U.S. Department of Energy
Office of River Protection
P.O. Box 450, MSIN H6-60
Richland, Washington 99352

JUL 28 2008

08-TOD-069

Mr. John C. Fulton, President
and Chief 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, JUNE 2008 (A-08-AMTF-TANKFARM-017)

The ORP Tank Farms Project Facility Representatives conducted evaluations of the Tank Farms and 222-S Laboratory operations and activities during June 2008. The attached report documents the results of the evaluations, which identified one Strength, two Findings, three Non-Cited Findings, and three Observations.

Please respond to the assessment Non-Cited Finding within 30 days of receipt of this letter. The response should include:

- The corrective actions that have been taken to control or remove any adverse impact from the noncompliant conditions (remedial actions) and the results achieved.

- 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 Farms Operations Division, (509) 373-9150.

Sincerely,

Stacy Charboneau

Stacy Charboneau, Assistant Manager
for Tank Farms Project

TOD:BIW

Attachment

cc: See Page 2

cc w/attach:
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Attachment
08-TOD-069

Assessment of Tank Farm Project Operations for June 2008
A-08-AMTF-TANKFARM-017

ACRONYMS

ALARA	As Low As Reasonably Achievable
ARA	Airborne Radioactivity Area
CRA	Contractor Readiness Assessment
DOE	U.S. Department of Energy
FR	Facility Representative
HIPTL	Hose-in-Pipe Transfer Line
HPI	Human Performance Improvement
MRT	Mobile Retrieval Tool
OA	Operational Awareness
OE	Operations Engineer
ORP	Office of River Protection
PER	Problem Evaluation Request
PrHA	Process Hazards Analysis
TFC	Tank Farm Contractor

Office of River Protection

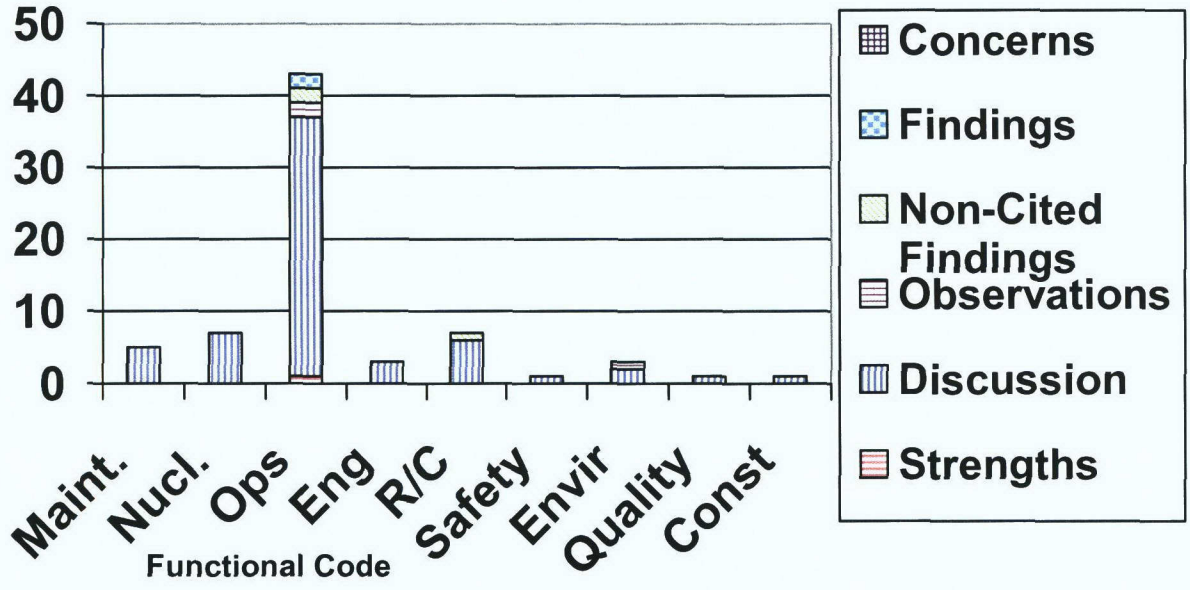
Tank Farm Project Monthly Report for June 2008

