



U.S. Department of Energy

~~Office of River Protection~~

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

07-TOD-037

MAY 02 2007

Mr. M. S. Spears, President
and Chief Executive Officer
CH2M HILL Hanford Group, Inc.
2440 Stevens Center Place
Richland, Washington 99354

Dear Mr. Spears:

CONTRACT NO. DE-AC27-99RL14047 – U.S. DEPARTMENT OF ENERGY, OFFICE
OF RIVER PROTECTION (ORP) TANK FARM PROJECT QUARTERLY REPORT
FOR THE SECOND QUARTER OF FISCAL YEAR 2007

The ORP TOD Facility Representatives and Technical Staff conducted evaluations of the
Tank Farm and 222-S Laboratory operations and activities during January, February, and
March 2007. The attached quarterly report documents the results of the evaluations.

If you have any questions, please contact me, or you may contact Mark Brown, Director,
Tank Farm Operations Division, (509) 373-9150.

Sincerely,

Delmar L. Noyes, Acting
Assistant Manager for Tank Farms

TOD:MCB

Attachment

cc w/attach:

E. J. Adams, CH2M HILL
C. E. Anderson, CH2M HILL
J. J. Badden, CH2M HILL
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U.S. Department of Energy, Office of River Protection

Tank Farm Project Operations Quarterly Report

Second Quarter Fiscal Year 2007
January thru March 2007

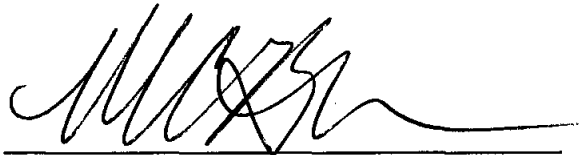


Office of River Protection

ORP MISSION

Retrieve and treat Hanford's tank waste and close the tank farms to protect the Columbia River.

U.S. Department of Energy
Office of River Protection
Tank Farm Project Operations
Quarterly Report
Second Quarter Fiscal Year 2007
January thru March 2007



Mark C. Brown, Director
Tank Farm Operations Division

Facility Representatives

C. A. Blanchard
R. C. Sorensen
G. D. Trenchard
K. G. Wade
B. I. Williamson
R. M. Yasek

Technical Staff

J. D. Long
M. J. Royack
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1. EXECUTIVE SUMMARY

The U.S. Department of Energy (DOE), Office of River Protection (ORP), Tank Farm Project (TFP) Facility Representatives (FR) and TFP Technical Staff completed scheduled and reactive reviews of the Tank Farm Contractor (TFC) and Analytical Services Production Contractor activities and operations at TFC managed facilities during the months of January thru March 2007. The reviews conducted during the quarter were focused on evaluating contractor activities, operations and continuous improvement efforts in the following areas: Waste Transfer Operations, Safety Basis Change Management, Analytical Equipment Replacement Plans for the 222-S Laboratory, Unreviewed Safety Question Transportation (USQT) Process, and review of Material Balance Areas (MBA) at the 222-S Laboratory. The review of Safety Basis Change Management is continued through April 2007 and will not be reported in this report. Below is a summary of the results, detailed results are provided in Section 2 of this report and in the attached surveillance reports.

A. Waste Transfer Operations

During the months of January and February 2007, ORP FRs observed several transfers, a caustic addition, and investigated corrective actions for issues from earlier transfers. FRs noted significant improvement in the conduct of operations of waste transfers during January and February. Although, the FRs did find several attention-to-detail related issues, they were relatively minor. The cross-site transfers this year were notably improved from the one in May of 2006. FRs identified three Strengths, two Non-Cited Findings, and two Observations in this area.

B. Analytical Equipment Replacement at the 222-S Laboratory

ORP Technical Staff conducted a review of the age and use of analytical equipment in the 222-S Laboratory in order to correlate equipment plans to the long term mission of the Site, with special emphasis on the mission for the Tank Farms. The review focused on the plans for replacement or upgrade of equipment and the basis for those plans. There were no Observations or Findings. Planning for laboratory equipment is consistent between budget and scheduling documents and generally consistent between CH2M HILL Hanford Group, Inc. (CH2M HILL) and Advanced Technologies and Laboratories International, Inc. (ATL).

C. Unreviewed Safety Question Transportation Process

ORP Technical Staff reviewed implementation of procedure TFC-OPS-WM-C-13, Revision B, "Unreviewed Safety Question Transportation Process." Reviews of documents and procedures indicate that CH2M HILL has implemented CH2M HILL Waste Services, Transportation Procedure TFC-OPS-WM-C-13, Revision B, "Unreviewed Safety Question

Transportation Process,” as directed by ORP. There were no Findings during this surveillance.

