

**WASHINGTON CLOSURE HANFORD  
RIVER CORRIDOR CONTRACT (RCC)  
PERFORMANCE & QUALITY ASSURANCE  
ASSESSMENT REPORT**

**QA&S-2013-004**

**PERFORMANCE OVERSIGHT AND EVALUATION  
OF  
PERFORMANCE IMPROVEMENT INITIATIVES**

**REVISION 0**

**DATE PERFORMED:  
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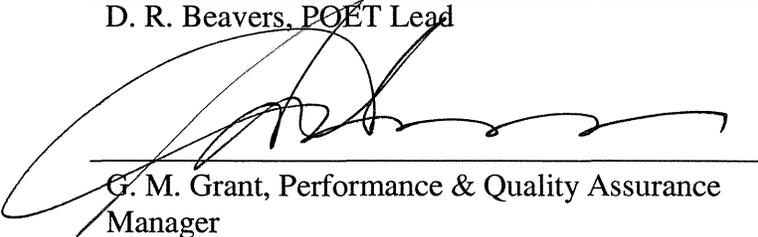
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# Executive Summary

## Overview

The Performance Oversight and Evaluation Team (POET) conducted a review of performance improvement initiatives that were implemented by Washington Closure Hanford (WCH) management. The evaluation included the following performance improvement areas:

- Corrective Action Program
- Internal Oversight Performance
- Integrated Work Control Program (IWCP)
- Subcontractor Oversight
- WCH-522, *Disciplined Operations Plan to Support River Corridor Contract Closure*, Revisions 0-2
- Previous POET corrective actions and actions documented in the DOE-RL & WCH Performance Improvement and Metrics plan
- WCH's safety culture

The evaluation took place from July 8 through July 25, 2013. Results documented in this report are based on observations of employee performance, document and record reviews, and personnel interviews. The evaluation was conducted in accordance with charter *Performance Oversight and Evaluation Team*, PM-CH-9, Rev 1. This was the fourth evaluation conducted in accordance with the performance oversight and evaluation process for WCH.

## Summary of Performance

The POET determined that overall, the WCH initiatives implemented to improve performance in the evaluated areas were effective, and significant progress has been made.

The POET evaluation resulted in four Findings and 25 Observations. The Findings and Observations are made against discrete objectives in the areas observed and are detailed in Section 2.0 of the report.

## Conclusions

Overall, the performance improvement initiatives are effectively being implemented, with one initiative (the Subcontractor Technical Representative Program) currently in the development stage. WCH management has taken positive steps to reinforce program improvement and implementation. There are clear indications that significant improvement has been made based on the review. In particular, the significant improvements gained in the Contractor Assurance System/Corrective Action

Management (CAS/CAM) program are expected to reinforce sustained continued improvements in other functional areas including IWCP and disciplined operations. Improvement initiatives were issued in the Disciplined Operations Plan to promulgate management's expectations, to improve the self-identification of issues and improve the use of the Corrective Action Management System (CAMS). Management's expectations are effectively being disseminated throughout WCH. The management team was observed to be actively engaged in all aspects of the project, routinely reinforcing expectations and displaying a strong visible presence in the field. Roles, Responsibilities, Accountabilities and Authorities have been developed and deployed into the organization. Significant improvements were noted with the self-identification of issues with the setting of clear expectations, removal of non-value-added steps in the process, and the use of feedback and coaching. Usage and ownership of the CAMS has improved. Cause analysis and resulting corrective actions were much improved with demonstrated line management ownership.

Initiatives have resulted in the improvement of internal oversight performance with additional actions that are being implemented to improve WCH subcontractor oversight and performance. An increased formality in oversight performance was observed. Discipline-specific checklists were developed and are being used. Assessments and surveillances are receiving a more self-critical review by the Performance Oversight organization and constructive feedback is provided. Documentation of issues has improved. Interviews with all levels of the Environmental, Safety, Health and Quality Assurance organization indicated that the subject matter experts are identifying more issues and are taking ownership of the issues. Interviews with management indicated a favorable regard for the POET assessments, as the process is seen as beneficial and adding valuable insight to project performance and the project/function interface.

Initiatives to improve self-identification of issues resulted in an increase in the self-identification of lower level issues. Cause analysis and resulting corrective actions are improved. Line management is taking more ownership of the CAM program and a belief now exists that the use of it is adding value. The Issue Review Team (IRT) is also adding value and providing a forum for the projects to share information. With the exception of IRT members' activities, the horizontal flow of information on project issues, problems and resolutions could be improved. Examples were identified during the review where improved horizontal flow of information would have been beneficial. The review concluded that continued improvements in self-identification, coupled with improvements in the ability to trend information and analyze issues, will continue to reduce both the number and severity of events.

Improvements in the IWCP were apparent in the areas of work scope definition, hazard identification and control, and work execution. While the review did identify instances of similar issues from previous assessments, fewer were seen and there is greater evidence improvements have been gained, particularly with regard to well-defined work scopes and activity-specific hazard identification and control. Some of the improvements are a direct result of Revision 10 of procedure PAS-2-1.1, *Integrated Work Control*, which has

clearer requirements. Improvements could also be attributed to the POET assessment process.

Initiatives to improve subcontractor oversight are in the implementation phase. The review concluded that the planned initiatives would result in improved subcontractor oversight.

A safety culture review conducted in conjunction with the POET assessment showed results consistent with the results of the 2012 WCH safety culture review. However, interviews with workers and leadership did indicate that the safety culture is under pressure due to external factors acting on the workforce. These include items such as impending schedule pressure, staff turnover and subcontractor culture. These factors point out the need for continued leadership investment in the WCH safety culture.

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## 1.0 Purpose and Scope

The Performance Oversight and Evaluation Team ([POET], hereafter referred to as “team”), conducted a review of performance improvement initiatives that were implemented by Washington Closure Hanford (WCH) management. The evaluation included the following performance improvement areas:

- Corrective Action Program
- Internal Oversight Performance
- Integrated Work Control Program (IWCP)
- Subcontractor Oversight
- WCH-522, *Disciplined Operations Plan to Support River Corridor Contract Closure (DOP)*, Revisions (Rev) 0-2
- Previous POET corrective actions and actions documented in the DOE-RL & WCH Performance Improvement and Metrics (PIM) plan,
- WCH’s safety culture

The evaluation took place from July 8 through July 25, 2013. Results documented in this report are based on observations of employee performance, document and record reviews, and personnel interviews. The evaluation was conducted in accordance with charter *Performance Oversight and Evaluation Team*, PM-CH-9, Rev 1. This was the fourth evaluation conducted in accordance with the performance oversight and evaluation process for WCH.

## 2.0 Performance Improvement Initiative Evaluations

The team developed criteria and review approach documents and lines of inquiry for the performance improvement initiatives that were evaluated. Findings and Observations can reflect a lack of effectiveness, a lack of compliance, or both.

### 2.1 Corrective Action Program

Implementation of the Corrective Action Program was evaluated to determine if actions from the DOP, the PIM, and previous POET evaluations have been effective in improving performance. While there are areas that need improvement, overall program implementation has improved significantly. Of special significance is the fact that attitudes and behaviors associated with the Corrective Action Program have improved dramatically, to the point that the management team believes the process is a core business and that their efforts in corrective action are adding value to the organization.

Management Assessment MA-2012-020, *Performance Improvement and Analysis*, identified gaps and expected outcomes in performance that the DOP was targeted to address. The identified gaps relevant to the Corrective Action Program were:

- **Gap 2:** WCH is not self-identifying performance issues at the activity and program (project) levels. The expected outcomes from identified actions are:
  - Issues identified at the work-activity level to drive direct real-time participation and performance improvement in the field.
  - Increase in the number of lower significance issues associated with human performance related causes (typically “find and fix” issues)
  - Increase in the identification of program level (i.e., cross-cutting) and recurring issues project-wide
  - Reduce number of issues requiring occurrence reporting and significant issues associated with human performance related causes
- **Gap 3:** WCH is not using the CAMS to its designed function/requirements, which limits the generation of corrective actions that are fully effective at preventing recurring issues. The expected outcomes from identified actions are:
  - Project-wide application of CAMS at the work-activity level to drive direct real-time participation in issue identification and improved performance in the field
  - Improved quality and consistency in issue identification, analysis, documentation of the analysis and effective corrective actions.
  - Improved identification of cross-cutting and recurring issues project-wide.

The PIM built upon the DOP actions and identified three problem statements for which the actions and metrics were targeted to resolve. These are:

- There is indication that some significant and adverse issues are repetitive in nature and consequence
- Follow through on some corrective actions is weak and can be characterized as dismissive in nature
- Too many problems and their resolutions are not recorded and/or documented in the CAMS

The team determined that the actions taken have addressed the above gaps and problem statements, and performance improvement is evident. While WCH still experiences significant and adverse issues and incidents, the number and severity of these has improved. For 2013, there were three events in January, and one self-identified adverse trend in February. Since then, there has been one event which occurred in April, and one event which occurred during the POET evaluation. Although this last event was screened as significant, a root cause analysis was determined unnecessary. More importantly, the company has significantly improved

the quality of root and apparent cause analyses and the resulting corrective actions. Documentation of Issue Forms (IFs) in the CAMS has been established and the company is experiencing a substantial increase in the number of issues being self-identified as reflected in the Contractor Assurance System/Corrective Action Management (CAS/CAM) reports. Lowering the threshold for IF identification will allow WCH to identify trends before they manifest themselves into more significant issues. Both the increase in issue identification and the increased quality of cause analysis will continue to reduce the number and severity of events. While the improvements are having a positive impact on company performance, there are still areas for improvement. These include the further development of the company's ability to trend issues, the sharing of information, including cross-cutting issues between projects, and increased management ownership of significant issues. Details of the review that support the above conclusions are provided below.

### **2.1.1 Issue Identification**

The number of self-identified issues has increased significantly in the last six months. Management expectations for issue identification are clear, and all personnel interviewed displayed a high level of enthusiasm for the way the process was working. Through observations of meetings, the team routinely heard discussion of the need for an IF and/or direction to generate one. This is a significant behavior change from previous POET evaluations. Issues generated during this evaluation were reviewed and found to be well written and represented good, self-critical issues. It was noted that management participation in documenting IFs was good, with most managers having set the example by personally documenting IFs. With one exception, issues that arose during the period of this evaluation were documented on IFs within a day of the issue discovery. The one exception was a fall protection issue identified at the 100D D4 project (further described in Section 2.3.1 of this report), where the issue was identified by the team, senior management was notified, and four days later an IF was not yet documented.

There were other areas where the team had recommendations for improvement. The team observed little recognition for personnel identifying issues, and no public recognitions. More formal and visible recognition of issue identification would reinforce expected behaviors.

The team also determined through interviews that confusion exists as to who is responsible for documenting IFs identified on DOE-RL Operational Awareness (OA) reports, whether it be the CAM organization, or the project(s).

#### **2.1.1.1 Observation CA1: Confusion exists as to who responsibility lies with for documenting IFs identified on DOE-RL OA reports.**

**Discussion:** Some managers interviewed indicated that they did not know if they are responsible for documenting IFs from OA reports, or if the functional CAM organization will initiate them. This confusion has resulted in some OA issues being duplicated in CAMS.

Overall, the critical activity of issue identification has shown substantial improvement. More importantly, employees across the board believe the low threshold of issue identification is adding value.

### 2.1.2 Issue Form Screening

Issue Form screening is performed by the Issue Review Team (IRT). Issue Review Team activities were observed, and were found to be well run, with all participants well prepared. Issues were discussed in detail and members routinely challenged each other. The project representatives routinely are passing information to each other on issues within their projects that may impact the other projects. Additionally, the IRT is routinely sharing information and looking for trends and patterns. Everyone who was interviewed indicated that the current screening process is good, that projects have greater ownership of issues, and that the graded approach is being effectively applied.

There were some areas where performance of the IRT could be improved. As mentioned in Section 2.1.1 above, recognition of issue identification is inconsistent. The IRT meetings provide a means to identify and recognize “good catches”. Also, IRT participation by functional personnel is not consistent with the CAMS procedure. While the procedure calls for all functional organizations to be represented, only one representative (a different one for each meeting) from the functions was present at each meeting the team observed.