A-08-AMTF-TANKFARM-017

I. Introduction/Summary

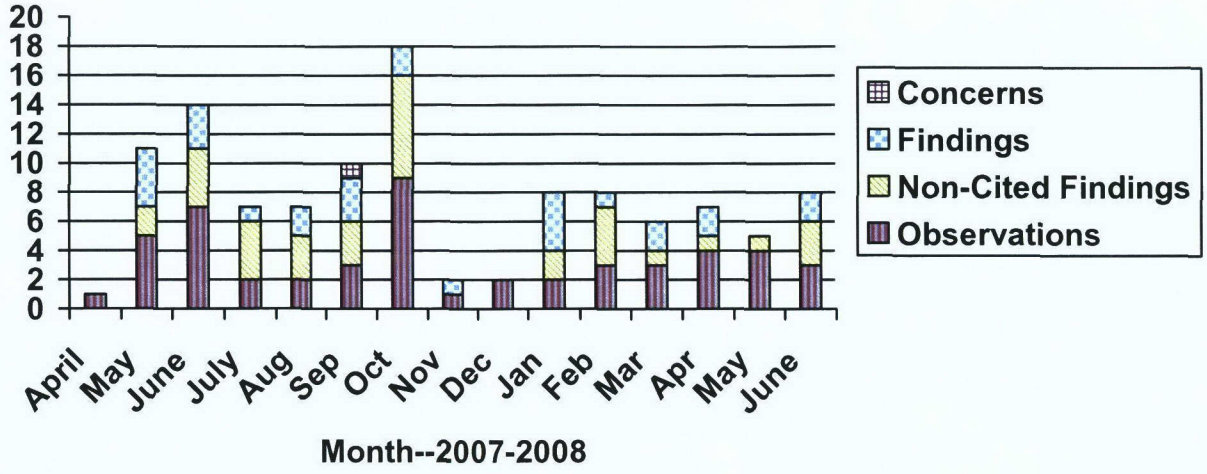
During the month of June 2008, the U.S. Department of Energy (DOE), Office of River Protection (ORP) Facility Representatives (FRs) reviewed maintenance and operations at the Tank Farms and 222-S Laboratory. For this reporting period, 71 entries were made in the Operational Awareness (OA) database (by both FRs and ORP technical staff). 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.

Figure 1 - Number of OA Entries by Category



One Strength, two Findings, three Non-Cited Finding, and three Observations were reported by the FRs during the month. These strengths and issues are discussed in Section IV of this report.

Figure 2 - Number of Deficiencies by Type



II. Analysis and Discussion

In June 2008, the ORP FRs performed 26 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, Environmental Programs and Maintenance.

While this report does include data from S-102 recovery oversight 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.

During the month of June, ORP FRs began to focus on procedural ambiguities that could result in significant adverse effects following the water skid water release event at C-109. The C-Farm water skid event in May took place shortly after resumption of retrieval at C-109; retrieval of C-109 was authorized following a Contractor Readiness Assessment (CRA) that pointed out a procedural ambiguity in the C-109 transfer procedure. The water skid event made it apparent that the corrective action for the procedural ambiguity, identified in the CRA, did not go far enough in that it did not look at the extent of condition of procedural ambiguities. Therefore, the FRs looked into the extent of condition during their oversight in June. Because this review was largely done on operations procedures, the issues are captured under the Conduct of Operations heading in Figure 1.

Figure 2 does not show a significant change in the number of deficiencies from the previous months.