D. Survey of Material Balance Areas at the 222-S Laboratory

ORP Technical Staff conducted a surveillance of ATL and CH2M HILL MBAs 235 and 500 at the 222-S Laboratory. MBA 235 is within the scope of CH2M HILL and MBA 500 is within the scope of ATL. MBA 235 and 500 custodians follow CH2M HILL, ATL, and Hanford security plans and procedures for receiving, custodianship, transfer of nuclear material, and radiological sample inventory control. There were no Findings during this surveillance.

Conclusion: Contractor operational performance and compliance with requirements was good during the quarter. Improvements were noted in conduct of operations, command and control, and communications. The FRs observed consistently good pre-job briefs. Additionally, FRs observed effective execution of field work on a fairly consistent basis. Errors in log keeping, data sheets, and other operationally related administrative matters indicates that more focus is needed in the area of attention to detail. FRs will continue to review this area to ensure effectiveness of contractor corrective actions.

2. QUARTERLY PERFORMANCE EVALUATION

Review Scope and Method: ORP FRs and technical staff completed evaluations of operations and activities at CH2M HILL managed facilities during the second quarter of Fiscal Year (FY) 2007, covering the months of January thru March 2007. The evaluations conducted during the quarter were focused on evaluating contractor activities and continuous improvement in the following areas:

- Waste Transfer Operations,
- Analytical Equipment Replacement at the 222-S Laboratory,
- Unreviewed Safety Question Transportation Process, and
- Survey of Material Balance Areas at the 222-S Laboratory.

In addition to these specific areas, and observing field operations and activities (operational awareness), the FRs performed a total of 44 reactive surveillances during the quarter. These surveillances were performed in the areas of maintenance, conduct of operations, nuclear safety, industrial safety, quality assurance, radiological controls, waste management, and training and qualification. Results from these surveillances are detailed in the Operational Awareness (OA) database and in the FR Weekly Reports. This quarterly report provides the results of the focus areas identified above, and provides a list of the deficiencies identified during all reviews (Section 3).

Results: Seven Strengths, two Findings, three Non-Cited Findings, and six Observations were identified during the quarter. In addition, two Issues were identified during the quarter prior to the revision to deficiency nomenclature (discussed below). The FRs identified three Strengths, two Non-Cited Findings, and two Observations during the quarter in the area of Waste Transfer Operations. ORP technical staff deficiencies identified during the quarter were provided to the contractor separately. The results of the FR reviews were provided to contractor management periodically during the quarter both verbally and via the Tank Farm FR Weekly Reports. The FR issues identified in these reports were also discussed with contractor management at the monthly interface meetings conducted on February 5, March 5, and April 2, 2007. The results of the technical staff reviews were discussed with the contractor separately.

There were 127 OA database entries made during the quarter. Based on review of the deficiencies identified by the FRs and technical staff, OA database entries, performance indicators, and occurrence reports submitted during the quarter, no adverse trends were identified. However, the FRs did note several instances where inattention to detail resulted in data sheet, log keeping, and other administrative errors associated with operations. The contractor has taken appropriate actions for the deficiencies identified. The FRs will continue to review attention to detail in data sheet and log keeping in the future to ensure corrective actions remain effective to prevent recurrence of the inattention to detail errors.

Starting with the month of February 2007, the FR program began using different nomenclature for deficiencies identified with contractor activities and operations. The following nomenclature and definitions were described in the February 8, 2007 FR Weekly Report:

Concern - A determination of a programmatic breakdown or widespread problem supported by one or more findings or observations.

Finding - An individual item which does not meet requirements.

Non-Cited Finding - An individual item which does not meet requirements, is considered minor in nature, and is considered to be an isolated non-compliance.

Observation - A condition or practice that does not provide or promote effective protection of the health and safety of the public, DOE's workers, or the environment, but is not directly linked to compliance.

The following sections provide details of the results of the focused reviews for the quarter. For the ORP technical staff reviews, a summary is provided for each area reviewed; details can be found in the attached surveillance reports. Refer to Section 3, *Facility Representative Issues*, for a complete listing of FR deficiencies identified during the quarter.

A. Waste Transfer Operations

During the months of January and February 2007, ORP FRs observed several waste transfers, a caustic addition to a waste storage tank, and investigated corrective actions for issues from earlier waste transfers.

Scope: The FRs monitored transfers in January and February period including: C-108 to AN-106 retrieval transfers, S-112 to SY-102 retrieval transfers, S-102 to SY-102 retrieval transfers, AP-101 to AY-102 waste transfer, two waste transfers from SY-102 to SY-101, a caustic addition to S-112, and two cross-site waste transfers, first from SY-101 to AP-101 and later from SY-101 to AY-101.

