



Department of Energy

Washington, DC 20585

May 13, 2002

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The Honorable John T. Conway
Chairman
Defense Nuclear Facilities Safety Board
625 Indiana Avenue, NW
Suite 700
Washington, DC 20004

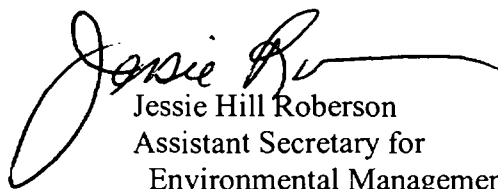
Dear Mr. Chairman:

In my January 2, 2002, letter, I committed to providing you the Corrective Action Plan (CAP) developed by the Office of River Protection (ORP) for an assessment conducted by the Office of Environment, Safety and Health. We have worked closely with ORP to develop a CAP that addresses the issues and concerns, and I approved this CAP on March 8, 2002. While we have taken additional time to develop and approve this CAP, I believe it now addresses the issues and provides us with a model CAP format. I am enclosing the final CAP for your information.

I would also like to update you on the schedule to perform an annual Integrated Safety Management (ISM) review of CH2M Hill Hanford Group. The ISM review is now scheduled as part of an Integrated Assessment to be conducted July 22 - August 9, 2002. I will apprise you of the results from this review.

If you have any questions, please contact me at (202) 586-7709 or have your staff contact Ms. Sandra Johnson at (202) 586-0755.

Sincerely,


Jessie Hill Roberson
Assistant Secretary for
Environmental Management

Enclosure



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DOE/ORP-2001-23
Revision 1

March 2002

Focused Review of the River Protection Project Safety Issues Corrective Action Plan



Office of River Protection

Focused Review of the River Protection Project Safety Issues Corrective Action Plan

Published March 2002

**CH2M HILL Hanford Group, Inc.
Richland, Washington 99352**

**Prepared for the
U.S. Department of Energy
Under DOE Office of River Protection
Contract DE-AC27-99RL14047**

Focused Review of the River Protection Project Safety Issues Corrective Action Plan

DOE/ORP-2001-23
Revision 1
March 2002

Approved by:



E. S. Aromi, President
and General Manager
CH2M HILL Hanford Group, Inc.



Harry L. Boston, Manager
Office of River Protection
U.S. Department of Energy

EXECUTIVE SUMMARY

The U.S. Department of Energy (DOE), Office of Environment, Safety and Health (ES&H) Oversight performed a Focused Review of the River Protection Project (RPP-FR) from April through July 2001. The primary purpose of the review was to evaluate DOE and CH2M HILL Hanford Group, Inc. (CHG) line management implementation of an integrated environment, safety, and health management system (ISMS) in order to: (1) provide feedback to the site on the effectiveness of its implementation of the five core functions of integrated safety management, (2) evaluate the functionality of an essential safety system, and (3) follow up on a 1996 safety management evaluation conducted by the Office of ES&H Oversight.

The RPP-FR identified six safety issues that warrant management attention. Safety Issues 1 through 5 are focused on CHG, and Safety Issue 6 is focused on the line management oversight function of the DOE Office of River Protection (ORP). For each safety issue, program elements, the areas of concern, and the specific statements of concern were identified. CHG and ORP performed a comprehensive evaluation of the RPP-FR areas of concern, assigned causal factors, and developed corrective actions.

This Corrective Action Plan (CAP) documents the process by which ORP and CHG evaluated the RPP-FR, identified the areas of concern, and developed the corrective actions. This CAP presents deliverables, responsible individuals, planned completion dates/status, and performance metrics/verification of effectiveness for each corrective action. ORP has reviewed CHG's corrective actions and has determined that CHG's process was comprehensive and consistent with ORP's methodology. ORP will verify closure of the identified corrective actions. ORP will re-verify CHG's ISMS implementation during the next annual ISMS assessment.

ORP and CHG are fully committed to the safety and health of their employees and the public, and to the protection of the environment, while accomplishing the River Protection Project mission. Implementation of the corrective actions identified in this CAP will ensure safe operations, continuous feedback, and quality improvement within the ORP and CHG.

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ACRONYMS

AJHA	Automated Job Hazards Analysis
ALARA	As Low As Reasonably Achievable
AMSQ	Assistant Manager for Environmental, Safety, Health and Quality
AR	Action Request (within CHG's Corrective Action Management System)
CAP	Corrective Action Plan
CARB	Corrective Action Review Board
CARS	Consolidated Action Reporting System
CATS	Corrective Action Tracking System
CCC	Central Command and Control
CFR	Code of Federal Regulations
CHG	CH2M HILL Hanford Group, Inc.
DNFSB	Defense Nuclear Facility Safety Board
DOE	U.S. Department of Energy
ES&H	Environment, Safety, and Health
ESH&Q	Environmental, Safety, Health and Quality
FRAM	Functions, Responsibilities, and Authorities Manual
HEPA	High Efficiency Particulate Air
INPO	Institute of Nuclear Power Operations
ISMS	Integrated Environment, Safety and Health Management System
ORP	Office of River Protection
ORPID	ORP Implementing Directives
PER	Problem Evaluation Request
PM3	Performance, Monitoring, Measurement and Management
QAPD	Quality Assurance Program Description
RPP-FR	Focused Review of the River Protection Project
RWP	Radiological Work Permit
S/RID	Standards/Requirements Identification Document
USQ	Unreviewed Safety Question

1.0 INTRODUCTION

The U.S. Department of Energy (DOE), Office of Environment, Safety and Health (ES&H) Oversight performed a Focused Review of the River Protection Project (RPP-FR) from April through July 2001. The primary purpose of the review was to evaluate DOE and CH2M HILL Hanford Group, Inc. (CHG) line management implementation of an integrated environment, safety, and health management system (ISMS) in order to: (1) provide feedback to the site on the effectiveness of its implementation of the five core functions of integrated safety management, (2) evaluate the functionality of an essential safety system, and (3) follow up on a 1996 safety management evaluation conducted by the Office of ES&H Oversight.