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

- Attended Joint Review Group meeting for P7 Sump Pump Installation in Building 219 (LAB-WO-06-01279);
- Attended pre-job brief and walk down with the Defense Nuclear Facility Safety Board staff and contractor to review the electrical distribution system in AY/AZ Farms and AP Farm;
- Observed startup of the 242-A ventilation system;
- Observed sample collection activities at CR-151 direct push vadose zone site;
- Attended pre-job brief for CLO-WO-08-0796, 241-B-103, 105, 203 replace breather filters with radial filters;
- Attended pre-job brief and operation of the C-109 Mobile Retrieval Tool (MRT) (operation without water);
- Observed operation of the C-109 MRT (operation with water);
- Attended pre-job brief and C-104 Bail Inspection of A and C pits lower cover blocks (CLO-WO-08-0161);
- Attended pre-job brief for P7 Sump Pump Installation in Building 219 (LAB-WO-06-01279);
- Attended fact finding involving the potential for accumulation of flammable gas within the C-Farm sump pumps;
- Attended fact finding for C-109 MRT track malfunction;
- Reviewed procedures used in C-109 retrieval (MRT operation, C Farm water skid use, sluicing and retrieval operations);
- Reviewed transfer procedure for AZ-102 to AW-106 transfer (TO-230-340);
- Attended contractor readiness meeting for the AZ-102 to AW-106 transfer;
- Conducted a facility walkthrough of 272-S with three contractor safety representatives;
- Inspected the 222-S Laboratory Radiological Controls and Postings with the ORP Radiological Controls Manager;
- Walked down the electrical distribution system in AP, AY and AZ Farms;
- Investigated water skid relief valve lifting event;
- Investigated MRT track incident;
- Reviewed the draft 242-A Fire Hazards Analysis with respect to starting the new ventilation fans;
- Attended pre-job brief and conducted field oversight for troubleshooting (Electrical Trouble Shooting Plan – CLO-WO-07-1611, Instrument Trouble Shooting Plan – CLO-WO-07-1619) of the C-Farm water skid;
- Attended pre-job brief and conducted field oversight of the prerequisites for sluicing operations (TO-220-112);
- Reviewed procedures with the C-Farm Operations Engineer (OE) to discuss issues identified TO-060-006 – *Operate POR-008 Exhauster*, TO-320-028 – *Operate POR-132-RW-RWDD-001 Raw Water Distribution Skid*;
- Attended pre-job brief and conducted field oversight of CLO-WO-08-0822 – Connect water truck up to POR132-RW-RWDD-001 – Backshift;

- Attended pre-job brief and conducted field oversight of the flushing operations for the supernate pump and slurry pumps per TO-220-112;
- Monitored waste transfer from 241-AZ-102 to 241-AW-106;
- Monitored waste transfer from 241-AZ-102 to 241-AP-105/AP-107;
- Observed activities at CR-151 direct push vadose zone site;
- Conducted walk down of the S-21 stack record sampler;
- Attended fact finding for tank riser damage at AN-01;
- Attended fact finding for the AN-101 contamination event;
- Conducted a walk through of 701-A Area and C-109 Control Room;
- Attended pre-job and observed field work to remove Hose-In-Pipe Transfer Line (HIPTL) from S-B Pit to S-D Pit;
- Participated in site-wide annual field exercise at the Emergency Operations Center;
- Attended MRT Process Hazards Analysis (PrHA) to discuss use of MRT with missing track;
- Reviewed site-wide lock and tag procedure for concurrence to send to the ORP and DOE, Richland Operations Office Managers for approval;
- Attended pre-job briefing and conducted field oversight for sluicing operations (TO-220-112) and MRT operations (TO-320-050);
- Toured the 222-S Laboratory with the Analytical Project Manager to assess fissionable material storage and handling;
- Reviewed the 222-S Lab notification process for analytical results that meet criticality concern threshold;
- Attended the pre-job briefing for adding caustic to the 702-AZ drain lines;
- Attended pre-job briefing and conducted field oversight for the removal of HIPTL at S-Farm;
- Reviewed the draft safety evaluation report for the safety basis amendment that authorizes operation of the new primary exhausters in AW Farm
- Reviewed Operational Evaluation 08-002, *Operability Evaluation for Valve AWVPB-WT-V-212;*
- Reviewed procedures TFC-OPS-OPER-C-10, *Vehicle and Dome Load Control in Tank Farm Facilities*, TFC-OPS-OPER-D-02, *Electronic Dome Load Log*;
- Reviewed procedure TFC-ESHQ-S_IH-C-07, *Heat Stress Control*;
- Reviewed procedure TO-020-085, *702-AZ Condenser Flush System* and RWP WTO-1000 to prepare for caustic flush of the 702-AZ drain lines; and
- Attended PrHA for the C-110 Waste Retrieval System.

III. Injuries and Occurrences

During the month of June 2008, there were no lost work days and one recordable case:

On June 30, 2008, an employee backed into a piece of plywood and received a sliver. The employee was given prescription antibiotics.

There was one Occurrence in June 2008:

On June 12, 2008, while working in an outdoor containment tent to replace valve funnels in tank AN-101's central pump pit, a large dust devil with high winds came into contact with the tent and unrolled the tent roof, rolled it back up and then lifted the rolling roof reel up dropping half of the reel and roof material (Herculite®) into tent. At the time of dust devil, the tent, posted as an Airborne Radioactivity Area (ARA)/Contamination Area, was fully staffed with 15-20 people wearing Air Purifying Respirators. There were no personnel injuries and no spread of contamination was found.