In January and February, the FRs were also involved in the investigation and corrective actions from transfer events that took place prior to the reporting period. Specifically, the FRs participated in fact findings and Documented Safety Analysis (DSA) and Technical Safety Requirement (TSR) amendment proposals that resulted from a caustic flush of the 702-AZ condensate system on June 21, 2006. This flush resulted in a transfer from AZ-301 to AY-101 without application of the required Administrative Control (AC) 5.11 controls (the waste characteristics exceeded the WASTE (L) criteria). The FRs also reviewed the root cause analysis, the final occurrence report, and verified corrective actions for a TSR violation involving failure to establish double valve isolation with independent verification, and a subsequent inadvertent addition of flush water to AP-103, that occurred during the AN-106 to AW-102 waste transfer in November 2006.

Discussion of Results: The TFC waste transfer operations in this period were successful. These transfers ensured double-shell waste receiver tanks were available for retrieval operations of Single-Shell Tanks (SST), including the continued retrieval of three SSTs, with no major issues identified by the FRs.

Throughout these transfers, the FRs noted very good conduct of operations as well as reduced Central Processing Unit (CPU) related transfer shutdowns due to use of a new Monitoring and Control System (MCS). Several relatively minor issues (provided below) were found, including inattention to detail regarding data recording, and have been or are being addressed. While not raised as an issue, FRs will continue to evaluate the inability of the SY-102 transfer pump to continuously pump at all tank levels. Although, this issue did not impact the ability of the TFC to make space for retrievals from the SSTs, it did impact the efficiency of those transfers and does indicate that this piece of equipment is potentially degraded. The TFC is considering several actions to investigate this situation including the use of an in-tank camera to observe the inlet screen during a future operation of that pump.

After concluding that future caustic additions to the 702-AZ condensate system are likely, and following performance of a consequence analyses of AZ-301 transfer leak accidents, the

TFC submitted a DSA/TSR amendment to exempt the 702-AZ condensate system from the definition of WASTE that would require AC 5.11 controls, and removed all references to that waste stream as being WASTE (L). This amendment was reviewed and accepted by ORP technical staff and FRs. The root cause analysis for the AN-106 transfer TSR violation and the final occurrence report were accepted by the FR. Corrective actions from this event were incorporated into the transfer that the FRs observed during this reporting period.

Weekly reports from the covered period reported three Strengths, two Observations, and two non-cited Findings relating to waste transfer operations as shown below.

Strengths:

Strong Conduct of Operations observed during the cross-site transfer. (G. Trenchard February 20, 2007)

DOE FRs monitored the cross-site waste transfer from SY-101 to AP-101, including observing backshift and weekend operations. Throughout the transfer, very good conduct of operations was observed. Specifically, the FRs observed consistent, strong command and control, clear communications, and good access control of the transfer control station. Although, the FRs did find minor administrative errors in some data sheets, overall, the data collection and recording of key transfer parameters was very good. Transfer operators, shift managers, and engineering staff were knowledgeable of the system and the transfer process. The Senior Supervisory Watches provided oversight and were seen by the FRs as a valuable asset during transfer startup.

The Cross-Site Transfer equipment upgrades resulted in improved performance. (G. Trenchard February 20, 2007)

A review of the 2006 SY-101 to AP-107 Cross-Site Transfer showed 16 shutdowns over the 10 day period. Thirteen of the shutdowns were attributed to CPU communication alarms and two were a pump shutdown with no apparent cause. The remaining shutdown was due to a Master Pump Shutdown. These shutdowns complicated the conduct of the transfer and were highly frustrating and distracting to the personnel working the transfer. The recent SY-101 to AP-101 Cross-Site Transfer used a new MCS. With this transfer, there were only three shutdowns (two were from a problem with the defense-in-depth continuous leak detector and one from a Master Pump Shutdown due to a leak detector relay not related to the transfer route). The elimination of the multiple CPU-related transfer shutdowns, resulted in a smoother, more consistent transfer, with minimal interruptions. The reduction in the frequency of alarms and shutdowns may have also had a positive affect on the overall Conduct of Operations.

Excellent communications consistently observed at S Farm retrievals.

(R. Yasek, February 28, 2007)

During retrievals at S-Farm, the ORP FR observed consistently good communications between the Operations Control trailer and workers inside the tank farm. Good use of repeat-backs and three-way communications ensured that correct information was conveyed between parties. In several instances, errors in communication were corrected immediately and messages were clarified to ensure work was performed effectively. This was all performed while operations were switching back and forth from retrieval at S-112 and S-102 from day to day, which increased the possibility of misinformation if clear communications were not used. The care used to ensure communications were conducted properly and clearly contributed to effective S-Farm retrieval operations.

