARP-T-331-00009, *Respond to Alarms at Control Trailer POR103-TRLR-001*;
- Reviewed the Industrial Hygiene Monitoring Plan (7T300-WLA-08-012) for the AW-106 to AP-105 waste transfer;
- Reviewed draft Documented Safety Analysis amendment for waste transfers;
- Reviewed TF-FT-279-023, *Perform Functional Test for AP Farm MCS Transfer Leak Detectors*;
- Observed the Base Operations Vice-President's pre-transfer approval meeting for the AW-106 to AP-105 waste transfer
- Conducted walk down of C-109 equipment with DNFSB site representative and board staff member;
- Observed conduct of Bechtel National, Inc. construction, Voluntary Protection Program self assessment;
- Reviewed status of the site-wide lock and tag procedure;
- Observed C-109 readiness assessment interviews;
- Attended a meeting on a safety basis amendment that revises AC 5.16, *Waste Chemistry Controls for AN-102*;
- Reviewed TFC-PLN-05, *Conduct of Operations Implementation Plan/Matrix*;
- Reviewed procedure TFC-ENG-STD-012, *Tank Farm Equipment Identification Numbering and Labeling Standard*;
- Reviewed RPP-RPT-25733, *System Health Report for the Double Shell Tank East Base Operations Instrumentation System for 1st Quarter CY 2008*;
- Observed the JRG meeting for installing new valve funnels on AN-101 jumpers;
- Reviewed Standing Orders OPS-07-008 R2, *Chain of Command during Retrieval Operations* and OPS-08-004, *C-109 Restart of Retrieval Operations*;
- Attended ALARA review for CLO-WO-07-1580, *Gauge Test Riser 6 on C-109 for MRT*;
- Participated in a Level 2 Readiness Assessment oversight for C-109; and
- Verified numerous corrective actions from the S-102 Accident Investigation Judgments of Need.

III. Injuries and Occurrences

During the month of April 2008, there were no lost work days or recordable cases.

There were no occurrences during April 2008.

IV. Strengths and Deficiencies

STRENGTHS

Excellent teamwork was displayed during the replacement of the AP-107 ENRAF drum and displacer (Chris Sorensen - April 2, 2008)

The FR attended the pre-job briefing and observed the work to replace the ENRAF drum and displacer at AP-107. There were two field work supervisors (FWS) assigned to the job. Both performed their respective roles well during the pre-job briefing and the work in the field. They took turns discussing the pertinent steps of the work instruction during the pre-job briefing. Dry runs were conducted in the glovebag prior to opening the ENRAF. The Instrument Tech supervisor directed the steps of the work instruction during the field work while the Operations FWS had overall responsibility. The crew members worked well as a team. Tools were readily available. The Health Physics Technicians (HPTs) were attentive to the work taking frequent swipes and smears for contamination control, surveying workers' hands each time they were removed from the glovebag, and even surveying workers' faces regularly. The HPT outside the contamination area provided excellent support also. The job successfully corrected the problem with the ENRAF.

Analytical Technical Services (ATS) and Advanced Technologies and Laboratories (ATL) met 2007 radiological exposure goals through exceptional ALARA practices (Courtney Blanchard - April 3, 2008)

The ATS/ATL FR observed, throughout 2007 and to-date, exceptional efforts to reduce radiological exposure during routine operations and maintenance activities. The 2007 year end report documents the whole body collective dose for the 222-S Laboratory at 1.610 person-rem, Waste Services at 0.805 person-rem, and ATL at 1.016 person-rem which was 28 to 60 percent less than the 2007 goals. Extremity accumulative collective radiological dose rates were also below 2007 goals. The exceptional ALARA performance can be attributed, in part, to the following:

- Management and craft have effectively implemented Integrated Safety Management System (ISMS) in all work phases.
- The ALARA Work Observation Process dedicates a worker to observe work activities solely for the purpose of reducing radiological exposure and contamination. Identified enhancements are immediately implemented into the work process.
- Craft requested and management-supported mock-ups have been extensively used to significantly improve high risk job planning and work execution.
- ALARA post-jobs are completed in a timely manner and any suggestions are implemented in the future.

The ATS and ATL work force has an exceptional commitment to ALARA values that has been effectively implemented into the ISMS process.

FINDINGS

A-08-AMTF-TANKFARM-013-F01; Control of High Radiation Areas Requires Improvement (Ron Frink - March 31, 2008)

Requirements:

TFC-ESHQ-RP_MON-C-11, Revision A-7, *High Radiation Areas Physical Access Controls*, Section 4.2, Line 20, Note 3 states, "Use of nylon or plastic type ties (tie-wraps) is unacceptable. Use of a metal self-fastening banding device is acceptable."