The contractor issued a "Just in Time" lessons learned on this issue that provided guidance to the planners to direct that these containment roofs shall be directed to be secured in future work documents and discussed the error precursor of human nature assuming that something will not happen because it hasn't happened yet.

IV. Strengths and Deficiencies

STRENGTHS

Good pre-job brief leads to increased participation and better work execution. (Wright - June 12, 2008)

The pre-job brief for C-109 retrieval operations conducted by the OE was well thought out and thorough, leading to increased feedback and participation from all the involved personnel. The OE had written on a white board the separated sections of the procedure to be used (TO-220-112 - Over-Ground Transfer from 241-C-109 to 241-AN-106 and Sluicing of Tank 241-C-109) and identified critical steps and steps that require coordination between different groups. This helped identify what actions would be needed and led to discussions to plan out exactly how these particular steps would be carried out. The OE also covered the requirements of the Industrial Hygiene Monitoring Plan and the C-109 Radiological Monitoring Plan to help coordinate the efforts of the individual groups which led to a more organized and efficient work plan. This pre-job demonstrated how an effective and well-planned pre-job briefing assists in preparing for successful work execution.

FINDINGS

A-08-AMTF-TANKFARM-017-F01; Corrective actions were insufficient to ensure worker safety when a disabled pressurization alarm was discovered in SY Farm on October 22, 2007. (Harwood/Williamson - June 16, 2008)

Requirement: 10 CFR 830.122 Criterion 3 – Management/Quality Improvement (3), identify the causes of problems and work to prevent recurrence as a part of correcting the problem.

Discussion: CH2M-PER-2007-1858 was written in October 2007, to address the SY pressurization alarm not annunciating upon shutdown of the SY primary exhauster; the scope of the Problem Evaluation Request (PER) only addressed a software change request, but failed to include installation and testing. The PER was closed in March 2008, with corrective actions only addressing those under engineering's control. A software change request was made to ensure the alarm is enabled upon system startup, but the change was not made in the field. Therefore, the pressurization alarm would still not annunciate upon exhauster failure if the system had been re-booted recently without the additional step of actively enabling the pressurization alarm.

Operations failed to document mitigating measures to be taken until the software change could be installed. A possible mitigating action may have been to ensure that the pressurization alarm was enabled following a power outage. There was an assumption that the software change would happen quickly, but it never did. Failure to document a mitigative measure to address the system's deficiency allowed the same issue to be reported in May, seven months later under CH2M-PER-2008-1210 written by Base Operations. This PER was closed prior to instituting any compensatory actions to maintain alarm operability until a permanent change could be made.

The pressurization alarm is important to worker safety for minimizing exposure to tank vapors and radiological contamination. Corrective action for this nature of a problem must be corrected with urgency and mitigated until a permanent solution is implemented.

A-08-AMTF-TANKFARM-017-F02; Tank farm dome loading control errors led to inaccurate understanding of dome loading at AN-101. (Ciola - June 19, 2008)

Requirements:
TFC-ENG-FACSUP-C-10; Control of Dome Loading

4.4.1	Route maps shall be used for all tank farm entries. Use the dome load log to track transient, permanent, and live loads.

TFC-OPS-OPER-C-10; Vehicle and Dome Load Controls in Tank Farm Facilities

4.3.10	Notify the Base Operations Shift Manager or delegate when the load is removed from the affected dome or exclusion zone and no longer needs to be tracked.
4.3.12	Log vehicle entries onto tank domes or exclusion zones on the dome load electronic log as required by TFC-OPS-OPER-D-02, unless exempted by steps 14 through 16.
4.3.13	When notified, remove loads from the electronic logs in accordance with TFC-OPS-OPER-D-02.
4.3.15	Waive the requirement to update the dome load electronic log for vehicle access only when the following conditions are satisfied: ▪ The vehicle access is to be within one shift only
4.3 18.a	Follow vehicle route map and pre-job meeting instructions provided by the field work supervisor or operations representative when entering the tank farm hazardous facility or tank dome/exclusion zone.