The RPP-FR identified the following six safety issues that warrant management attention. Safety Issues 1 through 5 are focused on CHG, and Safety Issue 6 is focused on the line management oversight function of the DOE Office of River Protection (ORP). Program elements, the areas of concern, and the specific statements of concern were identified for each safety issue. The following are the six safety issues and their corresponding program elements:

1. **CHG Work Planning and Control System** - The CHG work planning and control system does not ensure that all hazards are adequately identified and analyzed and that appropriate controls are tailored to the work performed as required by DOE Policy 450.4, *Safety Management System*.

Program Elements: Work Planning, and Hazard Analysis

2. **CHG Procedure Development** - Deficiencies in CHG procedure development and use are adversely impacting implementation of integrated safety management as required by DOE Policy 450.4, *Safety Management System*. Consequently, senior management expectations for procedure compliance delineated in CHG policy and DOE Order 5480.19 are not being met.

Program Element: Procedure Development and Use

3. **CHG Engineering** - Inadequate rigor in CHG engineering analyses, calculations, and the unreviewed safety question process resulted in the reduction of safety margin or in unreviewed conditions contrary to DOE Order 5480.21, *Unreviewed Safety Questions*; DOE Order 5480.22, *Technical Safety Requirements*; and DOE Order 5480.23, *Safety Analysis Reports*.

Program Element: Conduct of Engineering

4. **CHG Training and Qualification** - Some CHG personnel are not trained and qualified to perform assigned responsibilities in hazardous environments, as required by DOE Policy 450.4, *Safety Management System*, increasing the risk of adverse exposures.

Program Element: Employee Proficiency

5. **CHG Feedback and Improvement Processes** - CHG feedback and improvement processes are not sufficiently established or implemented to effectively drive continuous improvement or prevent recurrence of ES&H program and performance deficiencies as required by DOE Policy 450.5, *Line Environment, Safety, and Health Oversight*.

Program Elements: Assessment Program, Corrective Action Management System, and Lessons Learned

6. **ORP Oversight** - ORP line management has not established and implemented management systems that ensure effective oversight of contractor safety programs and performance as required by DOE Policy 450.5, *Line Environment, Safety, and Health Oversight*.

Program Elements: Contractor Oversight, Commitment Tracking and Trending, Self-Assessment, and Safety Basis Implementation Management

CHG and ORP evaluated the RPP-FR, identified areas of concern, assigned causal factors, developed corrective actions, and documented the results of those efforts in this Corrective Action Plan (CAP).

2.0 CORRECTIVE ACTION METHODOLOGY

A process based on DOE Order 414.1A, *Quality Assurance*, and on DOE Guide 450.4-1B, *Integrated Safety Management System Guide*, was utilized to develop the appropriate corrective actions to address the identified safety issues and areas of concern. This process is consistent with the DOE implementation plan for Defense Nuclear Facility Safety Board (DNFSB) Recommendation 98-1, *Department of Energy Plan to Address and Resolve Safety Issues Identified by Internal Independent Oversight*, and the memorandum from the Assistant Secretary for Environmental Management to Field Office Managers, *Policy for Content and Implementation of Corrective Action Plans (CAPs)*, dated October 4, 2001.

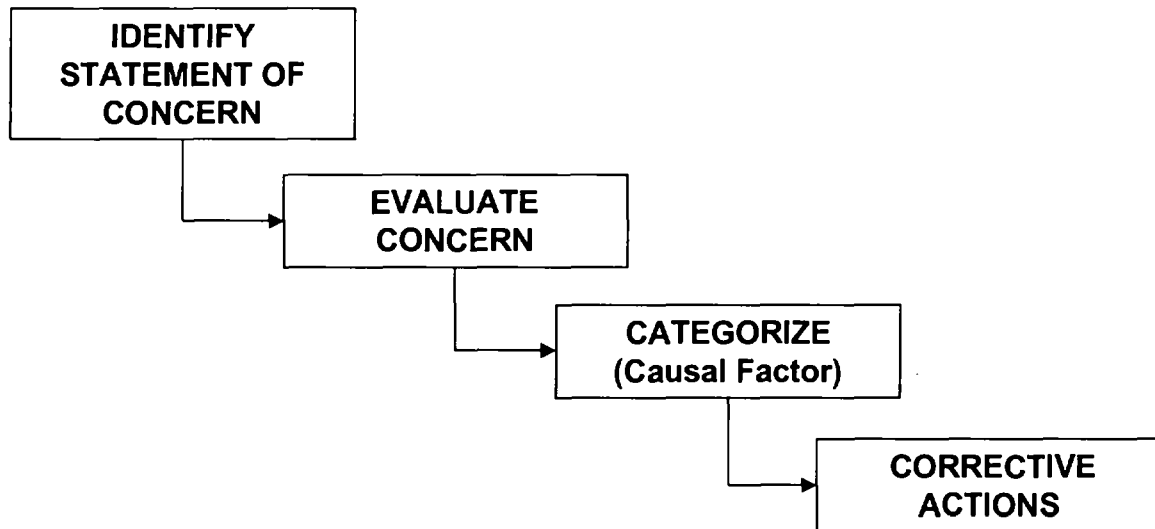
The following key steps define the process:

- Examination of the issue statement and the basis for each statement in RPP-FR Section 4.0, *Safety Issues*, to identify and capture the areas of concern.
- Examination of the remainder of the report to identify areas of concern that were not discussed in the RPP-FR, Section 4.0. These supporting issues were included in the evaluation.
- Categorization of each area of concern into program elements.
- Determination of the causal factors for each identified program element or specific statement of concern.

- Development and prioritization of corrective actions for the program elements or areas of concern, and assignment of responsibility for the corrective actions.
- Identification of performance expectations, and measures to monitor corrective action effectiveness.
- Performance of a management review for acceptance of the correction actions, completion dates, and measures of effectiveness.

This process is depicted in Figure 2-1 below, and the results of this process are discussed in Section 8.0, *Corrective Action Plan*, Sub-sections 8.1 through 8.6.

Figure 2-1, Corrective Action Methodology



3.0 CORRECTIVE ACTION PLAN DEVELOPMENT

The corrective actions were linked to the areas of concern, were evaluated to ensure that the specific statements of concern were addressed, and were grouped to the program elements (i.e., process, system, management). The corrective actions were evaluated to determine that collectively the corrective actions presented would address the programmatic weaknesses within the program elements, and therefore resolve the safety issue.