**2.1.2.1 Observation CA2:** Issue Review Team participation by functional organizations is inconsistent with procedure QA-1-1.2, *Corrective Action Management*, Rev 13, Appendix B, Issue Review Team Expectations.

**Discussion:** QA-1-1.2, Appendix B, states “At a minimum, representatives from each project and functional organizations (i.e., Engineering, Procurement and Subcontracts, Environmental and Nuclear Safety, IH, and Disciplined Operations) are to attend to meet quorum requirements.” For the meetings observed, functional organization participation did not meet procedure requirements.

Overall, the screening process is functioning effectively and represents a major reason that attitudes and behaviors relative to the Corrective Action Program have improved.

### 2.1.3 Cause Analysis

The cause analysis process has also seen substantial improvement. Expectations for both root and apparent cause analyses have been established, proceduralized, and training provided at the cause analyst, CAMS responsible manager, and Executive Safety and Quality Review Board (ESQRB) member levels. The team reviewed the last three root cause analyses and the last six apparent cause analyses (all approved after the training) using Appendix G, Cause Evaluation and Issue Form Review Sheet, in the CAM procedure which details expectations for cause analysis. The results of the review were that the analyses were detailed, thorough and consistent with management expectations. Causes were addressing organizational weaknesses and human performance. Actions developed were addressing those causes. The cause analyses reviewed represent a significant improvement from those observed in previous POET evaluations.

Management is in the process of instituting a Corrective Action Review Team which will review the results of apparent cause analyses. This is a good initiative which will result in continued improvement in the quality of apparent cause analyses and resulting corrective action. The team had its initial meeting and is targeting its first review within the next month.

Notwithstanding the significant improvements in the cause analysis process, there are areas where improvement is needed. Improvement in management ownership of issues is further discussed in Section 2.1.4 of this report.

#### 2.1.3.1 Observation CA3: Improvements can be made to strengthen the cause analysis development and review process.

**Discussion:** There are two recommendations for improving the cause analysis process:

- The current barrier analysis presentation is a “Swiss cheese” graphic with bullets at each layer of the cheese. To provide greater clarity to the analysis, the barrier analysis table (identifying the barrier, whether it was used or not, whether it was effective or not, and the impact) should also be included.
- The CAM procedure provides a cause analysis checklist (QA-1-1.2, Appendix G, Cause Evaluation and Issue Form Review Sheet) for review of apparent and root cause analyses and actions. This checklist is not being routinely used by responsible managers and/or ESQRB members. It

is recommended that an expectation be established that the checklist be used as a guide during the cause analysis review process.

#### **2.1.4 Management Ownership/ESQRB**

Through both interviews and observations, the team concluded that the Corrective Action Program is a “core business” within WCH and that the organization believes that the process, as currently implemented, is adding value to the company. Managers are now questioning, when presented with an issue, if an IF has been issued. Performance Assurance organizations have been strengthened, indicating a greater appreciation by management of the importance of these activities. The CAM procedure and the subsequent responsible manager training established clear expectations for management engagement in the process. Interviews with cause analysts revealed that responsible managers are engaged in the process and that they own their assigned issues.

The ESQRB meeting has also shown improvement over the last six months. Meetings start with a statement of purpose/expectations, and presentations are clear and understandable. The use of a pre-meeting to identify and resolve questions and concerns by ESQRB members has improved the process. Additionally, the distribution of the root cause analysis report in sufficient time to allow thorough and thoughtful review is positive.

As noted in Section 2.1.3 of this report, management ownership of significant issues needs improvement. Timeliness of root cause analyses is not meeting expectations. While there has been some near term improvements, on average, the time to approve a root cause analysis is over 105 days for significant issues generated in the last year. This consistent lack of timeliness is significant in that it indicates a lack of issue ownership by management. Most interviews attributed the lateness to a variety of issues. Only one manager interviewed indicated that they did not drive timely completion of the analysis as they should have. Significant IFs are not assigned to directors, but rather, are assigned to one of their direct reports. The company should consider assignment of resolution of its most significant issues to the director level. For the last two ESQRB meetings, the responsible manager was not present, and one of their direct reports attended. Lastly, the cause analyst routinely presents the results of the cause analysis at the ESQRB meeting. Having the responsible manager present the root cause analysis would portray greater ownership.

##### **2.1.4.1 Observation CA4: Ownership of significant issues needs improvement.**

**Discussion:** Management ownership of the project's most significant issues needs improvement as indicated by the below observations:

- The average cycle time for approval of a root cause analysis is over 100 days for the significant issues documented in the last year. When asked about the reason for the lack of timeliness, most managers/directors did not express personal responsibility for the delays.
- Significant issues are routinely assigned to responsible managers below the director level. Given the importance of the issues, WCH should consider assignment at the director level.
- The cause analyst presents the results of the analysis at the ESQRB meeting. Greater ownership of the root cause analysis by the responsible manager would be displayed if the responsible manager presented all aspects of the root cause analysis. The team's perception is that the responsible manager owns the actions, but not the analysis.
- For the last two ESQRB meetings, the responsible manager was not present at the meeting. Rather, a direct report to the responsible manager attended. For the ESQRB meeting observed by the team, the absence of the responsible manager was not questioned by the ESQRB members.

#### **2.1.4.2 Observation CA5:** The ESQRB Charter needs to be updated.

**Discussion:** ESQRB member designation is not consistent with the current organization's staffing. Additionally, the charter tasks the ESQRB to provide feedback and senior management direction concerning the WCH Assessment Program. Feedback and guidance are being provided through mechanisms other than the ESQRB.

### **2.1.5 Trending/Performance Indicators**

The development of performance indicators and the identification of performance trends have shown significant improvement. The CAS/CAM report package is extensive, well organized, and contains sufficient information and analysis to give a clear picture of performance in the areas presented. Many of the performance indicators break down the information by project so individual performance can be monitored. To supplement the CAS/CAM report, all three projects are looking to develop project-specific performance indicators. Performance trends are now being identified by the company and documented on IFs. This trend identification is occurring as a result of the CAS/CAM report information and cognitive trending by both the IRT and individual contributors. Additionally, the projects are looking to

develop the ability to trend information from the CAMS. The Field Remediation (FR) project is already trending management walkthroughs through a monthly rollup and analysis of the results of the walkthroughs. Overall for 2013, there has been one adverse trend and ten emerging trends identified. A review of these trends indicates that they are being dealt with in an appropriate manner.

The team identified areas where performance indicators and trending could be improved. Identified trends have little visibility. Most individuals interviewed had no knowledge of identified trends. Previously identified trends are not routinely carried forward in the CAS/CAM report and no matrix of identified trends and their status exists.

The trend codes used to support the trending need attention. The codes are not readily accessible and are applied by CAM staff. The projects have no real input into what the codes are or how they are applied to individual IFs. Additionally, only one program/process code is applied. This practice will limit the ability to trend information.

There is little “in house” expertise or experience in trending. The company should provide coaching and mentoring as the organization begins to further develop trend activities.

Because the trend process is new and not fully developed the company’s ability to identify track and resolve cross-cutting issues is limited. While the CAS/CAM process has improved this ability, further improvements in both trending and horizontal project communications will strengthen the company’s ability to identify and resolve cross-cutting issues.

While the CAS/CAM report package was good, the observed project review meeting was viewed to be routine and did not add value. There was a missed opportunity to discuss an emerging trend on total recordable case rate. Also, the CAS/CAM information was not challenged by the management team (e.g., management did not question whether the correct items were being tracked, if the thresholds were appropriate or needed to be changed, if the planned actions were correct, and what else could/should be monitored).

**2.1.5.1 Observation CA6:** There are several recommended actions which will improve the ability of WCH to trend issues from the CAMS.

**Discussion:**

- Trend codes are not visible (hard to find) and are applied to the IF by CAM staff. Project/functional organization involvement in the assignment of trend codes would

enhance the ability to make sure that IFs are in the correct “buckets”.

- Only one organizational and functional trend code is applied to an IF. This practice will limit the ability to put IFs in all appropriate “buckets”
- There is little expertise in trending methodologies. Projects are struggling as they attempt to trend IF information. Recommend both coaching as well as interaction between the projects on trend techniques/activities.

### 2.1.6 Other Observations

The projects’ Performance Assurance organizations are inconsistent, and increased communication of various aspects of Corrective Action Program implementation would enhance project performance.

**2.1.6.1 Observation CA7:** The three Performance Assurance project organizations are not consistent.

**Discussion:** Each Performance Assurance organization has different functions within their respective project. The makeup and staffing of each project organization is different, and varies based on the functions assigned. Greater consistency would enhance the performance assurance function and improve their ability to share information and provide a uniform, consistent approach to performance assurance. This is important as the Performance Assurance organizations are seen as one of the primary mechanisms by which the projects share information/issues/best practices with one another. The current FR Performance Assurance organization is the most mature of the three projects and should be used as a model.

**2.1.6.2 Observation CA8:** Increased communications of various aspects of Corrective Action Program implementation would enhance project performance.

**Discussion:** There were several aspects of the Corrective Action Program implementation which need to be better communicated to project personnel. These areas include:

- Recognition of self-identification of issues and the identification of “good catches” is inconsistent and lacks visibility. A process of the IRT to identify and publically recognize good issue identification is recommended.
- Identified trends receive little recognition. Most managers interviewed were not aware of identified emerging trends.

Identified trends, both adverse and emerging, need to be tracked in the CAS/CAM report until resolved.

- There is no evidence of communicating and celebrating the success stories from the Corrective Action Program. Highlighting these successes will reinforce expected behaviors and performance.
- With the exception of IRT member activity, there is little horizontal flow of information on project issues and resolutions.

Based on the changed attitudes and behaviors relative to implementation of the Corrective Action Program, the measures implemented to improve this area have been effective and significant progress has been made.

## 2.2 Internal Oversight Performance

WCH internal oversight performance was evaluated based on pertinent action items within the DOP and two problem statements identified in the PIM:

- Too many problems are identified by the external organizations or through occurrences that should have been identified by WCH staff.
- Internal oversight functions within Environmental, Safety, Health and Quality Assurance (ESH&QA) are not sufficiently self-critical, nor adequately staffed for sustainability.

The evaluation of internal oversight performance included document reviews and interviews with management and Subject Matter Experts (SMEs) within the ESH&QA organization. Overall, WCH internal oversight performance is improving, due in large part to management's endorsement of the activity, whether it is of high-level reviews such as POET evaluations, down to activity level evaluations.

Interviews with management indicate a favorable regard for the POET evaluations, as the process is seen as beneficial and adding valuable insight to project performance and the project/function interface. While some POET-identified issues were disputed or not fully embraced, the majority of identified issues were acknowledged as important insights and opportunities to improve standards of performance.

Staffing for internal oversight within ESH&QA is sustainable as WCH resources have been dedicated within the Performance Oversight organization and matrixed from the Technical Support group. When external SMEs are needed, resources are contracted through corporate reach-back and consultant mechanisms.

The team observed an increased formality in activity level oversight performance. Discipline-specific activity oversight checklists were developed and are being used in the field to assist evaluation of work. Assessments and surveillances are receiving a more critical review by the Performance Oversight organization, and constructive

feedback is being provided to management, which is driving a more self-critical approach to the internal oversight process. As a result, management expectations regarding documenting issues have gained significant traction. Interviews with all levels of the ESH&QA organization demonstrated that the SMEs are not only identifying more issues, but are taking ownership of the issues as well. Additionally, metrics demonstrate substantially improved self identification of issues, which was detailed throughout Section 2.1 of this report.

The team believes WCH internal oversight has greatly improved through increased activity and documentation; however, further maturity of the program is necessary to fully benefit from the effort. At this time, data is gathered through the focused activity oversight checklists, but a consistent expectation or method for review and analysis of the data for trends, along with feedback to the SMEs, is not yet implemented. Additional opportunities for improvement were identified that will help the program mature and improve sustainability.

**2.2.1 Observation IO1:** Conditions identified on focused activity oversight checklists that “do not meet expectations” are handled in ad-hoc trending processes conducted by the functions within the ESH&QA organization.