TFC-OPS-OPER-D-02; Electronic Dome Load Logs:

4.1.1.a.1 If the temporary live load is a vehicle, evaluate the weight of the vehicle against the allowable transient load for each applicable tank(s) dome the vehicle is to travel over. If the vehicle weight will not exceed the tank(s) allowable transit load, proceed with the activity without the necessity to load the weight of the vehicle for those tank domes specified on the route map. The full weight is only required to be loaded on the affected tank dome in which the vehicle will be staged on to perform work.

4.2 Removing Loads from the Electronic Dome Log.

NOTE 2: The requirement to remove a load may come from various sources such as from reviewing a work package closure package or from a verbal request from the field work supervisor or other FR.

Discussion: On June 17, 2008, a 56,950 lb crane was moved into the AN Tank Farm. The crane was located on Tank AN-101 on June 18, and remained in place until June 19. Although the movement was logged into the Base Operations Shift Manager's Log, the path of travel for the crane was not in accordance with the approved route map provided in the work package, WFO-WO-08-0005, nor was a deviation for the modified route approved by the Shift Manager. Also, the resultant temporary load placed on the AN-101 tank dome was not logged into the tank's dome loading log. Further inspection of the dome loading log indicated that a 90-ton crane load of 116,073 lbs was listed as an existing AN-101 tank load, but the 90-ton crane had been removed several days earlier. Later discussions with the Operations Manager indicated that the practice of leaving tank dome loads accounted for while a work package is still ongoing is a conservative logging method, which is intended to minimize potential errors while attempting to add and remove numerous loads on a daily basis. However, procedures TFC-OPS-OPER-C-10 and D-2 do not clearly define when loads are required to be removed from tank dome load logs.

Further, TFC-OPS-OPER-C-10 does not provide a clear definition for what constitutes a "transient load". Per the procedure, certain transient loads are afforded exemptions from tank dome load accountability requirements. The procedure defines transient loads as, "mobile equipment weighing more than 5,000 lbs," but does not identify the length of time a load can be placed on a tank dome prior to becoming "temporary" or "permanent" loads. Portions of the procedure imply that the term "transient" applies for a duration not to exceed one shift, although this condition is not explicitly applied to the term "transient". The result is a procedure that requires interpretation and may lead to inconsistent application of tank dome loading controls.

NON-CITED FINDINGS

A-08-AMTF-TANKFARM-017-N03; Incorrect Radiological Posting Observed. (Blanchard – June 3, 2008)

Requirement: Procedure TFC-ESHQ-RP_MON-C-18, Section 4.3, Step 4d states, "Remove postings when radiological conditions no longer warrant the posting based on current survey data".

Discussion: On Tuesday, June 3, 2008, the 222-S FR and ORP RadCon Manager conducted a surveillance of radiological postings. During the surveillance, two (2) ARA postings were identified that were inadvertently posted on the entry doors for Room 1E and 1A that indicated radiological conditions that did not exist.

Laboratory room entry doors have windows and inserts for postings. The inserts for the postings are located just below the window which allows the back side of the posting to be viewed from within the room. Most of these inserts have blanked cardboard so the back side of a posting is not visible from within the laboratory room. The general posting for the laboratory doors is an As Low As Reasonably Achievable (ALARA) sign on one side and the ARA post on the other. The posting for Room 1E and 1A from the hallway was the general ALARA sign, but when exiting the laboratory room the ARA posting was viewed (indicating the hallway was an ARA). In response to this issue, the FR contacted a facility Health Physics Technician who immediately remedied the issue and communicated the issue to the health physics supervisor.

This issue was categorized as a non-cited finding because it was not a repeat issue and the issue was fixed quickly with no cost impact.

A-08-AMTF-TANKFARM-017-N04; Ambiguous language in operations procedures creates transfer misroute vulnerability. (Williamson – June 6, 2008)

In review of TO-230-340, *Transfer from 241-AZ-102 to 241-AW-106*, Rev A-0, instances of ambiguous language were noted:

Step 5.8.10 stated "**IF** directed by Shift Manger/OE, **PERFORM** the following transfer route realignment valving; <Table>"

This step, if carried out, would restore the valve alignment needed for the waste transfer following a flush of the transfer pump by positioning two safety significant valves to the closed position with independent verification. The "IF directed" statement creates a decision point that relies upon the Shift Manager/OE to direct the positioning of these valves. If they did not direct performance of this step and the transfer were to continue, the procedure would send the user to section 5.2 for preparations to remove the Administrative Lock. In this section, step 5.2.7 states "As applicable, **CONFIRM** the following have been completed prior to removal of transfer pump administrative lock, **AND DOCUMENT** on Data Sheet 6. Independent verification of transfer valving has been completed per Checklist 3 and Shift Manager has confirmed no work activities...".

