U.S. Department of Energy
Office of River Protection
P.O. Box 450, MSIN H6-60
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AUG 22 2008

08-TOD-083

Dr. J. G. Hwang, President
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and Laboratories International, Inc.
P. O. Box 250
Richland, Washington 99352

Dear Dr. Hwang:

CONTRACT NO: DE-AC27-05RV14548 – U.S. DEPARTMENT OF ENERGY, OFFICE OF RIVER PROTECTION (ORP) SURVEILLANCE OF TANK FARM PROJECT OPERATIONS, JULY 2008 (S-08-AMTF-TANKFARM-008)

The ORP Tank Farms Project Facility Representatives conducted evaluations of the Tank Farms and 222-S Laboratory operations and activities during July 2008. The attached report documents the results of the evaluations.

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

Sincerely,

Stacy Charboneau

Stacy Charboneau, Assistant Manager
for Tank Farms Project

TOD:BAH

Attachment

cc w/attach:
K. J. Kuhl-Klinger, ATL
R. R. Loeffler, ATL
K. T. Juroff, EM-22
ATL Correspondence

ACRONYMS

ALARA	As Low As Reasonably Achievable
CY	Calendar Year
DOE	U.S. Department of Energy
FR	Facility Representative
HIHTL	Hose-in-Hose Transfer Line
ISMS	Integrated Safety Management System
JRG	Joint Review Group
MRT	Mobile Retrieval Tool
OA	Operational Awareness
ORP	Office of River Protection
PER	Problem Evaluation Request
RMA	Radioactive Material Area
RWP	Radiological Work Permit
SB	Safety Basis
TF	Tank Farm

Office of River Protection

Tank Farm Project Monthly Report
July 2008

S-08-AMTF-TANKFARM-008

I. Introduction/Summary

During the month of July 2008, the U.S. Department of Energy (DOE), Office of River Protection (ORP) Facility Representatives (FR) reviewed Tank Farms (TF) and 222-S Laboratory activities. FR oversight activities are designed to provide DOE line managers with accurate objective information on the effectiveness of contractor work performance and practices, including implementation of the Integrated Safety Management System (ISMS).

The FRs performed 44 Surveillances in areas that included conduct of operations, radiological control practices, industrial safety, integrated safety management, quality assurance, nuclear safety, criticality safety, and maintenance. Three Findings, one Non-Cited Finding, and one Observation were reported during the month.

The FR reviews indicated that continued effort is needed to improve conduct of operations and radiological controls.

II. Analysis and Discussion

For this reporting period, 98 entries were made in the Operational Awareness (OA) database documenting their oversight. Figure 1 shows some of the functional areas reviewed and the type of OA entries in each area.

