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Rev. 0

River Corridor
Closure Contract

Integrated Environment, Safety, and Health Management System FY10 Declaration

September 2009

Washington Closure Hanford

Prepared for the U.S. Department of Energy, Richland Operations Office
Office of Assistant Manager for River Corridor

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EXECUTIVE SUMMARY

The annual Integrated Safety Management System (ISMS) declaration describes the processes used by Washington Closure Hanford, LLC (WCH) to review, analyze, and evaluate safety performance and methods to ensure that current processes are in place to continuously improve the WCH ISMS program.

WCH systematically implements safety into management and work practices at all levels so that goals, objectives, and the overall mission of the contract are accomplished while protecting the public, the worker, and the environment. WCH accomplishes this through effective integration of safety management into all parts of the integrated work control process, work planning, and execution. This integration ensures that the safety and health of workers, the public, and the environment is not compromised. A strong priority is placed on managing and reducing the risks in the workplace as well as risks to the public and the environment. WCH operations are based on procedures and practices that meet and/or exceed U.S. Department of Energy Orders and U.S. Department of Labor Occupational Safety and Health Administration requirements. Every employee in the River Corridor Closure Project organization is responsible for implementing the ISMS and to ensure protection of the worker, the public, and the environment.

Prior to the ISMS Phase II Verification, WCH systematically incorporated ISMS functions and principles by providing employees with the following:

- ISMS training
- ISMS tool kit describing the functions and principles of ISMS and how WCH incorporates these into the work process
- Additional training for managers and supervisors on their role in ISMS and comprehensive assessment training
- Information provided to employees on how to effectively observe and assess their work areas and focused activities.

These concepts have been systemically incorporated into our business process and continue to facilitate the implementation of ISMS.

Since ISMS Phase II Verification was initiated, WCH has been on a journey of systematically and organizationally improving and integrating our safety and health programs into all facets of

the work process. From the planning process within the Integrated Work Control Program process to conducting work ensuring the necessary flow down of requirements to both WCH and subcontractors within ISMS Safety and Health Exhibit G, WCH has effectively incorporated safety and health as a part of the way business is conducted. WCH personnel obtained training through the Safety Trained Supervisor program and demonstrated competence and knowledge of safety and health issues by effectively incorporating the results of observations and reviews into lessons learned and new work packages. Documentation of issues and conditions were demonstrated within the Local Safety Improvement Team log books and through the upgraded web based Corrective Action Management (CAM) system.

Feedback and improvements were communicated to the Executive Safety, Health and Quality Review Board. This board provides to the functional managers feedback on Environment, Safety, Health and Quality metrics; ISMS corrective action status implementation; and emerging issues related to the ISMS program. Performance analysis meetings with senior management were conducted to address operations problems and concerns. These meetings have resulted in the establishment of the Initiative Teams designed to implement specific operational problems. These process improvements were implemented and established in fiscal year (FY) 2008 while fulfilling the improvement commitments associated with the ISMS Phase II Verification in Section 5.0 of this report.

WCH has conducted a rigorous improvement process since the ISMS Phase II Verification. All areas of improvement and concerns from the ISMS Phase II report were documented within the CAM system, analyzed by Subject Matter Experts, and corrective actions issued to not only enhance our current programs but to help prevent reoccurrence of the events and conditions. All open actions identified in the ISMS Phase II have been successfully completed, verified and documented in the CAM system. Corrective action status is reviewed on a weekly basis by senior management to ensure that actions are appropriately addressed and are on track. Areas that obtained final closure in FY09 from the ISMS Phase II Verification report are summarized in Section 5.0.

Immediately after achieving ISMS Phase II Verification, WCH began the process for acquiring Voluntary Protection Program (VPP) Star Status. This effort consisted of numerous internal and external assessments of WCH safety programs and culture which identified many opportunities for improvement that WCH has implemented. Employee involvement was encouraged through

several VPP activities to encourage employee participation. The most notable of these was the VPP Passport campaign that was created by WCH and cited by the U.S. Department of Energy VPP Team as a good practice and used as an example at other sites. The employee participation experienced during the VPP Campaign has heightened WCH's continuing philosophy of safety first by getting everyone involved in safety programs. The result of this effort was WCH receiving company wide Star Status in June 2009.

With continued process improvements identified and with the systematic review of processes throughout FY09, it was determined that WCH has documented and implemented an adequate ISMS Description consistent with U.S. Department of Energy ISMS requirements.

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APPENDIX

A. EM Corporate QA Performance Metrics .....A-i

ACRONYMS

ALARA	as low as reasonably achievable
CAM	Corrective Action Management
CAS	Contractor Assurance System
CASD	Contractor Assurance System Description
CY	calendar year
DOE	U.S. Department of Energy
EMS	Environmental Management System
EPCP	Environmental Protection and Compliance Plan
ERDF	Environmental Restoration Disposal Facility
ES&H	Environmental Safety and Health
ESH&Q	Environment, Safety, Health and Quality
ESQRB	Executive Safety and Quality Review Board
FY	fiscal year
GFCI	ground fault circuit interrupter
HASP	health and safety plan
HGET	Hanford General Employee Training
IF	Issue Form
ISMS	Integrated Safety Management System
ISMSD	Integrated Safety Management System Description
IWCP	Integrated Work Control Program
JHA	Job Hazard Analysis
LSIT	Local Safety Improvement Teams
ORPS	Occurrence Reporting and Processing System
OSHA	Occupational Safety and Health Administration
PAL	Project Analytical Leads
POMC	performance objectives, measure, and commitments
PPE	personal protective equipment
psi	per square inch
QA	Quality Assurance
QAP	Quality Assurance Plan
QAPD	Quality Assurance Program Description
RCC	River Corridor Closure
RCCC	River Corridor Closure Contract
RL	Richland Operations Office
RMAP	Regulatory Management Assessment Process
S&H	Safety and Health
SC	Significance Category
SH&Q	Safety, Health and Quality
SHIP	Safety and Health Improvement Plan
SME	Subject Matter Expert
STR	Subcontractor Technical Representative
STS	Safety Trained Supervisor
USQ	Unreviewed Safety Question
VPP	Voluntary Protection Program
WCH	Washington Closure Hanford, LLC.
WMIS	Waste Management Information System
WSHP	Worker Safety and Health Plan

1.0 BACKGROUND

Washington Closure Hanford, LLC (WCH), a limited liability company owned by URS Corporation-Washington Division, Bechtel National, Inc., and CH2M Hill Constructors, Inc., was awarded the prime contract to manage the River Corridor Closure (RCC) Project in March 2005. The River Corridor consists of approximately 210 mi^2 (546 km^2) of the Hanford Site and is adjacent to the Columbia River. This area is divided into the following four major sub areas:

- 100 Area, comprised of shutdown plutonium production reactors and support facilities
- 300 Area, comprised of reactor fuel fabrication, research, and support facilities
- 400 Area, comprised of support facilities for the Fast Flux Test Facility and Infrastructure program
- 600 Area, mostly vacant land but contains two of three waste sites on the U.S. Environmental Protection Agency's open National Priorities List.

Successful cleanup of the River Corridor will allow the 210 mi^2 (546 km^2) of the Hanford Site land to be available for other uses such as providing opportunities for public access to key recreational areas, protecting cultural resources, and shrinking the footprint for active Hanford cleanup operations to approximately 75 mi^2 (185 km^2). Key challenges include the need to remove and process buried high-activity wastes; deactivation, decontamination, decommission, and demolish of excess facilities; and isolating the reactor buildings while its source term decays away (Interim Safe Storage).

2.0 ANNUAL ISMS EFFECTIVENESS REVIEW AND DECLARATION PROCESS

Upon the review and confirmation of an effective system during the Integrated Safety Management System (ISMS) Phase II Verification by the U.S. Department of Energy (DOE), WCH put into place an annual process to review, evaluate, and update the WCH ISMS and the Integrated Safety Management System Description (ISMSD). The scope of the WCH annual ISMS review included all projects, facilities, and activities managed by WCH. The set of tailored criteria, modeled after the ISMS Phase II assessment, included Performance Objectives, Measurements, and Commitments (POMCs) along with the WCH Safety and Health Improvement Plan (SHIP) action items, used to evaluate the WCH system and effectively assessed and evaluated throughout fiscal year (FY) 2009.

The annual ISMS review was conducted throughout FY09 identifying areas for improvement, developing and incorporating corrective actions, and evaluating changes to systematically improve our ISMS processes. Subject Matter Experts (SMEs) provided updates, improvements, process changes, current initiatives, and

opportunities for improvement for each area under their jurisdiction. Each section was evaluated to determine if ISMS implementation was effective and functioning. In addition, WCH conducted a rigorous review of the POMCs and SHIP commitments and adjusted emphasis areas accordingly to ensure effective improvements were implemented and validated.

In addition to the monthly and quarterly reviews of the POMCs and SHIP commitments, over 350 assessments and 950 management walkthroughs were conducted in the last 12 months. The CAM process along with the Safety Trained Supervisor program was acknowledged by DOE Headquarters (DOE-HQ) Voluntary Protection Program (VPP) assessment team as an effective mechanism for management to demonstrate leadership and a validation of the safety systems and culture within WCH.

The annual ISMS effectiveness review assessed the implementation of the ISMSD, the adequacy of the ISMS performance, and determined the effectiveness and implementation of the final improvement actions identified during the ISMS Phase II Verification. This process utilized the tailored criteria to determine the continued effectiveness and implementation of the ISMS. Updates for each criterion were collected from SMEs who provided improvement actions, areas of success, and items of concern with action plans and mechanisms for addressing those self-identified issues for their focus area. The information provided by the SMEs, along with WCH self-assessments, corrective actions, and management input, determined the overall ISMS performance, trends, assessment results, and programmatic improvements. Annual updates to the ISMS criteria were reflected within the updated WCH-4, Rev. 7, ISMSD and accurately describe the current WCH ISMS.

3.0 CONTINUOUS IMPROVEMENT AT WCH

Throughout FY09, WCH has been self critical of our processes to ensure they were postured to maintain safety and quality as production activities increased. WCH recognizes that continuous improvement is needed to maintain this balance. In addition to the specific efforts to address the final ISMS Phase II Verification improvement opportunities (see section 5.0), WCH has improved many of the key processes associated with the safe performance of work and has maintained a focus on feedback and improvement.

The Safety and Health Improvement Plan (SHIP) was developed and communicated and provided to all field safety representatives, the LSIT chairs and co-chairs, and the VPP Steering Committee members. Focus improvement areas included the following:

- Integrated Work Control Process
- S&H Observation Program
- Site-wide Hazard Identification and Mitigation Document
- Fleet and Vehicle Safety Program
- Subcontractor Flowdown of Requirements
- S&H Employee Involvement
- Safety Ownership Program.

3.1 INTEGRATED WORK CONTROL PROCESS

The work planning process at WCH continues to mature and has made great strides from the initial implementation to the present. The Integrated Work Control Program (IWCP) process has matured to allow for full integration of ES&H into all facets of work planning and control. Feedback from external reviews described the WCH IWCP process as working well and effectively implemented with specific areas of improvement noted.

Continuous improvement actions were identified as a result of the DOE VPP Assessment, internal assessments, and the 336 Building fall event. As a result, the integrated work control process separated the Job Hazard Analysis (JHA) process into a stand alone procedure with emphasis on critical resources, single point failures, communication methods, PPE selection and use, the use of the "What IF" analysis, and the integration of hazard controls.

The latest Integrated Work Control procedure resulted in the following changes:

- Removed the JHA from the IWC procedure and establish it as a stand alone process.
- Incorporated the new JHA, an enhanced documentation of the analysis and drivers for controls on the form, a new "What If" analysis to clarify the way this part of the JHA is to be performed, and other clarifications of the process.
- Removed Risk Ranking from the procedure.
- Clarified work authorization.
- Clarified that routine work cannot be performed as a substitute for changing the work package.
- Clarified the expectation for JHA walk downs.
- Clarified how to manage changes to the work package prior to the RMs approval.
- Established supervision requirements per work package type.
- Clarified stopping and restarting work activities.
- Removed Type II work packages from the procedure.
- Included a discussion on how to manage vendor test plans in work packages.
- Clarified how to document PPE in a work package.

3.2 S&H OBSERVATION PROGRAM

The S&H Observation Program for FY09 focused on walk-through inspections, self-assessments, and Safety Trained Supervisor (STS) observations. Actions identified for completing this task included:

- Improving the weekly and monthly site walk-through inspections to ensure both management and craft are involved and active in these inspections

- Developing a 3-year assessment program and incorporating the needs of the Projects to provide a comprehensive overview and assessment of the S&H Program

- Establishing an assessment schedule for 2010 that incorporates those areas identified with opportunities for improvement found in 2009 assessments, Issue Forms, and any issues identifying assessments

- Improving the STS observation program and encouraging additional training and certification of employees along with increasing the activities and document the observations performed by this group.

Status:

- Site walk-through observations were conducted in each of the project areas to include Fermi. Walk-through observations include management, craft, and field safety representatives. Safety Trained Supervisors conducted observations at all three site project locations per schedules developed to facilitate the specific personnel and areas to review. Inspections are occurring in conjunction with S&H Weekly Inspections, LSIT committee walkthroughs, management walkthroughs, and independent STS inspections.

- Additional STSs have been trained with other qualified candidates preparing to take their exam. As of July 2009 over 265 STS personnel were certified. This allows for additional eyes on task at the point of work and has enabled an improved identification and closure process for self-identified safety issues.

- In response to events that have occurred involving hand and finger injuries, the STS personnel with the assistance of the Project Safety Reps conducted a focused review of hand and power tools to support the Hand and Finger Safety Campaign. S&H personnel provided a review of the current hand tools and the operating manuals for all project personnel. Safety features and requirements were addressed within Plan of the Day meetings and provided discussion points for the proper use of tools and alternative administrative and engineering controls that could be used in the performance of work.

- A 3-year assessment program was initiated in FY09 and incorporated the needs of the Projects to provide a comprehensive overview and assessment of the S&H Program. The new assessments designated for FY10 have been developed using the 3-year S&H Program review cycle and include areas where opportunities for improvement were found in FY09. This schedule also includes the items identified in internal and external assessments, surveillances, and formal investigations.

3.3 SITE-WIDE HAZARD IDENTIFICATION AND MITIGATION DOCUMENT (WCH-289)

During FY09 a Site-Wide Hazard Identification and Mitigation Document (HIM) was developed. This document identifies the hazards that are found throughout the project locations and the mitigative controls that are necessary to eliminate the hazard. This document was developed by the following:

- Meeting with Project Safety Representatives to determine feasibility of implementing a project-wide HIM

- Identifying actions within each of the Projects needed to implement the HIM project-wide for Field Remediation, Waste Operations, and the Environmental Restoration Disposal Facility

- Developing a schedule for project-wide implementation and incorporating into Plan-of-the-Week schedule following approval of the implementation plan.

This document was written to supplement the project health and safety plans and provide an easy way to update project hazards in one document to assist with configuration control of the document. The HIM has been incorporated into Field Remediation Project Health and Safety Plan and flowed down to all applicable FR subcontractors via an Exhibit G deviation and contract change.

3.4 FLEET AND VEHICLE SAFETY PROGRAM

In FY08, a trend was identified involving minor traffic and vehicle-related incidents, ranging from minor door dings to damage of property and equipment. An internal evaluation of those vehicle incidents indicated that an opportunity existed to improve vehicle safety awareness and focus attention on a reduction of vehicle related incidents. Proposed initiatives and improvements include:

- Issuance of awareness communications and bulletins (e.g., Take 5 for Safety, posters, Howler, weekly updates)

- Formulation of Vehicle and Fleet Safety Committee and performance indicators

- Review and revision of procedures, traffic patterns, incident fact finding/follow up, and disciplinary actions

Status:

- A Fleet Safety Committee was formed with a management sponsor and has been functioning for the past year. The charter outlined the duties and responsibilities of the committee members and provided the direction of the committee to proceduralize vehicle safety and to ensure that adequate communication was provided to employees to improve the driving skills of project employees.

- A performance indicator (PI) identifying the number of vehicle incidents has been established. This PI was evaluated by the Fleet Safety Committee and determined to help increase the awareness of fleet and vehicles incidents. Additionally, all vehicle incidents were included in the safety reporting process with accident forms completed and Safety Flash messages provided for these incidents. Each incident is reviewed by the Safety, Health, and Quality Director, the S&H Manager, and the personnel involved in the incident to help preclude reoccurrence of the event and provide lessons learned.

- Analysis of the vehicle incidents determined that a contributing factor was the use of large trucks for common transportation needs. As a result, actions were taken to minimize the

use of large trucks for personnel transportation by retiring the larger trucks in favor of smaller vehicles. This is a continuing action that will be completed as the leases on vehicles expire.

- Numerous communication mechanisms were developed to raise awareness for safe driving. Posters were distributed showing photos of recent WCH vehicles incidents to help raise awareness for fleet and vehicle safety and to encourage reporting of these incidents. Communications were reinforced with the Fermi personnel who use company vehicles and van pools on the rules for parking to enable snow and ice clearing. Posters were provided in each vehicle and a link added to the Weekly Roundup to provide to all project personnel.

- Updates were also provided using the Take 5 for Safety, Do It Right the First Time, and the Weekly Roundup publications. Topics included driving safety both on and off the job and provided information on the safe operation and inspection of vehicles. Local Safety Improvement Team (LSIT) focus area in November 2008 was on seatbelts and vehicle safety in general. Members were asked to flow this focus area down to their LSITs and provide feedback on the effectiveness of their campaigns.

- Awareness continued with the issuance of the Fleet and Vehicle Safety Procedure. This procedure revision included the new requirements for observations and documentation requirements for conducting these observations. It also included the Washington State requirements for driving while on state roads. Part of the revision of the procedure involved meetings with Human Resources to determine uniform evaluation and actions necessary after a vehicle accident.

3.5 SUBCONTRACTOR FLOWDOWN OF REQUIREMENTS

The annual revision of Exhibit G and the link to the 10 CFR 851 matrix is currently underway with additional requirements for subcontractors concerning industrial hygiene, physiological monitoring, heat stress, occupational medicine, training, and specific fall protection expectations and requirements. S&H also provided a clarification to all STRs on the requirements for use and incorporation of testing by the site medical provider for subcontractors and their sub-tier contractors. Part of this clarification included for subs was when to use AMH and specific personnel who are included in the medical monitoring program.

Numerous exhibits were tailored throughout FY09. Processes were evaluated and revisions and improvements were incorporated into the subcontract process by the Requisition Improvement Team. Tailoring of the subcontracts provides the subcontractor with the specific requirements for their certain scope of work. The tailoring process involves the Subcontract Technical Representative, the site safety representative, and the SH&Q Director.

3.6 S&H EMPLOYEE INVOLVEMENT

As part of the continuous improvement of the WCH S&H Program, WCH applied for DOE VPP Star Status. The WCH VPP application was successfully submitted to DOE-RL and forwarded onto DOE VPP Headquarters for review. The application was accepted by DOE-HQ with an onsite review occurring March 23 through April 3, 2009. This reviewed provided several opportunities for improvement and recommended WCH at the DOE VPP star level. This

designation was confirmed by the Director of the DOE Office of Health, Safety, and Security in June 2009.

To help prepare for the successful review and evaluation conducted by the DOE VPP team, WCH conducted a Management Assessment of the VPP program. Improvement actions identified in the VPP Management Assessment were documented and incorporated into the overall corrective action program upon receipt of the DOE VPP onsite review report. Additionally, WCH issued a special edition of the Howler highlighting the VPP internal assessment and achievements by employees throughout the year. This publication was distributed to all project employees and linked to the Weekly Roundup.