TFC-ESHQ-RP_MON-C-11, Revision A-7, *High Radiation Areas Physical Access Controls*, Section 4.2, Line 21 states, "Return all keys to the key custodian, as applicable, and enter the time/date returned into the key control log."

TFC-OPS-OPER-C-05, Revision A-24, *Lockout/Tagout Program*, Section 1 specifies, "Administrative Locks (gold in color)."

Discussion:

The SY-102 HRA fence is held together on the northwest corner with plastic wire ties. All other fence pieces are held together by bolted metal devices. The use of plastic wire ties is a non-compliance with TFC-ESHQ-RP_MON-C-11, Revision, A-7, *High Radiation Areas Physical Access Controls*, Section 4.2.

On March 18, 2008, during a cursory check of the HRA key log at the West Area Work Release Station, the FR noted that keys 232 and 233 were checked out on March 10, 2008 but were not logged in upon return. A review of the HRA key inventory found that the keys had been properly returned. The failure to log the keys by signing and dating is a non-compliance with TFC-ESHQ-RP_MON-C-11, Revision A-7, *High Radiation Areas Physical Access Controls*, Section 4.2.

During a review of CO-HRA-002, *241-T Tank 101 (Saltwell Pit)*, a gold lock was found as the locking mechanism for the HRA. This is a non-compliance with TFC-OPS-OPER-C-05, Revision A-24, *Lockout/Tagout Program*, Section 1, since administrative locks are defined as being gold in color. HRAs do not fall under the Administrative Lock Program and therefore, should not be gold in color.

A-08-AMTF-TANKFARM-013-F02 Inadequate Evacuation of 2704HV During Response to Smoke Detection; (Ron Frink - April 18, 2008)

Requirement:

DOE-0223, RLEP 1.1, Section 2.3 states, "When a fire alarm is heard, personnel shall immediately evacuate the building and report to the staging area."

Discussion:

On April 18, 2008, personnel activated the fire alarm in response to the smell of smoke in the northeast corner second floor of 2704HV. The building was immediately evacuated. Upon arrival, the fire department responding unit was met by the Building Emergency Director (BED) at the front of the building. Not long after arrival of the responding unit, a sweep of the building was performed by the BED and fire department personnel. One person was noted to have not evacuated the building as required. This represents a non-compliance with the aforementioned requirement. Additionally, no Problem Evaluation Request was written on this discrepancy and no apparent action was taken to preclude recurrence.

NON-CITED FINDINGS

A-08-AMTF-TANKFARM-013-N03; Several Deficiencies were Noted with Equipment Labeling in Various Tank Farm Areas (Chris Sorensen - April 29, 2008)

The FR reviewed the TFC's labeling standard referenced in the Conduct of Operations matrix. The FR then examined the labels associated with the AW-A, AW-B, AP, AN-A and AN-B valve pits to ensure that the labels met the standard as far as nomenclature was concerned. Most of the labeling was very good, but the following deficiencies were identified:

- The label for V-413 at AW-A valve pit was broken in half;
- The label for valve V-408 at AW-B valve pit has improper nomenclature in that it is missing a "V";
- The label for a heater control station next to the AW flush pit (in AW Farm beside AW-B valve pit) has improper nomenclature in that it does not say what the heater control station is for or where it is fed from; and
- The label for valve V-508 at the AP valve pit has faded to black.

These were brought to the attention of the Base Operations Senior SM. The FR also noted that there are still many labels faded to black, or worn off, in AP Farm, especially labels on the horizontal surfaces of riser cover plates. This has been identified repeatedly by ORP.

OBSERVATIONS

A-08-AMTF-TANKFARM-013-O04; Improvement for Labeling of High Radiation Areas Identified (Ron Frink – March 31, 2008)

During a review of Tank Farm HRAs, several HRAs were found without identification designations. Although properly posted for the radiological hazard, the following HRAs lacked identification numbers:

- CO-HRA-013 – Manhole Cover North of 152-AX Diversion Station
- CO-HRA-026 – S-102 Soil Drums (outside the farm)

Retrieval/Closure Operations specifies a unique identification number for each HRA; Base Operations does not. Consideration may be given to standardizing the identification of HRAs.

Additionally, the documentation to be reviewed to be able to identify a specific key for a given HRA is inconsistent between Retrieval/Closure Operations and Base Operations. For example, Retrieval/Closure Operations identifies all HRAs under its responsibility on one inventory sheet. These are identified by ID number, location description and key number. For Base Operations (including 242-A), the documentation is more complex. Base Operations Shift Office (MO-268) possesses an inventory list which specifies the location description. This list includes all HRAs within Base Operations, including those at 242-A. 242-A management keeps track of its HRAs with a key box index. This key box index identifies the 242-A HRAs and the key number associated with each HRA within 242-A. The HRA key for any HRA within Base Operations but outside of 242-A can only be identified by reviewing a third list located on the exterior of a key box within MO-268. For the purpose of clarity and consistency between the organizations, consideration should be given to standardizing and streamlining the administration of HRAs.