Figure 1 - Number of OA Entries by Category

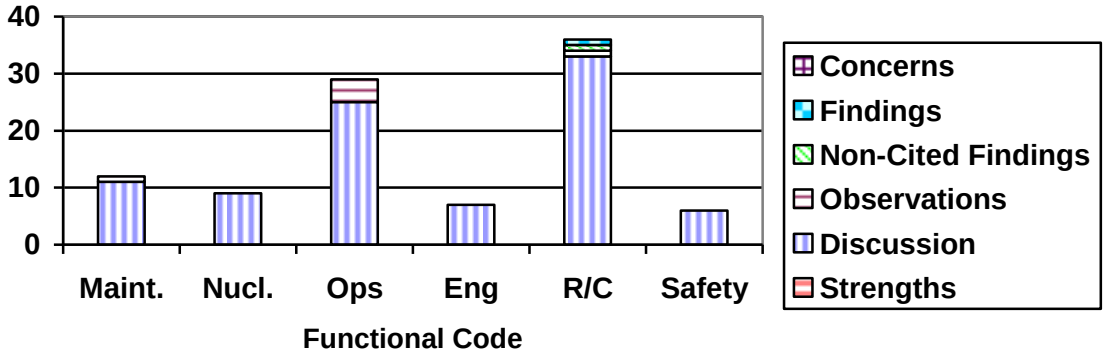
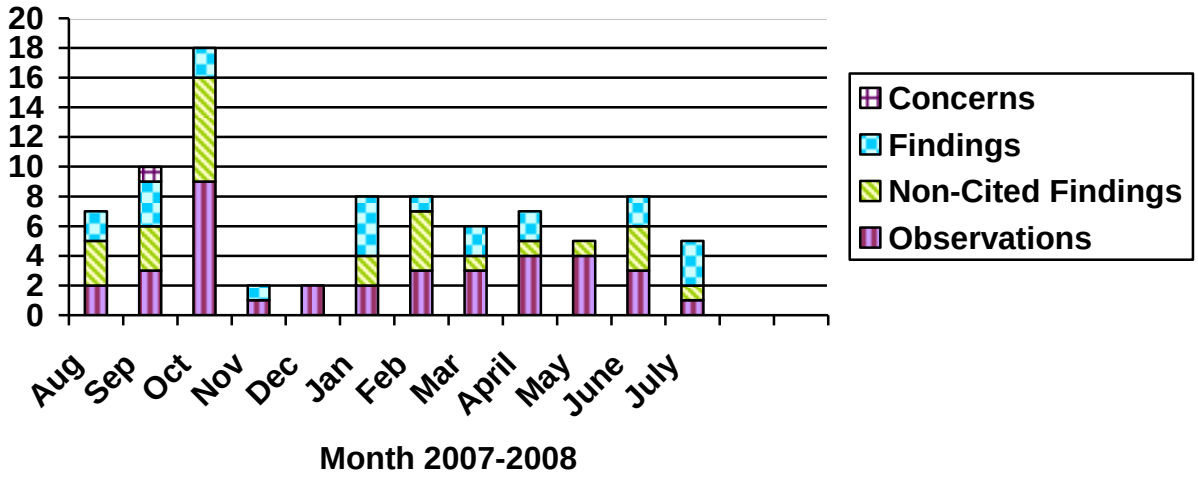


Figure 2 is a histogram of issues identified by the FRs for the last 12 months. No statistically significant change from the previous six months is observable.

Figure 2 - Number of Deficiencies by Type



III. Perspective Gained From Oversight

The FR's have a unique perspective of TF activities observing both work activities and TF events without the pressures felt by the Contractor. From the perspective of the FR's, the contractor is making a noticeable effort to maintain a focus on continued safety in the midst of a strong push to accomplish work prior to the turnover of operations to the successor organization. This report pinpoints areas of weaknesses, most notably those involving radiological work controls and the investigation and implementation of change. Although no consequences can be directly attributed to these weaknesses, the commonality of the issues in this report support that the potential for adverse consequences existed.

IV. Injuries and Occurrences

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

There were no occurrences during July 2008.

V. Strengths and Deficiencies

STRENGTHS

No strengths were documented by the FRs during the month of July.

FINDINGS

S-08-AMTF-TANKFARM-008-F01; Finding: The process for applying lessons learned into a work package after an abnormal radiological event is less than adequate. (Ciola, July 23, 2008)

Requirements:

RPP MP-003, *Integrated Environment, Safety, and Health Management System Description for the Tank Farm Contractor (section 2.3)*

ISMS Core Function 5 – Provide Feedback and Continuous Improvement

TFC-ESHQ-RP_RWP-C-03, *ALARA Work Planning* (section 4.4)

The As Low As Reasonably Achievable (ALARA) Management Worksheet is a tool used to ensure all reasonably achievable methods of reducing the worker's exposure are considered during the development of the work instructions.

The applicable lessons learned documented on the ALARA Management Worksheet must be incorporated into the work instructions and/or work documentation.

Discussion:

ISMS principles require that following an abnormal event such as a radiological problem -- work is stopped, the problem is evaluated, and the process is modified to avoid repeating the event.

On July 17, 2008, a radiological skin contamination occurred during work in the High Contamination Area at the 242-A Evaporator pump room. After the work package changes were issued, there was confusion on what was agreed to fix the problem. A review of the work package showed that an investigative meeting was held to determine the cause of the problem and the recommended fixes, but, the documentation from that meeting was not finalized and reviewed by the Joint Review Group (JRG) prior to their approval of the work package changes.

A detailed evaluation of the change process shows that the JRG is not required to review the results of investigative meetings prior to making decisions on changes. Nor is there a requirement for fixes to the problem to be incorporated into planning documents such as the ALARA Management Worksheet. The lack of a clear, documented path for evaluating and fixing radiological problems during the course of ongoing work adds unnecessary risk to work at the facility.