**Discussion:** The focused activity oversight checklists implemented by the ESH&QA functions contain a column to record conditions that are neither satisfactory nor unsatisfactory, but are not meeting expectations. Among the functions, there is not a consistent approach as to how or what to do with the information indicating expectations are not met; however, the functions are either formally or cognitively trending this information. This information and trending activity should be evaluated for possible integration into the company-wide trending program, or otherwise be standardized.

**2.2.2 Observation IO2:** Activity level oversight training for ESH&QA SMEs lacked formality and consistency.

**Discussion:** A formal training program was not implemented for activity level oversight. However, a briefing was conducted by the ESH&QA Director to the functional managers with the expectation that the briefing would in turn be flowed down to the SMEs. Through interviews it was determined that the expectations to document oversight activities on a focused activity checklist at specified frequencies (which differs from function to function) were communicated and understood by the SMEs. While the activity level oversight expectations for ESH&QA SMEs is resulting in increased rigor relative to a self-critical approach to conducting oversight and identifying issues, increased formality of training would help identify

future training needs to facilitate sustainable performance improvement.

- 2.2.3 Observation IO3:** Between functional and project expectations, SMEs performing oversight activities may be required to utilize too many oversight/management tools in order to fulfill metric goals, rather than utilizing the tools in a manner that could result in thoughtful and valuable assessments.

**Discussion:** Each ESH&QA function developed and utilizes their own focused activity oversight checklists, as prescribed by their respective procedures/processes/management expectations. While these functional checklists are used to document oversight activities from a functional perspective, some SMEs are also required to conduct additional assessments as scheduled by the function and/or the project they support. The additional assessment activities, varying by project and function, include Safety Trained Supervisor checklists, management walkthroughs, surveillances, and self assessments. These assessment expectations can be even more onerous when the SME fulfills dual functions (e.g., Project Safety Representative [PSR] and Project Industrial Hygienist [PIH]). The requirement to document oversight activities via multiple tools according to multiple schedules could potentially result in diminished value of each evaluation if the SME is driven to meet a metric for different expectations. A recommendation to streamline and direct assessments is further described in Section 2.6.1 (Safety Culture) of this report.

- 2.2.4 Observation IO4:** The quality of management walkthroughs conducted by non-management personnel is inconsistent.

**Discussion:** Management's expectation for conducting management walkthroughs was established and participating managers were identified. Everyone interviewed who conducts the management walkthroughs knew of the expectation and most noted that management monitors the activity and enforces the expectation. However, employees who are not in management positions are also conducting management walkthroughs. Additionally, management walkthroughs are at times used to document activities, rather than management oversight and critique of activities. As such, inadequate management walkthrough activities/documentation may detract from the intended function of the management walkthrough process, while yielding little value.

**2.2.5 Observation IO5:** All Roles, Responsibilities, Accountabilities and Authorities (R2A2s) are not available on the HR R2A2 website for easy retrieval/review.

**Discussion:** R2A2s developed for the Performance Assurance Engineers are not posted on the HR R2A2 website for easy retrieval/review. Additionally, subject matter expert R2A2s created as a result of a DOP action were posted on the HR website. Subsequently, those were removed and replaced with Engineering R2A2s. The oversight R2A2s need to be replaced on the webpage, in addition to the Engineering R2A2s.

Based on an increased formality in activity level oversight performance and self-identification of issues, the measures taken to improve this area have been effective and significant progress has been made.

### 2.3 Integrated Work Control Program

The team's evaluation of this area revealed clear indications that improvements have been made as a result of the efforts put forth through the DOP and the PIM. These documents identified improvement initiatives aimed at improving work control performance in the areas of work scope definition, hazard identification and control, and disciplined work execution. The two problem statements identified in the PIM are:

- Work classification, broadly defined work scopes and lack of specific requirements for job hazard analysis (JHA) content render hazard identification and hazard control implementation vulnerable.
- Work teams at times fail to recognize changed work conditions and associated approved scope of authorized work.

IWCP evaluators spent several days in the field directly observing work activities and reviewing associated work control documents. The focus of the review was to determine if improvements had been made in the execution of work and the administration of the work control documents, with emphasis on issues and findings identified in the three previous POET evaluations. Field projects visited during this review were the Environmental Restoration Disposal Facility (ERDF), 100-D FR, 100-B/C FR, 100-N FR, 100-D D4, and 300 D4. The assessors attended Plan of the Day (POD) meetings and Pre-Evolution (Pre-Ev) briefings, conducted formal and informal interviews with Field Work Supervisors (FWS), Responsible Managers (RM), Work Planners, Construction Subcontract Engineers, and CONOPS Coaches, observed work activities in progress, reviewed work authorization and release documentation, reviewed work control documents, reviewed Standing Orders, and conducted work area walk-downs.

While the team did find instances of similar issues as identified in previous assessments, they were fewer and less encountered and there was greater evidence

that improvements had been gained, particularly with regard to well-defined work scopes and activity-specific hazard identification and control. Some of the improvements are likely a direct result of the issuance of Rev 10 of procedure PAS-2-1.1, *Integrated Work Control*, which has clearer requirements in these areas; moreover, it is evidence that the POET evaluation process is yielding the desired outcomes and the projects have embraced the changes.

Of particular note to the team was the improvement in defined scope statements on Performance Pages. Previous evaluations identified Performance Pages that would often just repeat the entire scope of the Craft Work Package (CWP) or would contain single statements such as “Repair Heavy Equipment”. Revision 10 of the IWCP procedure requires a Performance Page to be prepared for each specific application of the CWP, including acceptance/completion criteria and defining the scope by answering the following questions: What is the work that needs to be performed, where will the work be performed, and how is the work to be accomplished? One example of an improved scope statement from a Performance Page is, “Replace AC compressor bracket and AC belt on Komatsu PC 400”. Others had clearly identified activities that could be performed in addition to limitation statements identifying activities not included in the scope. In addition, during a field walkdown prior to authorizing a Performance Page, the project walkdown team identified additional work scope that wasn’t included (patching a tire in addition to replacing two other tires). The FWS took the time to add the additional scope to the performance page and ensure the hazards were addressed in the CWP JHA prior to requesting the RM’s approval.

The team does believe there is opportunity for improvement in the conduct of POD meetings and Pre-Ev briefings. The use of checklists to help guide the structure and content of these meetings works well when used, but they are not used consistently throughout the projects. As such, some of the observed PODs and Pre-Evs were lacking important aspects (e.g., at least two observed didn’t have a safety topic). It should be noted that the FR projects observed utilized the POD and Pre-Ev checklists and those meetings were thorough and well conducted.

Many noteworthy items and signs of improvement were observed:

- Detailed work scopes entered on Pre-Ev briefings versus a note stating “See list of authorized work documents”
- Activity-specific Performance Pages versus broad scoped Performance Pages that cover multiple tasks
- Good use of Reverse Briefing techniques in PODs and Pre-Evs
- Activity-specific hazards addressed in JHAs
- Conservative decision making; limited use of Type IV work
- Work package CONOPS/quality improvements; support personnel helping FWS maintain the work packages
- Compliance with Rev 10 of the IWCP procedure

- Willingness to stop and ask questions
- Detailed work package Status Log entries
- Performance Pages with recorded work activities
- CONOPS Coaches making positive impacts in the field (this conveyed to the team during interviews)
- Thorough training to Rev 10 of the IWCP procedure which utilizes exercises given to FR subcontractors by the CONOPS Coach
- FWS and RM qualifications in process
- Standing Orders being reviewed at PODs
- Personnel taking the time to get the paperwork filled out properly
- Interview Feedback – “IWCP (Rev 10) is better; more focused”.
- Subcontractors embracing IWCP

Overall, the team believes that continued diligence and discipline are necessary to maintain the momentum; thereby, minimizing the number of similar issues and sustaining the noted improvements. The following Findings and Observations were also identified:

### 2.3.1 Finding IWCP1: Unclear use of Fall Hazard Postings at 183-D.

#### Requirement/Reference:

- DOE-0346, *Hanford Site Fall Protection Program*, Section 6.0

**Discussion:** While observing work at building 183D for the 100D D4 project, it was observed that the perimeter barrier rope had “Danger Fall Hazards May Exist contact FWS Prior to Entry” signs posted intermittently. The team observed workers crossing the fall hazard barrier to access equipment and prepare the area for work. As a result, the work package was reviewed and it did not contain a Fall Hazard Work Permit (FHWP). Discussions were held with the Project Manager (PM) and the WCH PSR about this matter. The PSR indicated they post things in this manner since it is difficult to control all fall hazards within the work site since it changes daily; therefore, workers need to contact the PSR to pass the barrier. This was not observed and it is unclear how the “All Clear” was communicated to the workers since it was not briefed in the Pre-Ev and the PSR was not present at the time workers were observed crossing the barrier. Furthermore, the PSR explained that a FHWP was not needed since their controls were written into the work package. Additionally, there is currently not a SME/Program Owner for the Fall Protection Program identified on the “WCH Program Owners and SMEs List”, whom the projects could contact to assist in their fall protection questions.

**2.3.2 Finding IWCP2:** Five Performance Pages were found in work package 300 13 02 26 001 that were photocopies of the same Performance Page with handwritten revisions, and no re-approval signatures.

**Requirement/Reference:**

- PAS-2-1.1, *Integrated Work Control*, Rev 10, Section 6.8.3

**Discussion:** Review of work package 300 13 02 26 001 found five Performance Pages that were photocopies of the same Performance Page, and were red-lined and struck-out to be reused. The Performance Pages had been duplicated with handwritten revisions to change the location of work on each, but they were not reapproved and work was performed without an appropriate signature from the RM or walkdown team. The handwritten changes were made in early April, 2013, pre-dating Rev 10 of the IWCP, as well as similar findings from the FR POET evaluation (QA&S-2013-002).

**2.3.3 Finding IWCP3:** D4 work package 300 13 02 26 001 did not contain the correct Beryllium Work Permit (BWP).

**Requirement/Reference:**

- PAS-2-1.1, *Integrated Work Control*, Rev 10, Sections 6.7.1.8, 6.8.1.2 [2] and 6.8.3.3

**Discussion:** A review of work package 300 13 02 26 001 found it contained a copy of BWP 300-13-003; however, several Performance Pages within the work package listed BWP 300-13-001. It is unclear if this was a typographical error, or if in fact, the work package and/or Performance Pages contained the incorrect BWP. When the assessment team briefed the 300 Area FWS responsible for this work package, objective evidence could not be provided to confirm whether it was a typographical error, or not.

**2.3.4 Finding IWCP4:** Unauthorized Smoking Area at ERDF Pit 31/618-10 drum assay area.

**Requirement/Reference:**

- Subcontractor submittal #02-002, WAI Stoller *WSDO Environment, Safety and Health Program*

**Discussion:** Workers at the Pit 31/618-10 drum assay area of ERDF had established a smoking area in the location near the assay equipment. The WAI Stoller Disposal Operations (WSDO) ES&H

Program states **“SMOKING is prohibited during all WSDO work activities.”** No worker, subcontractor, or service provider may smoke while actively engaged in a work activity on a job site. Smoking **may** be allowed in clearly marked and defined worker rest areas at the discretion of the project manager.” The area was not clearly identified as a smoking area and the project did not provide evidence that the area was evaluated and approved for smoking. The work wasn’t WSDO work, but was located in the WSDO project area.

**2.3.5 Observation IWCP1:** Activity-specific hazard identification was lacking.

**Requirement/Reference:**

- PAS-2-1.1, *Integrated Work Control*, Rev 10, Section 6.6

**Discussion:** Over the course of the evaluation, JHAs and work packages for all of the WCH projects were reviewed in order to determine if WCH is identifying hazards for specific work activities. The team observed WCH has greatly improved from previous POET evaluations in these areas; however, instances were still found where JHAs and work packages did not capture some hazards associated with the work and in several instances the Job Steps/Major Activity listed on the JHA were not specific to the work or were not actual job steps, but general hazards associated with the work to be performed.