Observations:

The times for data to be recorded were not consistent within a transfer procedure. (G. Trenchard February 5, 2007)

TO-430-200 *Transfer from 241-SY-102 to 241-SY-101* rev D-0, step 5.4.15.1 states to record Prefabricated Pump Pit (PPP) monitoring results on Data Sheet 6 every 4 hours (or 1.5 if retrieval is occurring); it does not mention the 30 minute or 60 minute entries within the body of the procedure. Data Sheet 6 does include the 30 minute and 60 minute data entries. The intent of the procedure was to include data recording at 30 and 60 minutes.

Data Sheet was not consistent with the related procedure step.

(G. Trenchard February 28, 2007)

Procedure TO-430-440, *Cross-Site Transfer from 241-SY-101 to 241-AY-101*, Step 5.3.3 says PERFORM AND RECORD "INITIAL" readings required per Data Sheet 8. This step occurs before the admin lock condition is removed (before the start of the transfer). Data Sheet 8, PPP Leak Detection Alarm Verification, has blocks for entering the initial readings, but these blocks have a footnote that says "Initial reading must be performed 30 minutes after start of transfer". As such, the Data Sheet is in conflict with the body of the procedure. Additionally, the use of multiple footnotes results in added Data Sheet complexity.

Findings (non-cited):

Inattention to detail when completing and reviewing waste transfer checklists and data sheets. (K. Wade, January 18, 2007)

Four sets of completed checklists and data sheets for procedure TO-220-110, *Over-Ground Transfer from 241-C-108 to 241-AN-106 and Sluicing of Tank 241-C-108*, were reviewed for retrieval operations performed on January 8, 2007 through January 11, 2007. The following errors were found during review of checklists and data sheets:

- Checklist 2 – On January 8, 2007, the Independent Verification time was recorded as 1300 (hrs.) and the transfer start time was recorded as 0830 (hrs.). This verification is required before starting the transfer to satisfy Limited Conditions for Operation (LCO) 3.1.2 physical disconnect requirements. The work crew started graveyard shift on Monday, January 8, 2007 and it appears the time was mis-recorded as 1300 in lieu of 0100 hours. This type of time recording error does not demonstrate compliance with the TSRs.
- Checklist 9 – The times and dates recorded do not correspond for the checks performed within 72 hours prior to starting the transfer. The 72 hour check is completed at the end of the shift for the next day and only the time is recorded - not the date. The next day checklist 9 is started for the remaining checks and a date is then recorded for the entire sheet. As a result, the check appears to be performed after the pump start time for that day. This type of procedure error does not demonstrate compliance with AC 5.11 transfer controls.
- Data Sheet 1 - Material Balance and Data Sheets 3, 4A, and 4B – Hose-In-Hose Transfer Line Radiation Surveys – The pump start and/or stop times was not always recorded or was incorrectly recorded. About six instances of this type of error was noted.

Inattention to detail when completing and reviewing waste transfer checklists and data sheets. (G. Trenchard February 5, 2007)

During a review of the completed transfer procedure TO-250-850, *Transfer from 241-AP-101 to 241-AY-102*, the FR noted that:

- On Data Sheet 2 – Intermediate Material Balance (Page 5 of 11) there were three entries made in pencil rather than ink.
- Checklist 5 – Transfer Valving, states that “Valving must be done in order listed in checklist”. The checklist has three pages and it is not clear whether each page must be

performed in order. In this case, page two was accomplished prior to page one. In addition, the second valve on page two was accomplished prior to the first valve.

Conclusion: FRs noted significant improvement in the conduct of operations of waste transfers during January and February. Although, the FRs did find several attention-to-detail related issues, they were relatively minor. The cross-site transfers this year were notably improved from the one performed in May 2006. The FRs attributed this improvement to several factors/actions: Including a pre-transfer review of the issues that were identified in the May 2006 cross-site transfer; working sessions to ensure personnel assigned to the transfer benefited from lessons learned reviews; implementation of corrective actions from the AN-106 TSR violation; and, hardware upgrades of the MCS, combined with a management emphasis on reduction of distracting nuisance alarms. The FRs will continue to monitor contractor actions for the degraded transfer pump in SY-102.

B. Analytical Equipment Replacement at the 222-S Laboratory

ORP Technical Staff conducted a review of the age and use of analytical equipment in the 222-S Laboratory in order to correlate equipment plans to the long term mission of the Site, with special emphasis on the mission for the Tank Farms. The review focused on the plans for replacement or upgrade of equipment and the basis for those plans. There were no Observations or Findings. Planning for lab equipment is consistent between budget and scheduling documents and generally consistent between CH2M HILL and ATL. See attached Surveillance Report for details.

C. Unreviewed Safety Question Transportation Process

ORP Technical Staff reviewed implementation of procedure TFC-OPS-WM-C-13, Revision B, "Unreviewed Safety Question Transportation Process." Reviews of documents and procedures indicate that CH2M HILL has implemented CH2M HILL Waste Services, Transportation Procedure TFC-OPS-WM-C-13, Revision B, "Unreviewed Safety Question Transportation Process," as directed by ORP. There were no Findings during this surveillance. See attached Surveillance Report for details.