Part of the DOE VPP process is to share and mentor to other sites to encourage cooperative programs and continuous improvement through sharing. WCH had the opportunity to provide assistance to Waste Isolation Pilot Plant VPP pre-assessment review as a team member and implemented lessons learned and tools obtained during this review at WCH. Additionally, WCH participated in two DOE VPP onsite assessments for Pacific Northwest National Laboratories and Bechtel Waste Treatment Plant, both at Hanford. WCH included Hanford contractors in both the internal assessments and during the WCH VPP presentations via the Hanford VPP Champion Meeting. WCH provided the VPP Passport and the DOE VPP gap analysis tool along with periodic campaigns, most notably the hand and finger campaign where dice were provided to all employees.

Part of awareness and employee involvement included a coordinated and comprehensive communication program to ensure that all WCH personnel understood the WCH VPP program and their rights and responsibilities within the program. WCH routinely provided VPP tips to all employees via the Weekly Roundup as part of the preparation for the onsite review and to continue with the VPP awareness for WCH.

Throughout FY09, WCH conducted numerous awareness campaigns targeted at increasing employee participation in their own safety and the safety of those around them. In December of 2008, WCH completed the “Vote for Safety Campaign” with 13 out of the 15 LSIT groups earning recognition for zero recordable injuries within this 90 day period. The main initiative launched was the VPP Passport initiative. With over 600 passports completed, personnel (both WCH and subcontractor) were able to learn about the elements of VPP, actively observe and make positive changes to their work environment and work closely with their LSIT representatives to achieve this special recognition for accomplishment of the task. The VPP Passport was noted by the DOE VPP team as a best practice and shared this idea with the other DOE contractors as a positive way to engage all employees in their safety program.

The project safety representatives and the LSIT committees have and will continue to be an integral part of the employee awareness initiatives. The monthly meetings of each of the LSITs and the involvement of each of the project safety representatives are critical to continue to improve the culture when incidents occur. The LSIT group has initiated a focus area each month and includes the project safety representatives in these reviews.

The status for update and improvement actions within the ISMSD to include the POMCs was provided to all project personnel on a monthly basis. Improvement actions identified in the VPP self-assessment were monitored on a weekly basis and used in the development of the SHIP for 2010. Self-assessments, increased surveillances, and improved safety communications have resulted in a heightened awareness for safety as a result of the improvement actions in both the POMCs and the SHIP and have enabled WCH to continue to improve.

3.7 SAFETY OWNERSHIP PROGRAM

WCH created the Safety Ownership Program in 2009 to provide focus on improvement efforts in cross-cutting areas of Conduct of Operations. The objectives of the program are to raise awareness among the staff of the need to maintain high standards of performance in the areas targeted, to provide some practical tools and exercises designed to help them know when performance is substandard, and ultimately make improvements in the areas targeted.
The program was designed with the following attributes:

- Builds on the ISMS and VPP (i.e., represents the 'next step forward')
- Has easily understood vision and achievable goals that focus on improvement areas
- Is visible inside and outside the project
- Incorporates significant employee involvement
- Establishes tenets (e.g., VPP)
- Provides guiding principles in support of the established tenets
- Includes rewards for achieving goals (e.g., VPP).

The tenets established for the program are:

1. Follow the instruction
2. Ask the question
3. Fix It Now
4. Own the Result.

Each tenet has four to five guiding principles which are promulgated to employees through learning exercises distributed every 1 to 2 weeks.

As of the end of July, exercises have been distributed for two of the tenets and associated guiding principles. To date, over 700 WCH employees and subcontractors have taken part in the exercises (a higher number than participated in the VPP exercises). The introduction of the remaining tenets will be completed in November.

The message to be delivered during the implementation of the program is that the program is about working safely, although the SOP will promote excellence in targeted conduct of operations areas, the goal is improved safety.

4.0 ISMS DECLARATION CRITERIA

4.1 ISMS EFFECTIVENESS AND CHANGES MADE TO THE ISMS OF THE WCH ISMS

It was determined that the WCH ISMS is effectively implemented and maintained based upon the mechanisms, procedures, and processes reviewed and verified throughout the year. During the annual WCH ISMS review, a thorough evaluation and review of internal assessments, external assessments, management observations in the field, ESH&Q metrics, and the completion and implementation of ISMS actions in the CAM system was conducted. Extent of condition evaluations were performed for issues identified for improvement. Items specifically identified in the 336 Building fall event received additional reviews and consideration to

determine necessary corrective measures. Numerous areas for improvement were identified and determined to be unique to the location and scope of work being conducted. Even though it was determined that WCH did have a functioning work control process in place, comprehensive improvements were implemented that are applicable to both WCH and subcontractor personnel.

WCH implemented an aggressive internal assessment schedule comprised of areas and topics identified as potential improvement areas and topics identified in the POMCs and the SHIP to facilitate continuous improvement. Effectiveness reviews and assessments were also conducted to determine the level of implementation of an improvement action. All types of internal assessments provided feedback on the health and degree of implementation of WCH programs and processes. In each assessment, improvements were identified and best practices reiterated and institutionalized to ensure these processes could be repeated and continued.

External assessments and reviews were conducted in concert with internal WCH assessments. Program assessments, Defense Nuclear Safety Board reviews, external VPP reviews, and DOE assessments and investigations were conducted to assure implementation and programmatic compliance. Results of these assessments were positive and provided valuable confirmation that newly implemented programs and practices were effectively implemented and identified additional improvement opportunities to provide a greater level of worker safety.

To complement both internal and external assessments, WCH management, at all levels, is a visible presence in the field. Management conducts regular management walk-through observations and inspections with field and site safety and health personnel, as well as, STSs conducting walk-through inspections. Both type of management reviews document their observations, provide feedback to the site management and safety representatives, and facilitate corrective actions based upon these observations.

Observations from assessments, management, and STSs contribute to the defense and analysis of ESH&Q metrics. These metrics are evaluated on a monthly basis to provide real-time data on the health and implementation status of our ISMS programs and processes. WCH senior management is provided a briefing on a monthly basis for these metrics and offers feedback to process owners and facilitators on how to correct any emerging trends or additional metrics that may need reviewed and tracked. Quarterly, these metrics are provided to -RL with an analysis of the programmatic changes that have occurred and the corrective actions that have been implemented.

To bring the assessments, reviews, observations, and metrics full circle, all improvement or corrective actions identified are entered, analyzed, and tracked to closure within the CAM system. Effectiveness reviews were completed on the remaining ISMS Phase II corrective actions and selected opportunities for improvement to ensure the implementation of the corrective actions. This system allows for the trending and tracking of all WCH issues, regardless of the level of severity, to ensure that all are documented and implemented effectively. This system also allows the integration of issues that were found to be programmatic in nature, to be addressed, not as individual issues, but as process improvements.

4.1.1 ISMS Implementation

WCH confirms on a daily basis that environmental and safety and health (S&H) considerations are integrated into RCC project work processes. The WCH ISMS focuses integrating

environmental and S&H considerations at all levels through the workflow processes and are fully integrated into the IWCP process. Key elements of this work review include verification of planning work as a team; identifying responsibilities; ensuring appropriate staff are involved in the work; ensuring walk downs, pre-, and post-job briefings are conducted; and verifying that personnel are adequately trained.

WCH has maintained the processes and mechanisms to ensure the safe execution of work since the ISMS Phase II Verification was initiated and has enhanced and improved upon these processes to provide the worker with a safe work process. The ISMS is effectively implemented through a mature, functioning, and continuously improving IWCP. The IWCP process has evolved into a robust process to conduct work while incorporating the feedback and lessons learned identified throughout the work control process. With the addition of the detailed JHA process, an increased level of detail is provided to ensure hazards are effectively analyzed with appropriate controls in place.

The IWCP enhancements and improvements are identified through the CAM system, external assessments, effectiveness surveillances, internal assessments, and management walkthroughs and documented and tracked to closure in the CAM system. Collectively, the corrective actions, surveillances, assessments, and observations not only verify the effective operation of the processes and mechanisms but afford the opportunity to identify and correct any deficiencies and apply improvements where needed. This integrated process allows for the improvement of not just a single issue but the system throughout the project. These improvements are flowed down to the worker through the effective implementation of mechanisms and processes that continue to provide a safe working environment and safe operating processes.

A detailed system analysis was conducted prior to the DOE VPP onsite assessment as well as in response to the 336 Building fall event that occurred in the D4 300 Area. The analysis during the DOE VPP assessment provided a few opportunities for improvement which have been entered into the CAM system. These involve communication of the SHIP, ensuring that training is reviewed when employees change work locations, and conducting a more detailed analysis of work.

Rigorous internal and external reviews were conducted in response to the 336 Building fall event. Reviews and investigations of the event were performed by a DOE Type B Investigation Team, a URS Corporate Investigation Team, and a WCH Root Cause Analysis Team. Each of these reviews identified some weaknesses in the implementation of the WCH work control process.

In addition, a WCH work control review team made up of senior managers, operations managers, and external subject matter experts performed a detailed review of the 336 Building demolition work package and an extent of condition review against other packages from each organization. This review identified over 40 issues where the 336 Building work package fell short of expectations. The broader review of the other D4 100 Area, FR, and WO packages did identify opportunities for improvement in formatting and clarity, but in general the packages were found to have details to support a more in-depth analysis of hazards and contained work control steps to support the safe performance of work

An external team of fall protection SMEs performed a very critical review of the program, procedures, training and qualifications, and implementation of the fall protection program. There were several opportunities identified in the report where improvements were warranted.

These include opportunities for clarity on alignment with 29 CFR 1926 on fall protection processes, scaffolding use, portable ladder use, flow-down of requirements to subcontractors, training and qualification of competent person, qualified person, and fall protection user. In addition to addressing the implementation weaknesses associated with the root causes of the event, corrective actions were developed to address identified improvement opportunities.

All opportunities for improvement and corrective action identified have been entered into the CAM system with actions actively underway to correct and improve these issues. Even though opportunities exist, the internal and external reviews did confirm that the ISMS is in fact implemented and in place.

4.1.2 ISMS Description Maintenance

The WCH ISMSD is effectively maintained and has evolved to incorporate the improvements and changes made since its initial issue in August 2005. The latest revision will be completed in September 2009 with all of the changes to date within the change history section in the beginning of the document. The description outlines the reasons for each revision, the date of the revision, and the revision initiator. The WCH ISMSD is effectively revised, as necessary, to reflect programmatic changes and to ensure that a review is conducted at least annually to verify that systems, mechanisms, and processes accurately reflect the current WCH ISMS.

Changes made to the WCH ISMSD are outlined in the Revision History section of WCH-4, Rev. 7, *Integrated Environment, Safety, and Health Management System Description*. The changes made to the description are opportunities for improvement identified during the year. The changes being made include the following:

- Updating the Environmental Management System description to reflect ISO 14000 and DOE O 450.1A.
- Clarifying the IWCP process as a result of the procedural improvement made in the IWCP procedure and a new Job Hazard Analysis Procedure.
- Incorporating the SOP as part of the continuous improvement program.
- Updating references to current DOE/contract requirements and WCH procedures and processes.
- Updating the POMC's, ISMS Performance Indicators, and integrated the FY10 SHIP.

4.2 EFFECTIVE INTEGRATION OF ENVIRONMENTAL MANAGEMENT SYSTEM AND QUALITY ASSURANCE INTO ISMS

4.2.1 Environmental Management System

The *Environmental Protection and Compliance Plan* (EPCP) (WCH-63) describes the WCH environmental protection and compliance framework and establishes a WCH environmental management system (EMS). The WCH EMS provides a structured process for the achievement of continual improvement while maintaining compliance with applicable laws, regulations, and standards.

The EPCP applies to WCH employees and to all persons working on behalf of WCH who are involved in environmental restoration work at the Hanford Site. This includes strategic site-wide planning; ISMSD work process; phases of project development; engineering, construction, and project closeout; facility and maintenance operations; and all other work activities that could impact the environment.

In June 2009, DOE O 450.1A, *Environmental Protection Program,* and DOE O 430.2B, *Departmental Energy, Renewable Energy and Transportation Management,* were incorporated into the WCH contract, subject to specified assumptions, exclusions, and limitations detailed in a DOE-RL approved implementation approach.

DOE O 450.1A established EMS requirements and DOE Sustainable Environmental Stewardship goals and also addressed specific sustainable environmental practices for the following:

- Environmentally preferable purchasing
- Pollution prevention and waste reduction
- Post-consumer material recycling
- Toxic or hazardous chemicals use and release reduction
- Life-cycle environmental management of electronic assets

DOE O 430.2B addressed specific sustainable energy and transportation goals and requirements for the following:

- Energy efficiency, renewable energy
- Fleet management
- Water conservation
- Sustainable design/high performance buildings

The Contracts Requirements Document (CRD) for DOE O 450.1A identified specific requirements for an Environmental Management System (EMS) to be declared “fully implemented.”

In July 2009, the EPCP was revised to provide a detailed implementation matrix that identified the specific implementation strategy for each DOE O 450.1A and DOE O 430.2B CRD item and sustainable practices for enhancing environmental management performance.

A key requirement in the DOE O 450.1A CRD was that the EMS “reflect the environmental management system elements and framework found in the International Organization for Standardization's (ISO) 14001:2004 (E) International Standard or equivalent, including policies, procedures and training to identify operations and activities with significant environmental impacts; to manage, control, and mitigate the impacts of these operations and activities; and to assess performance, implement corrective actions where needed, and ensure continual improvement.”

Consequently, in July 2009, Program Support Document 7 (PSD-7), *WCH Environmental Compliance System*, Element 5, “Environmental Management System,” was revised to provide a matrix that indicated which policies, plans, procedures, and other documents WCH used to implement each ISO 14001 requirement. Many of these policies, plans, procedures, and other

documents were also revised to incorporate the requirements of DOE O 450.1A, DOE O 430.2B, and ISO 14001.

The contract modification that incorporated the CRD for DOE O 450.1A also specified that the WCH EMS would be considered “fully implemented” when it has been the subject of a formal audit by a non-WCH qualified party and WCH has declared conformance of the EMS to the requirements of the CRD, with a corrective action plan in place to address findings of the audit. By this modification, DOE-RL directed WCH to have the requirements identified in the CRD to be completed by December 18, 2009.

In August 2009, the WCH EMS was evaluated by an independent outside auditor who determined that WCH could declare conformance to DOE O 450.1A when management accepts the findings and a corrective and preventive action plan is in place for the noted Nonconformities. The auditor identified seven minor non-conformities, fourteen Observations, sixteen opportunities for improvement and twenty-five noteworthy practices.

The auditor identified minor non-conformities in the following areas:

- Awareness of environmental policy and consequences (e.g., training, communication)
- Pollution Prevention (P2) waste minimization/resource conservation program
- Objectives (i.e., P2/resource conservation) and action plans
- Rigorous EMS internal audits
- Nonconformity (preventive actions that address cause, adequate look at extent of condition).

A corrective action plan for the minor non-conformances that prevents recurrence and adequately closes them out in a timely manner was developed and submitted to DOE-RL along with a WCH Declaration of Conformance in September 2009. These EMS Conformance corrective actions have been added to the WCH POMCs and will be tracked throughout FY10.

4.3 OPERATING EXPERIENCE PROGRAM (OEP)

During FY09, WCH maintained full implementation of the DOE Order 210.2, “DOE Corporate Operating Experience Program”, via procedure PAS-1, *Project Activities and Support,* PAS-1-1.8, “Lessons Learned.” This program was assessed for compliance by both the DOE-RL Operating Experience Subject Matter Expert (SME) in September 2008 and the WCH Lessons Learned coordinator in June 2009. Both of these assessments concluded that the WCH OPEX program is very good.

The DOE-RL Assessment also concluded that:

- WCH personnel are knowledgeable and demonstrated dedication to the OPEX program.

- Review of the WCH OPEX policies, procedures, personnel, logs, databases, records, and other performance indicated that a comprehensive review and screening is performed and distribution is made in a timely manner.

- Feedback from the workers and work planners is consistent with requirements and appropriately evaluated for dissemination.

The goal of the WCH OPEX Program is to provide for the systematic identification, collection, screening, analysis, evaluation, dissemination, and use of Lessons Learned and other Operating Experience information in order to prevent adverse events and improve safety performance. Employees are responsible for developing and utilizing Lesson Learned and operating experience information to assist in preventing adverse events and to expand the sharing of good work practices.

The Lessons Learned Field Points of Contact (FPOCs) are providing operating experience information to the WCH Lessons Learned Coordinator for the development of Lessons Learned. Lessons Learned are developed from the results of the causal analysis and corrective actions are entered into the WCH Corrective Action Management System (CAMS) for tracking purposes, if applicable. Assessments and effectiveness reviews are evaluated to determine if a Lesson Learned should be written. In FY09 (October 2008 through June 2009), WCH has developed and distributed eleven (11) WCH internal Lessons Learned documents associated with WCH work activities during FY09. A breakdown of these lessons learned documents identified the following information:

- Seven were BLUE/Information (64% of those issued)
- Three were GREEN/Good Practice (27% of those issued)
- One was YELLOW/Caution (9% of those issued)

OPEX from onsite and offsite contractors are reviewed for applicability/value and then transmitted to WCH FPOCs for review, dissemination, and utilization by the WCH Projects. A records review indicated that over 131 operating experiences and 122 Lessons Learned (a total of 253 operating experience documents) were distributed to WCH personnel by the WCH OPEX program during FY09.

Interviews with FPOCs and work planners identified that operating experience/lessons learned information is routinely being included in discussions at the Plan of the Day (POD) meetings and pre-job briefings. The planners are incorporating the information into work instruction documents and referencing the information in the Job Hazard Analysis (JHA).

Finally, as a good practice, starting in December 2008, WCH began publishing applicable Lessons Learned in the Weekly Roundup. The Weekly Roundup is sent to all WCH personnel and discussed at the weekly safety meetings and plan of the day meetings. The Weekly Roundup is designed to share information about events that occur at other DOE sites and industries, to raise awareness of the hazards associated with the work we are performing at the Hanford Site and the importance of using an observational approach in executing work.

An additional role of the WCH Lesson Learned coordinator is to monitor new occurrence reports and formal Lessons Learned from throughout the DOE complex and share that information, as appropriate, with WCH employees. The Lesson Learned coordinator also scans news headlines for safety, health, quality, or environmental related news articles. If an incident or

good work practice is identified that is applicable to WCH worksite operations/activities, then the WCH LLC forwards the information in an e-mail to the Lessons Learned FPOCs, for review and dissemination to WCH employees. This type of information is considered general "Operating Experience."

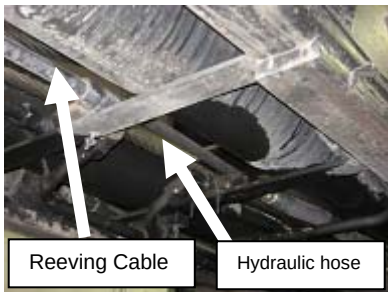
Other types of Operating Experience information that is shared with WCH employees is the "Safety Flash," which describes WCH project injuries or urgent safety information and the "Do It Right the First Time Flash," which describe operational incidents that may or may not rise to the level of a formal occurrence report. The purpose of sharing WCH injury and incident information with the workforce is to keep them informed, to stop unsubstantiated rumors, to make employees think about the potential for the event or injury to occur at their worksite, and to prevent recurrence throughout all WCH projects. To communicate external events, WCH created the "Rude Awakenings" publication that provides timely occurrence information to Project Safety Reps to be discussed at PODs to determine if this type of scenario is applicable and what employees can do to prevent a similar occurrence. This was noted as a "Best Practice" by the DOE VPP Assessment Team.