**Examples:**

- A JHA for work that indicates lockout/tagout (LOTO) control is required; however, it was unclear as to which activity or when LOTO was to be utilized since it was stated in a general manner. The FWS was able to identify certain times when LOTO would be required, but not specific to the work activities covered in the scope of the work package.
- A JHA for shearing/size reduction activities at 100-D FR did not include specific controls for maintaining a 75-foot boundary or for implementing use of a protective shield/film on the excavator
- CWP 300 13 01 03 007 had “Support Activities” included in its scope statement. The Additional Guidance section of the CWP further defined Support Activities as may include:
  - a. Animal/biological insect control (already in scope statement)
  - b. Equipment checks and daily inspections
  - c. Forklift activities
  - d. Housekeeping, snow and ice removal
  - e. Boundary work (set up and take down)

- f. Vehicle and equipment maintenance and basic repair
- g. Water removal from cans and tarps
- h. Delivery of supplies
- i. Tumbleweed collection
- j. Radiological and Industrial Hygiene (IH) surveys
- k. Load, off load, transport equipment and components <25000lbs.

None of the items listed, other than biological control which was already identified separately in the scope statement, could be found in the JHA. This list of support activities is very similar to the old Exempt list.

**2.3.6 Observation IWCP2:** Pre-Ev briefings lacked formality and rigor in order to effectively communicate work scope, hazards, and controls.

**Discussion:** Several Pre-Ev briefings and PODs for all of the WCH projects were attended by the team and were observed overall to be well conducted and performed. However, several of these Pre-Ev briefings needed significant improvement, while others require minor adjustments. Primarily, Pre-Ev briefings associated with the WCH D4 project are in need of more significant attention for improvement, such as:

- Personnel walking in late
- Magazines and newspapers available and being used
- Cell phones being used
- No discussion of work status from the previous day; no discussion of lessons learned or recent events (broken excavator window, strained shoulder); no safety topic to start meeting
- No discussion of roles and responsibilities

**2.3.7 Observation IWCP3:** Conduct of Operations issues were observed with regard to WCH work packages.

**Discussion:** During the evaluation it was observed that WCH Work Control documents have greatly improved in the areas of completeness, accuracy, and specificity. However, the team still found a couple of instances of Work Control documents needing attention in the area of Conduct of Operations, such as strikeouts missing initials and dates, field changes not properly documented and approved, and Performance Pages not being closed out. Additionally, a CWP issued under Rev 10 of the IWCP procedure had minor deficiencies. The Peer Review Checklist included with CWP 300 13 06 27 001 was not completely filled out (headings of subsequent pages identifying review

and package details were not filled in) and had “N/A” indicated in checklist areas that should have been evaluated.

It should be noted that work packages at ERDF are returned to a central location at the end of each day and the work control planner reviews them for completeness and accuracy. This works well as the ERDF packages are well maintained and do not exhibit CONOPS weaknesses. The same is also true of the packages at 100-N FR where the Construction Subcontract Engineer (CSE) performs a review of the packages each day after the POD, prior to work starting.

**2.3.8 Observation IWCP4: Radiological Work Permits (RWP) at ERDF have broad scope statements.**

**Discussion:** RWPs at ERDF have broad scope statements and overlap each other, causing confusion as to which RWP is governing the activity. During the Pre-Ev briefing for calibration (replacement) of the Crest Pad flowmeter, the FWS briefed that workers should sign on RWP ERDF13-0002, but that RWP ERDF 13-0001 was also acceptable. The work package indicated RWP ERDF 13-0002 was the proper permit. The ERDF RWP 13-0002 job description states “Vehicle/Equipment/Container Maintenance and Leachate system.” RWP ERDF 13-0001 job description states “All aspects of waste disposal and transportation operations, including, but not limited to, mix box, dump ramp and all disposal activities, place and cover activities, cell entries, excavation activities, and vehicle/equipment maintenance.” It was considered acceptable for workers to sign on either RWP to work on the job.

This was also indicated at a different Pre-Ev briefing for unloading the PFP glovebox to be used for spray foam testing. No RWP was required by the work document, but the Radiological Control Technician (RCT) indicated that if a worker wanted to, the worker could be on RWP ERDF 13-0001 since there was a potential to pick up dose due to the work area being near a radiation area.

**2.3.9 Observation IWCP5: Standing Orders not signed by subcontractors.**

**Discussion:** Standing Order SO-SITE-2013-006, Rev 0, Excavation Equipment Operations, was not signed by subcontractor personnel at 100-D/H FR. The standing order was issued on June 13, 2013 and at the time of this evaluation there was no indication that the subcontractor management team or craft personnel had signed the acknowledgement form indicating their understanding of the Standing Order. The Standing Order administrator indicated that the Standing Order had been emailed to the subcontractor and reminder requests to

sign the logbook were sent as well. The same was true of other Standing Orders at that project.

**2.3.10 Observation IWCP6:** A truck with remote start capabilities was left running unattended at 100-N.

**Discussion:** The operator of the vehicle was informed of the observation and indicated he was in compliance with the standing order because the keys were removed and the doors were locked. In fact; however, the standing order clearly requires the vehicle's engine to be secured.

**2.3.11 Observation IWCP7:** A FWS at 100-N FR was unclear as to the purpose for performing a field walkdown of a Performance Page.

**Discussion:** During an interview, a FWS at 100-N FR was questioned as to his responsibility to verify that the work package JHA adequately covered the hazards associated with the specific activity defined in the performance page. The FWS indicated he was unaware that he was responsible to review the JHA, but did understand the walkdown was to look for hazards associated with the work.

Improvement in the implementation of the IWCP was observed by the team; however, significant performance variance exists among the projects. Although the measures developed to improve this area have had a very short run time, they were deemed effective with a recommendation to perform quarterly surveillances to confirm that the effectiveness of the measures has sustainability.

## 2.4 Subcontractor Oversight

WCH subcontractor oversight performance was evaluated based on pertinent action items within the DOP and two problem statements identified in the PIM:

- Subcontractor performance relative to WCH's standards of safety and disciplined operation is below expectations.
- Oversight of WCH subcontractors is insufficient to detect performance issues and assure effective resolution.

On May 5, 2013, WCH completed the corrective action documented in the PIM which was aimed at developing and communicating, through contract documents, safety and disciplined operation performance expectations for construction subcontractors in Exhibits "G" and "K" (reference IF-2013-0248, action #1). Review of current procurement procedures and documents relative to construction subcontracts revealed that safety and disciplined operations performance expectations already exist, with monetary incentives for good performance. During the FY13 second and third quarters the average reward received by all subcontractors was approximately 94% of available funds, with some contractors earning the full amount

available. A suite of subcontractor performance measures had been established in the CAS/CAM report prior to August 2012 to reflect the overall performance of all WCH subcontractors. A pie chart was added May 5, 2013, to show the break-down of how each subcontractor performed in the areas of reportable and non-reportable occurrences. It should be noted that during the 3<sup>rd</sup> quarter of FY13 (April-June) the WCH CAS/CAM report shows an improving trend for WCH Subcontractor Performance.

An additional action taken by WCH was the decision to terminate the contract of one of its subcontractors for convenience, and self-perform the 309 Plutonium Research Test Reactor and 340 Vault work. In the past year, this subcontractor had been issued seven of the 12 Subcontractor Deficiency Reports issued by WCH to its subcontractors. This work is also the most difficult and the most critical of the remaining RCC scope of work.

WCH committed in the DOP Rev. 1 to conduct quarterly subcontractor safety meetings (starting in July 2012 and ongoing). The last meeting was held in July of 2012, with employee attendance from only one subcontractor. Due to a lack of participation of the other subcontractors, management decided to discontinue the quarterly meetings as there was no value added.

In an effort to improve subcontractor performance, self assessment ESHQ-2013-SA005, *Subcontractor Technical Representative (STR) Program and Implementation*, of the STR process was conducted. The expected result of the assessment was to understand the current process and associated implementation of subcontractor oversight and to identify any implementation weaknesses. IF-2013-0205 was entered into CAMS to document the issues that were found and to track the recommended actions. The recommended actions in CAMS were listed as “to be determined”, and WCH management assembled a team to evaluate the STR program and process to identify potential issues and to make recommendations for improvement. It is the opinion of the team that the recommended actions would improve the quality of WCH’s oversight of its subcontractors, and thus improve subcontractor performance. The effectiveness of these actions should be reviewed in the next POET evaluation as the actions are evolving and have a completion date of September 30, 2013.

After interviews with the WCH assessment team members assembled to evaluate the STR program (construction and service STRs, CSEs, RMs, and WCH Procurement management), the observations made by the POET team were reviewed and found to be similar to the conclusions of the STR program assessment team:

- STRs are burdened with other responsibilities that often compete (time) with their primary function
- STRs and CSEs have a good understanding of the R2A2s of both positions
- STRs spend very little, if any, time in the field performing oversight of subcontractor field work

- CSEs spend the majority of their time in the field performing oversight of subcontractor field work
- Formal training is not required for CSEs to perform their field duties
- CSEs are the STR's "eyes and ears" in the field, and CSEs sometime function in the STR role, but are not trained or qualified in the position
- STRs and CSEs do not have any regularly scheduled training or meetings
- A functional manager (e.g., Lead STR) does not exist to provide training, mentoring, and consistency to the STR program across the projects. It should be noted, however, that there is a pending action where the Procurement organization has identified an internal hire (effective August 5, 2013) to function as the STR Program Lead to assist in training, mentoring, and to facilitate some consistency among the Project STRs

Although some of the performance initiatives for this subject area were not mature at the time of this evaluation, additional opportunities for improvement were identified.

**2.4.1 Observation SCO1:** Evaluate the use of the CAMS by all WCH subcontractors.

**Discussion:** Waste Operations has made the CAMS available to their subcontractor (WAI Stoller) for IF documentation. Subcontractor personnel have been granted access to the system and trained on its use. The use of WCH's CAMS by all WCH subcontractors would make it easier to enter, track, trend, and disposition issues identified on the Projects.

**2.4.2 Observation SCO2:** Waste Operations allows an individual who is not STR-qualified to function in that position.

**Discussion:** Waste Operations has one qualified STR. When the STR is absent from the site for various reasons (time off, meetings, etc.), another Waste Operations employee functions as the STR, but is not trained and qualified as an STR. This person has an R2A2 titled "Subcontract Technical Representative", listing the responsibilities of a qualified STR.

**2.4.3 Observation SCO3:** Actions were performed as the result of an IF, but with no tracking mechanism.

**Discussion:** As a result of WCH self assessment ESHQ-2013-SA005, *Subcontractor Technical Representative Program and Implementation*, IF-2013-0205 was entered into CAMS identifying five issues with the STR program. Management was notified of the issues and the recommended corrective actions were listed as "To be determined". Actions were assigned to employees to address/evaluate the issues

stated, but objective evidence of who was assigned, what action was assigned, and a completion date was not entered into the CAMS. The IF should be updated to include the action plan.

With subcontractors earning approximately 94% of available contract incentive funds for safety and disciplined operations, the positive trend in subcontractor reportable and non-reportable occurrences, and the actions recommended to improve the quality of subcontractor oversight (i.e., the STR Program), the team determined these initiatives have been effective and are sustainable.

## 2.5 Disciplined Operations Plan

Management assessment MA-2012-020, *Performance Improvement and Analysis*, examined issues relative to WCH performance to identify prevalent underlying factors and determine whether those factors presented a threat to company performance based on WCH's closure contract and associated remaining work scope. Three performance gaps were identified, which if uncorrected may hinder achieving the objectives for continuously meeting internal and external customer requirements and expectations. Also identified were actions that would address the gaps and the potential underlying factors. As a result of this management assessment, the DOP was revised to incorporate the improvements identified in the assessment.

The three performance gaps are identified below. For each gap, the "expected outcome" results from the implementation of the actions as described in the management assessment are listed. Following the list of expected outcomes is a high level summary of the POET evaluation related to the area or subject matter based on reviews, observations and interviews conducted.