D. Survey of Material Balance Areas at the 222-S Laboratory

ORP Technical Staff conducted a surveillance of ATL and CH2M HILL MBAs 235 and 500 at the 222-S Laboratory. MBA 235 is within the scope of CH2M HILL and MBA 500 is within the scope of ATL. MBA 235 and 500 custodians follow CH2M HILL, ATL, and Hanford security plans and procedures for receiving, custodianship, transfer of nuclear material, and radiological sample inventory control. There were no Findings during this surveillance. See attached Surveillance Report for details.

3. FACILITY REPRESENTATIVE ISSUES

Seven Strengths, two Findings, three Non-Cited Findings, and six Observations were identified during the quarter. In addition, two Issues were identified during the quarter prior to the revision to deficiency nomenclature (discussed below). These were previously provided to the contractor via the FR Weekly Reports. The following table provides a listing of the deficiencies identified during the quarter.

Issue	Type of Issue	FR	Date	PER Number
Government vehicles left unattended with engine running.	I	Blanchard	1/16/07	2007-0149
Inattention to detail when completing and reviewing waste transfer checklists and data sheets.	I	Wade	1/18/07	2007-0150
Finding: Omission Identified with the Chemical Inventory Tracking System	F	Blanchard	2/5/07	2007-0316
Finding (Non-cited): Poor Housekeeping Observed Throughout the 222-SA Building	NCF	Blanchard	2/5/07	2007-0317
Finding (Non-cited): Inattention to detail when completing and reviewing waste transfer checklists and data sheets.	NCF	Trenchard	2/5/07	2007-0314

Observation: The times for data to be recorded were not consistent within a transfer procedure.	O	Trenchard	2/5/07	2007-0318
Observation: Closure Operations Shift Managers were not initialing the shift instructions after reviewing them at shift turnover.	O	Sorensen	2/12/07	2007-0369
Observation: Data Sheet was not consistent with the related procedure step.	O	Trenchard	2/28/07	2007-0421
Observation: Video camera troubles caused excessive delays in acquiring videos of Tank ER-311.	O	Sorensen	3/7/2007	2007-0429
Non-Cited Finding: Access to the fenced area around AZ-301 catch tank was not properly posted as an Underground Radioactive Material Area.	NCF	Williamson	3/20/07	2007-0540
Finding: Weaknesses in Operator Aid Audits.	F	Navarro	3/30/07	2007-0616
Observation: Operator Aids were found not firmly attached or numbered.	O	Navarro	3/30/07	2007-0617
Observation: No procedure exists for responding to a Crash Phone.	O	Navarro	3/30/07	2007-0618

4. CLOSURE

Finding: Inadequate implementation of vehicle barrier controls.
(R. C. Sorensen/B. Williamson May 8, 2006)

The Finding dealt with **vehicle barriers** in SY Farm that were not configured in accordance with DSA requirements. Specifically, one type of vehicle barrier approved by Section 4.4.4 of the DSA was the 6" steel pipe welded perpendicularly to a 3/4" steel plate. RPP-7916 specified that the steel plate be braced against the concrete footings of the PPP. In reality, the FRs noted that the steel plates were located several feet away from the PPP concrete footing. A Potential Inadequacy in the Safety Analysis was declared and Waste Feed Operations (WFO) senior management agreed to address design, implementation, and operator training issues in their corrective actions. Corrective actions included the following: The TFC decided not to use this design of vehicle barrier any longer since it did not meet the design requirements, so it was eliminated from RPP-7916 and Chapter 4 of the DSA. These vehicle barriers were removed from the proximity of the PPP at SY-101 (where WFO transfers regularly take place) and were replaced with jersey barriers. Others had been removed previously from other areas controlled by Closure Operations and replaced with jersey barriers. WFO operations personnel, from Shift Managers to Nuclear Chemical Operators, were retrained to recognize approved vehicle barrier configurations. The SY-102 to SY-101 transfer procedure was revised, prior to the transfer in June 2006, to specify exactly what type of vehicle barriers are in place and where they are located. Engineering procedures TFC-ENG-DESIGN-P-17, *Design Verification*, and TFC-ENG-DESIGN-C-10, *Engineering Calculations*, were revised to ensure that assumptions and limits contained in design calculations are addressed in the associated design. The FR verified that these corrective actions had been implemented. **This Finding is considered closed.** (Note: Findings from the Vehicle Barrier Assessment of May 2006 will be addressed separately.)