As a result of previous internal and external assessments, CHG and ORP have initiated corrective action management plans to address programmatic weaknesses similar to those identified in the RPP-FR. These corrective action plans were evaluated to determine if they would also address the safety issues identified in the RPP-FR. Where existing initiatives address the program element weaknesses such that recurrence prevention would be achieved, they are

included in the CAP. For the other program element weaknesses, new programmatic corrective actions have been provided in the CAP. The corrective actions identified to resolve the previously identified programmatic weaknesses, in concert with the corrective actions identified as a result of evaluating the RPP-FR, will ensure that the safety issues are appropriately addressed.

The corrective actions identified in Section 8.0, *Corrective Action Plan*, are those actions that are necessary to address identified programmatic weaknesses, resolve the safety issues, and prevent recurrence.

4.0 CORRECTIVE ACTION PLAN STRUCTURE

The CAP structure for Section 8.0 is as follows:

Identifier: RPP-FR issue number.

Issue Statement: issue as stated in the RPP-FR report.

Issue Manager: individual accountable for closure.

Discussion: summary of the program elements, assignment of causal factors, and other supporting information.

Corrective Actions: table showing issue number, description of corrective action, deliverables, responsible management person, planned completion date/status, and the measures to monitor corrective action effectiveness.

5.0 REVIEW AND APPROVAL OF CHG CORRECTIVE ACTIONS

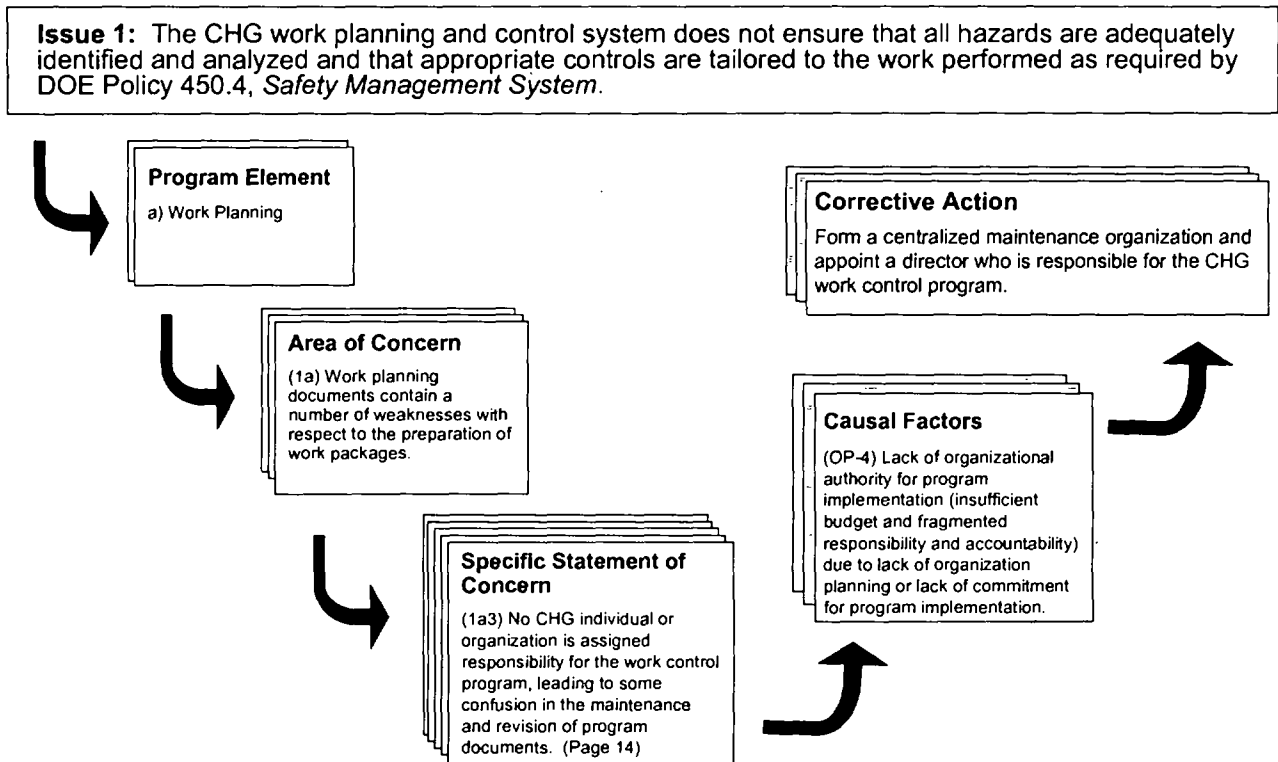
ORP and CHG prepared this CAP as a collaborative effort to ensure consistency in the methodology used to evaluate the RPP-FR, identify the issues, identify the causal factors, and develop corrective actions. This collaborative effort resulted in a disciplined approach for responding to the RPP-FR and developing this CAP.

ORP has determined that CHG's process was comprehensive and consistent with ORP's methodology. The resulting corrective actions address the identified concerns and weaknesses, therefore resolving Safety Issues 1 through 5. ORP's review of CHG's evaluation, methodology and development of the corrective actions is discussed below.

CHG performed a comprehensive evaluation of the RPP-FR to identify the overall programmatic weaknesses, which were termed Program Elements. Within these program elements, CHG identified the areas of concern. Upon further examination, CHG determined the specific issues

related to the areas of concern, which were termed Specific Statements of Concern. Causal factors were identified for the specific statements of concern, and corrective actions were developed to address the causes. Figure 5-1 illustrates the safety issue hierarchy.

Figure 5-1, Safety Issue Hierarchy



CHG utilized corrective action matrices (which show the relationships between the safety issue, program elements, areas of concern, specific statements of concern, the specific corrective actions, and the CAP corrective actions) to verify that the corrective actions address the causes and minimize the possibility of recurrence of the specific concerns. Figure 5-2 is an example of a Corrective Action T-Matrix, and Figure 5-3 is an example of a Corrective Action Validation Matrix. ORP has reviewed these corrective action matrices and has determined that they are complete and a useful tool for corrective action validation.