**2.5.1 Gap 1:** Management Expectations (Carol's Expectations) are not uniformly known, understood, and implemented across the company and at each level of the organization (i.e., Management expectations are not carried through field expectations). Expected outcome:

- R2A2s will be developed for positions that authorize work in the field, responsible for field supervision and SMEs that support any field activity. It is acknowledged that positions vary from project to project; however, all projects will work together to develop their R2A2s to ensure consistency.
- Overarching R2A2s will be developed to flow down the President's expectations and will be part of all R2A2s.
- Face-to-face discussions will be held with all subject personnel (e.g., positions that authorize work in the field, responsible for field supervision and SMEs that support any field activity).

The review concluded that management expectations had been effectively disseminated throughout the organization. The management team was observed to be actively engaged in all aspects

of the project, routinely reinforcing expectations and displaying a strong visible presence in the field. R2A2s were developed that included the President's expectations and deployed into the organization. Face-to-face R2A2 meetings were held with appropriate personnel. Interviews conducted with all levels of workers and management showed that their roles and responsibilities were well understood. Suggested enhancements to the R2A2 process are discussed in Section 2.2 (Internal Oversight Performance), Section 2.4 (Subcontractor Oversight), and Section 2.6 (Safety Culture) of this report.

**2.5.2 Gap 2:** WCH is not self-identifying performance issues at the activity and program (project) levels. Expected outcome:

- Issues identified at the work-activity level to drive direct real-time participation and performance improvement in the field.
- Increase in the number of lower significance issues associated with human performance related causes (typically “find and fix” issues).
- Increase in the identification of program level (i.e., cross-cutting) and recurring issues project-wide.
- Reduce number of issues requiring occurrence reporting and significant issues associated with human performance related causes.

The steps taken by WCH to improve self-identification of issues include the setting of clear expectations for self-identification, the removal of barriers to self-identification (lean review of CAMS process), trending of progress, and feedback and coaching. The collective result of these actions has been not only an increase in self-identification of lower level issues, but also a significant positive change in attitudes. Employees believe the use of the CAMS is adding value to the project. This attitude change is considered key to sustainability. The team believes that improvements in self-identification, coupled with improvements in the ability to trend information and analyze issues, will over time continue to reduce both the number and severity of events. This is further discussed in Section 2.1 (Corrective Action Program) and Section 2.2 (Internal Oversight Performance) of this report.

**2.5.3 Gap 3:** WCH is not using the CAMS to its designed function/requirements, which limits the generation of actions that are fully effective at preventing recurring issues. Expected outcome:

- Project-wide application of CAMS at the work-activity level to drive direct real-time participation in issue identification and improved performance in the field.

- Improved quality and consistency in issue identification, analysis, documentation of the analysis, and effective corrective actions.
- Improved identification of cross-cutting and recurring issues project-wide.

The actions referred to in Gap 2 above have also been effective in reaching the expected outcomes to close Gap 3. Cause analysis and resulting corrective actions are much improved, line manager ownership has improved, and the CAMS process is viewed as a “core business”. The IRT is adding value and is providing a forum for the projects to share information. Trending of CAMS information is just beginning, so the benefits are not yet fully realized. With the exception of the IRT members’ activities, the horizontal flow of information on project issues, problems and resolutions is weak. As a result, the identification of cross-cutting issues needs improvement and there are missed opportunities for the projects to learn from each other. This is further discussed in Section 2.1 (Corrective Action Program) and Section 2.6.3 (Safety Culture) of this report.

The DOP contains numerous actions the projects and various functional organizations (Disciplined Operations, Engineering, Environmental, Safety and Health, and Quality Assurance) are expected to complete/implement. These actions were derived from the results of management assessment MA-2012-020. Most of the actions in the DOP are discussed in the other sections of this report; however there are two actions from the DOP which resulted in Observations further discussed below.

The Maintenance of Disciplined Operations (MODO) program is a schedule of specific briefings and other activities conducted by the projects to communicate important disciplined operations-related topics to all project employees to maintain a high level of safety and disciplined operations throughout the project. Upon review of the coordination and management of the MODO program at each project, it was determined that there was a gap in the communications between the functions’ SMEs who developed MODO briefings for the project’s MODO program, and the project MODO coordinators.

**2.5.4 Observation DOP1:** The project MODO coordinators are unaware of the MODO briefings developed by the respective functions’ SMEs for the project’s MODO program.

**Discussion:** The projects are required to have an annual MODO schedule consisting, at a minimum, of the following topical briefings that will be given quarterly to all employees:

- Working Near Overhead Power Lines
- Stop Work
- Hazardous Energy Control/LOTO

- Electrical Safety
- Fall Protection
- Event Reporting
- Equipment/Vehicle Safety

The team reviewed the MODO annual schedule for each project and found that all of the projects went far beyond the minimum requirements (meaning each had added significantly more topics than the minimum). The functions' SMEs were also required to develop MODO briefings as described in their specific DOP action to be used by the projects in their MODO program. The team confirmed that all function SME briefings were developed and uploaded onto the WCH Disciplined Operations web page; however, the project MODO coordinators and the Performance Assurance Managers were unaware of these MODO briefings. As a result, the projects created these briefings in-house, without input from the function SMEs. The team obtained one of the project's "LOTO and Working Near Overhead Power Lines" MODO briefings given in June to all employees and had the Electrical Safety SME review them. One briefing had information that was not compliant with the LOTO procedure, and the other briefing didn't include important information that needed to be communicated (that was included in the MODO briefing developed by the SME). Additionally, the Electrical Safety SME was unaware of how the SME MODO briefing was being used, if at all, and what it would be used for.

Due to LOTO issues experienced by WCH prior to the development of Rev 2 of the DOP, an action was identified by management to re-establish the WCH LOTO Committee and conduct monthly meetings.

**2.5.5 Observation DOP2:** The re-establishment of the WCH LOTO Committee, as required by Rev 2 of the DOP, is not complete.

**Discussion:** Although monthly LOTO Committee meetings are being held and meeting minutes distributed, the average member attendance is two (the same two people every month) out of eight members across the projects and functions. Also, the committee charter has not been approved. The committee chair solicits meeting topics from the committee membership but rarely receives any feedback. Lacking any input, the chair sets the agenda based on recent site issues or events that have recently occurred as a lessons learned topic, and reviews items from the Hanford Site-Wide LOTO Committee. The chair distributes the meeting minutes to the committee members and the Controlling Organization Administrators to facilitate communications within the applicable organizations.

Based on significant improvements in addressing the three gaps from management assessment MA-2012-020, especially in the areas of CAS/CAM and issue self identification, the measures implemented to improve this area have been effective and significant progress has been made.

## 2.6 Safety Culture

The sampling of WCH safety culture information gathered during this review is consistent with the results of the 2012 Hanford Site and WCH safety culture review results. Looking forward, interviews with workers and leadership indicate that the WCH safety culture is under pressure due to a number of external factors acting on the workforce. The workforce senses impending schedule pressure and a “summit fever” mindset that could emerge during the completion of schedule performance incentive fee (SPIF) milestones. The fee earning milestones also generate project headcount reductions, with associated potential for distraction and human errors. The Hanford Atomic Metal Trades Council (HAMTC) contract is under negotiation with the adjoining risk of worker distractions. Staffing changes across the Hanford contractors could generate personnel turnover with an associated erosion of the safety culture. Some newly assigned workers may have different safety values and/or may be reluctant to demonstrate a questioning attitude. During this review, WCH experienced several incidents with human performance implications (e.g., shoulder injury, shipping documentation error, vehicle accident involving forgetting to lower a vehicle bed). Some workers worry that the subcontractor workforce is less likely to raise safety issues. These factors point out the need for continued leadership investment in the WCH safety culture. While WCH leadership has made significant improvements in many aspects of the integrated safety management systems, these and more will be needed to maintain the safety culture under these external pressures. In particular, this evaluation recommends that WCH leadership emphasize behavioral factors in incident prevention, build horizontal communication within the organization, and generate a Management Control Plan (MCP) to overlay proactive Human Performance Improvement (HPI) actions to take in anticipation of the timing of the external forces on the WCH safety culture.

The team patterned the review along the content and format of DOE G 450.4-1C, *Integrated Safety Management System Guide*, Attachment 10, Safety Culture Focus Areas and Attributes. This guide identifies three primary safety culture focus areas, each composed of a number of specific attributes. The safety focus areas are: Leadership, Employee/Worker Engagement, and Organizational Learning. The team reviewed the 2012 Hanford Site and WCH safety culture assessments to select areas for emphasis during the review.

The team performed record reviews, fieldwork and leadership observations, and interviews. The interviews included several “voice of the customer” sessions with DOE-RL personnel and interviews with senior WCH leadership, functional SMEs, engineers, supervisors, and workers. The interviews employed open-ended questions with an emphasis of seeking specific examples of how attributes were or were not

reduced to practice in the field. In addition, all interview candidates were promised anonymity and, in honor of that, most specific interview examples will not be discussed in this report.

**2.6.1 Leadership - Demonstrated safety leadership:** The WCH project continues to invest in the project integrated safety management systems and, in so doing, continues to reinforce the safety culture. A partial list of initiatives in progress or completed in the last year include:

- Enhanced execution of root and apparent cause analyses
- Performed multiple cross-functional POET evaluations
- Developed and rolled out Rev 10 of the IWCP procedure
- Established and continued implementation of formal qualifications for RMs and FWS
- Developed and conducted project-specific HPI classes for project operations and engineering personnel
- Instituted the behavioral awareness to reduce risk (BARR) process

The team reviewed the Human Resources (HR) procedures associated with discipline and rewards. The HR procedures appropriately reinforce the safety culture. The discipline process recognized HPI attributes, and interviews indicated the procedures were being followed. The award program had been recently revised to better recognize safety performance, and approximately 30% of the awards were related to safety performance. The project is investing in aiding personnel in the off boarding process, and is communicating these successes to the workforce in an effort to reduce worker distractions.

DOE-RL and WCH are engaged in partnering initiatives to build alignment. Of special note, the respective DOE-RL and WCH ESH&QA organizations are teaming to build better cross-communications on safety and health issues. The team has identified counterparts and set expectations for routine and conditional communications. These efforts will serve to both resolve issues while demonstrating unity of purpose and expectations to the workforce.

Reviews of completed management walkthroughs and interviews with supervisors and workers indicate that leadership in the field is strongly focused on field physical conditions. Most leadership focuses on industrial safety considerations, and workers note that they would appreciate more interpersonal interactions and performance feedback.

Observation IO3 in Section 2.2.3 of this report identifies duplication and inefficiency in overlapping assessment initiatives. Opportunities exist for streamlining and directing assessments. As an example, a

campaign could be initiated to focus SME assessments on compliance aspects, while the management walkthroughs are directed at worker engagement and behavioral feedback for work control and conduct of operations attributes.

Some workers noted that leadership is not always available to participate in safety celebrations, but that they are usually available to participate in production milestone completion celebrations.

Personnel interviewed indicate that the WCH President/PM is strongly committed to the safety culture, and that they believe she will hold true to her values even under stress. Some workers and “voice of the customer” interviews expressed concern that others in WCH management might yield to production pressure in the future. While there were many examples of the project properly stopping work to address safety issues, some personnel believe that mid-level and low-level managers may waiver on safety culture when deadlines are near. Some people also believe that while a questioning attitude is encouraged, leadership may become frustrated or impatient if work is being slowed or if others think the questions are trivial. These perceptions could discourage some workers from reporting issues.

Finding IWCP1 “Unclear Use of Fall Hazard Postings at 183-D” in Section 2.3.1 of this report identifies a lack of clarity in the identification and implementation of fall hazard controls. Given the strong safety culture significance placed on fall protection at WCH, this uncertainty in hazard controls at the working level needs additional leadership attention.

- 2.6.2 Leadership - Management engagement and time in field:** The team interviewed a cross-section of workers and supervision with open-ended questions regarding management engagement in the field. Workers and supervision uniformly stated that management understands what it takes to get work done. Visits are unannounced and varied by day of the week and time of the day. No special preparations are completed prior to management visits, and work practices are unchanged when leaders are present. Workers and FWS perceive leadership understands the work.

Management engagement and time in the field is improving as a result of the management walkthrough process and expectations. The expectations for participation in management walkthroughs are clear. Management is generally complying with this expectation. Personnel are completing the “Management Walkthrough Observation Sheets”, although sheets may contain minor editorial errors (e.g., blocks not checked).