ENCLOSURES

- A. Analytical Equipment Replacement at the 222 S. Laboratory
- B. Unreviewed Safety Question Transportation (USQT) Process
- C. Survey of Material Balance Areas at the 222 S Laboratory

**PRORAMMATIC REVIEW OF PLANS FOR ANALYTICAL EQUIPMENT REPLACEMENT
AT THE 222 S. LABORATORY**

Office of River Protection



Andrew Stevens
Office of River Protection
January 2, 2007 – February 13, 2007

**Facilities Reviewed: Advanced Technologies and Laboratories International, Inc.
and CH2M HILL Hanford Group, Inc.**

Executive Summary

A review was made of the age and use of analytical equipment in the 222-S Laboratory in order to correlate equipment plans to the long term mission of the Site, with special emphasis on the mission for the Tank Farms. The review focused on the plans for replacement or upgrade of equipment and the basis for those plans.

There were no Observations or Findings.

Those contacted during this review were:

Heather Anastos, ATL
Kathleen Hall, CH2M HILL
Barbara Hill, CH2M HILL

Replacement of analytical instruments is planned and that planning is supported primarily by experience which is being confirmed by data from actual usage.

List of Acronyms

CH2M HILL	CH2M HILL Hanford Group, Inc.
ATL	Advanced Technologies and Laboratories International, Inc.
ORP	Office of River Protection
ICP/MS	Inductively Coupled Plasma/Mass Spectrometry
GC/MS	Gas Chromatography/Mass Spectrometry
GPC	Gas Proportional Counter
LIMS	Laboratory Information Management System
HANDI	Hanford Data Integrator

Background and Scope

As stated in the River Protection Project System Plan, the 222-S Laboratory is currently planned to operate until cleanup of the Site is completed. During that period, the 222-S Laboratory will analyze samples from the tanks, evaporator, vapor space, nearby soils and vegetation and produce quality results in a timely manner. One major factor to enable that capability is the equipment used in these analyses. This review evaluates the Contractor's planning for analytical equipment to support the long range mission of the Laboratory. CH2M HILL is the Contractor responsible for procurement and major maintenance of analytical equipment. ATL is the Contractor responsible for use of, and minor maintenance of the same analytical equipment.

Results

In discussions, it was determined that there is good awareness of the age of instruments, use, criticality of certain instruments in performing analytical work and the maintenance necessary to keep each instrument operational. Most of this awareness is based on experience in the 222-S

Laboratory but records to support that awareness is not extensive. Available information and data was gathered, as summarized below:

- A CH2M HILL document showing planned annual upgrades for instruments and facilities through 2012. The document was prepared about a year ago for budget preparation purposes and contains approximate cost for each instrument, a summary description and justification.
- A CH2M HILL P3 schedule showing plans for future procurement. A comparison of this schedule with the information in the budget planning document shows consistent planning and intent to execute the plan.
- A CH2M HILL list of instruments by equipment number and name that shows the availability of each instrument during the month. The data is for the past 6 months but has not been rolled up into a single spreadsheet.
- A review of CH2M HILL HANDI financial data shows that the ICP/MS procurement is underway and is consistent with the planning documents. The cost for the year is about \$600k.
- The CH2M HILL HANDI financial data shows a planned procurement for GC/MS instruments in 2007 from a budget perspective but is different from the scheduling document which shows the first of three procurements to begin in 2009. Cost of each would be about \$340k. The inconsistency is explained because the cost of this equipment has fallen and procurement was made with expense funds in 2006. A Baseline Change Request has been submitted to remove the GC/MS from procurement this year.
- A list of priorities for replacement instruments was provided by ATL. This list was compared with the CH2M HILL lists and schedule. The lists are in general agreement, but there are some differences. For example the GPC is second in priority on the ATL list but scheduled procurement is in 2009. A meeting between the Contractors has been arranged to discuss and resolve differences.
- Data representing the amount of use for each instrument is not presently available. Remaining lifetime of instruments is based on knowledge and experience of laboratory workload and operations. However, LIMS is presently being mined to provide data to support the experience-based knowledge of usage.

Conclusion:

Planning for laboratory equipment is consistent between budget and scheduling documents and generally consistent between CH2M HILL and ATL.

**OFFICE OF RIVER PROTECTION
SURVEY OF IMPLEMENTATION OF CH2M HILL
PROCEDURE TFC-OPS-WM-C-13, "UNREVIEWED SAFETY QUESTION FOR
TRANSPORTATION PROCESS" REVISION B**

Office of River Protection



Michael J. Royack
Office of River Protection
Transportation and Packaging Program

Closes Integrated Assessment Item: ORPGPB0170 Transportation Safety Document Implementation
March 2007

EXECUTIVE SUMMARY

The U.S. Department of Energy (DOE), Office of River Protection (ORP) conducted a survey of CH2M HILL Hanford Group, Inc (CH2M HILL) Waste Services, Transportation Procedure TFC-OPS-WM-C-13, Revision B, "Unreviewed Safety Question Transportation (USQT) Process," implementation. Reviews of documents and procedures indicate that CH2M HILL has implemented CH2M HILL Waste Services, Transportation Procedure TFC-OPS-WM-C-13, Revision B, "Unreviewed Safety Question Transportation Process," as directed by ORP.