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Figure 5-2, Example of a Corrective Action T-Matrix

Issue 1 The CHS work planning and control system does not ensure that all hazards are adequately identified and analyzed and that appropriate controls are taken to the work performed as required by DOE Policy 45C.4, Safety Management System:

EHS-22 Program Element		Corrective Actions									
Work Planning	Hazards Analysis	Corrective Actions									
		REP-FR-0101 a	REP-FR-0101 b	REP-FR-0101 c	REP-FR-0101 d	REP-FR-0101 e	REP-FR-0101 f	REP-FR-0101 g			
Areas of Concern		Causes									
<p>1.1) Work planning documents contain a number of omissions and errors in the preparation of work packages.</p> <p>1.2) ALARA is not always fully reflected in work plans or work packages and is not adequately integrated into the work planning process.</p> <p>1.3) Line management has not ensured that adequate review and approval of work packages is completed for the planning process.</p> <p>1.4) CHS project hazards have not been adequately identified or analyzed.</p>		<p>1.1) Inadequate program management (lack of process or more review) due to inadequate management and program oversight.</p> <p>1.2) Inadequate review and approval of work packages.</p> <p>1.3) Inadequate review and approval of work packages.</p> <p>1.4) Inadequate review and approval of work packages.</p> <p>1.5) Inadequate review and approval of work packages.</p> <p>1.6) Inadequate review and approval of work packages.</p> <p>1.7) Inadequate review and approval of work packages.</p> <p>1.8) Inadequate review and approval of work packages.</p> <p>1.9) Inadequate review and approval of work packages.</p> <p>1.10) Inadequate review and approval of work packages.</p> <p>1.11) Inadequate review and approval of work packages.</p> <p>1.12) Inadequate review and approval of work packages.</p> <p>1.13) Inadequate review and approval of work packages.</p> <p>1.14) Inadequate review and approval of work packages.</p> <p>1.15) Inadequate review and approval of work packages.</p> <p>1.16) Inadequate review and approval of work packages.</p> <p>1.17) Inadequate review and approval of work packages.</p> <p>1.18) Inadequate review and approval of work packages.</p> <p>1.19) Inadequate review and approval of work packages.</p> <p>1.20) Inadequate review and approval of work packages.</p> <p>1.21) Inadequate review and approval of work packages.</p> <p>1.22) Inadequate review and approval of work packages.</p> <p>1.23) Inadequate review and approval of work packages.</p> <p>1.24) Inadequate review and approval 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Example

Focused Review of the River Protection Project Safety Issues Corrective Action Plan

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Figure 5-3, Example of a Corrective Action Validation Matrix

Issue 1: The CHG work planning and control system does not ensure that all hazards are adequately identified and analyzed and that appropriate controls are tailored to the work performed as required by DOE Policy 450.4 Safety Management System

EHZ Areas of Concern and Specific Statements of Concern	Corrective Actions						
	RPP FR 01-01 a	RPP FR 01-01 b	RPP FR 01-01 c	RPP FR 01-01 d	RPP FR 01-01 e	RPP FR 01-01 f	RPP FR 01-01 g
	Revise HNF-P-0842 Volume 5 Section 7.1 Tank Farms Work Control, to improve the work control process	Revise HNF-P-0842 Volume 5 Section 4.1. The Job Briefing, to require verification that training requirements are met	Form a centralized maintenance organization and appoint a director who is responsible for the CHG work control program	Ensure the safety department is represented as an integral resource in the planning process and participates in work hazard analysis	Revise HNF-P-0842 Volume 7, Section 17.1 Health and Safety Plan to delete its title and monitoring zones and state that Central Command and Control (CCC) maintains the current list of air monitoring zones	Revise HNF-P-0842 Volume 7, Section 17.1, ALARA Work Planning, and associated ALARA Management Worksheet form #AG-003-121 to include an attribute for identification of beta radiation hazards	Revise HNF-P-0842 Volume 7, Section 17.2 Radiological Work Permits, to include correct guidance for completing the RWP Radiation Emission block
(1a) Work planning documents contain a number of weaknesses with respect to the preparation of work packages	X						
(1a1) Job-specific hazards are not clearly identified in work packages and there is no requirement to document that standing A/JHAs are read and understood (Page 10)	X						
(1a2) For example, some terms used in the fundamental to implementing the work control process (e.g., "roll-of-the-cloth") are not defined. A checklist is used for work release and the checklist has not been used in the work control process. The review team identified some discrepancies in work control packages. For example, the work package for core sampling in S11-2 Tank was not reviewed with both incomplete and expired waste check site (Page 10)	X						
(1a3) No CHG work planning organization is assigned responsibility for the work control process, leading to confusion in the maintenance and repair of process equipment (Page 14)			X				
(1a4) Worker training is not clearly identified in the A/JHA or in work control packages (Page 14)		X	X				
(1a5) CHG work control packages are not required to list training requirements in work packages, and line managers seldom request training requirements for applicability to specific job hazards. An exception is the recent changes in some waste handling programs as lockout and tagout (Page 10)		X	X				
(1a6) The work control packages do not provide for the control of the radiological hazards associated with the conduct of work. The lack of specific controls in the controlled area may have contributed to the release of radionuclides (Page 16)	X	X					
(1b) Some CHG work control packages have not been adequately identified, analyzed, or documented							
(1b1) CHG has not identified the potential for beta radiation doses to the lens of the eye for some work activities. This hazard was not included in the "as low as reasonably achievable" (ALARA) management worksheets, the radiation work permits or the pre-job briefings for W-314 valve pit work. The Fluor Federal Services contractor work package and job-specific job safety analysis did not identify the hazard (Page 12)	X					X	X
(1b2) CHG Radiation Work Permit IS-329 Revision 001 erroneously identified in the data field "Radiation Emitted" that alpha, beta, and gamma were not a hazard; i.e., all boxes for "Alpha, Beta, Gamma and Neutron" were left unchecked. This contradicted information elsewhere in the radiation work permit, which indicated the potential for "MFP" (mixed fission products) and specified controls for alpha and beta/gamma activity (Page 12)	X						X
(1b3) For ultrasonic testing of the S11-AZ Condensate Tank, the potential stored energy hazard associated with the pressure wash (e.g., potential line whip hazard) was not adequately identified, analyzed, and documented in the work package or communicated to workers (Page 12)	X			X			

ORP has concluded that CHG's process was comprehensive and effective in identifying causes and in developing appropriate corrective actions and measurement of effectiveness. ORP concurs with CHG's CAP development methodology and has verified that it is consistent with the methodology used by ORP.