Many of the management walkthrough observations sampled by the review team focused on plant conditions versus workforce behaviors. Leaders are focused on the physical state of plant equipment and heavy equipment layout, for example, with less documented involvement in worker performance monitoring and feedback. In interviews, some workers noted they would prefer more interaction with management and performance feedback during field visits.

There is significance variance across the WCH organization in the generation of IFs during management walkthroughs. Some FWS stated they had been completing two observations per month for the last two years and had never generated an IF. These supervisors were able to provide examples of deficiencies they had found and corrected during their walkthroughs, but these items were not made available to the organization for trending through the CAM process, or for extent of condition evaluations.

Mid- and upper- level managers were observed by workers as they spent time in the field, and workers believe the managers have a positive impact when they are there. RMs are seen in the field several hours per day, and senior managers were seen in field a lesser, but appropriate amount. Work processes remain consistent whether management is present or not.

Of special note, the project Performance Assurance Managers are perceived to have a positive impact on field performance. In addition, the Deputy PM is perceived by the workers to be field oriented.

**2.6.3 Leadership - Open communication and fostering an environment free from retribution:** During interviews, workers were able to describe specific examples of many cases across the project where workers felt free to raise issues. Specific examples were described of workers raising issues, either with or without a stop work being called. Many specific examples were provided of management responding rapidly to the issue and giving feedback to the workers prior to work resuming.

The workforce appreciates the frequent PM communications. Workers believe the PM places great personal commitment on the safety value. In particular, some workers noted with appreciation that the PM made the safety culture topic a special area in this POET evaluation.

Workers and supervision across WCH were able to supply numerous and varied specific examples of instances when the project acted to place “safety over production”. Most workers could readily relate two or three personal experiences of times where a question was asked,

work was stopped, the question was resolved, feedback was provided, technical work documents were revised as appropriate, and work resumed with adequate controls in place.

A few number of workers related an incident where production pressures seemed to obviate a safety concern. Due to anonymity considerations, they will not be described here. Over the course of many interviews conducted by the team, two such recollections were presented.

The workforce understands and feels free to use the many means available to report issues. Most WCH employees feel extremely comfortable reporting issues through the chain of command. They could also list several means available to them to report issues outside the chain of command and could describe how they would initiate such a process.

Horizontal communication across the organization is weak. Work stoppages in one area are not rapidly communicated to workers in other areas. A partial list of specific examples is provided below:

- Questions raised about the efficacy of heart rate monitoring while wearing rubber gloves were raised in one area. The questions were answered, and work resumed. Several days later, the stop work and resolution had not been passed to workers using similar equipment on other projects.
- A 300-Area D4 worker experienced a shoulder injury on March 5, 2013, while moving new crane pads. These new pads are heavier than the old pads. This injury and the associated behaviors were not passed horizontally in the organization. On March 25, 2013 a similar injury was experienced by an ERDF worker while placing the new pads. The review team could not locate a communication to the workforce about lifting behaviors. During the week of July 15, 2013, a worker experienced a shoulder injury while jerking on a stuck Conex door. The team could not find communications to the workforce related to the behavioral aspects of proper lifting techniques and/or body mechanics considerations. While the D4 PM did get notification of the incident and all D4 Conex doors that were sticking were lubricated, the broader implications of proper body positioning and avoiding risk when positioning heavy equipment were not communicated across WCH.
- Root Cause Analysis RCA-2013-0007, *Near Miss – Concrete Coring Drill Anchor Bolt Separates from Wall*, identifies contributing causes to the event. Contributing Cause CC-01 is “The subcontractor FWS perceived the activity to be a low risk activity”. Contributing Cause CC-02 is “Work planning activities were negatively influenced by an over-reliance on the expertise of

the vendor and skill of the craft”. While the core drilling event has many aspects that are isolated to D4 activities, the two contributing causes reflect behavioral risks that have broad project relevance. The completed Fact Finding Report for this event was distributed to the FR Director and the Senior Leadership Team reviewed and approved the root cause analysis. Attributes of the event were communicated to the other projects. However, discussions during the ESQRB meeting and interviews in the field indicate that the broad lessons of over-reliance on skill of the craft and risk perception on routine tasks were not communicated to workers outside D4.

- As an example of improving horizontal communications, the IRT is demonstrating rapid analysis and communication of emerging trends throughout the project from low in the organization.

In general, leadership focus is directed on “conditions” versus “behaviors”. Management walkthrough documentation, interviews, and field observations indicate that leadership is focused on the status of mechanical systems, heavy equipment placement, containment and confinement, ventilation integrity, and so forth. While conditions are important and cannot be ignored, little evidence is available on identifying and providing feedback on critical behaviors that keep work safe.

**2.6.3.1** In most cases, and only after a series of probing questions, workers expressed reluctance to raise behavioral issues and human errors. Workers state that they are committed to safety. Workers understand the concept of leading indicators in preventing accidents and injuries. Workers also understand that capturing and trending behavioral data presents opportunities for injury and event prevention. However, workers are reluctant to “report on a brother or sister.”

Many represented workers stated that while they personally feel free to raise issues, they perceive that subcontractors are in a different situation. Workers perceive that subcontractors are less likely to demonstrate a questioning attitude and are less likely to raise safety concerns since they could be more likely to experience an adverse impact as a result. WCH workers, and some supervision, perceive that subcontractor personnel could potentially experience retaliation if production were impacted by asking questions or raising concerns.

**2.6.4 Leadership - Clear expectations and accountability:** The PM has established and communicated clear expectations to the workforce. Workers uniformly are convinced that the PM is personally committed

to safety culture. A consistent safety value message is being communicated throughout WCH.

Workers, “voice of the customer”, and some supervision believe there is some uncertainty with how mid- and lower- level management will behave under stress (e.g., production pressure). While they have confidence that the PM will not waiver on her safety values, lower levels of leadership are not as uniformly trusted.

R2A2s have been developed and implemented. The PM issued Manager’s Memos on December 27, 2012, and January 21, 2012, stating the expectations that R2A2s be developed and discussed with employees. The Manager’s Memos identified the positions that “authorize work in the field, are responsible for field supervision, and support field work”. Some minor inconsistencies exist across the R2A2 set. For example, while most R2A2s discussed the responsibility to stop work when appropriate, several key R2A2s (i.e., RCT Supervisor, PIH, IH Supervisor, and Radiological Control Engineer) did not include this statement. In most cases, the R2A2s were delivered in face-to-face discussions between leadership and employees. In one case, the employee was distributed as a “read and sign”, but the employee insisted on a face-to-face discussion.

**2.6.4.1** Most personnel are not receiving performance feedback on how well they are meeting the expectations of the R2A2s. An opportunity for future continued improvement is to knit the R2A2 expectations into the simplified annual performance review process.

**2.6.5 Employee/Worker Engagement:** WCH employees expressed a uniform and consistent personal commitment to everyone’s safety. Interviewees provided many varied examples of specific instances that demonstrated a willingness to stop work. Many workers described instances when they had actually called or witnessed a stop work during a job, and workers described successful and prompt resolution of their issues including feedback to the workers on how the issue would be resolved.

The WCH leadership team is beginning to implement behavioral feedback processes. Leadership has implemented a Local Safety Improvement Team (LSIT) process that opens a worker communication and feedback channel, and the leadership is now implementing the BARR process. Though it is unlikely the BARR process will fully mature in the time available to WCH, the effort is opening up the workforce to behavioral feedback and the opportunities

for injury prevention in worker-to-worker safety discussions and trending.

Workers provided examples and described specific events that reinforce teamwork and mutual respect. Workers uniformly appreciate WCH leadership and culture, and express their satisfaction with working at WCH. Workers perceive their input is valued by the WCH leadership team and that worker ideas are considered in decision making.

Workers participate in work planning and improvement initiatives. Workers provided many specific examples of how they had specific personal experiences of involvement in the hazards identification and analysis process from the start of the work planning process. Workers provided many specific examples of worker involvement in planning and improvement initiatives.

While workers indicate that they have many means available to them to report and resolve issues, many of these means do not get formalized into CAMS for trending. Workers do not write or use IFs. LSIT logbooks are used and partially meet the need, but reviews of several LSIT logbooks across WCH found that the entries are sporadic, limited to a few individuals, and are purely condition-based; thus limiting leading indicator and performance trending opportunities. Much of the operator feedback to leadership is provided verbally. Leaders address the worker feedback on the spot, and some of the supervisors generate IFs to capture the issue.

Leadership, workers, and SMEs demonstrate mindfulness of hazards and controls, and a strong and consistent industrial safety focus. Some workers perceive a weakness in IH institutional controls. Interviews with workers and SMEs indicate that, in the past, IH was conducted using expert knowledge from SMEs to evaluate issues and decide paths forward. As a result, some workers saw different controls selected as a function of the specific SME involved. Also, some of the SMEs could not explain the basis of their decisions to the satisfaction of some workers. The inconsistencies perceived by some workers eroded confidence in the IH program. Also, some workers reported that staffing reductions may have impacted the amount and frequency of IH monitoring in the field. As discussed elsewhere in this report, most of the worker and management attention is focused on physical conditions with much less emphasis on behaviors. The BARR process is a good first step in opening up WCH to the behavioral aspect of performance improvement.

**2.6.6 Organizational Learning - Credibility, trust and reporting errors and problems:** WCH leadership has invested significant effort into improving the CAS/CAM process, and the project is realizing the benefit of that investment. IF generation, trending actions, root cause analysis thoroughness, and ESQRB discipline are serving to self-identify trends and initiate actions in the continuous improvement process. The significant improvements gained in the CAS/CAM system are expected to enable continued sustained improvements in other functional areas including work control and disciplined operations.

As discussed elsewhere, most problems are identified based on conditions. The WCH organization is growing the ability to report errors and trend behavioral performance.

The LSIT logbooks exist as a means for workers to identify safety issues to management. The logbooks are a good first step to build worker involvement. A review of several logbooks across WCH indicates that entries in the books are sporadic. In addition, the entries concern physical plant conditions only (e.g., ceiling tiles).

**2.6.7 Organizational Learning - Effective resolution of reported problems:** Corrective Action program, root cause analysis, and ESQRB process improvements are serving to improve the effective resolution of reported problems. Section 2.1 of this report dealing with the Corrective Action program discusses this topic in great depth.

As an example, the team observed the ESQRB review of Root Cause Analysis RCA-2013-0007, *Near Miss – Concrete Coring Drill Anchor Separates from Wall*. The meeting was disciplined. The meeting started on time and with the necessary quorum. The meeting leader stated the meeting purpose and the root cause analysis was presented to the members with no distractions. Management engaged during the meeting, displaying an appropriate “questioning attitude”. The event investigation was thorough, including interaction with the core-drill vendor SMEs. The root cause analyst was fluent in HPI principles and competent in root cause analysis. The quorum properly voted on the decision to approve.

**2.6.7.1** As an opportunity for improvement, the “All Hands” brief generated as a result of the event investigation was specific to the topic of core-drilling equipment controls and was limited to the D4 organization. An opportunity exists to discuss “Performance Excellence” (i.e., HPI) implications of risk perception of routine work and over-reliance on skill of the craft with the other WCH projects.

The leadership team developed and delivered HPI training and tool rollout for projects and engineering personnel. The training applied HPI principles to the specific challenges being faced by WCH. As an example, the HPI training included a module regarding management presence in the field and the need to not focus only on physical plant conditions but to also pay attention to “low frequency high consequence” events. The engineering HPI training emphasized the engineering role as the “technical conscience” of the organization. Many interviewees could not remember the training several months after having attended; as such, the training is worthy of periodic reinforcement.

**2.6.7.2** The DOP (Rev 2) contains a set of actions related to disciplined operations improvement actions. Action item 5.7 states that management will “disseminate Human Performance Improvement briefings to the project for presentation at plan-of-the-day meetings.” The team could not locate a consolidated list of WCH-wide HPI briefings that were completed or planned to close this action. The team did observe one HPI briefing delivered during an ERDF POD as a MODO topic. This MODO briefing dealt with IF-2013-0829 and involved a vehicle rolling incident. The HPI included a discussion of the Stop-Think-Act-Review (STAR) error prevention tool. Section 2.5 (DOP) of this report discusses the opportunity for uniformly managing the company-wide MODO briefings (reference Observation DOP1).