All of the Operating Experience information identified above is documented in a quarterly report and monitored using a performance indicator, which is reported to senior management on a monthly basis.

WCH is currently operating an active and effective Lessons Learned/Operating Experience program that is fully compliant with DOE O 210.2 and related DOE-RL guidance.

4.3.1 Assessments

In FY09 the RCC fully implemented DOE O 210.2, "Operating Experience Program," and was also programmatically reviewed for compliance by DOE-RL in March 2008 by the Operating Experience SME. The results of the DOE-RL surveillance were very positive, with one minor finding involving whether or not to issue lessons learned for Category 2 occurrences.



4.3.2 Lessons Learned Program

In FY09 (October 2008 through June 30, 2009), the RCC issued 16 formal Lessons Learned documents that were submitted to the DOE complex Lessons Learned database. This is one more than during the same time period for FY08. Two additional, internal Lessons Learned were published and 328 total operational experience documents were disseminated to selected RCC personnel.

Important Lessons Learned were identified either through event causal analysis or evaluation of work performance include the following:

Reeving Cable Causes Hydraulic Hose Failure (RCCC-08-013) - 11/06/2008

Summary: Equipment and machinery, even during a "no load" condition, can be deteriorating to a point that could result in equipment damage or personnel injury. This may be occurring in

areas that are not readily visible and could result in unexpected or premature equipment failure. Pinch and wear points should be inspected during normal maintenance, to ensure that this condition is not overlooked.

Hydraulic hose:
Investigation of the hoist hydraulic system revealed that a section of the reeving cable had sagged and worked its way under the hydraulic hose, between the hoist rails. In this position, the reeving cable wore a groove into a 90 degree fitting, during normal operation, and eventually wore into the hydraulic hose causing the hose the leak.

Corrective actions included modifying Benlee® trailers using a section of channel (5 in. shield or plate) to capture the reeving cable, providing a natural path for its movement, and protecting the hydraulic hose from contacting the reeving cable.

Discovery and Disposition of Unknown Gas Cylinders at the 618-7 Burial Ground (RCCC-09-001) - 01/22/2009

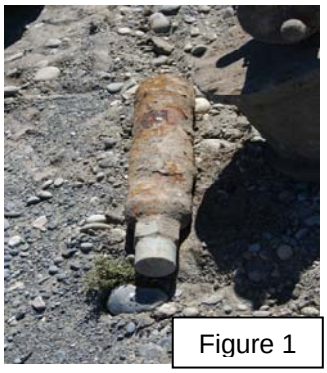


Figure 1

Summary: Work site operational awareness of Unique Hazards, early resource integration of technical expertise, and teaming with stakeholders paves the way for quick reduction of risk from unknown burial ground hazards and approval of emergency planning documents.

During the excavation of the burial ground, numerous items were retrieved. Perhaps the most significant discovery included two anomalous compressed gas cylinders suspected to contain highly hazardous materials. This is the first time that these suspected hazardous materials have been encountered during excavation activities at Hanford and therefore were not anticipated. Based on the configuration of the cylinders, valve caps, and an extensive historical document review it was determined that the cylinders most likely had originally contained phosgene (Figure 1) and hydrogen chloride (Figure 2). They were likely used for testing more efficient ways to produce plutonium during the nuclear production mission at Hanford in the 1950s and 1960s.

Figure 2

Corrective actions include:

1. To address immediate security and safety issues and eventual transportation to ERDF, the two cylinders were placed inside a secondary containment vessel approved by DOT for transportation of leaking gas cylinders (Figure 3).

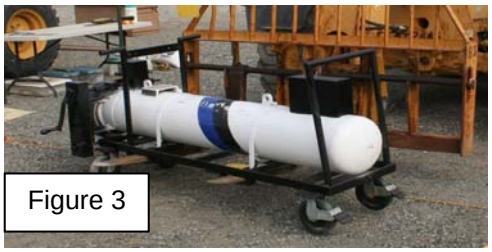


Figure 3

2. Changes to the emergency preparedness hazard assessment (EPHA) and emergency action levels (EAL) require approval by the local DOE EP program office and normally takes several months. To accomplish this revision in a timely fashion personnel required to “buy into” the revision were identified before beginning the revision process. These personnel were consulted to determine the most expedient path forward. Instead of revising the existing EPHA and EALs, an EPHA addendum and additional EALs were created that contained only the information needed to address the transient hazards. Since

it was not covered by an EPHA, ERDF was temporarily incorporated through the addendum into the 618-7 EPHA.

Additionally, it was decided that the 618-7 facility emergency response organization would accompany the material to ERDF and oversee the process. This eliminated training the ERDF staff to the work package and emergency preparedness documents. Transportation of the cylinders to ERDF was covered by the existing sitewide EPHA for transportation. Reducing the number of people involved in the review and the material to be reviewed allowed the first draft approval time to one work week.

1. A plan was developed and approved by the stakeholders to transport the gas cylinders to ERDF, to breach the cylinders, perform sampling, and treat the gas cylinder contents.

2. Project management conducted a thorough review of the Sub-contractors procedures and processes for handling, sampling, and treating the contents of compressed gas cylinders prior to authorizing the work activity to be performed.

3. Extensive pre-job planning and JHA development with input from several disciplines of the teamed organizations were essential to identifying and capturing the hazards correctly. This, as well as readiness reviews and thorough pre-job walk-downs, along with several full dress rehearsals, were warranted considering the potential hazards associated with the gas cylinders. Abnormal and upset events are always carefully planned for by all personnel involved with work activities with focused training on response to an upset condition. This detailed planning and “team attitude” all contributed to the success of the evolution, making the non-routine, high hazard work seem almost routine.

4. Early involvement and continued support from the Hanford Fire Department and Hanford Patrol helped expedite (e.g., road closures and barricades) the safe shipment of the gas cylinders to ERDF.

5. On November 8, 2008, the cylinder characterization went well. The two cylinders were carefully sampled and treated by Integrated Environmental Services (IES), a Sub-contractor with proprietary equipment specializing in handling compressed gas cylinders onsite. The good news is the cylinders were found to be empty of their original contents. The EPHA addendum and additional EALs were maintained as part of the work package until the neutralization process was completed.

Hood Connection Defect - NOTICE to users; conduct a positive, connector lock check as part of your respirator protection equipment User Check prior to donning the MSA, PAPR, TL hood – (RCCC-09-002) - 2/25/2009

Summary: During a routine donning of the Mine Safety Appliance (MSA) Powered Air Purifying Respirator (PAPR) TL hood, a defective connector was identified prior to entering the contamination zone.

While donning a PAPR TL hood for entry into an Airborne Radiological Area (ARA) in the 308 Building of the 300 D4 project a defect was noted. The employee bent down applying separation pressure on the hose-to-hood connection causing the inner piece to slide from the outer piece. Normally these two pieces lock into place and can not be separated unless unlocked.

Corrective actions include:

- The hood was removed from service. The supporting Industrial Hygiene Technician (IHT) checked the replacement hood for a positive, connector lock by hand pulling on the two pieces.
- All hoods at the respirator issuance station were checked for a positive connector lock.
- Notify WCH Safety Representative and Industrial Hygienists by email.
- Issue this lessons learned to notify TL hood users that the respirator protection equipment User Check must include a positive connector lock check.

Follow-up action:

- Request the hood manufacturer, MSA to conduct an engineering evaluation of the defective connector.

Field screening process to separate and segregate chromium-contaminated soils – (RCCC-09-003) - 02/24/2009

Summary: The early involvement of multiple disciplines in waste disposal activities paved the way for safer, more cost-effective processes for separating, segregating, and treating chromium-contaminated soils.

Figure 1

Since the ERDF began operating in 1996, more than eight million tons of contaminated material has been disposed. Much of the material is contaminated soil (Figure 1), which must be characterized to ensure it meets waste disposal requirements for ERDF. Some of the material is described as Land Disposal Restricted (LDR) and must be treated before it can be placed in ERDF. Characterization of soils at these sites is based on a relatively small sample set, and

remediation efforts tend to over excavate to ensure all LDR materials are removed. However, a consequence of this approach is large volumes of material containing low concentrations of contaminants require the same treatment as materials containing higher concentrations. XRF technology has been utilized as a qualitative tool. However, a method for providing a quantitative result was needed to create an efficient process to screen the chromium-contaminated soils. Therefore, a process was developed and an alternative method of analysis was initiated using the XRF to determine concentrations of total chromium contamination in the waste matrix. The methodology provided a technical basis for allowing treatment and disposal commensurate with the concentration of chromium in the waste soils. The methodology included the following elements:

Figure 2

- Developing multiple standard samples of the actual waste with chromium concentrations near the decision point (Figure 2)
- Performing laboratory analysis on each standard sample to ensure consistent duplication of results
- Developing a method to calibrate instruments that requires multiple shots of each standard sample
- Developing quality standards for field measurement data
- Developing criteria for evaluating the field measurement data to ensure conservative decision making
- Performing calibration and operability checks at various stages of field measurement activities.

The new process was the result of the early involvement by representatives of a number of WCH organizations, as well as DOE and the regulators. The team included representatives from the waste generators; analytical, QA, environmental, waste services and engineering organizations within WCH; and DOE, U.S. Environmental Protection Agency (EPA), and Washington State Department of Ecology.

Corrective actions included:

1. Collaborating early with involved parties helped ensure cooperation, team building, and compliance with regulations.
2. Involving analytical experts, statisticians, and QA/QC early in the process was a key element of success.
3. Using XRF was an effective method to reduce the time between data gathering and decision making.
4. Deploying XRF methodology to remediation sites may reduce the volumes requiring treatment

5. Using XRF will reduce chemical inventory for treatment activities by relying on representative data vs. worst-case data.

6. Using representative vs. worst-case data can increase worker safety by eliminating potentially adverse reactions between reagents or other elements in the waste matrix.

7. Working closely with the waste generators to identify waste sites with potential LDR wastes requiring treatment can save significant time and money and allow optimal use of resources.

Hoist Single Stage Cylinder Failure – (RCCC-2009-006) - 3/3/2009

Summary: During the process of preparing to load a container, the driver raised the lift frame on a roll-on/roll-off truck. The single stage hydraulic cylinder extended to the upper limit. When the driver attempted to lower the cylinder, no movement occurred.

The cylinder buckled in the fully extended position. There was no load on the truck as the rams were extending. One of the hydraulic rams overextended due to an internal failure of the weld holding the cylinder rod to the piston. These circumstances were common to both occurrences.

The apparent cause of failure was a combination of minimal design and overstress to the welded area. Driving the vehicles with the cylinders extended, especially on uneven terrain or while turning, may apply excessive lateral stresses to the failed weld location.

The likelihood of a catastrophic failure that could cause injury to personnel is considered extremely unlikely. Therefore, a simple daily equipment check for signs of a failed or damaged cylinder was decided to be the most effective form of inspection. Other administrative controls, as described below, are recommended.

Corrective actions included:

1. Fully extend unloaded hoists each morning/shift and look for any signs of a cylinder failure.

2. Avoid placing loaded hoists in the fully extended position whenever possible.

3. Except when backing or pulling forward to load or unload containers, lift platforms are required to be lowered prior to movement of the shuttle truck.

4. This information is intended to be shared among other DOE contractors.

Worker Injured in Fall from Catwalk

Summary: Washington Closure Hanford workers were tasked with completing pre-demolition activities in the 336 Building, located in the 300 Area, in preparation for the gantry crane removal. At approximately 0830 hrs, 2 Riggers and 2 Millwrights accessed the building and

ascended a wall mounted steel ladder approximately 50 ft to the bridge crane service catwalk. At approximately 0930, during performance of the final task, a Millwright stepped into an open hatchway on the catwalk resulting in a fall of approximately 50 ft to the concrete floor interrupted by first hitting the railing at the 25 ft platform. The Millwright cracked two vertebrae in his back, broke bones in both legs, and damaged his left knee. There were no head or other internal injuries, and the Millwright is expected to recover and return to work.

In response to the event, two separate investigation teams were assembled that performed the on-scene evaluations, document reviews, and interviews of key personnel. One team was the DOE Type B Accident Investigation Board (Board), and the other team was a Corporate Team made up of safety and health professionals brought in from the parent companies of WCH.

WCH also commissioned an in-house team of individuals to perform a formal root cause analysis.

Analysis: A review of this event, based on the Type B and Corporate Team reports, identified the following weaknesses:

- Inadequate implementation and execution of the Washington Closure Hanford, LLC. (WCH) Integrated Work Control Program (IWCP)
- Inadequate implementation and execution of the WCH Fall Protection Program (FPP)
- FPP training was not sufficient to provide specific knowledge to the workforce.

Issues specific to the IWCP included:

- Scope of the work package was not adequately defined in enough detail to anticipate needed activities, did not allow for a complete job hazard analysis (JHA), or bound the work to inhibit “Scope Creep.”
- The JHA and Pre-Job walk downs were incomplete due to the limited accessibility of the catwalk work area where no additional controls were incorporated into the work package to compensate for this.

Issues specific to the FPP:

- The FPP procedure content was not adequate to clearly convey the applicable regulatory requirements of 29 CFR 1926 Subpart M to the workforce.

Issues specific to the FPP training:

- The fall protection training did not provide adequate hands-on demonstration, performance testing, and understanding of the hazards and requirements.

Corrective Actions Included:

1. Revise the IWCP Procedure to address and enhance the following:
    - Guidance on scope definition

- Guidance on the change control process for work packages under development
- Requirements for Job Hazard Analysis (JHA) walk-downs
- Identification of the critical resources needed to perform and/or oversee the work
- Revise the Pre-Evolution Briefing checklist form to emphasize interactive discussion of work activities and hazard controls
- Clarification on use of skill of the craft
- Stop Work/Work Pause expectations
- Clarification of IWCP Roles and Responsibilities and related expectations.

2. Issue a new JHA Procedure to address and enhance identification of critical resources and identification of communications risks and associated controls.

3. Provide training on the enhanced IWCP and JHA processes to Responsible Managers (RM), Field Work Supervisors (FWS), and Work Planners.

4. Provide IWCP awareness briefings to the general project population.

5. Revise the WCH Fall Protection Procedures to include use of new Fall Hazard Prevention Analysis, and to clarify and improve alignment with applicable requirements of 29 CFR 1926 Subpart M.

6. Expand fall protection training for Competent Person, Qualified Person, and Fall Protection Users to improve fall protection knowledge and application.

External Lessons Learned

Provided in Table 1 are examples of lessons learned from external sources and the actions taken by WCH in response to these lessons learned.

Table 1. Examples of External Lessons Learned. (2 Pages)

Title (Identifying Number)	Actions Taken
Waldon Drum Handler loosens and falls off forklift tines during operation	Provided in the Weekly Roundup for Project Safety Rep evaluation and dissemination.
Work Method Changes Can Impact JHA Effectiveness	Provided in the Weekly Roundup.
Inadequate Lock Out/Tag Out Y-2008-OR-BWY12-1201	Provided in the Weekly Roundup
Unforeseen Electrical Configuration Ends in Shock for Subcontractor	Provided in the Weekly Roundup.
Injury to Right Index Finger	Provided in the Weekly Roundup.
Disengagement Potential of Locking Snap Hooks	Provided in the Weekly Roundup.

Table 1. Examples of External Lessons Learned. (2 Pages)

Title (Identifying Number)	Actions Taken
Material Handling Pinch Points RPP-WTP-LL-09-0041	Safety presentation on tools, pinch points, and material proximity for all project locations and staff personnel.
Pneumatic Impact Tool Injury	Provided in the Weekly Roundup.
Damaged Electrical Cord Results in Welder Electrocution	Rude Awakening issued.
DOE Type B Investigation Initiated - Employee Injured While Riding in an Electric Cart 2009-LL-0022	Provided in the Weekly Roundup.
Glove Breach, Room 409 as a Result of a GB Glove Failure. LANL-TA55-2008-0008	Provided in the Weekly Roundup.
Lapel Air Sampler Battery Charger Shock	Complete internal assessment of batteries used by the projects. Contacted the manufacturers, provided updates to Other Hanford Contractors.
Fatal Fall While Wearing Fall Protection Device	Issued a Rude Awakening for immediate review by all Project Safety Reps at PODs.
Government Vehicle Involved in Fire Due to Grass Buildup 2007-AO-PTX-1007	Provided a Vehicle Safety Tip in the Weekly Roundup.
Work Package Scope, Estimate and Hazard Evaluation Not Updated Y-2009-OR-BWY12-0503	Included in the evaluation and revision of the work control procedure and development of the JHA procedure.
Before Backing Up, Take Time to Look Around Your Vehicle LL-2009-LLNL-04	Provided Vehicle Safety Tip in the Weekly Roundup.

4.3.3 Significant and Recurring Events

For the purpose of evaluating significant and recurrent events, this review encompasses the fourth quarter of FY08 and the first three quarters of FY09. During this period, WCH experienced 10 total events, with 3 events categorized at the Significance Category (SC)-4 level, and seven events categorized as SC-3 events. WCH identified zero events or conditions categorized at the SC-R (recurring) threshold.

Although the evaluation period does not include the fourth quarter of FY09, WCH experienced a serious injury accident that occurred on July 1, 2009. As a result of a WCH worker falling from a significant height, this event was categorized at the SC-2 level causing multiple personal injuries. Due to an ongoing DOE Type B Investigation, this event will not be included in this annual declaration.

Collectively, the 10 events identified above have been analyzed via the WCH CAM process, and corrective actions developed and tracked in the WCH CAMS database. In accordance with the WCH performance monitoring requirements, these events were included in the internal monthly Performance Analysis report. This report is distributed throughout WCH management and highlights any adverse trends and areas of special interest. WCH management evaluated these trends and areas of interest to determine significance and potential effect on operations and personnel safety. When warranted, WCH management assigned resources to mitigate any

safety hazards identified as a result of the trending analysis and to ensure a safe and productive work place.

4.3.4 Occurrence Reporting

In addition to the monthly Performance Analysis report, WCH develops a quarterly report for all ORPS reportable and non-reportable events, as required by DOE M 231.1-2. This report evaluates all events reported to the ORPS database within a rolling 12-month window, and includes non-reportable events and their associated category if the event would have met an ORPS reporting threshold. The purpose of this report is to identify events that are similar in nature and cause, and to determine if an adverse trend exists which would result in a recurring event report. For this declaration report, WCH evaluated the entire range of ORPS reportable and non-reportable events for the fourth quarter of FY08 and the first, second, and third quarters of FY09. This analysis resulted in the determination that no additional significant adverse trends existed and the WCH analysis and feedback processes were effective in identifying problems and effectively mitigating future similar events. In accordance with the WCH continuous improvement philosophy, the results of the analysis are used to improve worker safety and the effectiveness of the WCH work control programs.

During the declaration period, the seven occurrences categorized as SC-3 events are:

- Automatic Activation of a Deluge System

  Summary: Due to excessive build-up of ice inside an exterior ventilated bus duct, an arc flash was created which activated the building fire suppression system.

  Actions Taken: This event occurred at building undergoing decommissioning. The long term action to prevent recurrence was to remove the affected transformer from service.