There were NO FINDINGS during this survey.

SCOPE

Perform a document review of CH2M HILL implementation of TFC-OPS-WM-C-13, Revision B, "Unreviewed Safety Question Transportation Process."

PROCESS

The survey was compliance and performance-oriented and evaluated activities.

Data for the survey was gathered through reviews of documentation.

Findings are considered deficiencies that will require formal corrective action plans. Suggestions are identified as program enhancements and do not require corrective action plans.

There were no Findings identified during the survey.

SYNOPSIS OF SURVEY ISSUES:

There were no Findings identified during this survey for this survey.

SURVEY REPORT NARRATIVE

CH2M HILL has assigned a trained and qualified staff member as the CH2M HILL USQT evaluator. The CH2M HILL evaluators' qualification was based on requirements specified in the requirements of Hanford Site Transportation Safety Document, DOE/RL-2001-36, Revision 1, Chapter 10.0 Personnel Training and Qualification, Section 10.1.1, Training Program Requirements. Evaluators qualification were:

- Education, Masters Degree in Information Technology;
- Completion of DOE Headquarters Packaging Certification Course, Course 17027 Safety Analysis Reports, dated August 19, 2004, certificate reviewed;
- Hanford Specific USQT course, 020120 Intro Site wide Transportation Safety Document dated May 2, 2003, and Course 020121 USQT Process for Transportation and Packaging Jan 7, 2005.
- Experience: Twenty years in Transportation and Packaging including 17 years of Transportation experience in U.S. DOE regulations and requirements.

Unreviewed Safety Question Determinations

During the period from when ORP approved the implementation of Revision B, of TFC-OPS-WM-C-13, Revision B, "Unreviewed Safety Question Transportation Process," and the period of this survey, CH2M HILL had not documented any Attachment A's "Margin of Safety Determination Checklist" of TFC-OPS-WM-C-13, Revision B.

During the period from when ORP approved the implementation of Revision B of TFC-OPS-WM-C-13, Revision B, "Unreviewed Safety Question Transportation Process," and the period of this survey, CH2M HILL had not documented any USQT Determination (USQTD) Worksheets.

DOCUMENTS REVIEWED/REFERENCED

ORP letter from R. J. Schepens to M. S. Spears, CH2M HILL, "U.S. Department Of Energy (DOE) Office Of River Protection (ORP) Approval of CH2M HILL HANFORD GROUP, INC.'S (CH2M HILL) Procedure TFC-OPS-WM-C-13, "Unreviewed Safety Question for Transportation Process" REVISION B, 06-TOD-100, dated December 18, 2006.

CH2M HILL letter from M. S. Spears to R. J. Schepens, ORP, "Unreviewed Safety Question for Transportation Requirements," CH2M-0631513, dated October 18, 2006.

CH2M HILL HANFORD GROUP, INC.'S (CH2M HILL) Procedure TFC-OPS-WM-C-13, "Unreviewed Safety Question for Transportation Process" Revision B.

CH2M HILL Hanford Group, Inc.'s (CH2M HILL) Memorandum 7S500-07-LTB-01, dated February 20, 2007, Designation for James P. McGrogan as an USQT Evaluator.

Qualification Certifications: Methods for Reviewing Safety Analysis Reports for Packaging and Performing Confirmatory Analysis, Course 17027 Safety Analysis Reports, dated August 19, 2004.

Copy of Training Records Information James P McGrogan.

POINTS OF CONTACT

L. T. (Ty) Blackford, CH2M HILL, Waste Services
James P. McGrogan, CH2M HILL, Waste Services

**SURVEY OF MATERIAL BALANCE AREAS
at the 222 S LABORATORY**

Office of River Protection



Michael J. Royack
Office of River Protection
Transportation and Packaging Program

Closes Integrated Assessment Item: ORPGPB0160 MBA Security and Storage
March 2007

OFFICE OF RIVER PROTECTION
Survey of MBA 235 and 500 In 222-S Laboratory

EXECUTIVE SUMMARY

The U.S. Department of Energy (DOE), Office of River Protection (ORP) conducted a survey of Advanced Technologies and Laboratories International Inc. (ATL) 222-S Laboratory and CH2M HILL Hanford Group, Inc (CH2M HILL) Material Balance Areas (MBA) 235 and 500. This survey was conducted to ensure that samples in MBA 235 and 500 were being stored in accordance with procedures, and that items in MBA 235 and 500 were below the criteria that would put them within the scope of DRAFT DOE M 441.1-1 Nuclear Material Packaging Manual.