Similar to the analysis of hazards, the selection of corrective actions tends to be focused on “condition” versus “behavior”. While the selection of controls usually addresses the necessary actions to address the specific issue within an activity, the broader behavioral lessons learned (e.g., lifting techniques, risk perception of routine jobs, overreliance on skill of the craft) tend to not be identified or communicated to other projects.

Interviews noted that institutionalization of lessons learned could become an issue as the project draws down and/or is impacted by bump and roll. Briefings and Standing Orders may be ineffective controls in a high personnel turnover project environment.

Development of the Differing Professional Opinion (DPO) process is in progress. The revised procedure to implement the revised DOE O 442.2 requirements is overdue. The quarterly notification process, as required by the Order, has not been institutionalized to ensure execution.

**2.6.7.3** The 618-10 nondestructive assay event identified a DPO that was not promptly identified and resolved. Root Cause Analysis RCA-2013-0003 stated “Radiological Engineers questioned the validity of the soil annulus model data at the onset and throughout the use of the model. The extent of their reservation led them to redact data...”. Management involvement and response at the time would likely have identified the lack of technical formality in model modifications earlier.

Lessons learned and extent of condition actions do not always cross organizational boundaries. The March 5, 2012, 300-Area D4 shoulder injury associated with lifting the new and heavier crane pads was not communicated outside the D4 project. Event lessons learned and extent of condition actions did not get passed to ERDF, and a similar injury with the same lifting pad occurred at ERDF on March 25, 2013.

**2.6.8 Organizational Learning - Questioning attitude:** Interviews identified many and varied specific examples of workers, supervision and SMEs demonstrating a questioning attitude and using their stop work authority when appropriate. Issues were promptly resolved by leadership, and workers received individual feedback on actions being taken to resolve the issue. Some workers and supervision perceive that subcontractors are under production pressure that could result in a reluctance to demonstrate a questioning attitude.

The bump and roll process has the potential to remove experienced cultural leaders from the workforce while adding workers with a safety culture different from the one held at WCH. Some workers perceive that new workers could be intimidated by the new surroundings and may be less likely to demonstrate a questioning attitude. Of note, using this reasoning, it is likely that the WCH safety culture could be most at risk in areas with higher personnel turnover.

The following recommendations for WCH leadership were identified:

- Continue to develop a focus on the importance of behaviors to the safety culture
- Develop and reinforce horizontal communications throughout the organization
- Produce and communicate a WCH MCP to predict and proactively manage the safety culture risks to the organization. The MCP could overlay on the existing WCH production schedule as forecast to end of project. The plan would identify, as a function of time and impact, the external stressor risk events that could challenge safety performance (e.g.,

SPIF, bump and roll, HAMTC contract). WCH leadership and LSIT members would analyze the risk event along with the timing of project activities and add specific safety culture risk mitigation activities to the integrated WCH project schedule. Proactive HPI risk mitigation techniques (e.g., focused oversight, enhanced work release gates, all hand briefings, round tables, and LSIT involvement) are several of the tools available to proactively maintain the safety culture. Lastly, and as part of the mitigation, communicate and periodically status the plan to the workforce.

## Appendix A: Performance and Oversight Evaluation Team

<b>Name</b>	<b>Performance Area</b>
Dan Beavers	Team Lead
Dale Bignell	Disciplined Operations Plan
Mike Carmichael	Corrective Action Program
Kim Hauer	Safety Culture
Eric Kinnunen	Internal Oversight Performance
John McDonald	Safety Culture Mentor
John Mercer	Integrated Work Control Program
Emily Millikin	Safety Culture
Karl Sanders	Integrated Work Control Program
Chuck Stewart	Subcontractor Oversight
Amanda Tuttle	Internal Oversight Performance

## Appendix B: List of Documents Reviewed

Description/Title	Document Number	Rev/Date
Letter from S.L. Feaster to J.J. Short, Contractor Requirements Documents 0 442.2, Differing Professional Opinions for Technical Issues Involving Environmental, Safety and Health Technical Concerns	162979	12/21/2011
River Corridor Closure Project Partnering Performance Agreement	166753	04/03/2012
Manager's Memo – Roles, Responsibility, Accountability and Authority for RCC Leadership	169114	12/27/2012
Internal Memorandum, G. Snow to C. Johnson, Response to D4/300 Area Performance Oversight and Evaluation Team (POET) Evaluation	169590	01/24/2013
Memo from C. Johnson Expectations for the use of the WCH Corrective Action Management System	170146	03/07/2013
Internal Memorandum, J.F. Armatrout to C. Johnson, Response to Waste Operations Performance Oversight and Evaluation Team (POET) Evaluation	170599	04/10/2013
Internal Memorandum, R.D. Cantwell to C. Johnson, Response to Field Remediation Performance Oversight Evaluation Team (POET) Report (QA&S-2013-002)	171848	06/26/2013
Meeting Minutes, WCH LOTO Committee	171846	06/26/2013
Performance Improvement and Disciplinary Action	BSC-1-1.8	Rev 4
Awards and Recognition Program	BSC-1-1.13	Rev 2
Program Overview & General Requirements	CONOPS-1-0	Rev 4
Communications	CONOPS-1-4	Rev 3
Standing Orders	CONOPS-1-15	Rev 4
Operator Aids	CONOPS-1-17	Rev 2

<b>Description/Title</b>	<b>Document Number</b>	<b>Rev/Date</b>
Component Labeling	CONOPS-1-18	Rev 3
Senior Supervisory Watch	D4-100-1.2	Rev 0
Environmental Trending	ENV-100-1.1	Rev 2
Subcontract Technical Representative (STR) for Construction Field Work Activities	PAS-1-4.5	Rev 6
Executive Safety and Quality Review Board	PM-CH-1	Rev 4
Performance Oversight and Evaluation Team	PM-CH-9	Rev 1
Charter, WCH LOTO Implementation Committee	PM-CH-10	Draft
Nuclear Safety Culture	PM-ESHQ-15	Rev 0
Corrective Action Management	QA-1-1.2	Rev 12
Corrective Action Management	QA-1-1.2	Rev 13
Performance Analysis Process	QA-1-1.3	Rev 4
Cause Analysis	QA-1-1.4	Rev 5
Disciplined Operations Plan to Support River Corridor Contract Closure	WCH-522	Rev 0
Disciplined Operations Plan to Support River Corridor Contract Closure	WCH-522	Rev 1
Work Control/CONOPS Mentoring Program	WCH-555	Rev 0
Integrated Environment, Safety, and Health Management System Fiscal Year 2013 Declaration	WCH-559	Rev 0
WCH Safety & Focused Oversight Checklist	WCH-FS-033	05/08/2013

<b>Description/Title</b>	<b>Document Number</b>	<b>Rev/Date</b>
Configuration Verification Walkdown	WCH-FS-302	02/04/2013
WCH Standards of Conduct	WCH-HR-109	10/24/2007
Industrial Hygiene Field Visit Checklist	WCH-SH-524	07/31/2012
Subcontractor Industrial Hygiene Oversight Checklist	WCH-SH-531	05/29/2013
Radiological Control Field Visit Checklist	WCH-TM-R213	11/10/2011
Integrated Safety Management System	DOE G 450.4-1C	07/29/2011
Sellafield Ltd Supporting Practice	SLSP 3.06.10	June, 2011
DOE-HQ webpage on Differing Professional Opinions	<a href="http://www.hss.doe.gov/nuclearsafety/qa/dpo.html">http://www.hss.doe.gov/nuclearsafety/qa/dpo.html</a>	N/A
Assessing Safety Culture in DOE Facilities	EFCOG	November, 2009
Performance Excellence, Tools & Approaches – Next Level Safety	Course Number 105885	Rev 1
Construction STR Qual Card	Course Number 105494	07/24/2013
Construction STR- Field Work Activities	Course Number 105973	07/24/2013
Apparent Cause Analysis Workshop	Course Number 104009	Rev 0
Responsible Manager Corrective Action Management	Course Number 104008	Rev 1
Root Cause Analysis for IF-2013-0665	RCA-2013-0007	Draft
Self Assessment	ESHQ-2013-SA005	01/31/2013

<b>Description/Title</b>	<b>Document Number</b>	<b>Rev/Date</b>
Hearing Conservation End Point Effectiveness Review	ESHQ-2013-S047	05/30/2013
Management Assessment, Performance Improvement and Analysis	MA-2012-020	12/04/2012
Management Assessment, Radiological Control 1 <sup>st</sup> Qtr 2013	MA-2013-004-RC	07/09/2013
Management Assessment, Radiological Control 3 <sup>rd</sup> Qtr 2012	MA-2012-019	12/18/2012
Management Assessment WCH Management Performance Improvement and Analysis	MA-2012-020	12/06/2013
POET Report, Performance Oversight and Evaluation of D4 300 Area	QA&S-2012-005	Rev 0
POET Report, Performance Oversight and Evaluation of FR 100 Areas	QA&S-2013-002	Rev 0
POET Report, Performance Oversight and Evaluation of Waste Operations	QA&S-2013-001	Rev 0
Radiological Work Permit	ERDF-13-0001	N/A
Radiological Work Permit	ERDF-13-0002	N/A
Craft Work Package – Maintenance troubleshoot, repair, operations, installations, services to leachate and non-potable water systems.	ERD-13-05-15-001	N/A
Type I Work Package – Retrieval of 618-10 Drums in ERDF landfill	ERD-13-04-12-001	N/A
Type I Work Package – Perform Macro-Encapsulation Operations	ERD-12-10-10-001	Rev 1
Craft Work Package – D and H Waste Site Excavation Sorting and Loadout	FRD 12 11 20 001	N/A
Craft Work Package – Mob/De-Mob, General Site Maintenance, Heavy Equipment Maintenance and Road Grading/Maintenance and Construction	FRD 12 11 12 001	N/A
Technical Procedure – ERDF Container Operations for Field Remediation	FRC-200-TP-FRE-001	N/A
Craft Work Package – Waste Site Excavation, Sorting and Load-Out	FRN 12 09 19 001	N/A

<b>Description/Title</b>	<b>Document Number</b>	<b>Rev/Date</b>
Craft Work Package – Equipment Maintenance	FRN 13 01 16 002	N/A
Technical Procedure – D & H Waste Site Excavation, Sorting and Load-Out	FRC-200-TP-EXC-002	N/A
Technical Procedure – 100 N Excavation, Sorting and Loadout	FRC-200-TP-EXC-003	N/A
Craft Work Package – Haz Mat Removal Building 326	300 13 01 03 001	N/A
Craft Work Package – Class I Asbestos Abatement	300 13 02 26 001	N/A
Craft Work Package – 1800 DeMag Setup	300 13 06 27 001	N/A
WCH Root Cause Analysis Report, Failure to Take Formal Approach in Analyzing Data Discrepancies	RCA-2013-0003	Rev 0
WCH Root Cause Analysis Report, Near Miss – Front End Loader Contacts Occupied Scaffold	RCA-2013-0004	Rev 0
WCH Root Cause Analysis Report, ERDF Fall Event	RCA-2013-0005	Rev 0
WCH Root Cause Analysis Report, Near Miss – Concrete Coring Drill Anchor Bolt Separates From Wall	RCA-2013-0007	Rev 0
Improvements to IH Program	IF-2012-0011	07/23/2012
ORPS Implementation	IF-2012-0720	10/16/2012
Actions Resulting from Disciplined Operations Plan to Support River Corridor	IF-2012-0866	12/05/2012
Actions Resulting from Disciplined Operations Plan to Support River Corridor (Waste Ops)	IF-2012-0867	12/05/2012
Actions Resulting from Disciplined Operations Plan to Support River Corridor (FR)	IF-2012-0868	12/05/2012
Actions Resulting from Disciplined Operations Plan to Support River Corridor (D4)	IF-2012-0869	12/05/2012