S-08-AMTF-TANKFARM-008-F02; Failure to issue Problem Evaluation Request (PER) or immediately address degraded packaging of equipment in Radioactive Material Area (RMA) 109. (Blanchard, July 16, 2008)

Requirement:

Procedure TFC-ESHQ-Q_C-C-01, REV D-5, *Problem Evaluation Request,* Section 4.1, PER Initiation, states, "A PER shall be initiated for conditions that require resolution, trending, cause determination, or identification and tracking of corrective actions."

Discussion:

On July 15, 2008, packaging issues were observed with a water lance stored in RMA 109. This approximate 40 foot in length radiologically contaminated water lance was wrapped in plastic and then enclosed in a Herculite outer cover. This Herculite outer cover was drooping between the three concrete supports and what appeared to be a duct tape patch had begun to come off. This drooping or loosening of the Herculite cover and degraded patch were the result of failed duct tape from environmental exposure.

Upgrades to the Herculite outer cover and supporting the equipment off the ground were part of the corrective actions from the event on June 13, 2007, where the outer covers of several pieces of contaminated equipment were identified with water in them. The corrective actions also included more attention to degraded covers during routine surveillances performed by the RMA custodian, radiological surveys, equipment owners etc. The corrective actions required immediately addressing packaging deficiencies and/or write a PER. In discussions with the contaminated equipment custodian, RMA custodian, and others the degraded water lance outer cover was known for several months, but immediate corrective actions were not taken and a PER was not issued.

On July 16, 2008, the water lance degraded packaging issues were corrected.

S-08-AMTF-TANKFARM-008-F03; Finding: TF Abnormal Operating Procedure (TF-AOP-015) contains ambiguous language that creates a procedure vulnerability.
(Wright/Sorensen, August 1, 2008)

Requirement:

TFC-OPS-OPER-STD-01, Section 3.7 states, in effect:

"1. Procedure action steps must be complete, concise, correct, and clear."

Discussion:

On July 28, 2008, an employee experienced headache, sore throat and a runny nose from ammonia vapors while performing Low Flammability Limit checks and valve handle removal at 241-S-107. TF-AOP-015 Rev B-18 - *Response to Reported Odors or Unexpected Changes to Vapor Conditions* was entered and subsequently exited upon Industrial Hygiene Technicians report of no ammonia detected in the breathing zone during continuous monitoring at job location.

The procedure has unclear and ambiguous steps which may have led to confusion on the applicability of some steps to be followed in the procedure. Individuals conducting this

procedure may interpret steps differently leading to a different outcome. An example of this is in step 3.1.5.

1.1.1 3.1.5 IF entry to a radiological area is necessary, CONTACT Radiological Control for determination of appropriate Radiological Work Permit (RWP)/work document, (e.g. TF-OPS-025).

NOTE - Step 3.1.5.1 applies to personnel who will be assigned to establish, control, or mark hazardous area boundaries.

1.1.1.1 3.1.5.1DON appropriate Personnel Protection Equipment as prescribed in Attachment 1 AND

ESTABLISH hazardous area boundary.

3.1.5.2 **IF** no detectable hazards are found, **GO TO** Section 4.0.

As written it is unclear if individuals that are already in the radiological area are required to follow this step or skip the step and continue on to step 3.1.6. If this step is followed and no hazard is found then going to Section 4 will bypass the step requiring employees exhibiting symptoms receive medical surveillance. Although the individual did receive medical attention the procedure is written in a way that this step could be bypassed. It would also bypass the requirement for a Tedlar bag sample and PER issuance.

NON-CITED FINDINGS

S-08-AMTF-TANKFARM-008-N04; Non-cited Finding: Personnel wearing pencil dosimetry on inside of Anti-Contamination clothing in a Contamination Area. (Yasek, July 17, 2008)

Requirement:

TFC-ESHQ-RP_DOS-C-08, REV A-1 States : "Pocket, pencil, and electronic dosimeters are direct reading supplemental dosimeters that provide real-time indication of exposure to radiation and assist in maintaining personnel doses less than administrative control levels."