- Near Miss - Operator Confined between Waste Container and Fixed Hot Cell

  Summary: Two WCH Nuclear Chemical Operators (NCOs) were relocating B-25 waste containers in the 327 Building, 300 Area, when the first NCO was lightly contacted by a container suspended from a gantry crane, confining him between two waste containers and a fixed Hot Cell. The second NCO immediately released the tension, repositioned the crane, and moved the box away from the first NCO, allowing him to walk out of the confined area. The supervisor questioned the NCO about any potential injuries and he reported that he was not hurt.

  Actions Taken: Develop and deliver a training module for NCOs for waste box movement, revision to the NCO qualification card to include waste box movement raining, and generate a Lessons Learned for DOE distribution.

- Fifth Metacarpal Bone Broken While Stowing a Truck's Hydraulic Lift Gate

  Summary: A WCH teamster injured his right hand when the worker attempted to manually lift a truck’s hydraulic lift/tail gate from a horizontal position to a vertical stowed position. During this process, the worker caught his right hand in a 3.5 in. gap between the gate and the truck bed resulting in a hand injury. The worker reported the event to a supervisor and refused medical treatment at the time. On June 11, 2009, the worker became concerned about his right hand due to associated pain and swelling. The worker was taken to an

offsite medical facility for an evaluation and X-rays. The injury was diagnosed as a fracture to the fifth metacarpal bone of the right hand. The worker was then released without work restriction.

Actions Taken: Inspect D4 vehicles for potential hand pinch points and highlight areas of concern with yellow paint, develop a company-wide Safety Flash, and provide discussion at the POD meetings that include routine work hazards and associated risks.

- Contaminated Plastic Discovered Outside of ERDF Controlled Area

  Summary: On two occasions, WCH Radiation Control Technicians discovered multiple pieces of contaminated plastic outside the Contamination Area/High Contamination Area (CA/HCA). The plastic is believed to have blown out of the ERDF cell due to recent high wind conditions at the Hanford Site.

  Actions Taken: WCH Waste Operations set up a plastic construction fence around the boundaries of the landfill cell. This fence will act as a screen catching any wind blown pieces of plastic. WCH Waste Operations has also changed to using a large, sheep footed trash compactor as the primary machine to compress the surface of the landfill. This will reduce the shredding of the plastic into smaller pieces. WCH Waste Operations has instituted daily patrols around the construction fence in order to collect any fugitive bits of plastic caught by the fence. WCH Waste Operations has changed their Posi-shell application procedure and is now applying a thicker layer of Posi-shell to cover the pieces of plastic and protecting them against being displaced by sustained high winds.

- Subcontractor Laborer Contacted by an Empty Waste Container

  Summary: After attempting to disconnect a shuttle truck D-ring from a waste container, a subcontractor laborer became frustrated and raised his arms. The teamster in the shuttle truck mistook the raised arms as a signal to move the truck forward. Since the cable was still attached to the waste container when the truck moved forward, the container also moved forward and contacted the laborer on the shoulder.

  Actions Taken: A mockup demonstration was conducted by the subcontractor to evaluate the current process, identify hazards, and develop modified work controls associated with disconnecting the containers at the ERDF Queue. The subcontractor also performed a hazard review of the modified work controls associated with the disconnecting process (i.e., removal of the D-ring from the hook and communication between the laborers and teamsters). WCH issued a Standing Order to the subcontractor to implement the changes as identified in corrective actions. In addition, a procedure revision was issued to Stoller procedure 5-30 Waste Shuttle Procedure and the Laborers and Teamsters were trained to the new Standing Order and procedure.

- Steel Cable and D-ring Assembly Break Rear Window of a Haul Truck

  Summary: In the Container Transfer Area at the ERDF, a teamster had unloaded a roll on/off waste container to the ground. The teamster removed a steel cable with D-ring assembly off the loading hook of the waste container. As the driver lowered the lift frame to the truck frame, the driver did not hear the D-ring land in its storage basket. The driver noted the D-ring lodged between the truck stinger and the container lip. The driver

attempted to raise the lift frame to free the D-ring when the cable released with enough force to strike and break the rear window of the truck cab. Per procedure the teamster was operating the side mounted hydraulic controls outside the cab of the truck and was out of the directional path of the cable. There were no injuries from the event.

Actions Taken: A Standing Order was issued to allow only manual hand placement of the D-ring into the storage basket and to maintain a two container distance for personnel not unloading the container. In addition, a procedure was revised to clarify hand placement of the D-ring into the storage basket and all relevant personnel were trained to the revision.

- Improper Work Scoping Leads to an Excavator Breaking a Buried De-energized Power Line

  Summary: A subcontractor was attempting to retrieve a native soil sample from a recently completed remediation site using an excavator. As the excavator bucket retrieved the second load of soil, the bucket caught a buried electrical conduit. This resulted in breaking the plastic conduit surrounding an electrical cable that powered a series of light poles. The HEO immediately placed the excavator in a safe configuration and initiated notifications to Envirocon and safety representatives.

  Actions Taken: The subcontractor supervision involved in this event briefed the department's employees on the requirement to follow the work package task instructions. If the task instructions do not cover the scope of work, the employees were reminded to stop and notify supervision. WCH management set expectations that the involved subcontractor supervision can only authorize work within the scope of work packages and procedures. WCH management also conducted a review of the Field Remediation work packages to ensure sampling activities are adequately covered. WCH management modified the Field Remediation work packages to ensure they clearly state that prior to using heavy equipment, a check for utilities must occur prior to the commencing work. Field Remediation management conducted an independent assessment on the formal work release process.

Each of the seven SC-3 events resulted in a structured investigation, causal analysis, and corrective action development and implementation. While the corrective actions were entered into the Occurrence Reporting and Processing System (ORPS) database, tracking and closure of the actions were done via the WCH CAM system. Completion of the corrective actions was independently verified and no repeat occurrences have been noted. The events, corrective actions, and lessons learned were used to improve WCH project-wide operations and were shared with other DOE entities and contractors via the ORPS database and the Lessons Learned listserver.

In accordance with the requirements in DOE M 231.1-2, "Occurrence Reporting and Processing of Operations Information," and WCH procedures, WCH performs a quarterly analysis of all reportable and non-reportable events within a rolling 12-month period.

4.4 SAFETY PERFORMANCE OBJECTIVES, MEASURE, AND COMMITMENTS

WCH instituted a set of ESH&Q performance metrics which are analyzed and reviewed monthly in a standing meeting involving the WCH President and all Directors. Through this process, several areas were identified as opportunities for improvement and actions were assigned to achieve those improvements demonstrated through subsequent trending by the performance indicator. Areas improved include reducing workplace injuries and illnesses;

vehicle/transportation safety; control of hazardous energy; employee involvement in safety; ESH&Q programmatic compliance; and improving S&H observations, issue identification, documentation, and feedback. DOE facility representatives as well as the DOE VPP assessment team have witnessed these performance metric meetings and provided positive feedback.

WCH has been successful in reaching the 2009 POMCs. All POMCs with established metrics are within the goals established for 2009. Performance within most of the areas has been exemplary. WCH has accomplished the following 2009 POMC goals:

- **Injury/illness review-analyze and track all first aid, recordable, and/or days away/restricted cases**-director level review of each injury with the safety representative and line management, document actions to preclude or mitigate similar injures on the S&H Injury Management Review Report form.

  Results:

  Work toward an injury-free workplace was facilitated through Director and S&H Manager review of workplace incidents. The reviews were conducted and documented 100% of the incidents that occurred to include incidents without treatment, first aids, and recordable injuries that occurred in FY09 detailing the incident, the corrective action taken, and planned actions to prevent reoccurrence. These incidents were documented on the S&H Injury Management Review Report Form.

- **Injury rate continuous improvement-**monitor TRC and DART 12 month moving avgerage (MMA) trends and implement improvement pans if trending unfavorably. Initiate a targeted corrective action improvement plan when any adverse trend, defined a quarter ending 12 MMA TRC or DAER rate is greater than the previous quarter's end, is identified.

  Results:

  WCH monitors the TRC and the DART 12 MMA to determine if unfavorable trends have occurred. A slightly unfavorable trend was identified in the first and third quarter of FY09. Each quarter had two recordable incidents involving sutures, a finger laceration, and a broken bone in a hand.

  Two distinct improvement plans were developed for each quarter. These corrective actions and results are provided.

  First Quarter Trend Corrective Action Plan:

  - Issuance of a Take 5 and Safety Flash information detailing circular saws and the methods to inspect and use power and hand tools.

  - Include the proper behaviors and use of saw horses, tables, supports to safely cut materials in POD Meeting.

  - Review and revise JHAs involved in cutting and the use of circular saws as necessary. Review these revisions with the crews involved.

- Determine if the necessary PPE was in place.

- Inspect all work areas and determine if the proper equipment and set-up is appropriate for the safe use of circular saws and other hand tools.

- Increase the focused observations of the work areas to review work involving circular saws and other power and hand tools.

Actions performed:

1. PODs emphasized using the right tool for the job and human performance factors for conducting work using circular saws and hand tools for both subcontractors. PODs at the other sites reviewed the incidents and the methods to prevent reoccurrence.

2. Issued a Take 5 on December 8, 2008, detailing the two circular saw incidents and the necessary PPE, proper use, and precautions when operating and using these types of equipment.

3. A stand down of work was conducted with both contractors involved in these incidents.

4. The JHAs involved in the incidents were reviewed with a revision of the mobilization JHA for the Dickson subcontractor.

5. OJT was conducted for the Dickson contractor on the use of portable hand and power tools.

6. Additional observations were conducted by the S&H Field Representatives and structured surveillances were conducted by the STSs involving power and hand tools and the use and set up of these observations at all sites. These reviews included safety guards, cords, housekeeping, workstation set up, and ergonomics of the operations.

7. Worksite documentation (i.e., JHAs, pre-evolution work packages, work instructions, and the HASP) reviewed and revised as necessary to include additional PPE, worksite behaviors, and additional precautions needed to increase worker safety when using circular saws. Information on follow-up corrective actions was communicated through the Weekly Roundup to Field Safety Representatives and WCH Directors.

Results: Raised awareness on the proper use and precautions for circular saws and power and hand tools for field operations. Additional inspections, precautions, and work controls imposed for all worksites. Saw horses and additional tables were observed for field operations.

Additional improvement actions implemented to improve safety and to improve our TRC and the DART 12 MMA include:

- Communicating and providing the SHIP to all field safety representatives, the LSIT chairs and co-chairs, and the VPP Steering Committee members. Improvements included the Weekly Roundup communication tool that is a collection of weekly safety activities, improvement actions, Lessons Learned, assessments, and timely safety topics. Special safety refocus topics are also included in this communication.

- Timely posting of medical incidents in the Safety Flash posting with Flash Updates that provides a more detailed explanation of the incident. These updates also provide all project employees with the corrective actions and any Lessons Learned from the incidents. These files are updated so that all the information is collected in one location with date and time stamps to provide the chronology of the events and postings.

- Communicating vehicle incidents information through the Safety Flash information to employees. These are also being updated as additional information is obtained and shared with employees.

- Providing employees incident information that is not injury or vehicle related through another communication titled Do It Right the First Time. This communication provides both the initial and updated information on incidents that occur on the project with actions performed and follow up information for project employees.

- Communicating Safety and Quality-related issues was improved by the use of the Weekly Roundup. This communication tool was provided to the S&H field representatives and to WCH Senior staff on the Thursday of each week for dissemination to all project employees through the Monday POD meetings. All LSIT chairs and facility representatives for the Fermi location were included in this distribution as well. This information provides a timely and consistent message to project employees and enables project employees to receive the weekly safety information in one convenient and consolidated location. This communication includes: Medical/Vehicle Incidents, Safety Events, Safety Topics, General Safety Information, Safety Awareness, Surveillances/Assessments, Upcoming Events, and Safety Bulletins which include Take 5, This Week in Safety, Weekly Safety Report, SHIP information, Do It Right the First Time, Corrective Actions, and Lessons Learned.

- Conducting a refocus after the Thanksgiving Day Holiday to provide additional safety and health focus after the holiday break. This refocus was provided to all project personnel and involved Human Performance attributes; Lessons Learned; Safety Statistics involving strains, sprains, slips, trips, and falls; soft tissue injuries; prescription medications; planning; focus; and VPP.

Third Quarter Trend Corrective Action Plan:

- Continued emphasis on hand and finger safety with a review of project areas where potential pinch points could occur and alert employees of these areas.

- Hoisting and Rigging focus to provide additional information and Lessons Learned on the proper methods and employee responsibilities when conducting these activities.

- Issued two Do It Right the First Time bulletins to address close call incidents involving a cable causing a window to break on a haul truck and a piece of rebar that caused a window to break on a loader. Both incidents were reviewed with additional emphasis on the safety features installed on the equipment and the necessary review of all equipment to ensure that this equipment is installed and functioning properly. A Standing Order was issued for those involved in loading and unloading haul cans and trucks on how to position the cable to help prevent it from being put under strain or tension.

- Launched a Heat-Related Illness information and awareness campaign project wide. This focused on general information as well as site specific project information regarding work scope, PPE, and precautions.

- General safety awareness in all activities to include walking/working surfaces, hand tools, proper tools for the job, conducting thorough, in-depth observations. Safety representatives were moved to different locations to give a fresh look at the work and suggest and incorporate improvements.

- Additional safety representatives were added to the S&H staff to assist in the oversight of field and work activities.

- Issued Rude Awakenings to include:
    - Fatal Fall
    - Fatal Lightning Strike
    - Broken Lift Points-Load Drop
    - Skin Sanitizer-Bacteria
    - Electrical Burn
    - Gas Line Explosion
    - Traffic Fatality
    - Finger Loss-Improper Light Plan Installation.

- Launched a Heat-Related information campaign in response to the increasing temperatures and field observations that identified that the type of PPE and work conditions may put workers at an increased risk of heat-related incidents. A comprehensive information campaign to include hydration, monitoring, rules, symptoms, general work requirements, and response actions were provided to all employees. Specific work-related information was expanded upon and provided to workers in the individual project locations. In response to site conditions, work locations and configurations were modified to minimize worker's exposure to heat generating sources, PPE was changed to accommodate both the heat concerns and the hazards within the work areas, and equipment was modified to minimize the worker exposure to the heat and sun conditions.

Actions performed:

1. Reviewed the additional hand and finger safety information reviewed at all POD meetings.

2. Reviewed use of appropriate tools and using the correct tools for the job.

3. Reviewed the hoisting and rigging presentation at the POD meetings. Training was reviewed and workers involved were provided additional information on the requirements prior to conducting hoisting and rigging activities.

4. Launched a review of activities at all project locations to determine improvements that could be made in regards to alternatives to PPE in D4 where a breathable level of protective clothing for contamination areas was introduced. This PPE was used at

another site at Hanford with great success in maintaining contamination control and reducing the amount of heat generated. Additionally, equipment was replaced or moved to other locations to provide additional relieve of the hot working conditions to include misters installed in areas, cool rooms erected, and heat generating equipment moved into non-work areas.

Results:

- Positive response on the change of the PPE and additional administrative controls were received from the workers.

- Additional caution tape was added to areas where potential pinch points are located to provide awareness to all employees.

- **AED Awareness**-Perform AED placement evaluations to determine optimum locations and provide training and education seminars on proper use in FY09.

  The locations of the Automated Electronic Defibrillators (AED) and the personnel trained to operate this piece of equipment were confirmed. During this review, new equipment with the updated software was provided along with replacing defective and/or outdated equipment.

  Table-top drills to familiarize personnel with procedures to follow in the use of AEDs have been conducted with over 200 personnel to date with additional drills scheduled in the near future. The objective is to provide personnel with the confidence to assist fellow employees when help is needed for medical emergencies.

- **Fleet and Vehicle Safety Program**-Implement a fleet safety program involving elements such as: procedure(s), performance indicators, accident reviews, and communications to increase awareness designed to reduce property and personnel injury events in FY09.

  Results:

  WCH accomplished this goal and continues to provide awareness and implementation of the Fleet and Vehicle procedure. Specific actions accomplished to successfully achieve this goal include:

  - Created a Fleet and Vehicle Safety Committee. The charter issued for this committee outlined the responsibilities and actions to be performed by the members to include monthly focus areas, introducing awareness campaigns for WCH, and providing a review of the performance indicator to monitor vehicle incidents.

  - Provided awareness tips via the Safety and Health Weekly Roundup to employees concerning a wide range of driving, vehicle, and travel safety tips.

  - Conducted a vehicle safety slogan campaign for all employees to help raise awareness of fleet and vehicle safety. Winning slogans published in the Weekly Roundup. Posters with the winning slogan printed and posted at all work sites and administrative offices.

- Provided a Do it Right the First Time on the results of a 360 walk-around that observed a defective hoist on a truck bed. This bulletin asked that all personnel check the hoists and ensure that this condition did not exist on other vehicles.

- Awareness continues with the issuance of the Fleet and Vehicle Safety Procedure. This procedure revision included the new requirements for observations and documentation requirements for conducting these observations. It also included the Washington State requirements for driving while on state roads.

- **Chronic Beryllium Protection Program**-Participation in the development and site wide applicability of the Chronic Beryllium Prevention Program with 80% participation in scheduled Hanford Chronic Beryllium prevention Committee meetings to assist with program implementation.

  Results:

  Chronic Beryllium Protection Program development for the Hanford Site with WCH participation in 100% of the meetings scheduled. WCH received the direction to proceed with the implementation of the site-wide Chronic Beryllium Protection Program. Work began this quarter to determine the cost estimate and schedule for implementation of the program.

- **VPP Safety Recognition**; S&H Employee Involvement-Initiate, implement and incorporate the DOE VPP safety recognition for WCH equal to achievement of DOE VPP designation (Stretch)/successful submission and approval of the WCH VPP application by DOE-RL (Base).

  Results:

  - Completed the participation in the DOE-HQ VPP assessment of WCH with a receipt from the team for VPP Star Status.

  - Completed the VPP Passport activity with over 600 WCH and subcontractor employees completing this activity.

  - Attended the Region X VPPPA conference with both craft and staff in attendance at this conference.

  - Participated in the DOE HQ VPP re-certification of the Pacific Northwest National Laboratory and the Waste Treatment Plant as a headquarters team member.

  - Attended the National VPPPA conference in San Antonio, Texas, where a WCH employee was reelected to the Board of Directors.

- **Site Wide Hazard Identification and Mitigation (HIM) Document**-Consolidate the project hazards documents to one project specific hazard document per RCC project/develop and implement a project-wide hazards document for universal hazards.

  Results:

- A HIM was developed and successfully implemented within WCH.

- The HIM has been effectively implemented at the Field Remediation (FR) sites. This document is incorporated into the revised Health and Safety Plan (HASP) in use at all FR project locations.

- The D4 project along with Waste Operations continued with the evaluation of the current Hazard Control Documents for their respective project locations. Hazards for the site were evaluated against the current list within the HIM. This evaluation also takes into account the specific emergency processes and needs for the projects.

- **S&H Observation Program-STS Program Inspections**-Conduct STS observations in WO, D4, and FR and report on a quarterly basis.

  Results:

  Conducted STS focused observations at each of the project sites on a monthly basis and provided this information to the SH&Q Director. These observations included sections of safety, health, quality, radiological, transportation, and vehicles. These observations were stand-alone observations, in conjunction with S&H staff weekly walk-throughs, management walk-throughs, and LSIT committee observations.

Performance within each metric was taken into consideration when determining POMCs for FY10. Additional metrics and POMCs will also be considered for new processes or programs and for identified areas of weakness or concern.