6.0 CORRECTIVE ACTION PLAN STATUS REPORTING AND CLOSURE

This RPP-FR Safety Issues CAP contains the information to be entered into the DOE-Headquarters Corrective Action Tracking System (CATS) database. ORP will update CATS on a monthly basis.

ORP will enter the corrective actions identified for Safety Issues 1 through 6 into the ORP Consolidated Action Reporting System (CARS) to monitor implementation progress. Definition of corrective action status has been established (i.e., to be initiated, in progress, complete, closed). Although a corrective action may be complete, a particular improvement will not be closed until the effectiveness is validated. CHG's corrective actions will be tracked and verified complete in accordance with HNF-IP-0842, Volume 1, Section 2.4, *Corrective Action Management*.

7.0 VERIFICATION OF CORRECTIVE ACTION EFFECTIVENESS

CHG will develop and/or revise performance indicators to monitor the effectiveness of corrective action implementation to ensure that performance is meeting expectations. CHG will perform assessments that will focus on areas of corrective action implementation to ensure improvement is being attained, and to confirm appropriate measures are in place to continually monitor performance. These assessments will be included in CHG's integrated assessment schedule.

ORP will assess CHG's performance in field implementation of the scheduled corrective actions and ensure appropriate measures are in place to continually monitor performance. ORP will verify completion and effective implementation of CHG's corrective actions prior to closure of Safety Issues 1 through 5. ORP will perform an assessment with sufficient scope to verify completion of the corrective actions, to ensure CHG's corrective actions are implemented in programs and operations, and to verify performance is meeting both immediate and long-term expectations.

For Safety Issue 6, ORP will assess performance indicators to monitor the effectiveness of corrective action implementation. ORP will commission an independent assessment to verify completion and effective implementation of ORP corrective actions. This assessment will be of sufficient scope to ensure ORP's corrective actions are implemented in programs, to verify performance is meeting expectations, and to confirm appropriate measures are in place to continually monitor performance.

ORP will notify the Assistant Secretary of Environmental Management upon verification of closure of the six safety issues.

8.0 CORRECTIVE ACTION PLAN

ORP and CHG are fully committed to the safety and health of their employees and the public, and to the protection of the environment, while accomplishing the River Protection Project mission. Implementation of the immediate and long-term corrective actions and measures of performance identified in this CAP will ensure safe operations, continuous feedback, and quality improvement within the ORP and CHG. ORP will re-verify CHG's ISMS implementation during the next annual ISMS assessment.

8.1 CHG Work Planning and Control System (Issue 1)

Identifier: RPP-FR-01-01

Issue Statement: The CHG work planning and control system does not ensure that all hazards are adequately identified and analyzed and that appropriate controls are tailored to the work performed as required by DOE Policy 450.4, *Safety Management System*.

Issue Manager: Dale I. Allen, Senior Vice President of Operations, CHG

Discussion: CHG implemented compensatory measures until a comprehensive evaluation of the RPP-FR was performed. A director of maintenance responsible for the CHG work control process was appointed (completed May 29, 2001, Action Request [AR] 29010935/12). A controlled release of work was invoked to ensure work was not released unless it was properly planned, the work package was thoroughly reviewed by the subject matter experts and disciplines involved in the work, and hazards and hazards controls were identified and understood before work was performed (completed May 29, 2001, AR 2900935/2). The work planning process was expanded by applying enhanced work planning, which was previously applied to only higher risk jobs (completed May 24, 2001, AR 29010225/2). An integrated (multidiscipline team) work package review was applied to high risk work packages to ensure all hazards had been identified, appropriately mitigated, and to provide an overall assessment of the task and work package (completed May 24, 2001, AR 29010225/3). These actions remained in effect until sufficient progress had been made in preparing work packages.

CHG's evaluation of Safety Issue 1 identified two program elements: a) Work Planning, and b) Hazard Analysis. Within these program elements, CHG identified four areas of concern (discussed below in the program element) supported by 24 specific statements of concern. Causal factors were assigned to the specific statements of concern, and corrective actions were identified. CHG utilized corrective action matrices to verify that the corrective actions will address the causes and minimize the possibility of recurrence of the areas of concern.

The following discusses CHG's approach to improve the ability to plan, analyze, integrate, and perform field activities.

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a) Work Planning

The RPP-FR Safety Issue 1 identified three areas of concern within this program element.

1. Work planning documents contain a number of weaknesses with respect to the preparation of work packages.
2. Automated Job Hazards Analyses (AJHAs) do not always clearly define and tailor hazard controls to the specific work activity and are not effectively integrated into the work instructions.
3. Line management has not ensured that workers review and understand the hazards analyzed in the standing AJHA.

CHG's evaluation identified 12 specific statements of concern related to these three areas of concern. Causal factors assigned to the specific statements of concern pointed to inadequate program monitoring, lack of organizational authority for program implementation, and inadequate program design (inadequate scope or feedback from the field work force, lack of or inadequate interface requirements).

CHG identified corrective actions to address the causal factors. CHG will conduct a detailed review of the field work execution process to address whether all hazards are identified, appropriate controls are in place, and to provide indications of needed improvement within the work planning preparation process. As part of the pre-job briefing process, CHG will require the field work supervisor to confirm the training and qualification of the workers. These actions, in addition to the other corrective actions identified in the table below, will enhance the overall effectiveness of work planning documents, will ensure that expectations, requirements, and processes are delineated in implementing procedures, will enhance personnel knowledge and understanding of the hazards analysis and associated controls prior to performing work, and will ensure that previous implementation weaknesses are corrected and processes are continuously improved.

CHG will develop and/or revise performance indicators to monitor the effectiveness of changes within the work planning documentation processes to ensure that performance is meeting expectations. CHG will conduct an assessment that will focus on the field usability of work planning documentation, as well as the effectiveness of program changes and training. This assessment will be included in CHG's integrated assessment schedule.

b) Hazard Analysis

The RPP-FR Safety Issue 1 identified one area of concern within this program element.