Discussion:

On work excavating contaminated soil from S-102, three personnel were observed without pocket dosimeters, as required by the RWP. This was brought to the attention of the Senior Supervisory Watch, who asked the individuals if they had the required dosimetry. The personnel did have it, but was worn underneath their anti-contamination clothing. The personnel were then brought to a controlled area, surveyed so that they could get their pocket dosimeters from under their anti-c clothing and then put the pencil dosimeters on the outside of their anti-c clothing. There was no evidence to suggest that this non-compliance was willful, and has not been

observed in other comparable work or as a repeat discrepancy for this work package. The safety impact was minor and was corrected on the spot.

Wearing pocket dosimeters under anti-c clothing prevents personnel from being able to monitor their exposure to radiation while in an area where they may be exposed. This is contrary to its purpose and negates the benefit of wearing this type of dosimetry.

OBSERVATIONS

S-08-AMTF-TANKFARM-008-O05; Observation: Four out of 17 Event Investigation Reports issued during Calendar Year (CY) 2008 were issued late. (Sorensen, July 22, 2008)

The FR reviewed Event Investigation Report 2008-009, *Fact Finding for AN-01A Valve Funnel Replacement Leak – WFO-WO-07-1729*. The FR compared it to the procedure requirements for content and timeliness and noted that, while the content and format matched that recommended by the procedure, it was almost a month late in being issued. The procedure TFC-OPS-OPER-C-14, *Event Investigation Process*, requires a final report typically within 30 calendar days of the fact finding. The FR decided to review the issue dates for all other event investigation reports for CY 2008 and discovered that of 17 reports issued so far in 2008, four of them have been late, three of them significantly late, one as much as two months late. On the other hand, of the thirteen that were issued on-time or ahead-of-schedule, many of these were issued well ahead-of-schedule, one in as short as nine days. Discussions with cognizant personnel indicated that, in addition to being used to establish facts, in some cases event investigation reports are being used to conduct causal analyses which they are not intended to do by the governing procedure.

VI. Closed Finding

A08-AMTF-TANKFARM-008-F03: Operations response to facility alarms was not in compliance with procedures. (Williamson, January 4, 2008, CH2M-PER-2008-0096)

VII. FR Activities

The oversight performed by the FRs during July 2008 included, but was not limited to:

- Attended pre-job briefing and conducted field oversight for sluicing operations (TO-220-112) and Mobile Retrieval Tool System (MRT) operations (TO-320-050).
- Observed response to stop work due to heat stress control implementation inconsistencies.
- Observed removal of drill rod at CR-151 Vadose Zone site.
- Attended pre-job briefing for the removal of insulation from Hose-in-Hose Transfer Line (HIHTL) at S-Farm.
- Walked down T-Farm and observed increases in sand deposition on west and north fence-lines and in barrier runoff trench.
- Observed work planning meeting for pumping of S-302.

- Participated in the TF Criticality Surveillance.
- Participated in Configuration Management Assessment.
- Verified power restoration occurred at 242-A following power loss from 200-E grass fire.
- Reviewed SB amendment for air blow out of the primary HIHTL.
- Developed approach to complete Emergency Response Assessment report.
- Conducted interviews of Closure Operations Engineers to determine their level of knowledge of Technical Safety Requirements and the SB.
- Reviewed TE-08-019 – *Tank C 241-C-109 Retrieval System Technical Evaluation of Waste Migration from Jet Streams.*
- Reviewed TE-07-024 – *Foldtrack Mobile Retrieval Tool System (MRT) Waste Channeling/Waste Leak Path Technical Evaluation.*
- Reviewed documents for SB Amendment for Safety-Significant Designation of Waste Transfer Primary Piping Systems.
- Reviewed OE-08-001 – *Operational Evaluation for Hose-in-Hose Transfer Line (HIHTL) Compatibility with Quintolubric Hydraulic Fluid.*
- Reviewed work package for S-102 riser 7 cleanup (CLO-WO-07-1996).
- Observed the Sampling Crew package the AN-106 Samples for shipment.
- Attended pre-job brief and conducted field oversight on removal of plastic wrap off flanges in 219-S.
- Observed radiological work practices at the 222-S laboratory.
- Observed ALARA work practices at the 222-S laboratory.
- Attended an ALARA in-process review for work at 242-A.
- Attended Operational Readiness Review meeting for K-Basins.
- Reviewed the saltwell removal Job Safety Analysis, ALARA Management Worksheet, and revised work instruction CLO-WO-08-0495, *C-110 Remove Saltwell Screen and Polyurea Caisson*.
- Reviewed procedure TO-080-800, *Prepare and Load Hedgehog II Waste Sample Containers & Steel PIGs.*
- Reviewed SB Amendment for S-302 liquid removal and transfer to Double-Shell Tank.
- Toured Building 616 and evaluated postings and barriers and general housekeeping.
- Toured the perimeter of the Storage Pad 2727 WA to inspect postings, security, general packaging conditions, fire load conditions, and housekeeping.
- Reviewed In-process Radiological Surveys and the RWP associated with work at 242-A.
- Reviewed Radiological Work Permits at 272-AW ACES station.
- Reviewed TFC-ESHQ-RP_RWP-C-03, *ALARA Work Planning*.
- Reviewed TFC-ESHQ-RP_RWP-C-04, *Radiological Work Permits*.
- Reviewed TFC-ESHQ-ENV_FS-C-01, *Environmental Notification*.
- Reviewed RPP-16922, *Environment Specification Requirements*.
- Reviewed Hanford Site Radioactive Air Emissions License #FF-01.
- Reviewed the Event Investigation Process procedure and several event investigation reports.
- Toured the 242-A Evaporator observing Heating, Ventilation and Air Conditioning upgrades.