MBA 235 is within the scope of CH2M HILL and MBA 500 is within the scope of ATL. MBA 235 and 500 custodians follow CH2M HILL, ATL, and Hanford security plans and procedures for receiving, custodianship, transfer of nuclear material, and radiological sample inventory control.

Results of the review indicated that the items in the MBAs were being handled and stored in accordance with currently approved procedures and plans. There was one item identified in MBA 500 that was determined to be potentially within the scope of DRAFT DOE M 441.1-1, Nuclear Material Packaging Manual as of March 9, 2007. The position of ORP will be that current and future items remain out of the scope of DOE M 441.1-1, Nuclear Material Packaging Manual.

There were NO FINDINGS during this survey.

SCOPE

Perform inspections of MBA 235 and 500 for storage of items in the MBAs in accordance with procedures and plans. Review documentation for the items in the MBAs to determine if any item could be determined to be within the scope of DRAFT DOE M 441.1-1, Nuclear Material Packaging Manual as of March 9, 2007.

Process

The survey was compliance and performance-oriented and evaluated activities.

Data for the survey was gathered through reviews of MBA inspections, procedures and interviews with contractor personnel assigned to the 222-S Laboratory program and operational responsibilities.

Findings are considered deficiencies that will require formal corrective action plans. Suggestions are identified as program enhancements and do not require corrective action plans.

There were no Findings identified during the survey.

SYNOPSIS OF SURVEY ISSUES:

There were no Findings identified during this survey for MBA 235 and 500.

There was one item identified in MBA 500 that was determined to be potentially within the scope of DRAFT DOE M 441.1-1, Nuclear Material Packaging Manual as of March 9, 2007.

OFFICE OF RIVER PROTECTION
Survey of MBA 235 and 500 In 222-S Laboratory

It was suggested that the custodian of the MBA 500 further review the item when DOE M 441.1-1, Nuclear Material Packaging Manual is issued for review and comment. The position of ORP will be that current and future items remain out of the scope of DOE M 441.1-1, Nuclear Material Packaging Manual.

No contractual direction was given during the scope of the discussions on the item that potentially fell within the scope of DOE M 441.1-1, Nuclear Material Packaging Manual.

SURVEY REPORT NARRATIVE

Tours of MBA 235 and 500 were conducted.

Access:

Access into the MBAs is for authorized personnel only. Security keys to the MBAs are controlled by operations. Nuclear material in the MBAs were found to be controlled per requirements.

Storage:

Items in the MBAs were stored in various types of containers which appeared to be in good condition and in compliance with requirements when placed into the MBA.

MBAs-235 and 500 contains only Category IV nuclear material and as such is subject to a biennial physical inventory and is witnessed by the Fluor Hanford, Inc. Safeguards Material Control Organization. CH2M HILL Safeguards and Security perform surveys of the MBAs in accordance with Safeguards and Security Procedures. All nuclear material in these MBAs are inventoried. Inventories are conducted in accordance with Security procedures at a minimum. No discrepancies were noted during these inventories.

Draft DOE M 441.1-1 Nuclear Material Packaging Manual

One item was found to be within the scope of Draft DOE M 441.1-1 Nuclear Material Packaging Manual. Once DOE M 441.1-1 Nuclear Material Packaging Manual is issued Contracting Officer direction may be provided to ensure the item is processed to remove it from the scope of DOE M 441.1-1. The position of ORP will be that current and future items remain out of the scope of DOE M 441.1-1, Nuclear Material Packaging Manual.

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Survey of MBA 235 and 500 In 222-S Laboratory

DOCUMENTS REVIEWED/REFERENCED

ATS-LO-180-105, Operation of the MBAs and Transfer of Nuclear Material, Rev/Mod: H-0, Release, dated October 24, 2006.

ATL-MP-1010: Material Control and Accountability Plan, Rev: 0, Release, dated May 23, 2006.

ATS-LO-180-105, Operation of the MBAs and Transfer of Nuclear Material, Rev./Mod. H-0, Release, dated October 24, 2006.

ATL-LO-090-101, 222-S Laboratory Sample Receiving and Custodianship, Rev./Mod. BB-0, Release, dated October 13, 2006.

ATL- LO-180-107(USQ), Radiological Sample Inventory Control, Rev./Mod. H-0, Release, dated November 28, 2005.

TFC-PLN-28: Materials Control and Accountability Plan.

HNF-PRO-611: Nuclear Material Transfers.

HNF-PRO-613: Control Tamper-Indicating Devices.

HNF-PRO-629: Physical Inventories.

DOE O 470.1: Safeguards and Security Programs.

ORP Nuclear Material Inventory Listing 222S Laboratory MBA 235.

ORP Nuclear Material Inventory Listing 222S Laboratory MBA500.

POINTS OF CONTACT

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