A-08-AMTF-TANKFARM-013-O05; Miscellaneous Materials Stored Above AN-106 Central Pump Pit (Ron Ciola – April 1, 2008)

The AN-106 central pump pit cover was partially covered with a tarp and other gear, including scaffolding materials and cinder blocks. The area appeared disorganized and cluttered, and had appeared so since January 2008. Investigation concluded that the items had been placed there by retrieval personnel. The tarp was intended to prevent water intrusion into the pit but had been moved out of position and was only partially covering the pit. The condition was discussed with the AN Farm Facility Manager. The SM also logged the observation.

A-08-AMTF-TANKFARM-013-O06; Discovered Broken Drywell Cover During Walkdown of T Farm (Rob Yasek – April 22, 2008)

Upon exiting the T Farm change trailer and approaching the vehicle ramp at the southern end of the Interim Barrier, I observed that the plastic cover set in place to prevent water intrusion into the drywell at the base of the vehicle ramp had apparently been run over by a vehicle and was left broken, allowing water to intrude into the drywell. It was indeterminate how long this drywell had been broken.

A-08-AMTF-TANKFARM-013-O07; Waste Transfer Flush not Correctly Accounted for (Glyn Trenchard – April 25, 2008)

During the AW-106 to AP-105 waste transfer on April 25, 2008, a 1500 gallon flush was not correctly documented in the transfer procedure (TO-270-365). The transfer procedure was written to allow the flexibility of performing flushing before, between and after waste transfers or independent of a transfer (and provides the option to not record the flush volume if it is not necessary to do so). Step 5.8.8 of the transfer procedure is performed after the flush and states, “IF necessary, OBTAIN AND RECORD flush volume on Data Sheet 2”. In this case, the flush volume should have been recorded on Data Sheet 2 as a “Flushing During Transfer” entry, but it

was not. As a result, the initial calculation of the 30-minute Material Balance Discrepancy (MBD) was in error. Operations staff then recognized the need to adjust the MBD for the flush water and reset the baseline material balance to account for the flush water. The MBD was then recalculated. This demonstrates that careful consideration should be made when performing (or skipping) steps that are to be performed on an as needed basis.

V. Closed Findings:

Two findings were closed in April 2008.

S-08-AMTF-TANKFARM-003-F1; Supplemental Lighting had Been Installed in Various Areas for the AP-101 to AW-102 Transfer but was not Being Used at Night (Chris Sorensen - February 23, 2008)

On February 23, 2008 the FR observed that the temporary lighting installed in AP and AW Farms for the AP-101 to AW-102 waste transfer was not illuminated at night. Temporary lighting for night operations during waste transfers is a corrective action from a judgment of need identified during the S-102 accident investigation. The purpose for it is for early detection of a potential waste transfer leak outside of a pit. The TFC responded to this finding by including the requirement for temporary lighting in the pre-job briefing for every waste transfer, adding the requirement to the turnover sheet for both the transfer operators and transfer Operations Engineer/SM, and by including this as a topic of discussion at every transfer readiness briefing for the Base Operations Vice-President. Also, a special briefing was conducted by the Base Operations Shift Operations Director for every SM on the purpose for the requirement for temporary lighting during waste transfers. The FR has personally observed this heightened attention to temporary lighting during waste transfers and confirmed that the temporary lighting is energized, usually even in the daytime. This finding is therefore considered closed.

A-08-AMTF-TANKFARM-008-F01; Leak Detector Monitoring During the AP-101 Recirculation was Inadequate (Glyn Trenchard – January 4, 2008)

On January 4, 2008 the FR observed inadequate leak detector monitoring during the AP-101 recirculation. The Human Machine Interface (HMI) was not being actively monitored and the operator was relying on the audible alarm from the HMI monitoring station. The speakers at the HMI were found with the volume turned down such that the alarm would have been inaudible. For corrective action, the verification of the audible alarm capability at the HMI monitoring station was added to the operator turnover sheets as well as the pre-job template for double-shell tank transfers. The transfer crew members were briefed on the issue at the time it was discovered and have been briefed on expectations to check the audible alarm capability on several subsequent transfers and proper checks of the audible alarms has been reviewed during numerous management observations. The initial check of the audible alarm capability at the HMI has also been added to the prerequisites in the operating procedure for subsequent transfers. These corrective actions were adequate to close the finding. This finding is therefore considered closed.