- Observed the pre-job briefing for the decontamination hose down of the 242-A pump room.
- Attended the JRG meeting for work package WFO-WO-07-1602, *Step 001 242A Paint Evaporator Room Floor*.
- Reviewed the RWP modification for work package WFO-07-2340, *242-A Repair Nozzle E*.
- Reviewed and concurred in Safety Evaluation Report – *Approval of the Safety Basis Amendment for Hose in Hose Transfer Line Air Blow Out.*
- Observed removal of the salt-well screen from C-110.
- Attended a procedure Hazard and Operability Study for C-110 operation – TO-320-028 – *Operate POR132-RW-RWDD-001 Raw Water Distribution Skid.*
- Observed de-termination of heat trace for a HIHTL at S Farm.
- Observed testing of S-302 pump at the Cold Test Facility.
- Attended pre-job briefing and field oversight for Nozzle E replacement at 242-A.
- Observed a seal water jumper flush at 242-A.
- Attended the pre-job briefing for Hood Sash Work at 222-S.
- Observed pre-job briefing and conducted field oversight of CLO-07-1983 – *Remove S-101, S-107, S-111 HIHTLs to S-C, S-A pits.*
- Assisted in an assessment on POR-008 exhauster.
- Conducted an exhauster surveillance in C-Farm.
- Observed a Team Planning Meeting for CLO-WO-07-1982 - *Remove HIHTL from S-112 to S-A Pit.*
- Reviewed TFC-WO-08-0532 - *Blow Down C-109 and POR104 Valve Box HIHTLs.*
- Attended pre-job briefing and conducted field oversight for CLO-WO-07-1335 - *Water Flush of C-109 and POR104 Valve Box HIHTLs.*
- Attended pre-job briefing and conducted field oversight for TFC-WO-08-0532 - *Blow Down C-109 and POR104 Valve Box HIHTLs.*
- Reviewed TF-AOP-015 - *Response to Reported Odors or Unexpected Changes to Vapor Conditions.*
- Reviewed RPP MP 003, *Integrated Environment, Safety, and Health Management System Description for the Tank Farm Contractor.*
- Reviewed TFC-ESHQ-RP_RWP-C-03, *ALARA Work Planning.*
- Reviewed TFC-ESHQ-RP_ADM-C-13, *ALARA Administration.*
- Reviewed TFC-ESHQ-RP_RWP-C-04, *Radiological Work Permits.*
- Reviewed TFC-ESHQ-RP-STD-03, *ALARA Decision Making Methods.*
- Reviewed TFC-ESHQ-RP_ADM-C-11, *Joint Review Group*
- Reviewed TFC-OPS-MAINT-C-01, *Tank Farm Contractor Work Control*.
- Attended AN Farm new primary exhauster training.
- Reviewed SB Amendment for over pressure devices to protect transfer lines.