WCH has incorporated into the ESQRB Policy the review of performance related information such as assessments, operational awareness activities, lessons learned, trend analysis, event investigations, and worker feedback. The ESQRB provides oversight of programs and processes associated with the Safety Management Programs, this includes those programs and processes that make up the ISMS. This review has resulted in the development of SH&Q additional Performance Indicators, new communication mechanisms (e.g., Weekly Roundup, Rude Awakenings, and Just in Time bulletins), a new incident reporting and review process via the management review process, and a Safety Ownership Program.

In addition to the formalized performance indicators, S&H outlines other improvements to ensure continuous improvement of programs and processes. The SHIP for FY09 focused on both program development and program execution in the field. A common goal for both the S&H program and field execution was successfully achieving DOE VPP Star Status. The VPP campaign for FY09 was managed as a project separate from the S&H Program. Actions within this improvement plan are tracked on a weekly basis with project wide improvements reported through the Plan of the Week to WCH Senior Management. The current SHIP is located on the S&H Program web site and status is updated on a monthly basis.

Improvement actions included in the SHIP provided continuous improvement to the overall S&H Program, strengthened the implementation of the WCH VPP, and assisted in the goal of achieving DOE VPP Star Status. Items within the specific improvement initiatives that were considered best practice improvements include the following:

- The use of the LSIT members and the log books for identification, documentation, and correction of issues and safety and health concerns

- The development, implementation, and execution of the VPP Passport employee involvement campaign

- The development of an integrated communication vehicle by use of the Weekly Roundup that ensures that all safety-related information is provided to the projects on weekly basis and accessible to all employees

- Successful and effective implementation of the voluntary Safety Trained Supervisor program that includes both WCH and subcontractor personnel.

WCH will continue to review and report on a comprehensive set of SH&Q performance indicators that are used routinely by senior management and staff to evaluate the implementation and effectiveness of the ISMS. The ISMS performance indicators listed below are modified, as needed, to ensure that the correct ISMS attributes are being assessed. Current ISMS performance indicators include the following.

OSHA Total Recordable Case Rate: Number of OSHA recordable injuries and illnesses multiplied by 200,000 and divided by the total number of work hours (including subcontractors).

Days Away, Restricted, Transferred Case Rate: The number of OSHA recordable cases involving days away from work, days involving restricted work or job transfer multiplied by 200,000 and divided by the total number of work hours.

Near-Miss Occurrences: A reportable event or situation as described by DOE M 231.1-2, Group 10 in which an inappropriate action occurs, or a necessary action that could be reasonably expected to occur, is omitted and could have resulted in a serious personnel injury. This includes a situation in which controls that should have been in place were absent or overlooked.

Radiological Skin Contaminations: Radiological skin contaminations, as defined by DOE M 231.1-2, Group 6, Subgroup D, Criteria 3.

Radiological Uptakes: Radiological uptakes, as defined by DOE M 231.1-2, Group 6, Subgroup C, Criteria 3.

Hazardous Energy Control Events: Hazardous energy control events resulting in a person contacting hazardous energy, as defined by DOE M 231.1-2, Group 2, Subgroup C, Criteria 1 OR hazardous energy control events where personnel fail to follow prescribed hazardous energy control processes, as defined by DOE M 231.1-2, Group 2, Subgroup C, Criteria 2.

Transportation Safety: Transportation safety events as defined by DOE M 231.1-2, Group 8.

Completed Corrective Actions:

1. Percent of corrective actions that are overdue
2. Percent of actions that are >180 days old
3. Percent of actions that are extended

Completed Scheduled Assessments: Ratio of the number of completed scheduled and unscheduled assessments compared to the number of scheduled assessments.

Spills and Releases as defined by DOE M 231.1-2, Group 5, Subgroup A

Technical Safety Requirement Violations at nuclear facilities
In accordance with the River Corridor Closure Contract (RCCC) (DE-AC06-05RL14655) Clause I.93, "Integration of Environment, Safety, and Health into Work Planning and Execution" (DEAR 952.223-71), WCH is required to annually review and update its ISMS POMCs. POMCs are updated using inputs from the previous year's performance, internal and external assessments, and worker input via the various feedback mechanisms available through WCH. The POMCs were developed in accordance with QA-1-1.15, "Development, Review, Approval and Submittal of ISMS Performance Objectives, Measure, and Commitments." The POMCs for FY10 are described in Table 2.

Table 2. ISMS Performance Objectives, Measure, and Commitments for Fiscal Year 2010. (2 Pages)

Objective	Quarterly Performance Measures and Commitments
Work Toward an Injury-Free Workplace	**Injury/Illness Review** – **Analyze and track all first aid, recordable, and/or days away/restricted cases**. Director level review of each injury with the safety representative and line management, document actions to preclude or mitigate similar injuries on the S&H Injury Management Review Report form. (base goal)
	Injury Rate Continuous Improvement – Monitor TRC and DART 12 Month Moving Avg. (MMA) trends and implement improvement plans if trending unfavorably. Initiate a targeted corrective action improvement plan when any adverse trend, defined as quarter ending 12 MMA TRC or DART rate is greater than the previous quarter's end, is identified (base goal)
	Fall Protection-Elevated Work Improvements. Perform an effectiveness evaluation of the improved WCH fall protection program to include procedures, training, and fall hazard prevention analyses. (base goal = Completion of End Point Assessment).
	IWCP/Job Hazard Analysis Improvements. Perform an effectiveness evaluation of improvements made to the Integrated Work Control and Job Hazard Analysis processes (base goal = Completion of End Point Assessment).
Maintain Effective Control of Hazardous Energy	**Hazardous Energy Control Events per quarter** resulting in a person contacting hazardous energy, as defined by DOE M 231.1-2, Group 2, Subgroup C, Criteria 1, equal to 0/1 (stretch goal/base goal).
	Hazardous Energy Control Events per quarter where personnel fail to follow prescribed hazardous energy control processes, as defined by DOE M 231.1-2, Group 2, Subgroup C, Criteria 2, equal to 0/1 (stretch goal/base goal).
Environmental Program Compliance	**Environmental Noncompliance** as defined by DOE M 231.1-2, Group 9, SC4 per quarter equal to 1/3 (stretch goal/base goal).
	Protection of Environmental and Cultural Resources as defined in DOE M 231.1-2, Group 5, Subgroup B per quarter equal to 0/1 (stretch goal/base goal).

Table 2. ISMS Performance Objectives, Measure, and Commitments for Fiscal Year 2010. (2 Pages)

Objective	Quarterly Performance Measures and Commitments
	Environmental Protection Index per quarter equal to 1.0/0.9 (stretch goal/base goal) This index is calculated based on criteria specified for compliance relative to air quality permitting, spill prevention control, excavation plans, ecological/cultural plans, and sample management.
	EMS Conformance Corrective Actions – Implement the corrective actions identified in the WCH EMS Declaration of Conformance to DOE O 450.1A. (base goal)
	Improve Waste Documentation – Implement the recommendations from the external assessment on the generation and use of OWTFs, to include revised WMT procedures, requirements document, and human factored OWTF. (base goal)
Industrial Hygiene	**Participation in the development and site wide applicability of the Site Wide Respiratory Program with 80% participation in scheduled Hanford Respiratory Protection Committee meetings to assist with program development.** (base goal) *(stretch goal N/A. This goal will be evaluated as the program is developed and site wide implementation of the program is determined)*
	Heat Stress Recognition and Process Improvements – Implement a new/revised procedure to include: physiological monitoring for heat stress, and provide awareness briefings and information on recognition and treatment of Heat Stress. (base goal)
Safety Ownership Program	**Safety Ownership Program -** Successfully promote the four tenets of the Safety Ownership Program (SOP)by completing all scheduled activities within the Communications Plan (base goal) and obtain participation of at least 500 personnel for the SOP activities (stretch goal).
Continuous Improvement and Feedback	**Performance Analysis** conducted per year equal to 3/2 (stretch goal/base goal).
	WCH Key Performance Indicator monthly evaluations conducted per quarter equal to 3/2 (stretch goal/base goal).
	Operating Experience documents issued per quarter (both internally and externally generated) equal to 90/70 (stretch goal/base goal).
	Safety and Health Improvement Plan (SHIP) development, implementation and communication. Establish a SHIP that includes key goals and commitments for safety and health and communicate these goals to all employees with updated information on the status and achievement of goals on a quarterly basis (base goal).

DART – Days Away, Restricted, or Transferred
DOE – Department of Energy
EMS – Environmental Management System
IWCP – Integrated Work Control Program
OWTF – Onsite Waste Transfer Form
S&H – Safety and Health
TRC – Total Recordable Injury Cases
WCH – Washington Closure Hanford, LLC.

4.5 EFFECTIVENESS OF WCH LINE MANAGEMENT OVERSIGHT

WCH Line Management is involved with the direct and continuous management, leadership, and oversight of WCH and subcontractor work functions. Line managers understand and accept their safety responsibilities inherent in mission accomplishment and do not depend on supporting organizations to build safety into line management work activities. Line managers

spend a great deal of time in the field coaching, mentoring, and reinforcing standards and positive behaviors. Line managers throughout the organization set an example for safety through their direct involvement in continuous improvement. WCH Line Management has fostered improvements in the STR program and IWCP and has increased participation in the STS program. Line Management's sponsorship of these as well as other improvements has resulted in improvements in both safety and production, which can be seen in WCH's key performance indicators. The effectiveness of Line Management's oversight is continuously monitored by WCH's Contractor Assurance System (CAS), which ensures oversight is comprehensive and integrated for key aspects of operations essential to mission success and was recognized by the DOE VPP Assessment Team as a strength in the WCH VPP Program.

4.5.1 Subcontract Technical Representatives

WCH's STR program continues to be an essential ingredient in the monitoring of subcontractor performance. The program ensures personnel providing technical oversight at the working level have a minimum qualification to function as an STR. The STR program is in its third year of existence and has been used as a model by other Hanford contractors to build their own subcontract oversight training program.

The STR training class and qualification card establishes the minimum qualification for an individual to be a WCH STR. The STR Program Manager writes STR assignment letters to ensure only qualified STRs are assigned to oversee WCH construction subcontracts.

Continuing improvements are made to the STR training classes. The class material is currently being reviewed with WCH Training to provide a training experience for STRs that will better align with the language and processes in PAS-1-4.5, "Subcontract Technical Representative for Construction Field Work Activities."

Continuing improvements were made to PAS-1-4.5, "Subcontract Technical Representative for Construction Field Work Activities." The latest improvements involved adding a detailed section on the process for monitoring and documenting time and material subcontracts and providing more details and examples on the subcontract change notice processes.

The customizing and tailoring of subcontracts exhibits has continued to mature since it was introduced. The exhibits in subcontracts have been revised to allow for customizing and tailoring of the requirements of the exhibits to the specific scope of work of a construction subcontract. This process simplified the process for conducting oversight of the subcontractor by identifying only those requirements that are applicable to the scope of work of the subcontract within the exhibit. Previously, the exhibits placed in a subcontract contained many sections that were not applicable to the specific subcontract scope of work and the STR and subcontractor had to uniquely determine those requirements that did not apply. The revised WCH Subcontractor Safety and Health Requirements Exhibit G process has been conducted to determine the tailoring method is not only effective but also saves time spent by the STRs and subcontractors upon review of the contract.

Improvements to the requirements flow down process for subcontractors have enabled a tailored and more useable set of requirements for all subcontracts. The STRs are able to use this tailored list to ensure that subcontractors not only understand their requirements but are complying with all applicable requirements. Subcontractors are evaluated during daily observations, during weekly walk-through inspections, and periodically to determine safety incentives earned. Each subcontract is reviewed to determine the injury/illness rates, worker

involvement in safety, and specific production items as they relate to their work scope. These metrics feedback provided to the subcontractors are evaluated to improve their processes and to facilitate a greater rigor of compliance with requirements.

The STR program is compliant with the Integrated Environment, Safety and Health Management System.

4.5.2 Safety Trained Supervisor Program

As the majority of the physical work performed by WCH is through the use of subcontractors, direct field oversight by all levels of supervision is critical to ensure both compliance to requirements and to maintain a safe work environment. The STS Program is an important part of the direct oversight of subcontractor personnel which is in addition to regularly scheduled inspections, surveillances, assessments, and maintenance reviews.

STS personnel who voluntarily choose to be trained to earn this certification provide additional oversight in both the field and the office to review daily work activities and provide positive feedback to improve the work conditions. STS personnel were trained to observe safety and health conditions, concerns, and requirements. These personnel were afforded checklists to document their observations and provide written information to the subcontractors to assist with the timely and accurate correction of S&H observations. Notification of observations is also sent to the S&H and QA Director to provide feedback to be incorporated into project-wide improvement initiatives.

The benefits of this program include increased observations, reduced injuries and illnesses, employee ownership of the safety program, S&H Training for a cross section of employees, first line and mid-level management participation, safety awareness with each observation all the while supporting both company safety (ISMS) and VPP efforts.

4.5.3 Integrated Work Control Process

The IWCP process applies to all work packages and routine work conducted by WCH through direct hire employees as well as all the subcontractors working with WCH. A fully integrated process allows all those working on an activity the opportunity and responsibility to participate in the planning and execution of work.

At the earliest stages of work planning, a team made up of the work supervisor, the field safety representative, SMEs, and craft personnel are assembled and engaged in the process. This team is involved in the JHA to identify hazards and select the necessary controls. The planning team selects controls using the hierarchy of hazard elimination, engineering controls, administrative controls, or use of PPE. Based on the JHA and input from engineering, characterization, subject matter experts, and the work force to include subcontractor personnel, the planner prepares the work package. From planning to execution to the post job review, subcontractor personnel are actively involved and held accountable.

4.5.4 Contractor Assurance Program

The WCH Contractor Assurance System Description (CASD) in Section 10 of the ISMSD provides an overview of the CAS developed to address DOE O 226.1A, *Implementation of Department of Energy Oversight Policy*. The WCH CAS is composed of existing WCH

processes and systems that meet the criteria for DOE O 226.1, *Contractor Requirements Document*.

The WCH CAS continues to provide a comprehensive and integrated CAS in accordance with the QA requirements (as stated in 10 CFR 830, Subpart A), applicable DOE directives, and contracted terms and conditions. The CAS encompasses environmental and SH&Q, safeguards and security, cyber security, emergency management, and subcontractor oversight.

Through the WCH CAS, WCH ensures that the ISMS and the ISMSD are evaluated annually, effectively maintained through the continuous monitoring of performance objectives, measures, and indicators.

4.6 SUBCONTRACTOR SAFETY AND HEALTH ACTIVITIES

Subcontractor safety activities are analyzed, reviewed, observed, and assessed on a daily basis. An integrated and seamless approach to safety is demonstrated with both WCH and subcontractor employees. Requirements are universally applied with emphasis on environment, safety, health, and quality during focused reviews. Site S&H plans outline the requirements for each project area and detail the hazards, controls, PPE, and other specific requirements to facilitate a safe and healthful work area.

Routine assessments, reviews, and audits are conducted periodically and include all the subcontractor activities. As the program integrates all aspects of environment, safety, and health into all activities, each of the types of reviews performed by WCH include all subcontractor activities. Findings for assessments, reviews, and audits are entered into the CAM system, assigned analysis, determined a method of corrective action, and tracked to closure.

4.7 IMPLEMENTATION OF ISMS CORE FUNCTIONS FOR NEW CONSTRUCTION AND MAJOR FACILITY MODIFICATIONS

New construction and major facility modification occurred at ERDF (Cells 7 and 8) and 618-7. Safety was fully integrated into both projects from conceptual design through detail design and construction. Through an integrated team approach, hazard analyses were conducted early in the design process to allow full optimization and proper selection of hazard mitigation/prevention measures. After construction, a Project Startup Review was conducted that assessed the effectiveness of hazard controls and ensured that adequate protection for the public, workers, and the environment was provided by both design features and by the proposed operating practices. The end result was that the projects were designed and constructed within the ISM framework, ensuring a solid foundation for operations under the mantle of the ISMS core functions and guiding principles.

4.8 SPECIAL SAFETY IMPROVEMENTS INITIATIVES AND HUMAN BEHAVIORS

The RCC continues to empower and provide mechanisms and information to all employees to improve not only their own safety but the safety of their co-workers. A comprehensive approach of bring safety home was offered as part of the implementation of safety initiatives to help in the behavior modification process and to sustain the positive in the safety culture. This was

assessed throughout the year during self-assessments, management assessments, and verified during the DOE VPP assessment. Improvement initiatives included:

- A Vote for Safety initiative engaged workers in the need to put safety first each day. This initiative put the LSITs up against each other in providing the safest working environment for their employees. Stickers reminding employees to vote for safety were provided along with an electronic dashboard using a past president to represent the LSITs in a race to the end goal of 90 Days of Safety. Interim incentives were provided to employees to keep the motivation active with a weekly report of the status of each LSIT.

- Timely posting of medical incidents in the Safety Flash posting with Safety Flash Updates that provides a more detailed explanation of the incident. These updates also provide all project employees with the corrective actions and any lessons learned from the incidents. These files are updated so that all the information is collected in one location with date and time stamps to provide the chronology of the events and postings.

- Communication of vehicle incidents through the Safety Flash information to employees. These are also being updated as additional information is obtained and shared with employees.

- Incident information that is not injury or vehicle related was provided to employees through another communication titled Do It Right the First Time. This communication provides both the initial and updated information on incidents that occur on the project with actions performed and follow up information for project employees.

- Improved communication on Safety and Quality-related issues was issued through the use of the *Weekly Roundup*. This communication tool was provided to the S&H field representatives and to WCH senior staff on the Thursday of each week for dissemination to all project employees through the Monday POD meetings. All LSIT chairs and facility representatives for the Fermi location were included in this distribution as well. This information provides a timely and consistent message to project employees and enables project employees to receive the weekly safety information in one convenient and consolidated location. This communication includes: Medical/Vehicle Incidents, Safety Events, Safety Topics, General Safety Information, Safety Awareness, Surveillances/Assessments, Upcoming Events, and Safety Bulletins which include: Take 5, This Week in Safety, Weekly Safety Report, SHIP information, Do It Right the First Time, Corrective Actions and Lessons Learned.

- Conducting a refocus after the Thanksgiving Day Holiday, New Years break, again after Memorial Day, and the July 4th holiday. These briefing provided additional safety and health focus after the holiday breaks. These were provided to all project personnel and involved Human Performance attributes; Lessons Learned; Safety Statistics involving strains, sprains, slips, trips, and falls; soft tissue injuries; prescription medications; planning; focus; hand tools; hand and finger injuries; VPP; and the fall protection requirements and injury prevention.

- Providing the OSHA 29 CFR 1026 10-hour training to over 70 ERDF personnel to enhance their safety awareness and knowledge of safe work practices in the construction arena.

- Conducting a focus on electrical power and hand tools and electrical cords in the month of January. Information on equipment inspection was provided in the Re-Focus offered to employees after the New Year's holiday. Additionally, safety information on portable electric heaters, electrical tools, and GFCIs were provided to employees via the Take 5 safety publication. For additional focus, hot topics were prepared for the Weekly Roundup on GFCI safety and the recent electrical safety events that occurred in the DOE complex. General safety topics were also added to the Weekly Roundup that included power tool safety, flex cord safety, and general electrical safety.

- Management focus on slips, trips, and falls was evident in January with inclement weather causing slippery conditions. Management conducted a special meeting to discuss options to improve site conditions for employees when ice and snow conditions exist. As a result, communication was sent out to employees on immediate actions that could be taken to reduce the risk of slips, trips, and falls. Managers and supervisors were provided additional operational options (e.g., designate snow routes, sand areas, assign personnel to a snow removal team) to work in concert with employee actions. Posters were developed and distributed to all sites including the administrative office location.