As with the previous discussion, the wording "As applicable, **CONFIRM**..." creates a decision point for the shift manager that *could* result in not performing the step. Plus, even if the step was performed, confirmation that transfer valving has been completed per Checklist 3 only checks

that the transfer was lined up **before** that valving was modified in Section 5.8. Therefore, this step would not confirm valving is aligned to remove the administrative lock from the transfer pump.

With the combined ambiguity of both of the above steps, the possibility is created where a transfer could be resumed after a pump flush without having first closed the safety significant valves that isolate the water system.

Additionally, the wording of the following step, "IF necessary **OBTAIN AND RECORD** flush volume on Data Sheet 2", does not define a criteria for when it is necessary to be performed. If the wrong decision is made and the flush volume is not recorded, then the Material Balance would be in error. This issue was previously noted by ORP on April 25, 2008, (Observation A-08-AMTF-TANKFARM-013-O07).

The FR relayed these comments to the Tank Farm Contractor (TFC), who promptly corrected them by removing the ambiguity before starting the transfer. This issue was graded as a non-cited finding due to the simplicity of the fix and because the contractor was reported to be performing a similar review. When considered with the other issues in the report, the significance is more serious. This is discussed in Section V below.

A-08-AMTF-TANKFARM-017-N05; Review of Procedure TO-220-112, Revision B-4, *Over-Ground Transfer from 241-C-109 to 241-AN-106 and Sluicing of Tank 241-C-109* Revealed Non-Compliances with TFC-OPS-OPER-STD-01. (Frink – June 9, 2008)

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

1. "Procedure action steps must be complete, concise, correct, and clear."
2. "It is critical that procedure action steps be sequenced to match the order in which they must be performed."

Discussion: Procedure TO-220-112, *Over-Ground Transfer from 241-C-109 to 241-AN-106 and Sluicing of Tank 241-C-109* was found non-compliant with TFC-OPS-OPER-STD-01, *Technical Procedure Format and Preparation Standard".*

Steps 5.6.22, 5.7.28, and 5.14.18 state, "**ISOLATE** Raw Water Supply." These steps do not clearly state how to isolate the Raw Water Supply. This creates an error trap (operational ambiguity) by requiring the performance of an unstated procedure/work package (TO-320-028 or water truck). Procedure TO-320-028 and the water truck should be referenced as options so that the user clearly understands that a different procedure/package is needed and that the user is not expected to isolate the raw water supply using TO-220-112. This step represents a non-compliance with TFC-OPS-OPER-STD-01, Section 3.7, Line Item 1.

The performance of step 5.6.8 will result in a procedure violation if executed in the required sequence. Section 5.6 does not permit steps to be performed out of sequence. Step 5.6.8 states,

"**IF** raw water supply fails during water flush, **CLOSE** valve POR105-RW-V-103". This is a conditional step. Any event that requires the use of step 5.6.8 would occur after step 5.6.8 thus requiring the user to perform step 5.6.8 out of permissible sequence. Sections 5.6 must be rewritten to permit the intended operational flexibility so that the step is not performed out of sequence. This step represents a non-compliance with TFC-OPS-OPER-STD-01, Section 3.7, Line Item 2.

Steps 5.7.7 and 5.14.10 have vulnerabilities similar to step 5.6.8 and, thus represent a non-compliance with TFC-OPS-OPER-STD-01, Section 3.7, Line Item 2.

Although not a non-compliance with TFC-OPS-OPER-STD-01, Step 5.14.16 states, "**CLOSE** valve POR104-WT-V-111 and POR104-WT-V-106." This is an error trap in that this step directs the actions for two separate valves. To eliminate this error trap, it would be best to separate these actions into two steps with one action on each valve.