1. Some CHG project hazards have not been adequately identified, analyzed, or documented.

CHG's evaluation identified 12 specific statements of concern related to this area of concern. Causal factors assigned to the specific statements of concern pointed to inadequate program monitoring, and inadequate program design (vagueness in procedures, inadequate scope or feedback from the field work force, lack of or inadequate interface requirements, conflicting program requirements).

CHG identified corrective actions to address the identified causal factors. CHG initiated the integration of an industrial safety and health professional and an individual familiar with the Authorization Basis (specifically Technical Safety Requirements) as an integral part of the work planning process. CHG will develop and implement task-based standing job hazard analysis to replace the currently used craft-based standing job hazard analysis. These actions, in addition to the other corrective actions identified in the table below, will enhance the overall effectiveness of hazard analysis and controls, and the integration of hazard analysis and controls into work planning documents. These actions will also ensure that expectations, requirements, and processes are delineated in implementing procedures, and will ensure that previous implementation weaknesses are corrected and processes are continuously improved.

CHG will develop and/or revise performance indicators to monitor the effectiveness of changes within the hazard analysis documentation processes to ensure that performance is meeting expectations. CHG will conduct an assessment that will focus on the effectiveness of program changes, training, and field usability. This assessment will be included in CHG's integrated assessment schedule.

The following table identifies the actions to address the program elements and to improve CHG's work planning and control.

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Corrective Actions:

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RPP-FR-01-01-a	Revise HNF-IP-0842, Volume 5, Section 7.1, <i>Tank Farms Work Control</i> , to improve the work control process.	<p>Revise procedure HNF-IP-0842, Volume 5, Section 7.1, <i>Tank Farms Work Control</i>, capturing:</p> <ul style="list-style-type: none"> Incorporation of training requirements into work packages. (02/24/02) Incorporation of hazard controls (i.e., AJHA, As Low As Reasonably Achievable [ALARA] Management Worksheet, Radiological Work Permit [RWP]) into work packages. (06/28/02) Development of task-based standing AJHAs. (06/28/02) <p>Task-based standing AJHAs. (06/28/02)</p>	T. L. Hissong	06/28/02 / In Progress	<p>Monthly review (including field observations) of a sample of in process work packages to verify appropriate training requirements and hazard controls are incorporated.</p> <p>Performance indicator to track percentage of work packages sampled that incorporate appropriate training requirements.</p> <p>Performance indicator to track percentage of work packages sampled that incorporate appropriate hazard controls.</p> <p>Performance of the second Independent Performance Evaluation (IPE-II).</p>
RPP-FR-01-01-b	Revise HNF-IP-0842, Volume 5, Section 4.1, <i>Pre-Job Briefing</i> , to require verification that training requirements are met.	Revise HNF-IP-0842, Volume 5, Section 4.1, <i>Pre-Job Briefing</i> .	T. L. Hissong	02/24/02 / Complete	<p>Monthly review of a sample of pre-job briefings to observe training requirements verification.</p> <p>Performance indicator to track percentage of pre-job briefings observed that verified training requirements are met.</p>
RPP-FR-01-01-c	Form a centralized maintenance organization and appoint a director who is responsible for the CHG work control program.	Organization chart showing alignment of work planning personnel under the Director, Maintenance Program.	D. I. Allen	05/29/01/Complete	The reorganization has been implemented and its effectiveness will be monitored through its output (see corrective action RPP-FR-01-01-a).

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Number	Description	Deliverables	Responsible Actionee	Planned Completion Date / Status	Performance Measurement / Effectiveness Verification
RPP-FR-01-01-d	Ensure the safety department is represented as an integral resource in the planning process, and participates in walk-downs and in each job hazard analysis.	Revise HNF-IP-0842, Volume 9, Section 2.6, <i>Job Hazard Analysis</i> . Revise HNF-IP-0842, Volume 5, Section 7.1, <i>Tank Farm Contractor Work Control</i> . Revise RPP-MP-614, <i>Safety and Health Program Description</i> .	R. E. DeBusk	01/31/02 / Complete	Monthly review of a sample of in process work packages to verify appropriate hazards and controls are identified. Performance indicator to track percentage of in process work packages sampled that identify appropriate hazards and controls. Periodic assessments to verify safety department's involvement in work planning, walk-downs, and job hazard analyses.
RPP-FR-01-01-e	Revise HNF-SD-WM-HSP-002, <i>Tank Farm Health and Safety Plan</i> to delete its list of air monitoring zones and to state that Central Command and Control (CCC) maintains the current list of air monitoring zones.	Revised HNF-SD-WM-HSP-002, <i>Tank Farm Health and Safety Plan</i> , stating that Central Command and Control (CCC) maintains the current list of air monitoring zones.	R. E. DeBusk	04/30/02 / In Progress	Revising the Health and Safety Plan to delete its list of air monitoring zones and to state that CCC maintains the current list of air monitoring zones eliminates the possibility of conflicting information. Verification of corrective action completion will be performed.
RPP-FR-01-01-f	Revise HNF-IP-0842, Volume 7, Section 17.1, <i>ALARA Work Planning</i> , and associated ALARA Management Worksheet form #A-6003-121 to include an attribute for identification/mitigation of beta radiation hazards.	Revise HNF-IP-0842, Volume 7, Section 17.1, <i>ALARA Work Planning</i> . Revise ALARA Management Worksheet form #A-6003-121.	R. L. Brown	12/19/01 / Complete	Quarterly reviews of a sample of RWP/ALARA Management Worksheets. Performance indicator to track percentage of RWP/ALARA Management Worksheets that appropriately addressed identification/mitigation of beta radiation hazards.
RPP-FR-01-01-g	Revise HNF-IP-0842, Volume 7, Section 17.2, <i>Radiological Work Permits</i> , to include correct guidance for completing the RWP Radiation Emitted block.	Revised HNF-IP-0842, Volume 7, Section 17.2, <i>Radiological Work Permits</i> . Modified Word file template, which annotates alpha, beta, and gamma radiation.	R. L. Brown	01/31/02 / Complete	Quarterly reviews of a sample of RWP/ALARA Management Worksheets. Performance indicator to track percentage of RWP/ALARA Management Worksheets that correctly completed the RWP Radiation Emitted block.