- Coordination was reached with the parties who determine work delays for the Hanford Site due to weather conditions. WCH can now determine at an earlier time if arrival at the site would be delayed or canceled all together for WCH employees. This provides the information in a timely manner to the employees who leave earlier to arrive at the remote work sites.

- Conducting a safety emphasis campaigns on Hoisting & Rigging safety to all personnel regarding a hoisting and rigging incident at one of the WCH field locations. This was provided to all site locations via the Weekly Roundup. Issued a Do It Right the First Time notice describing the WCH incident and provided this information to WCH corporate partners and Hanford contractors for their use.

- Launched a Hand and Finger safety emphasis based on a review of the recordable trend on site. Safety emphasis launched after the third recordable incidence involving sutures to a finger involving some type of mechanical saw. Initial response included issuance of Safety Flash detailing the incident and a follow up safety presentation at the work site where the incident occurred. This briefing was linked via the Weekly Roundup and provided to all site locations. As a follow-up, the Weekly Roundup initiated a series of presentations on hand and finger safety. This campaign included:

  - Management summary of the hand and finger incidents at an "All Fingers" meeting detailing the events that have occurred over the last six months on the project. Provided this information to other Hanford Site contractors as well as to share Lessons Learned.

  - Conducted weekly briefings on the safe use of hand tools, inspection of hand tools, and the use of the proper tool for the job.

  - Conducted a focused review of all hand, power tools, and equipment to reinforce the approved tools for use when conducting work.

- Provided the management summary of recent hand and finger incidents to the LSIT chairs and formed a subcommittee to review methods to reduce the risk of hand and finger incidents.

- Developed a poster campaign, Your Fingers are Nothing to Gamble, to support the hand and finger safety emphasis.

- Continued emphasis on the hand and finger campaign for WCH by providing dice to all employees at a series of all-hands meetings designed to continue with the awareness of potential hazards and the associated events that could result if safe acts and conditions were not observed.

- Formalized the S&H New Hire Orientation outline for a consistent and uniform message for the new employees. Conducted a rigorous orientation for new D4 employees, many of whom have never worked on the Hanford Site and are unfamiliar with a rigorous safety program. These employees received additional training and mentoring to assist a safe and effective transition to their new role.

- Introduction of a new method to engage employees in POD meetings through the communication of Rude Awakenings. This bulletin is a hard hitting communication tool that uses incidents from all over the world to identify what could and did go wrong while performing work. This communication includes very graphic and descriptive photos and illustrations to make a lasting impression and impart an important lesson. This communication asks employees how this situation could apply to their work on that day and if so, what measure could be taken to prevent this occurrence.

- Launched a Heat-Related information campaign in response to the increasing temperatures and field observations that identified the type of PPE and work conditions that may put workers at an increased risk of heat-related incidents. A comprehensive information campaign to include hydration, monitoring, rules, symptoms, general work requirements, and response actions were provided to all employees. Specific work-related information was expanded upon and provided to workers in the individual project locations. In response to site conditions, work locations and configurations were modified to minimize worker's exposure to heat generating sources, PPE was changed to accommodate both the heat concerns and the hazards within the work areas, and equipment was modified to minimize the worker exposure to the heat and sun conditions.

4.9 EVIDENCE OF FLOW DOWN OF REQUIREMENTS

WCH maintains a robust process for flow down of contractual and regulatory requirements to all construction[1] subcontractors through a series of contractual Exhibits. Each exhibit focuses on a single functional element and is updated as changes are made and warranted via the

[1] WCH has two primary mechanisms for letting out subcontract 'construction services' and 'technical services.' Construction services contracts contain a number of focused Exhibits, as described above. Technical services contracts may incorporate the criteria identified in focused Exhibits within the Scope of Work (Exhibit D) and append the specific Exhibit. This determination is made in collaboration with the Project, Contracting Officer, and the affected Exhibit Owners. Only Construction services contracts are described within this document, since they would engulf all other contractual types.

subcontractor change control process. Six exhibits capture the ISMS, Safety, and QA requirements:

Exhibit A – General Conditions, Legal, and Regulatory Requirement

Exhibit B – Special Conditions, WCH Management Directives, Policies, Exemptions, and Deviations

Exhibit D – Scope of Work, including QA requirements

Exhibit G – Safety and Health

Exhibit J – Environmental Safety

Exhibit K – Operations Support.

To effectively and consistently ensure subcontractors meet the current S&H condition and/or operational requirements, WCH Subcontractor Safety and Health Requirements (Exhibit G) was updated and provided to all subcontractors through their official contract. This document is used to assist the subcontractor in understanding the S&H requirements for their specific project. This document does not relieve the subcontractors or its sub tier subcontractor(s) from recognizing and complying with applicable local, state, and federal regulations. A 'Graded Approach' was used when determining flow down of requirements to subcontractors so that the exhibits can be tailored for specific scopes of work.

The following areas of Exhibit G were updated to comply with updated state and project regulations and requirements:

- Standard deviation to flow down of the WCH Health and Safety Program for all Field Remediation projects.

- Modification to the Industrial Hygiene criteria to better align with WCH regulatory tracking requirements

- Clarification to Occupational Medicine monitoring and training requirement with respect to

  - Beryllium – adaptation of the Hanford site-wide beryllium program.
  - Lead – clarification of monitoring program involvement
  - Respirator medicals and training
  - Use of AdvanceMed Hanford for first aid/emergency versus Occupational Medicine

- Inclusion of increased requirements for Fall Protection and Heat Stress hazards analysis, monitoring, and oversight.

To effectively ensure subcontractors meet the environmental condition and/or operational requirement, Subcontractor Environmental and Waste Management Requirements (Exhibit J) is provided to the construction subcontractor through their official contract. This document is used to assist the subcontractor in understanding the environmental and waste management requirements that will be imposed on their specific project. As with Exhibit G, this document

does not relieve the subcontractor or its sub tier subcontractor(s) from recognizing and complying with applicable local, state, and federal regulations.

For those subcontracts where it is required to flow down Hanford or regulatory programs (e.g., Hanford Site Lock and Tag, DOE Explosive Manual, Hoisting and Rigging), WCH has incorporated those requirements directly into to the contracting documents by providing the procedures, processes or compliance matrices. Currently, WCH directly flows down the following safety programs and/or regulatory requirement:

- 10 CFR 851, "Worker Health and Safety," Code of Federal Regulations, as amended
- 48 CFR 970.5223-1, Integration of Environment, Safety, and Health into Work Planning and Execution
- DOE-0336, Hanford Site Lockout/Tagout (LO/TO) Procedure
- DOE-M-440.1-1A, DOE Explosives Safety Manual
- DOE 5480.19, Conduct of Operations Requirements for DOE Facilities (CONOPS)
- DOE-RL-92-36, Hanford Site Hoisting and Rigging Manual
- PAS-2-1.1, Integrated Work Control.

Three (10 CFR 851, ISMS, CONOPs) of the programs require completion of compliance/ applicability matrices as part of the submittal process.

Additionally, as part of the Exhibit tailoring process, the SME for each Exhibit performs a review for the required submittals and documents that each subcontractor is required to maintain and provide to the WCH upon request. The submittals are further consolidated into a single table (Exhibit I) and provided to the subcontractors at contract award. This improvement provides the subcontractor with a specific submittal and required documentation list that can easily be reviewed, maintained, and audited by both WCH and the subcontractor.

WCH has a number of mechanisms that it invokes to provide subcontractor oversight and ensure that changes to the contracting requirements or scope of work is continually flowed down and that the subcontractor is meeting the terms, conditions, and requirements of the contract. Upon each revision to an element of the contracting document (scope of work, exhibit, or regulatory requirement) an internal assessment is performed by the Project, SME, STR, STS, and Contracts to determine applicability to a specific subcontract. If a modification is deemed necessary, the Subcontract Change Control process is invoked to transmit the potential change.

An example of the typical steps for implementation and flowdown of a new requirement and/or regulatory directive are as follows:

1. Review of DOE-RL directive and order
2. Identification of WCH policy/procedure changes
3. Modification of WCH implementation procedures
4. Assessment of existing subcontracts by the STR for applicability
5. Flowdown of requirements through the subcontract change process
6. Modification and Equitable Adjustment for subcontractor implementation

7. WCH review, approval, and/or assessment of subcontractor implementation.

This process was used during the last assessment period with success and improvements incorporated after each use and review.

During the execution of the subcontract, WCH periodically performs assessments, inspections, and evaluations of performance. These oversight activities cover all disciplines (e.g., safety, schedule/budget, work practices, QA) and identify good practices, opportunities for improvement, and deficiencies.

Opportunities for improvement and deficiencies are captured within the WCH CAM system and are tracked to closure. All findings are passed onto other RCCC work areas and locations via a number of avenues (e.g., Lessons Learned, Take 5 for Safety, Safety Refocus, PODs, and staff meetings).

4.10 REVIEW AND DECLARATION OF QAP IMPLEMENTATION

Consistent with the guidance provided by the Deputy Assistant Secretary for the Office of Safety Management and Operations on January 8, 2009, subject: “Revision of the Office of Environmental Management Corporate Performance Metrics System for Quality Assurance Programs,” an evaluation of the WCH QA program was performed and the full results are included in Appendix A.

WCH’s QA program continues to meet the requirements of DOE O 414.1C, Quality Assurance, with most areas being coded as green (“good”). There were two areas (Work Processes and Procurement) that continue to warrant improvement actions and were coded as yellow (“investigate”). In the last two years the WCH QA program has been assessed by internal and external agencies providing a high level of assurance that the program adequately implements DOE O 414.1C and appropriately incorporates the requirements of NQA-1 2000. While these assessments continue to identify opportunities for improvement in flow down and issues with implementation, they consistently validate that the program elements are being effectively implemented.

Work processes were previously identified as “investigate” based on isolated failures to appropriately implement expectations of the Integrated Work Control Program or the Work Packages developed. Broad based improvement actions were being taken via the Safety Ownership Program which is designed to improve understanding and implementation of work control expectations. However, in July 2009, WCH experienced a significant injury where the root cause was found in implementation weaknesses of the Work Control program expectations. A formal corrective action plan has been developed to address these weaknesses. The general area of Work Process, with the exception of IWCP, would have been deemed acceptable based on the results of ISMS Phase II Verification (Nov 2007), and QA verification of implementing procedures (July 2008). Previous Independent Assessments on work control implementation and routine surveillances by QA&S on M&TE controls, receipt inspections, and S/CI implementation also support overall determination of acceptable implementation. Until completion and verification of effectiveness of corrective actions, this area will remain yellow.

Procurement was also previously identified as “investigate” with two primary areas of concern being procurement processes and subcontractor oversight. While the processes do provide the mechanisms for appropriate implementation, they were at risk due to the heavy reliance on the

initiator of procurement activities to identify the appropriate requirements and review/approval components to ensure appropriate identification and flow-down of expectations to service providers. The October 2008 EM QA Audit validated that the clarity by which expectations on implementation of procurement controls does not meet expectations. Recent changes have improved the process controls and this area should be better postured; however, no assessments on effectiveness have been performed to warrant changing this area from yellow to green. Pending confirmation of effectiveness, this area should remain yellow. Additionally, identified weaknesses in how well WCH is verifying programmatic implementation of subcontractor programs in the areas of detection and correction processes has diminished the level of assurance that subcontractors are being appropriately managed. Past emphasis has appropriately focused on the safety and quality of the work activities. The EM QA Audit confirmed that while appropriate performance based oversight is being performed, improvement in the programmatic review of subcontractors is warranted. Actions were taken to improve the QA program reviews of subcontractors and a recent surveillance activity demonstrated the increased focus. However, pending a broader evaluation of effectiveness, this area will remain yellow.

5.0 PHASE II ISMS VERIFICATION IMPROVEMENTS

ISMS Phase II Verification was completed in calendar year 2008. The FY09 ISMS Declaration stated that there were primarily Effectiveness Reviews remaining to be performed to complete the ISMS Phase II Verification improvements. The purpose of the effectiveness reviews was to verify the adequacy of WCH compliance with Hazard Controls and the IWCP Process. Forty-three Project Assessments were performed between Mach and June 2008 that were evaluated in a roll-up assessment that was completed in August 2008. Over half of these assessments identified opportunities for improvement that were either corrected on the spot or documented in the Corrective Action Management System for resolution. The effectiveness assessment determined that, although not perfect, the problems found during the ISMS Phase II Verification have been largely reduced to sporadic events that are being handled appropriately at the project level. The completion of all ISMS Phase II Verification issues has been verified complete by DOE-RL.

6.0 WORKER SAFETY AND HEALTH PLAN, (10 CFR 851)

On an annual basis, the WCH Worker Safety and Health Plan (WSHP) as described in the ISMSD is evaluated and assessed to determine if all requirements of the plan have been effectively implemented and outlined. Additionally, WCH is required to provide DOE any updates to the WSHP for review and approval.

The WCH WSHP demonstrates the integration of the overall S&H program elements with ISMS. The scope of the program plan is applicable to all WCH personnel and facilities. The program does not apply to vendors, delivery persons, and others who do not have service contracts with DOE or who are not subcontractors to such contractors.

Documentation of the current WCH WSHP is within the WCH ISMSD and was reviewed and updated as necessary as a part of the annual WCH ISMS review. All functional areas of the WCH WSHP were reviewed to ensure valid and consistent implementation of DOE S&H requirements. Updates to the WCH WSHP were limited to reference updates. No programmatic changes to the WCH WSHP were identified during the WCH ISMS review.

As part of the WCH WSHP annual review all of the citations and references in the WCH 10 CFR 851 Compliance Matrix (PSD-8) were reviewed and updated where appropriate. This document is referenced within the ISMSD, Appendix G, the WCH WSHP, and Subcontractor Safety and Health Requirements document Exhibit G. No major revisions were identified during the citation and reference review and update.

7.0 VOLUNTARY PROTECTION PROGRAM

VPP is a voluntary program and demonstrates the commitment of all three parent companies included in WCH. Every employee has a prime responsibility to carry out assigned tasks consistent with the WCH S&H policy to prevent accidents, reduce exposure, and reduce noncompliance. WCH has both embraced the VPP philosophy and extended its commitment to S&H excellence through the pursuit of VPP Star Status. The primary driving force behind the WCH commitment to the VPP process is the employees and supporting subcontractors who are WCH's primary asset.

WCH has effectively prepared and incorporated the tenets of VPP into the ISMS program with the addition of the employee involvement section into the annual review. A strategic plan for VPP was developed that outlined the process to fully incorporate all the tenets of VPP and to provide a seamless transition from ISMS Phase II Verification to VPP Star Status. Senior management were involved in the overall strategic plan and schedule for this important initiative and stressed to employees that VPP is a recognition for WCH's S&H program. Employees have embraced the ownership and pride in the WCH S&H program by owning the WCH safety program and continue to demonstrate their active role in maintaining their safety and the safety of their co-workers.

The tenets of VPP were included in the annual WCH ISMS review and have been incorporated into the tenet of Safety Culture. WCH submitted the application for DOE VPP Star Status in 2008 and obtained the DOE-HQ VPP onsite assessment in the spring of 2009. Preparation for this assessment included a comprehensive management assessment that included the functions and principles of ISMS along with the tenets of VPP. Upon the conclusion of the assessment conducted by DOE, a recommendation was made to accept WCH into the DOE VPP program as a star site. Official notification of this designation was received in June 2009.

Several opportunities for improvement were identified during this assessment. These include:

1. WCH should provide measurable targets for as many actions in SHIP as possible as a means of identifying successful achievement of the goal.

2. WCH should ensure wider and more frequent dissemination of SHIP and monthly status updates.

3. WCH should consider additional engineering studies of stored energy systems to ensure equipment design, operation, and maintenance support continued safe operation in RCCP.

4. WCH should revise instructions for preparation of JHAs to clearly define and document the analysis that links the hazard identification to the selected set of controls. After revision of the procedure, WCH should conduct training for all work planning team members on the process.

5. WCH should ensure that EJTAs are reviewed and updated when workers change work assignments.

6. WCH should ensure that all TPDs are up to date and that all workers have completed required training.

All items identified by the DOE review team have been entered into the Corrective Action Management system with status of action required by the end of 2009 in preparation for the annual report required by DOE headquarters in February 2010.

The culture is monitored on a periodic basis throughout the year and includes all levels of employees. Improvement objectives for FY09 included the tenets of VPP and outlined specific actions and activities accomplished to achieve the goal of VPP Star Status. The annual WCH ISMS program review, the management assessment conducted by WCH, and the DOE VPP onsite assessment fulfills the VPP criteria for an annual S&H Program assessment and ensures that each of the elements of VPP are reviewed and assessed to facilitate continuous improvement.

8.0 CONCLUSIONS

The WCH annual ISMS effectiveness review evaluated WCH procedures, policies, and manuals and the mechanisms by which full implementation are implemented. It was determined that the WCH ISMS is effectively implemented and integrates employee participation from WCH senior management through to the contract workers in the safety process and declares an effective and implemented ISMS, QA Program, Operating Experience, and Worker Safety and Health Program. The current safety management programs implement and satisfy the DOE requirements for ISMS and adequately manage the work safely. Reference documents validating mechanisms and requirements documents are detailed and listed within the ISMSD and the compliance matrix.

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APPENDIX A

EM CORPORATE QA PERFORMANCE METRICS

EM Corporate QA Performance Metrics
Quality Program Criteria Summary
July 2009

Site: Washington Closure Hanford

Period: FY09

Critical Decision				10 CFR 830.122		Score	
1	2	3	4		Criterion	Previous Period	Current Period
				Management	1. Program		
					2. Personnel Training and Qualification		
					3. Quality Improvement		
					4. Documents and Records		
				Performance	5. Work Processes		
					6. Design		
					7. Procurement		
					8. Inspection & Acceptance Testing		
				Assessment	9. Management Assessment		
					10. Independent Assessment		
				Supplements	Suspect /Counterfeit Items		
					Software QA		

Performance Score

Excellent Good Investigate Define Actions N/A

EM Corporate QA Performance Metrics

10 CFR 830.122 & DOE O 414.1C

Criterion		Requirements
1	Program	1) Establish an organizational structure, functional responsibilities, levels of authority, and interfaces for those managing, performing, and assessing the work. 2) Establish management processes, including planning, scheduling, and providing resources for the work.
2	Personnel Training & Qualification	1) Train and qualify personnel to be capable of performing their assigned work. 2) Provide continuing training to personnel to maintain their job proficiency.
3	Quality Improvement	1) Establish and implement processes to detect and prevent quality problems. 2) Identify, control, and correct items, services, and processes that do not meet established requirements. 3) Identify the causes of problems and work to prevent recurrence as a part of correcting the problem. 4) Review item characteristics, process implementation, and other quality-related information to identify items, services, and processes needing improvement.
4	Documents and Records	1) Prepare, review, approve, issue, use, and revise documents to prescribe processes, specify requirements, or establish design. 2) Specify, prepare, review, approve, and maintain records.
5	Work Processes	1) Perform work consistent with technical standards, administrative controls, and other hazard controls adopted to meet regulatory or contract requirements, using approved instructions, procedures, or other appropriate means. 2) Identify and control items to ensure their proper use. 3) Maintain items to prevent their damage, loss, or deterioration. 4) Calibrate and maintain equipment used for process monitoring or data collection. 5) Verify or validate work before approval and implementation of the design.
6	Design	1) Design items and processes using sound engineering/scientific principles and appropriate standards. 2) Incorporate applicable requirements and design bases in design work and design changes. 3) Identify and control design interfaces. 4) Verify or validate the adequacy of design products using individuals or groups other than those who performed the work.
7	Procurement	1) Procure items and services that meet established requirements and perform as specified. 2) Evaluate and select prospective suppliers on the basis of specified criteria. 3) Establish and implement processes to ensure that approved suppliers continue to provide acceptable items and services.
8	Inspection & Acceptance Testing	1) Inspect and test specified items, services, and processes using established acceptance and performance criteria. 2) Calibrate and maintain equipment used for inspections and tests.
9	Management Assessment	Ensure managers assess their management processes and identify and correct problems that hinder the organization from achieving its objectives.
10	Independent Assessment	1) Plan and conduct independent assessments to measure item and service quality, to measure the adequacy of work performance, and to promote improvement. 2) Establish sufficient authority, and freedom from line management, for the group performing independent assessments. 3) Ensure persons who perform independent assessments are technically qualified and knowledgeable in the areas to be assessed.