<b>Description/Title</b>	<b>Document Number</b>	<b>Rev/Date</b>
Actions Resulting from Disciplined Operations Plan to Support River Corridor (QA)	IF-2012-0870	12/05/2012
Actions Resulting from Disciplined Operations Plan to Support River Corridor (S&H)	IF-2012-0871	12/05/2012
Actions Resulting from Disciplined Operations Plan to Support River Corridor (Rad/IH)	IF-2012-0872	12/05/2012
Actions Resulting from Disciplined Operations Plan to Support River Corridor (Facilities)	IF-2012-0873	12/05/2012
Actions Resulting from Disciplined Operations Plan to Support River Corridor (ENG)	IF-2012-0875	12/05/2012
ESH&QA Coach Has Not Been Provided Training and/or Tools to Provide Effective Coaching	IF-2013-0038	01/14/2013
Adverse Trend Waste Shipping	IF-2013-0177	02/14/2013
Improvements needed in the STR Program	IF-2013-0205	02/22/2013
Internal Oversight Performance (Finding Problems)	IF-2013-0245	02/27/2013
Corrective Action Management (Fixing Problems)	IF-2013-0246	02/27/2013
Integrated Work Control Process	IF-2013-0247	02/27/2013
Subcontractor Performance	IF-2013-0248	02/27/2013
Emerging Trend Fire Extinguishers	IF-2013-0330	03/14/2013
Apparent Cause Analysis	IF-2013-0341	03/16/2013
Emerging Trend Waste Site Excavation Signs/Ropes	IF-2013-0390	03/22/2013
Emerging Trend Safety Program	IF-2013-0422	03/27/2013

<b>Description/Title</b>	<b>Document Number</b>	<b>Rev/Date</b>
Emerging Trend Chemical Management	IF-2013-0425	03/27/2013
Apparent Cause Analysis	IF-2013-0530	04/08/2013
Apparent Cause Analysis	IF-2013-0685	05/06/2013
Apparent Cause Analysis	IF-2013-0733	05/14/2013
Emerging Trend Hazard Control	IF-2013-0808	05/29/2013
Emerging Trend Hazard Control	IF-2013-0809	05/29/2013
Emerging Trend Hazard Control	IF-2013-0810	05/29/2013
Apparent Cause Analysis	IF-2013-0829	05/20/2013
Emerging Trend TRC	IF-2013-1031	07/01/2013
Emerging Trend Radiological Survey	IF-2013-1039	07/02/2013
WCH Management Walkthrough Observation Sheet (13)	N/A	N/A
WCH Manager's Memos	N/A	04/04/2013 - 09/12/2012
WCH Organizational Charts	N/A	N/A
URS GMOS Phase II Review of Work Planning & Control Implementation at WCH	N/A	N/A
DOE-RL Safety Culture Good Practices Evaluation Report	N/A	September, 2012
EFCOG Meeting Handout, Assessing Safety Culture in DOE Facilities	N/A	January, 2009

<b>Description/Title</b>	<b>Document Number</b>	<b>Rev/Date</b>
Hanford Organizational Climate and SCWE Survey for 2012, U.S. Department of Energy Richland Operations Office Site	N/A	2012
Hanford Organizational Climate and SCWE Survey – Washington Closure Hanford for 2012	N/A	2012
WCH Contractor Assurance Report	N/A	06/26/2013
WCH Contractor Assurance Report	N/A	07/17/2013
WCH Discipline Operations Plan (DOP) informal action tracking spreadsheet	N/A	N/A
WCH Engineering Leadership, Expectations and Technical Conscience Culture Training	N/A	06/14/2013
Management Walkthrough Forms	N/A	N/A
Industrial Hygiene Field Visit Checklists	N/A	N/A
WCH Rewards and Recognition Statistics for On-The-Spot Awards and Osprey Awards	N/A	N/A
WCH Roles, Responsibilities, Accountabilities, and Authorities for Construction Subcontract Engineer, Resident Engineer, Responsible Manager, Subcontract Technical Representative, Radiological Control Supervisor, Field Work Supervisor	N/A	N/A
Weekly calendars for the Project Manager, Deputy Project Manager, and Director of ESH&QA	N/A	N/A
WCH Standing Instructions/Orders	N/A	N/A
DOE-RL & WCH Performance Improvements & Metrics	N/A	N/A
FY13 WCH ESH&Q Assessment Schedule	N/A	Rev 11
Email (LOTO Committee Expectations, DeLong to Weidert)	N/A	03/05/2013

<b>Description/Title</b>	<b>Document Number</b>	<b>Rev/Date</b>
FR MODO briefing on Overhead Line Safety	N/A	June, 2013
FR MODO briefing on LOTO	N/A	June, 2013
Function SME MODO briefing on Overhead Line Safety	N/A	N/A
Function SME briefing on LOTO	N/A	N/A
DOP Action Tracking table	N/A	N/A
WCH Contractor Assurance Reports	N/A	January – June, 2013
Subcontractor Deficiency Reports (12)	N/A	July, 2012 – July, 2013
Construction Subcontractor Technical Representative (STR) Program Evaluation presentation	N/A	05/15/2013
R2A2s for STRs and CSEs	N/A	N/A

## Appendix C: List of Meetings and Activities Observed

### Meetings Attended

- 100-B/C IWCP Rev 10 Gap Training (Del Hur)
- 100-D D4 Pre-Ev Briefing – 183D Demolition
- 100-D D4 Fact Finding, IF-2013-1087
- 100-D/H FR POD
- 100-N FR POD
- 100-N Stop Work/Return-to-Work meeting
- 300 Area D4 POD
- 300 Area D4 Pre-Ev Briefing – 326 HazMat Removal/Class I Abatement
- Apparent Cause Analysis meeting, IF-2013-1087
- D4 CONOPS Coach meeting
- ERDF POD
- ERDF Pre-Ev Briefing – Leachate Flowmeter/Tranducers, Annual
- ERDF Pre-Ev Briefing – Test foaming of PFP glovebox
- ERDF Fact Finding – Deranged Electrical Panel
- ERDF Plan of Tomorrow
- ESQRB - Cause Evaluation Report for RCA-2013-0007, Rev 0
- Issue Review Team meetings
- Local Safety Improvement Team (LSIT) monthly meeting
- Monthly Project and Performance Assurance meeting
- Monthly CAS/CAM meeting
- Safety Assessment Conference Call

### Activities Observed

- Container Transfer Area operations
- Size reduction
- Excavation, sort and load
- Field remediation
- Demolition
- Dust suppression
- Field walkdowns
- Vehicle maintenance
- Training

## Appendix D: List of Personnel Interviewed

Contact	Organization
D4 Director	WCH
D4 Deputy Director	WCH
D4 100/400 Area Manager	WCH
D4 100-D Project Manager	WCH
D4 100-D RM	WCH
D4 100-D FWS	WCH
D4 100-D PSR	WCH
D4 300 Area Closure Project Manager	WCH
D4 300 Area STRs	WCH
D4 300 Area Engineer	WCH
D4 300 Area FWS	WCH
D4 300 Area Craft Supervisor	WCH
D4 300 Area Lead Planner	WCH
D4 300 Area CONOPS Coach	WCH
D4 300 Area RCT Supervisors	WCH
D4 300 Area PIH	WCH
D4 Performance Assurance Manager	WCH
D4 Performance Assurance Engineer	WCH
FR Closure Director	WCH
FR Closure Deputy Director	WCH
FR 100-B/C STR	WCH
FR 100-B/C CSE	WCH
FR 100-D/H Project Manager	WCH
FR 100-D/H STR/RM	WCH
FR 100-D/H CSEs	WCH
FR 100-D/H FWS	Terranear/Envirocon
FR 100-D/H Superintendent	Terranear/Envirocon
FR 100-D/H Resident Engineer	WCH
FR 100-D/H Standing Order Administrator	WCH
FR 100-N Project Manager	WCH
FR 100-N RM/STR	WCH
FR 100-N CSE	WCH
FR 100-N FWS	WCH
FR 100-N Superintendent	Envirocon
FR 100-N RCT Supervisor	WCH
FR 618-10 PIH	WCH
FR Project RadCon/IH Manager	WCH
FR Emergency Preparedness/Fact Finding	WCH
FR Planner	WCH
FR CONOPS Coaches	WCH
FR Performance Assurance Manager	WCH

FR PSRs	WCH
Waste Operations Director	WCH
Waste Operations Deputy Director	WCH
Waste Operations Disposal Operations Manager	WCH
Waste Operations Disposal STR	WCH
Waste Operations Waste Services Manager	WCH
Waste Operations Project RadCon/IH Manager	WCH
Waste Operations RCT Supervisor	WCH
Waste Operations Day Shift Supervisor	WCH
Waste Operations Performance Assurance Manager	WCH
Waste Operations Performance Assurance Engineer	WCH
Waste Operations Corrective Actions/Supervisor	WCH
Waste Operations Environmental Protection Lead	WCH
Waste Operations PSR/PIH	WCH
Waste Operations CONOPS Coach	WCH
Waste Operations Stoller Quality Assurance Manager	WAI Stoller
Waste Operations WSDO Superintendent	WAI Stoller
Waste Operations WSDO Work Planner	WAI Stoller
Waste Operations WSDO FWS	WAI Stoller
RCTs, D&D Workers, Teamsters, Mechanics, Drivers (22)	HAMTC/Building Trades
WCH President and Project Manager	WCH
Employee Concerns Manager	WCH
ESH&QA Director	WCH
ESH&QA Deputy Director	WCH
ESH&QA Radiological Controls & IH Manager	WCH
ESH&QA Safety & Health Manager	WCH
ESH&QA Safety and Health Field Manager	WCH
ESH&QA Technical Support Manager	WCH
ESH&QA IH Program Lead	WCH
ESH&QA Subject Matter Expert	WCH
ESH&QA Engineering Services, Electrical SME	WCH
ESH&QA Environmental Compliance/Services Manager	WCH
ESH&QA Performance & Quality Assurance Manager	WCH
ESH&QA Deputy Performance & Quality Assurance Manager	WCH
ESH&QA Performance Oversight Manager	WCH
ESH&QA PAAA Coordinator	WCH
ESH&QA Root Cause Analyst	WCH
ESH&QA CAMS/IRT Lead	WCH
ESH&QA Contractor Assurance QA Engineer	WCH
Human Resources Core Services Manager	WCH
Human Resources Manager	WCH
Project Services, Infrastructure & Information Services Manager	WCH
Project Services, Deputy Manager Contracts &	WCH

Procurement	
Project Services, Procurement Closure Specialist	WCH
Assistant Manager for Safety and Environment	DOE-RL
Facility Representative (3)	DOE-RL
Senior Safety Advisor	DOE-RL

## Appendix E: In-Brief/Out-Brief Attendees

Name	Organization	In-Brief	Out-Brief
Jeff Armatrout	WCH	X	X
Dan Beavers	URS	X	X
Dale Bignell	URS	X	X
Elizabeth Bowers	DOE	X	X
Rob Cantwell	WCH	X	X
Mike Carmichael	WCH	X	X
Steve Chalk	DOE		X
Ray Corey	DOE	X	X
Bruce Covert	WCH	X	X
Joe Curcio	WCH	X	X
Gordon Dover	WCH	X	X
Dan Elkins	WCH	X	X
Frank Farmer	WCH	X	X
Mark French	DOE		X
Gary Grant	WCH	X	X
Terry Hunter	WCH	X	X
Kim Hauer	SRR	X	X
Mike Hiett	DOE	X	X
Dennis Hurshman	WCH	X	X
Carol Johnson	WCH		X
Eric Kinnunen	WCH	X	
Bill Kirby	WCH	X	X
John McDonald	WRPS	X	
Robert McPherson	WCH	X	X
John Mercer	WCH	X	X
Jennifer Meszaros	DNFSB		X
Emily Millikin	URS	X	
Scott Parnell	WCH	X	X
Ed Parsons	DOE		X
Elver Robbins	DOE	X	
Karl Sanders	WCH	X	X
Tom Shoemaker	WCH	X	X
Jerry Simiele	WCH	X	
Gary Snow	WCH		X
Jim Spets	DOE	X	X
Chuck Stewart	WCH	X	X
Amanda Tuttle	WCH	X	X