8.2 CHG Procedure Development (Issue 2)

Identifier: RPP-FR-01-02

Issue Statement: Deficiencies in CHG procedure development and use are adversely impacting implementation of integrated safety management as required by DOE Policy 450.4, *Safety Management System*. Consequently, senior management expectations for procedure compliance delineated in CHG policy and DOE Order 5480.19 are not being met.

Issue Manager: Dale I. Allen, Senior Vice President of Operations, CHG

Discussion: Prior to CHG performing a comprehensive evaluation of the RPP-FR, CHG had initiated a campaign to reinforce strict adherence to conduct of operations requirements. CHG issued a Conduct of Operations Manual to establish a uniform standard and the basis for step-change improvement (completed April 10, 2001, AR 29010214/6). An Event Investigation Team was established to provide immediate investigation of events to obtain factual evidence to support establishment of corrective actions, thereby minimizing pressure to do work package/procedure work-a-rounds (completed July 25, 2001, AR 29010218/3). CHG implemented a zero threshold problem reporting system for bottoms up identification of problems, Management Directive RPP-MD-058, *Problem Evaluation Request* (discussed further in Section 8.5, *CHG Feedback and Improvement Processes*). A daily morning management meeting chaired by the Vice President of Operations was formalized to provide executive management the forum to discuss incidents/occurrences, problem evaluation requests (PERs) issued, and lessons learned. This morning meeting re-enforces the expectation of disciplined conduct of operations in a uniform manner across the tank farms (completed June 25, 2001, AR 29010214/2). Operations expectations, including mission objectives, procedural compliance, and conduct of operations, were published to ensure personnel understand that no work is to be undertaken that is not fully described in the work package or permitted by procedures. If documentation contains errors or is ambiguous, work must be stopped and the documentation corrected before work is resumed (completed August 16, 2001, AR 29010214/9).

CHG's evaluation of Safety Issue 2 identified one program element: Procedure Development and Use. Within this program element, CHG identified two areas of concern (discussed below in the program element) supported by 22 specific statements of concern. Causal factors were assigned to the specific statements of concern, and corrective actions were identified. CHG utilized corrective action matrices to verify that the corrective actions will address the causes and minimize the possibility of recurrence of the areas of concern. As described in Section 3.0, CHG conducted a review of previously initiated company level corrective actions to identify where existing initiatives address program element weaknesses.

The following discusses CHG's approach to improve the ability to develop, maintain, and adhere to procedures.

Procedure Development and Use

The RPP-FR Safety Issue 2 indicated two areas of concern within this program element.

1. Procedures are often inadequate (lack integration, contain conflicting information, ambiguous, voluminous, outdated or incorrect, non-existent).
2. Personnel failed to follow established safety requirements and procedures as required.

CHG's evaluation identified 22 specific statements of concern related to these two areas of concern. Causal factors assigned to the specific statements of concern pointed to lack of commitment to program implementation, inadequate program monitoring or management, lack of program evaluation process, and inadequate program design (vagueness in procedures, inadequate scope or feedback from the field work force, conflicting program requirements).

CHG identified corrective actions to address the identified causal factors. CHG has initiated revision of the procedure development guide, and establishment of a concise document hierarchy. Revision of existing procedures will be prioritized and completed using a graded approach. Efforts are underway to address performance enhancement by re-establishing the culture of strict adherence to procedures supported by simplification of procedures. These actions, in addition to the other corrective actions identified in the table below, will enhance the overall effectiveness of procedural development and use, and will ensure that previous implementation weaknesses are corrected and processes are continuously improved.

CHG will develop and/or revise performance indicators to ensure that performance is meeting expectations. In addition, an assessment will be conducted in areas where improvement is needed to be sure that the corrective actions are being implemented effectively and are having the desired results. This assessment will be included in CHG's integrated assessment schedule.

The following table identifies the actions to address the program elements and to improve CHG's procedural development and use.

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RPP-FR-01-02-a	<p>Develop a Conduct of Operations improvement plan.</p> <ul style="list-style-type: none"> • Issue Conduct of Operations Manual (complete). • Expectations training class led by the Senior Vice President of Operations (complete). • Conduct of Operations Training (05/29/02). 	<p>Conduct of Operations Manual.</p> <p>Training materials and attendance rosters.</p>	M. D. Hasty	05/29/02 / In Progress	<p>Performance indicator to track the percentage of events/occurrences due to failure to follow procedures.</p> <p>A Performance Monitoring, Measurement, and Management (PM3) operations war room has been established. This war room will post the results of the work task activities, and will maintain the metrics by which progress in re-establishing the proper Conduct of Operations will be measured.</p> <p>Performance of the second Independent Performance Evaluation (IPE-II).</p>
RPP-FR-01-02-b	<p>Develop a performance management improvement plan to improve accountability.</p> <ul style="list-style-type: none"> • Establish standards of conduct and discipline. • Issue performance management guidelines. • Conduct progressive performance management training focused on coaching. 	<p>Standards of conduct and discipline.</p> <p>Performance management guidelines.</p>	C. R. Carson	06/30/02 / In Progress	<p>Performance indicator to track the percentage of events/occurrences due to failure to follow procedures.</p> <p>A PM3 operations war room has been established. This war room will post the results of the work task activities, and will maintain the metrics by which progress in re-establishing the proper Conduct of Operations will be measured.</p> <p>Performance of the second Independent Performance Evaluation (IPE-II).</p>

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Number	Description	Deliverables	Responsible Actionee	Planned Completion Date / Status	Performance Measurement / Effectiveness Verification
RPP-FR-01-02-c	<p>Implement improvements in procedure development.</p> <ul style="list-style-type: none"> Develop procedure guide and document procedure hierarchy (complete). Benchmark HNF-IP-0842 Administrative procedures against industry practices and identify improvement opportunities (09/30/02). Develop screening criteria, screen procedures, and complete upgrading the high priority procedures (09/30/02). 	<p>Identified procedure improvement opportunities.</p> <p>Procedure guide and hierarchy.</p> <p>Upgraded high priority procedures.</p>	J. G. Kristofzski	09/30/02 / In Progress	<p>Performance indicator to track the percentage of PERs due to procedures not adequate, confusing, voluminous, etc.</p> <p>Management assessment to confirm effectiveness of upgraded procedures.</p>

8.3 CHG Engineering (Issue 3)

Identifier: RPP-FR-01-03

Issue Statement: Inadequate rigor in CHG engineering analyses, calculations, and the unreviewed safety question process resulted in the reduction of safety margin or in unreviewed conditions contrary to DOE Order 5480.21, *Unreviewed Safety Questions*; DOE Order 5480.22, *Technical Safety Requirements*; and DOE Order 5480.23, *Safety Analysis Reports*.