Performance Score

Excellent Good Investigate Define Actions N/A

EM Corporate QA Performance Metrics
10 CFR 830.122 & DOE O 414.1C

Criterion		Requirements
	Suspect/Counterfeit Items	An S/CI prevention process must be developed and implemented as a part of the organization's quality assurance program (QAP) and commensurate with the facility/activity hazards and mission impact. The QAP must be applied to identifying and analyzing S/CI's, removing them, and preventing S/CI's from being supplied to DOE/NNSA and its contractors.
	Software Quality Assurance	Safety software quality requirements are necessary to ensure that DOE/NNSA safety software in nuclear facilities performs its intended specific safety functions in relation to structures, systems, or components (SSCs) and that the classification, design, and analysis associated with nuclear facility operations is correct
	Corrective Action	To prescribe process requirements and responsibilities for DOE line managers to perform corrective actions that effectively resolve safety issues.

Performance Score

Excellent Good Investigate Define Actions N/A

EM Corporate QA Performance Metrics

10 CFR 830.122 & DOE O 414.1C

MANAGEMENT/ PROGRAM [10 CFR 830 Criterion #1]				SCORE
ASME NQA-1, 2004	**Supported ISM Core Functions/Guiding Principles**			
1. Organization 2. Quality Assurance Program	Define Work Identify/Analyze Hazards Develop/Implement Controls	Perform Work within Controls Feedback/Continuous Improvement Line Management Responsibility	Clear Roles and Responsibilities Competence Commensurate with Responsibilities	
Lines of Inquiry	**Response**			
	Basis		Supporting Documents	Score
A The quality management system (QMS) defines and documents the established organizational structure, functional responsibilities, levels of authority, and interfaces for those managing, performing, and assessing the work including overall expectations for effective implementation of the quality assurance program.	A. The QAPD directly addresses organizational structure for WCH and functional responsibilities for QA program specific implementation. The QAPD defers to the Project Management Plan for general functional responsibilities, levels of authority, and interfaces. The QMS went through an improvement campaign to better align with NQA-1-2000 in 2008 and is being brought up to 2004 with addendum to align with EM QA program expectations. B. The QAPD identifies the QA organization and describes the roles and responsibilities of the QA organization. Specific training requirements for QA Inspection and assessment personnel are addressed. C. The QAPD describes the grading process and how it is implemented at WCH. Recent revision to the QAPD clarified the strategy on how the graded approach is developed, implemented, and verified addressing previous weakness. Due to the closure contract nature of WCH, a tiered or multi-level approach has not been developed at WCH (no QA levels). However, key processes that benefit from grading such as training, work control, procurement, and assessments have been developed reflecting a varied approach based on risk and consequences to ensure hazards associated with work activities are appropriately addressed.		EM-64 Audit of QA program, (January 2009) EM-AUDIT-2008-018	
B The QMS describes a quality assurance organization that has sufficient resources and qualifications to perform its functions.				

Performance Score

Excellent | Good | Investigate | Define Actions | N/A

EM Corporate QA Performance Metrics
10 CFR 830.122 & DOE O 414.1C

MANAGEMENT/ PROGRAM [10 CFR 830 Criterion #1]			SCORE
Lines of Inquiry	**Response**		
	Basis	Supporting Documents	Score
C The QMS defines a process for grading the application of requirements and this process adequately addresses hazards and mission.	Implementation of organization and graded approach is deemed effective based on completion of the ISMS Phase II verification (November 2007) and QA verification of implementing procedures (July 2008). A key improvement initiative for 2008/2009 is an alignment update with NQA-1-2004 with addendum through 2007 to meet EM QA program expectations. Overall excellent grade applied due to the combination of Senior management support and buy-in to the QA program, sufficient staffing in QA and the Projects to ensure in process quality controls and oversight is performed.		

Performance Score

Excellent Good Investigate Define Actions N/A

EM Corporate QA Performance Metrics

10 CFR 830.122 & DOE O 414.1C

MANAGEMENT/ PERSONNEL TRAINING AND QUALIFICATION [10 CFR 830 Criterion #2]				SCORE
ASME NQA-1, 2004	**Supported ISM Core Functions/Guiding Principles**			
2. Quality Assurance Program	Define Work Identify/Analyze Hazards Develop/Implement Controls	Perform Work within Controls Feedback/Continuous Improvement Line Management Responsibility	Clear Roles and Responsibilities Competence Commensurate with Responsibilities	
Lines of Inquiry	**Response**			
	Basis		Supporting Documents	Score
A The methodology is well described for establishing requirements to indoctrinate, train, qualify and maintain proficiency of personnel performing or managing activities affecting quality.	A. The QAPD describes indoctrination, training and qualification of personnel performing or managing activities affecting quality. Project has a Training Implementation Matrix that demonstrated implementation of DOE O 5480.20 supported by Business Services procedures for the establishment of training requirements and records management. B. Human Resources and Training organization provide the infrastructure for obtaining qualified personnel and tracking completion of assigned training. A mix of internal subject matter expert led training and external resources are utilized to provide training and qualification of personnel conducting work. Job assignments are controlled via the first line supervisor who is trained and qualified. C. Each employee has a general Training Position Description that identifies training requirements and a specific Training Assignment Tool that identifies any unique needs based on specific assignments. Specific areas such as assessors, inspectors, welders, have a qualification/certification process to ensure they are appropriately trained and qualified.		ISMS Phase II Verification (Nov 2007), QA independent Assessment (May 2008), QA&S-2007-012 EM-64 Audit of QA program, (January 2009) EM-AUDIT-2008-018 Training Management Assessment, (June 2009) MA-2009-0012	
B Adequate resources have been identified to support the selection, training, and qualification of personnel conducting work.				

Performance Score

Excellent | Good | Investigate | Define Actions | N/A

EM Corporate QA Performance Metrics
10 CFR 830.122 & DOE O 414.1C

MANAGEMENT/ PERSONNEL TRAINING AND QUALIFICATION [10 CFR 830 Criterion #2]			SCORE
Lines of Inquiry	**Response**		
	Basis	Supporting Documents	Score
C Requirements are defined and implemented for the qualification and/or certification of personnel in the various functional areas (e.g., audit personnel, subject matter experts, inspection and test personnel, welders, etc.).	Implementation is deemed acceptable based on results of referenced assessments and the QA verification of implementing procedures (July 2008). Much of the key training needs for work at hazardous sites are obtained from the Hammer Training facility – this approach provides a consistent and specialized training platform for workers that are exposed to industrial, radiological, and chemical hazards. General process training is provided by in-house SMEs when practical, however use of industry training providers is also done.		

Performance Score

Excellent Good Investigate Define Actions N/A

EM Corporate QA Performance Metrics

10 CFR 830.122 & DOE O 414.1C

MANAGEMENT/ QUALITY IMPROVEMENT [10 CFR 830 Criterion #3]		SCORE
ASME NQA-1, 2004 2. Quality Assurance Program 15. Control of Nonconforming Items 16. Corrective Action	**Supported ISM Core Functions/Guiding Principles** Feedback/Continuous Improvement Operations Authorization	

Lines of Inquiry	Response: Basis	Supporting Documents	Score
A The organization has established, implemented, and documented processes to detect and prevent quality problems such as conditions adverse to quality and nonconforming items.	A. WCH's corrective action management process describes the Issue Form process and is integrated with nonconformance processes. Overall health is monitored via indicators which include leading indicators on health of program. Additionally, key project processes have performance metrics to identify adverse trends. These key metrics are presented to senior management on a monthly basis by the functional owners. B. The QAPD addresses cause, remedial and preventive actions. The IF process addresses extent of condition. The process also allows for improvement opportunities not tied to deficiencies. C. Procurement, Receipt inspection and NCR processes address the review of item characteristics obtained for use at WCH. Deficiencies identified are entered into the corrective action system for tracking of resolution. Process implementation issues identified by event/condition or assessments are also entered into the CAMs process. Trending processes and metrics are used to review quality data.	ISMS Phase II Verification (Nov 2007), Management Assessment on CAMs, June 2008, MA-2008-005 EM-64 Audit of QA program, (January 2009) EM-AUDIT-2008-018 Management Assessment on Lessons Learned MA-2009-013 June 2009 RL Surveillance on Corrective Action Effectiveness S-09-AMSE-WCH-QA-001 August 2009	
B The QMS describes methods for addressing cause, extent, and remedial and preventative corrective actions for conditions adverse to quality to prevent recurrence.			
C A process is identified to review process implementation, item characteristics, and other quality-related information to effect continuous improvement to the QMP.			

Performance Score

Excellent | Good | Investigate | Define Actions | N/A

EM Corporate QA Performance Metrics

10 CFR 830.122 & DOE O 414.1C

MANAGEMENT/ QUALITY IMPROVEMENT [10 CFR 830 Criterion #3]			SCORE
Lines of Inquiry	**Response**		
	Basis	Supporting Documents	Score
D Controls provide for identification, documentation, evaluation, notification to affected organizations, segregation when practical, and disposition of nonconforming items.	D. NCR process addresses identification, documentation, evaluation, segregation when practical, and disposition of nonconforming items, and for notification to affected organizations. Nonconforming issues are entered into the CAMs process for tracking/trending purposes. E. Performance Indicators are established to monitor usage, significance levels, timeliness, and overall health of the CAMs process. A subset of these performance indicators are presented to senior management on a monthly basis ensuring the continued use of the system. F. NCR, CAMs, and Trending programs are in place. Metrics are used to monitor the health of the CAMs process. Trending information and recommendations are presented to senior management. Implementation is deemed acceptable based on results of, ISMS Phase II Verification (Nov 2007), a Management Assessment on CAMs (May 2008), monthly metrics indicating healthy management of issues, QA verification of implementing procedures (July 2008), and a Management Assessment on Lessons Learned. Periodic assessments by DOE/RL reveal marked improvements in the management and implementation of the CAMs process. The in-house developed system was evaluated and used for the Plateau Remediation Contractor (a separate prime contractor to DOE/RL) and is being evaluated for use by DOE/RL. Improvement initiative for 2008/2009 was the development of a new training module on performance of apparent cause analysis to improve the field performance of implementation.		
E Performance analysis system monitors the health of the quality improvement element and provides feedback to the affected and related organizational entities.			
F A nonconformance and corrective action tracking and trending program is in place and effective.			

Performance Score

Excellent Good Investigate Define Actions N/A

EM Corporate QA Performance Metrics

10 CFR 830.122 & DOE O 414.1C

MANAGEMENT/ DOCUMENTS AND RECORDS [10 CFR 830 Criterion #4]				SCORE
ASME NQA-1, 2004	**Supported ISM Core Functions/Guiding Principles**			
5. Instructions, Procedures, and Drawings 6. Document Control 17. Quality Assurance Records	Define Work Identify/Analyze Hazards Develop/Implement Controls	Perform Work within Controls Balanced Priorities Identification of Safety Standards	Hazard Controls Tailored to Work Operations Authorization	
Lines of Inquiry	**Response**			
	Basis		Supporting Documents	Score
A Functions and activities affecting quality and services are effectively described and performed in approved, documented, and controlled instructions, procedures, or drawings that include or reference appropriate quantitative or qualitative acceptance criteria for determining that prescribed activities have been satisfactorily accomplished.	A. All requirements contained within the QAPD have been verified to be implemented in plans, policies, processes, procedures and appropriately address acceptance criteria/expectations for performance. B. Records Management Plan appropriately addresses, and implements the controls necessary to ensure that records are traceable to associated items and completed work activities. The record inventory and disposition schedule (RIDS) is in place and is being appropriately implemented. The last Independent Assessment identified weaknesses in the Records Management Plan and RIDS implementation – remedial actions were taken. C. This attribute is more appropriately captured under element 7, procurement. Four documents address processes for overseeing contractors and suppliers. Quality Program requirements document identifies applicable elements that are flowed down. Supplier evaluation documents the in-house review of suppliers program. Surveillance/assessment processes address monitoring of supplier performance. Subcontractor deficiency reports address specific issues that the supplier must provide analysis and corrective action to address performance weaknesses.		ISMS Phase II Verification (Nov 2007), Independent Assessment Document Control, February 2008, QA&S-2007-014 EM-64 Audit of QA program, January 2009, EM-AUDIT-2008-018 Management Assessment on Waste Transfer Form Implementation MA-2009-009 June 2009	
B Quality assurance records are traceable to associated items and completed work activities from applicable documents, such as design specifications, procurement documents, test procedures, and operational procedures; properly identified, classified, and specified; authenticated, controlled, and maintained; and their final disposition is specified.				

Performance Score

Excellent | Good | Investigate | Define Actions | N/A

EM Corporate QA Performance Metrics
10 CFR 830.122 & DOE O 414.1C

MANAGEMENT/ DOCUMENTS AND RECORDS [10 CFR 830 Criterion #4]			SCORE
Lines of Inquiry	**Response**		
	Basis	Supporting Documents	Score
C Documents have been developed and effectively implemented that prescribe processes to oversee contractors and suppliers.	D. The QAPD establishes controls for the generation of procedures and the implementation matrix identifies those procedures that implement the requirements for the preparation, review, approval, issuance, and revision of procedures.		
D The QMS describes how procedures are prepared, reviewed, approved, issued, used, and revised to prescribe processes, specify requirements, or establish design.	Implementation is deemed acceptable based on results of the referenced assessments and QA verification of implementing procedures (July 2008). EM QA Audit identified cases where the procedures do not completely reflect the totality of efforts taken to implement the expectation (no credit provided for training or system controls) – Broader evaluation of adequacy being performed.		

Performance Score

Excellent Good Investigate Define Actions N/A

EM Corporate QA Performance Metrics

10 CFR 830.122 & DOE O 414.1C

PERFORMANCE/ WORK PROCESSES [10 CFR 830 Criterion #5]			SCORE
ASME NQA-1, 2004		**Supported ISM Core Functions/Guiding Principles**	
5. Instructions, Procedures, & Drawings 8. Identification & Control of Items 9. Control of Special Processes 12. Control of Measuring & Test Equipment	13. Handling, Storage, & Shipping 14. Inspection, Test, & Operating Status Subpart 2.7 SQA	Define Work Identify/Analyze Hazards Develop/Implement Controls Perform Work within Controls Balanced Priorities Identification of Safety Standards Hazard Controls Tailored to Work Operations Authorization	

Lines of Inquiry	Response		
	Basis	Supporting Documents	Score
A Core functions and guiding principles of the DOE Integrated Safety Management System are addressed consistent with DOE O 450.1, *Environmental Protection Program,* DOE P 450.4, *Safety Management System Policy*, and applicable chapters in DOE O 5480.19, *Conduct of Operations Requirements for DOE Facilities*, such that work is performed consistent with technical standards, administrative controls, and other hazard controls adopted to meet regulatory or contract requirements	A. WCH-4, Integrated Environment, Safety, and Health Management System Description addresses the core functions and guiding principles of DOE O 450.1, DOE P 450.4 and applicable chapters in DOE O 5480.19 such that work is performed consistent with technical standards, administrative controls, and other hazard controls adopted to meet regulatory or contract requirements using approved instructions, procedures, or other appropriate means. The Integrated Work Control Process was revised in 2007 with Independent Assessments performed to validate implementation. While consistent implementation was identified as a concern during the ISMS Phase II verification, recent DNFSB visits found the process significantly improved. Management assessment activities in 2008 identified implementation weaknesses resulting in the previous score being yellow. Actions were taken to address these weaknesses and a presentation to ESQRB in June provided an improved evaluation of health. B. The QAPD incorporates the key attributes of DOE 414.1C for control of suspect counterfeit items and DOE G 414.1-3 was utilized in the development of processes to address controls to prevent the introduction and use of suspect counterfeit items.	ISMS Phase II Verification (Nov 2007), EM-64 Audit of QA program, January 2009, EM-AUDIT-2008-018 Independent Assessment HASQARD Implementation QA&S-2008-0005 February 2009 IA-2009-003, Special processes, Welding July 2009 Type B Accident Investigation 336 Fall Event	
B The QMS provides methods to identify and control items including S/CI, to ensure their proper use consistent with DOE G 414.1-3 and it addresses suspect counterfeit items.			

Performance Score

Excellent | Good | Investigate | Define Actions | N/A

EM Corporate QA Performance Metrics
10 CFR 830.122 & DOE O 414.1C

PERFORMANCE/ WORK PROCESSES [10 CFR 830 Criterion #5]			SCORE
Lines of Inquiry	**Response**		
	Basis	Supporting Documents	Score
C The method to maintain items to prevent their damage, loss, or deterioration is adequately described. This method addresses the requirements (e.g., DOE O 433.1, *Maintenance Management Program for DOE Nuclear Facilities*).	C. Material control processes are established to provide protection of equipment to prevent damage and loss. The Maintenance Implementation Plan addresses DOE O 433.1 requirements and the approach to inspect and preserve facilities. Very few facilities are under a maintenance program due to the general nature of WCH activities where we are focused on field remediation and demolition activities.		
D Special processes that control or verify quality, such as those used in welding, heat treating, and nondestructive examination, are performed by qualified personnel using approved procedures or instructions compliant with the requirements of applicable codes and standards, including acceptance criteria.	D. Requirements for special processes that control or verify quality, such as those used in welding, heat treating, and nondestructive examination, are described in the QAPD. WCH only performs non-consequential/ non-structural welding – special processes warranting controls are subcontracted. Requirements flow-down and verification activities are performed to ensure these special processes are performed by qualified personnel using approved procedures or instructions compliant with the requirements of applicable codes and standards, including acceptance criteria for the process. E. WCH has a tool crib and associated procedures in place to ensure that tools, gauges, instruments and other measuring and test equipment are controlled and calibrated at specific periods, adjusted and maintained to required accuracy limits. There have been some noted cases where implementation weaknesses indicate a need to perform more oversight of this process.		