Although not a non-compliance with TFC-OPS-OPER-STD-01, steps 5.6.4, 5.7.4, 5.14.7 of TO-220-112 possess a significant Human Performance Improvement (HPI) error trap. Each of the tables in each step specifies valves with similar identification numbers that may lead to undesirable valve positioning. For example, step 5.6.4 states:

ENSURE the following valves are in the position indicated:

Valve	Position
POR122-RW-V-101	OPEN
POR122-RW-V-107	OPEN
POR122-RW-V-102	CLOSED
POR122-RW-V-103	CLOSED
POR122-RW-V-104	CLOSED
POR122-RW-V-105	CLOSED
POR122-RW-V-106	CLOSED
POR204-RW-V-101	OPEN
POR204-RW-V-102	OPEN
POR105-RW-V-103	CLOSED
POR105-RW-V-102	CLOSED
POR105-RW-V-105	CLOSED
POR104-WT-V-110	OPEN
POR104-WT-V-111	OPEN
POR104-WT-V-107	OPEN
POR104-WT-V-106	CLOSED
POR104-WT-FCV-112	CLOSED

One error precursor inherent in this table, for example, is the positioning of POR122-RW-V-102 and POR204-RW-V-102. POR122-RW-V-102 is required to be in the CLOSED position.

POR204-RW-V-102 is required to be in the OPEN position. The user is required to pay strict attention-to-detail so that valve #102 is placed in the correct position for the correct platform. This issue was graded as a non-cited finding due to the simplicity of the fix and because the contractor was reported to be performing a similar review. When considered with the other issues in the report, the significance is more serious. This is discussed in Section V below.

OBSERVATIONS

A-08-AMTF-TANKFARM-017-O06; Inadequate Guidance for the Restoration of the 296-S-21 Exhaust Stack Radiological Alarm System After Planned Electrical Power Outage. (Courtney Blanchard - June 19, 2008)

After the planned electrical power outage on June 13, 2008, the local S-21 Stack Radiological record sampler low flow and pressure alarms were not reset. A review of work package LAB-WO-08-0718, Vendor Replace Substation Tank Operations Contract Switch, found that it addressed resetting the alarm panel in 3B but was silent on guidance for resetting the local alarm located at the record sampler. The local alarm remained activated until it was identified the following day during routine rounds. Notifications were made in accordance with Procedure TFC-OPS-OPER-CD-01, *Event Notification* and the work package/procedure deficiency was identified during the post job review.

A-08-AMTF-TANKFARM-017-O07; Ambiguous language in operations procedures creates procedure vulnerability. (Wright - June 24, 2008)

In review of TO-320-028, *Operate POR132-RW-RWDD-001 Raw Water Distribution Skid*, instances of ambiguous language were noted:

> Step 5.1.7 stated "**IF** directed by Shift Manger/OE, **ENSURE** fire hydrant R-11-E is Charged/In Service."
>
> This step, if carried out, would ensure that the water source to the POR132 Raw Water Skid needed for C-farm operations was operational. The "IF directed" statement creates a decision point that relies upon the Shift Manager/OE to direct this action. If they did not direct performance of this step it is possible to run the water skid dry, possibly damaging the pumps. There is a low level alarm on the water tank to protect from this but relying on alarms is not a good operating principle.
>
> Also related to the above discussion, step 5.3.6 stated "**IF** directed by OE, **REMOVE** fire hydrant R-11-E from service." This once again creates a decision point which relies on the OE to direct this action. This also requires the OE to know what the previous OE had directed; this may not be documented.

With the combination of the "IF directed" actions stated above, the possibility is created where the POR-132 Raw Water Skid could be started without an available water source.

A-08-AMTF-TANKFARM-017-O08; Procedure TO-060-006, *Operate POR-008 Exhauster,* contains steps that are not easily understood. (Wright - June 24, 2008)

In review of TO-060-006, *Operate POR-008 Exhauster*, instances of unclear actions were noted:

> Step 5.5.10 stated "**IF** FINAL SHUTDOWN, **PERFORM** Checklist 5 and Checklist 6."
>
> The condition of "FINAL SHUTDOWN" is not defined anywhere in the procedure. Also performing Checklist 5 requires that the "Low Isolation Valve Main Air Stream – V-136" be positioned to close, but a note on the bottom of the Checklist states that the valve must remain open if liquid is present in the Seal Pot to prevent thermal expansion of trapped air. This Checklist may not be completed as written. Section 5.8 – Empty POR-008 Seal Pot, does provide a way to drain the seal pot but no steps in the procedure lead you to this section and it must be directed by the OE. Additionally, completing this section leaves several valves open that would be required to be closed for the "FINAL SHUTDOWN" per Checklist 5.