Performance Score

Excellent Good Investigate Define Actions N/A

EM Corporate QA Performance Metrics
10 CFR 830.122 & DOE O 414.1C

PERFORMANCE/ WORK PROCESSES [10 CFR 830 Criterion #5]			SCORE
Lines of Inquiry	**Response**		
	Basis	Supporting Documents	Score
E Tools, gauges, instruments, and other measuring and test equipment used for activities affecting quality are controlled and calibrated at specific periods, adjusted and maintained to required accuracy limits.	F. Items identified as non-conforming are tagged and controlled to ensure resolution prior to use. Testing activities are performed by subcontractors when utilized with WCH oversight. Inspection and testing activities are documented to ensure traceability. In process inspections/tests, when required, are incorporated into work instructions with controls to ensure control of items that have not passed such that they are not inadvertently installed, used, or operated		
F Status of inspection and test activities is identified either on the items or in documents traceable to the items where it is necessary to ensure that required inspections and tests are performed and to ensure that items which have not passed the required inspections and tests are not inadvertently installed, used, or operated.	Implementation is deemed at risk due to the significant fall injury associated with building 336. Root Cause was found in the implementation weaknesses of program expectation. Low rigor, overreliance on verbal work and hazard controls. January 2009 overall health report rated “Work Control” as being yellow. Improvement actions were being taken along with the Safety Ownership Program which is designed to improve understanding and implementation of work control expectations. However, in light of the injury event, this area still should remain yellow pending completion of corrective actions. Work Process, with the exception of IWCP, is deemed acceptable based on results of ISMS Phase II Verification (Nov 2007), and QA verification of implementing procedures (July 2008). Previous Independent Assessments on work control implementation, the DNFSB visit, and routine surveillances by QA&S on M&TE controls, receipt inspections, and S/CI implementation also support overall determination of acceptable implementation.		

Performance Score

Excellent Good Investigate Define Actions N/A

EM Corporate QA Performance Metrics

10 CFR 830.122 & DOE O 414.1C

PERFORMANCE/ DESIGN [10 CFR 830 Criterion #6]				SCORE
ASME NQA-1, 2004	**Supported ISM Core Functions/Guiding Principles**			
3. Design Control Subpart 2.7 SQA	Define Work Identify/Analyze Hazards Develop/Implement Controls	Perform Work within Controls Balanced Priorities Identification of Safety Standards	Hazard Controls Tailored to Work Operations Authorization	
Lines of Inquiry	**Response**			
	Basis		Supporting Documents	Score
A The QMS describes a process for design verification and/or validation for design products including software related to safety systems, before approval and implementation of the design. The process requires the use of individuals or groups other than those who performed the work.	A. Engineering processes are in place to ensure appropriate control of design inputs, process, analyses, interface control, verification, use of computer programs in support of design, change control, and documentation and records. At the closure project, typical design elements are applied to the project definition for remediation of the area. Design input would be characterization data of the area to remediate, uncertainties, end state expectations, etc. B. Design items and processes use sound engineering/scientific principles and appropriate Standards and Orders. The process addresses change control throughout the design life cycle. C. Physical and functional design interfaces are identified, documented, and controlled. Administrative interfaces, which include authorities, responsibilities, and lines of communication between project team members, are defined in sufficient detail to identify and establish relationships and authorities of the team members.		ISMS Phase II Verification (Nov 2007), Management Assessment Configuration Management MA-2008-004, April 2008 Independent Assessment Engineering Services QA&S-2008-0001 May 2008 Management Assessment Design Authority MA-2008-012, Sep. 2008 EM-64 Audit of QA program, January 2009, EM-AUDIT-2008-018 Independent Assessment, Software Quality Control July 2009 QA&S-2009-0002	
B Design items and processes use sound engineering/scientific principles and appropriate Standards and Orders (i.e., DOE O 420.1B, *Facility Safety*). The process addresses change control (changes to design inputs, final designs, field changes and temporary and permanent modifications to operating facilities).				
C Design interfaces are identified and controlled, within the design authority and externally with customers and suppliers, including subcontractors.				

Performance Score

Excellent | Good | Investigate | Define Actions | N/A

EM Corporate QA Performance Metrics
10 CFR 830.122 & DOE O 414.1C

PERFORMANCE/ DESIGN [10 CFR 830 Criterion #6] (cont)			SCORE
Lines of Inquiry	**Response**		
	Basis	Supporting Documents	Score
D Design verification evaluations are tailored as a function of importance to safety, complexity of the design, degree of standardization, state-of-the-art, and similarity with previously proved designs.	D. The extent of the design verification is commensurate with the design's complexity: to include it's importance to safety and the environment, degree of standardization, state-of-the-art, and similarity with previously proved designs E. System Engineering and Configuration Management processes are in place and implemented at WCH. Challenges in this area are primarily with subcontractor work scopes to maintain configuration management of temporary infrastructure systems such as lighting and trailers. Corrective actions have been issued to address these performance related issues along with an annual assessment required as part of the overall assessment plan. Pending validation of effectiveness, this area should stay as yellow. F. Use of computer programs in support of design is specifically addressed as part of the QAPD and engineering implementing processes. General software controls and safety software controls are addressed in the QAPD and implemented via Information Technology plans, policies, and processes. EM QA Audit noted that design of software from NQA-1 was not fully captured in the QAPD (oversight during development of section 12) Issue entered into CAMs, downgraded area to yellow from a configuration management perspective – noted that IT has implementing procedures to address, although the rigor in the expectation of use has weaknesses also (identified as guides, not procedures). QAPD update is scheduled for August/September time frame to address this weakness. Implementation is deemed acceptable based on results of Independent Assessments on software (Feb 2006/July 2009), DOE RL assessments on Safety Software Controls (Aug 2007), ISMS Phase II Verification (Nov 2007), QA Independent Assessment on Engineering processes (Mar 2008) and QA verification of implementing procedures (July 2008). If challenges with configuration control and software control are not improved by end of calendar year 09, then overall grading should be dropped to yellow.		Green
E Procedures implementing configuration management requirements are established and documented at the earliest practical time prior to facility operation, including authority and responsibilities of the organizations whose functions affect the configuration of the facility, such as operations, design, maintenance, construction, licensing, and procurement.			Yellow
F Software design requirements are identified and documented and their selection reviewed and approved (operating system, function, interfaces, performance requirements, installation considerations, design inputs, and any design constraints of the computer program).			Yellow

Performance Score

Excellent | Good | Investigate | Define Actions | N/A

EM Corporate QA Performance Metrics

10 CFR 830.122 & DOE O 414.1C

PERFORMANCE/ PROCUREMENT [10 CFR 830 Criterion #7]				SCORE
ASME NQA-1, 2004	**Supported ISM Core Functions/Guiding Principles**			
4. Procurement Document Control 7. Control of Purchased Items and Services Subpart 2.7 SQA	Define Work Identify/Analyze Hazards Develop/Implement Controls	Perform Work within Controls Balanced Priorities Identification of Safety Standards	Hazard Controls Tailored to Work Operations Authorization	
Lines of Inquiry	**Response**			
	Basis		Supporting Documents	Score
A The requirements for the procurement of items and services are established. The requirements include performance and quality specifications provided by the design authority and quality organization. The requirements ensure that procured items and services will meet established requirements and perform as expected.	A. Engineering processes describe the request for services and items and does establish the expectation to identify requirements for performance and quality specifications. Procurement processes provide the mechanisms to appropriately flow-down requirements to prospective suppliers. While the processes do provide the mechanisms, they were at risk due to the heavy reliance on the initiator of procurement activities to identify the appropriate requirements and review/approval components to ensure appropriate identification and flow-down of expectations to service providers. Recent changes have improved the process controls and this area should be better postured, however no assessments on effectiveness have been performed to warrant changing this area from yellow to green. Pending confirmation of effectiveness, this area should remain yellow. B. The procurement process ensures the evaluation of bids and program requirements prior to award. While some implementation weaknesses have been identified, they are individual performance related.		Independent Assessment Supplier Selection, Evaluation and Monitoring QA&S-2008-0003 December 2008 Independent Assessment Nuclear Material Control and Accountability Program QA&S-2008-0004 November 2008 Management Assessment Subcontractor Oversight MA-2009-002 Feb. 2009 ISMS Phase II Verification (Nov 2007), EM-64 Audit of QA program, January 2009, EM-AUDIT-2008-018	
B The system to evaluate and select prospective suppliers based on specified criteria performs satisfactorily.				

Performance Score

Excellent Good Investigate Define Actions N/A

EM Corporate QA Performance Metrics
10 CFR 830.122 & DOE O 414.1C

PERFORMANCE/ PROCUREMENT [10 CFR 830 Criterion #7]			SCORE
C Processes are established and implemented to ensure that approved suppliers continue to provide acceptable items and services. Application is graded to ensure safety-related items and mission critical items are subject to more rigorous methods (e.g., inspection and testing at the manufacturer and upon receipt).	C. Receipt inspection and oversight processes ensure satisfactory performance. Graded application is used such that construction activities have more rigor associated with independent verification of quality attributes than demolition related activities. . EM QA Audit identified some weaknesses in the clarity by which expectations are being implemented – procedures have been changed to address concerns, however no effectiveness assessments have verified improvements, as such, downgraded this area to a yellow to reflect concern. Overall implementation is deemed at risk based on results of the referenced assessments. Additionally, the level of assurance that subcontractors are being appropriately managed is not high – past emphasis has appropriately focused on the safety and quality of the work activities. While this past emphasis is important, there appears to be weaknesses in how well WCH is verifying programmatic implementation of subcontractor programs in the areas of detection and correction processes. As such, this area in general needs investigation. The recent EM QA Audit validated that the clarity by which expectations on implementation of procurement controls do not meet expectations. Additionally, the EM QA Audit confirmed that while appropriate performance based oversight is being performed, improvement in the programmatic review of subcontractors is warranted.		

Performance Score

Excellent Good Investigate Define Actions N/A

EM Corporate QA Performance Metrics

10 CFR 830.122 & DOE O 414.1C

PERFORMANCE /INSPECTION AND ACCEPTANCE TESTING [10 CFR 830 Criterion #8]			SCORE
ASME NQA-1, 2004		**Supported ISM Core Functions/Guiding Principles**	
8. Identification & Control of Items 10. Inspection 11. Test Control	12. Control of Measuring and Test Equipment Subpart 2.7 SQA	Feedback/Continuous Improvement Operations Authorization	

Lines of Inquiry	Response		
	Basis	Supporting Documents	Score
A Inspections and tests are specified for items, services, and processes. Acceptance and performance criteria are established and used.	A. Operating facilities have inspection processes established with acceptance criteria identified. Items and services have acceptance criteria identified in procurement documents and are verified by receipt inspections (items) or review/acceptance of deliverables (services). B. Purchase orders, inspection plans, and submittals are documented and are performing satisfactorily. C. WCH has a tool crib and associated procedures in place to ensure that tools, gauges, instruments and other measuring and test equipment are controlled and calibrated at specific periods, adjusted and maintained to required accuracy limits. Where inspection or testing is performed as part of the subcontractor's scope, process requirements for control of inspection and test equipment is flowed down and verified. Implementation is deemed acceptable based on results of ISMS Phase II Verification (Nov 2007), and QA verification of implementing procedures (July 2008). Previous Independent Assessments on work control implementation and routine surveillances by QA&S on M&TE controls, receipt inspections, and S/CI implementation also support overall determination of acceptable implementation. Additionally, and IA on Inspection and acceptance testing performed, with a focus on the cell construction efforts, identified satisfactory implementation. One area of concern is still in the SM&U area which warrants assessment to ensure appropriate implementation.	Independent Assessment Inspection and Acceptance Testing QA&S-2009-0001 March 2009	
B The system for documenting the results of inspections and tests performs satisfactorily.			
C Inspection and test equipment is controlled by a process to ensure it is calibrated and maintained.			

Performance Score

Excellent | Good | Investigate | Define Actions | N/A

EM Corporate QA Performance Metrics

10 CFR 830.122 & DOE O 414.1C

ASSESSMENT/ MANAGEMENT ASSESSMENT [10 CFR 830 Criterion #9]			SCORE
ASME NQA-1, 2004 2. Quality Assurance Program 18. Audits	**Supported ISM Core Functions/Guiding Principles** Feedback/Continuous Improvement Operations Authorization		
Lines of Inquiry	**Response**		
	Basis	Supporting Documents	Score
A The QMS describes how managers, at all levels, assess their management processes.	A. The QAPD establishes the expectation for managers, at all levels, to assess their programs. Procedures provide methods for performance of management assessments at the program/system level and self assessments at the system/process level. B. Issues identified during assessments are entered into the CAM system for evaluation and resolution. C. Results of assessment program performance is monitored and reported to senior management on a monthly basis. Managers are scheduled, by name, to perform management assessments and self assessments. Implementation is deemed acceptable based on results of ISMS Phase II Verification (Nov 2007), and QA verification of implementing procedures (July 2008). The use of the assessment program was a major focus in the FY2007/2008 QA Improvement Plan. To date (Oct 07 through Aug 08), 219 issues have been identified and entered into the CAMs process as a result of assessment activities in FY 2008. For FY 2008, there were a total of 460 assessments performed at the WCH project. Additionally, since the last assessment, a new document, WCH-307 was issued, to document the overall assessment program strategy to ensure the right areas are being assessed.	Assessment Program Management MA-2008-005 Feb 2008 Management Assessment Waste Operations Surveillance Program MA-2008-018 Sep 2008 ISMS Phase II Verification (Nov 2007),	
B The QMS provide for the identification and correction of problems that hinder the organization from achieving its objectives.			
C Managers take responsibility for, and directly participate in, the assessments.			

Performance Score

Excellent | Good | Investigate | Define Actions | N/A

EM Corporate QA Performance Metrics

10 CFR 830.122 & DOE O 414.1C

ASSESSMENT/ INDEPENDENT ASSESSMENT [10 CFR 830 Criterion #10]		SCORE
ASME NQA-1, 2004	**Supported ISM Core Functions/Guiding Principles**	
1. Organization 2. Quality Assurance Program 10. Inspection 11. Test Control 15. Control of Nonconforming Items 16. Corrective Action 18. Audits	Feedback/Continuous Improvement Operations Authorization	

Lines of Inquiry		Response		
		Basis	Supporting Documents	Score
A	Independent assessments (e.g., audits) are planned and conducted to measure item and service quality, to measure the adequacy of work performance, and to promote improvement.	A. Independent Assessments are identified as part of the annual scheduling process and are conducted to measure item and service quality with a focus on performance and continuous improvement. B. Issues identified during assessments are entered into the CAMs system for evaluation and resolution. QA review and acceptance of resolution and final closeout of QA issues ensures positive results. C. Independent Assessors are certified by the QA Manager and are provided sufficient authority and freedom from line management. Individual assessor experience is used to ensure technically qualified personnel are performing assessments and subject matter experts are utilized as necessary to augment any knowledge weaknesses. D. All issues identified during assessments are entered into the CAMs system for evaluation and resolution. QA review and acceptance of resolution and final closeout ensures positive results.	Assessment Program Management MA-2008-005 Feb 2008 Management Assessment Waste Operations Surveillance Program MA-2008-018 Sep 2008 ISMS Phase II Verification (Nov 2007)	
B	The organization responds on assessments in a manner that results in continuous improvement.			

Performance Score

Excellent | Good | Investigate | Define Actions | N/A

EM Corporate QA Performance Metrics
10 CFR 830.122 & DOE O 414.1C

ASSESSMENT/ INDEPENDENT ASSESSMENT [10 CFR 830 Criterion #10]			SCORE
C	The group performing independent assessments has sufficient authority and freedom from line management (i.e., not directly responsible for the work being assessed) and the persons who perform independent assessments are technically qualified and knowledgeable in the areas to be assessed.	Implementation is deemed effective based on results of ISMS Phase II Verification (Nov 2007), and QA verification of implementing procedures (July 2008). While Independent Assessments have been effectively being performed throughout 2006 & 2007, there was a noted weakness in the strategy of scheduling that has been addressed to ensure that all QA elements are assessed on a tri-annual basis (improvement). Current process is more oriented to meet an NQA-1 philosophy of auditing. WCH is transitioning to include the intent of 414 which is to assess areas other than just QA. Additionally, since the last assessment, a new document, WCH-307 was issued, to document the overall assessment program strategy to ensure the right areas are being assessed. Future focus on implementation of IWCP and subcontractor oversight is warranted.	
D	Management of the audited organization or activity investigate adverse audit findings, schedule corrective action, including measures to prevent recurrence of significant conditions adverse to quality, and notify the appropriate organization in writing of action taken or planned.		

Performance Score

Excellent Good Investigate Define Actions N/A

EM Corporate QA Performance Metrics

10 CFR 830.122 & DOE O 414.1C

SUSPECT / COUNTERFEIT ITEMS (S/CI) [DOE O 414.1C, Section 4 & Attachment 3]			SCORE
ASME NQA-1, 2004			
7. Control of Purchased Items & Services 8. Identification & Control of Items	10. Inspection 15. Control of Nonconforming Items		
Lines of Inquiry	**Response**		
	Basis	Supporting Documents	Score
A An S/CI program is in place to adequately identify problems, control non conforming items and prevent their use.	A. WCH QAPD identifies S/CI requirements in section 11 and the implementing procedures reflect the expectations. Key elements of inspection, use of NCR process, and control of items are addressed. B. Periodic assessments are performed augmented with an Independent assessment of program implementation. C. All S/CI issues are captured on an NCR which requires and IF to be issued. The IF is used to track issue resolution and closure. The overall implementation is deemed acceptable based on past assessment activities, improvement initiatives associated with training warehousemen, engineers, electricians, and vendors on S/CI program elements. Area is in need of a programmatic assessment and is scheduled for Sept/Oct 2009.	Surveillances: 300 FR-2009-S032 Field Remediation S/CI Program Implementation 300 FR-2009-S031 Field Remediation S/CI Sub SE&C 300 FR-2009-S030 Field Remediation S/CI Sub FE&C 300 FR-2009-S028 Field Remediation S/CI Sub Foothills QA&S-2009-S010 Waste Operations S/CI Sub Stoller/Delhur	
B Oversight of the S/CI process is performed to ensure it is functioning adequately.			
C Corrective actions for S/CI identified issues are adequately performed and tracked to ensure closure and provide lessons learned.			

Performance Score

Excellent | Good | Investigate | Define Actions | N/A

EM Corporate QA Performance Metrics
10 CFR 830.122 & DOE O 414.1C

SAFETY SOFTWARE QUALITY (SQA) REQUIREMENTS [DOE O 414.1C, Section 5 & Attachment 5]			SCORE
ASME NQA-1, 2004 3. Design 5. Instructions, Procedures and Drawings 7. Control of Purchased Items & Services 11. Test Control			
Lines of Inquiry	**Response**		
	Basis	Supporting Documents	Score
A Safety software quality assurance requirements are adequately incorporated into a formal QA program.	A. Safety Software requirements are incorporated into the QAPD, using 414.1C grading process. B. WCH's Safety Software baseline is complete and meets appropriate requirements. C. Recently performed Independent Assessment verified overall compliance with some minor alignment weaknesses. Overall implementation is deemed acceptable based on results of Independent Assessments on software (Feb 2006/July 2009), DOE RL assessments on Safety Software Controls (Aug 2007), ISMS Phase II Verification (Nov 2007), and QA verification of implementing procedures (July 2008). DOE EM Audit identified some alignment issues and the Independent Assessment in 2009 also identified some minor alignment issues. If challenges with software control are not improved by end of calendar year 09, then overall grading should be dropped to yellow.	Independent Assessment Software IA-QA&S-2009-002 Surveillance Software Quality Assurance, MICROSHIELD, RADCALC, and WMIS QA&S-2009-S014 ISMS Phase II Verification (Nov 2007), EM-64 Audit of QA program, (January 2009) EM-AUDIT-2008-018	
B Safety software utilized by contractor has DOE software quality assurance requirements applied.			
C Management and/or Independent assessments performed, specifically address safety software quality requirements			

Performance Score

Excellent | Good | Investigate | Define Actions | N/A

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