The combination of actions stated above lead to actions that are not clearly stated and conditions that are not clearly defined.

V. 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, some of the written guidance to work crews is either not clear, or the need to provide written guidance is not being identified by Contractor personnel. Although no actual consequences were realized during the month due to these weaknesses, the commonality of the issues in this report support that the potential existed.

Several issues observed this month point to ambiguous language in operating procedures that set the user up to make a wrong decision. In some cases this ambiguity could have very serious consequences such as a transfer misroute, or possible damage to a pump. Considering Integrated Safety Management System core functions, it would appear that the weakness is in Core Function 3 - Develop and Implement Hazard Controls. For an example, consider the hazard to be, the potential for a misroute. One of the controls counted on for safe operations is to rely on transfer valving to provide a boundary for the transfer. Performing work within the control relies on a procedure to sequence steps such that a valve boundary is provided before the administrative lock is removed from the pump. If the procedure creates a decision point that could result in not performing the valve lineup, then the procedure is an ineffective hazard control tool. A trained work crew may make the correct decision most of the time, but one of the principles of HPI is that people make mistakes. Thus procedures need to be written to minimize human error and catch human error before an error causes an event. When the potential consequences of a wrong decision are as serious as a misroute, the procedure needs to be robust and provide clear guidance for performing the action.

The near miss occurrence described in Section III above is an example where no existing guidance was in place to control a hazard. The contractor's "Just in Time" lessons learned on securing containment roofs is a good example of the contractor providing guidance where it had not previously existed to control a hazard. Another example is found in finding F01 where no written guidance was provided to re-enable the SY pressurization alarm following a power restoration. To correct this issue, a Temporary Operator Round was put in place until the software fix was made to control this hazard. Identification and correction of these types of issues, where providing guidance moves in the direction of ensuring a safer work environment, is encouraged.

Even though no formal issues (e.g., observations, findings, or concerns) were specifically identified this month by FR's where work crews failed to perform to clear guidance, focusing on getting guidance to the work crews that enhances our safety posture will ultimately enhance safety and efficiency at the tank farms.

VI. Closed Findings:

Three findings were closed in June 2008.

S-08-AMTF-TANKFARM-001-F01: Insufficient Maintenance Employed in Equipment Labeling Program. (Patel, November 11, 2007)

This finding is considered closed based upon the actions documented in CH2M-PER-2007-2020 as well as a review of the Temporary Component Identification Tags (TCIT) log. PER-2007-2020 provides evidence that shift crews were briefed on the expectations to be observant for damaged labels on their rounds and similar activities, and to replace those labels found deficient with permanent labels in a timely manner. It also contains evidence that this is taking place (e.g. a Management Observation Checklist). Several FR observations of the TCIT log found that it has since been maintained with no temporary tags or very few at any given time.

Closure of this finding only indicates that significant improvement has been made in the TCIT program. The permanent labels in some tank farms are still in need of replacement. This effort is ongoing, but it is not yet complete. CH2M-PER-2008-0972 addresses a DOE identified issue with permanent labeling, and this PER remains open.

A-08-AMTF-TANKFARM-001-F01: No written approvals in the standing order logbook for two standing orders that have been in place greater than six months. (Sorensen, February 29, 2008)

This finding involved two standing orders that had been in the standing order logbook for greater than six months but the standing order logbook did not contain the required management approvals for extending them beyond six months. This finding was closed based on the shift instruction where the Operations Director directed all Site Shift Managers to review the requirement in the Standing Order procedure for written approval for all standing orders in place greater than six months. Also, written approvals for the two standing orders cited in the finding

were promptly obtained and placed in the standing order logbook. This finding is considered closed.

A-08-AMTF-TANKFARM-001-F02: On-call FR was not notified of call to outside agency regarding diesel spill. (Sorensen, March 3, 2008)

This finding is considered closed based on:

1. Changes to the environmental notification procedure that keeps the shift office informed for all outside agency environmental notifications, and
2. Direction from the Operations Director to all Senior Shift Managers communicating expectations to notify FRs for all notifications to external agencies for environmental issues.

The FR has observed numerous notifications from the shift office for environmental notifications since these actions were implemented.