Issue Manager: David C. Lowe, Chief Engineer, CHG

Discussion: Prior to CHG's evaluation of the RPP-FR, CHG began changing its Conduct of Engineering program. CHG has centralized the engineering functions, previously reporting into different project organizations, under a Chief Engineer reporting to the CHG President (completed April 16, 2001, AR 29010235/1 and 2). Engineering roles and responsibilities were revised and communicated (completed June 7, 2001, AR 29010238/2). These interim actions establish the foundation to obtain consistent interpretation of engineering policies and procedures, expected engineering rigor and product development, and Engineering's overall support and responsiveness to Conduct of Operations.

CHG's evaluation of Safety Issue 3 identified one program element: Conduct of Engineering. Within this program element, CHG identified four areas of concern (discussed below in the program element) supported by 19 specific statements of concern. Causal factors were assigned to the specific statements of concern, and corrective actions were identified. CHG utilized corrective action matrices to verify that the corrective actions will address the causes and minimize the possibility of recurrence of the areas of concern.

The following discusses CHG's approach to improve the Conduct of Engineering program.

Conduct of Engineering

The RPP-FR Safety Issue 3 identified four areas of concern within this program element.

1. Weaknesses in the rigor and implementation of analysis, evaluation of design information, and development of controls to ensure that the design intent is met and that systems do not operate outside the conditions documented in the calculations.
2. Weaknesses were identified in unreviewed safety question screenings for changes in the Aging Waste Facility tank ventilation system, other equipment, and procedures.
3. Deferred maintenance on the Aging Waste Facility airlift circulator interlock has resulted in engineered controls being replaced by administrative controls.
4. Deficiencies in the controls specified in the Fire Hazards Analysis.

CHG's evaluation identified 19 specific statements of concern related to these four areas of concern. Causal factors assigned to the specific statements of concern pointed to inadequate program design (inadequate scope or feedback from the field work force), and lack of program evaluation.

CHG identified corrective actions to address the identified causal factors. Engineering will revise the engineering management assessment criterion to provide an early and more systematic identification of areas for improvement. CHG is performing an evaluation of the adequacy of unreviewed safety question (USQ) screenings conducted during October 1997-2001. Results of this evaluation will be included as lessons learned in the enhanced training being prepared for USQ screeners. These actions, in addition to the other corrective actions identified in the table below, will enhance the rigor in engineering analyses, calculations, controls, and the unreviewed safety question process.

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CHG will develop and/or review performance indicators to monitor the effectiveness of changes within the Conduct of Engineering. CHG will conduct an assessment to survey general engineering activities, technical adequacy of engineering products, and implementation of personnel feedback and management initiatives to continuously improve. This assessment will be included in CHG's integrated assessment schedule.

The following table identifies the specific actions to improve CHG's Conduct of Engineering.

Corrective Actions:

Number	Description	Deliverables	Responsible Actionee	Planned Completion Date / Status	Performance Measurement / Effectiveness Verification
RPP-FR-01-03-a	<p>Implement improvements in Conduct of Engineering to address weaknesses in technical rigor.</p> <ul style="list-style-type: none"> Develop and communicate to engineering staff Chief Engineer's expectations for Conduct of Engineering (complete). Establish Engineering performance indicators that address technical rigor (complete) 	<p>Chief Engineer's expectations for Conduct of Engineering and attendance rosters.</p> <p>Conduct of Engineering performance indicators.</p> <p>Independent assessment report.</p>	D. C. Lowe	07/30/02 / In Progress	<p>Performance indicators of technical rigor incorporated into Engineering products by attributes of Adequacy of Scope, Application of Requirements/Standards/Assumptions, Calculation/Analysis Performance, and Product Quality.</p> <p>Overall improving trends as indicated in the monthly performance indicators and an improved rating as reported in the assessment of Engineering.</p> <p>Conduct independent assessment of Conduct of Engineering.</p>
RPP-FR-01-03-b	<p>Evaluate and revise as necessary the Engineering Management Assessment process to ensure it adequately addresses: routine management surveillance of general activities supporting the Conduct of Engineering; worker assessments; feedback from staff dealing with problem areas and ways to improve work processes and execution; use of new procedures and their effectiveness; evaluation of the technical adequacy of engineering products; implementation of management initiatives to improve Engineering performance.</p>	<p>Revise Desk Instruction or conversion of current Desk Instruction to a procedure, if necessary.</p>	C. J. Rice	12/28/01 / Complete	<p>Quarterly review of completed Engineering Management Assessments to assess the quality of the Engineering Management Assessments.</p> <p>Performance indicator to track the percentage of Engineering Management Assessments that meet the quality expectations.</p> <p>Overall improving trends as indicated in the monthly performance indicators and an improved rating as reported in the assessment of Engineering.</p>

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Number	Description	Deliverables	Responsible Actionee	Planned Completion Date / Status	Performance Measurement / Effectiveness Verification
RPP-FR-01-03-c	Improve training of USQ screeners to provide lessons learned and hands-on-training on how to prepare screenings and determinations. Increased oversight of the process will be conducted for 60 days following the training and progress will be evaluated.	Training materials and attendance rosters. List of qualified screeners, evaluators, and core evaluators. Evaluation report.	K. M. Hall	12/31/01 / Complete	Monthly review of a sample of USQ screenings to assess the quality of the USQ screenings. Performance indicator to track the percentage of USQ screenings reviewed that meet the quality expectations. Monthly review of a sample of USQ determinations performed to assess the quality of the USQ determinations. Performance indicator to track the percentage of USQ determinations reviewed that meet the quality expectations.
RPP-FR-01-03-d	Revise HNF-IP-0842, Volume 4, Section 4.28, <i>Testing Practices Requirements</i> , to consider instrument uncertainty in preparation of test procedures.	Revise HNF-IP-0842, Volume 4, Section 4.28, <i>Testing Practices Requirements</i> .	C. DeFigh-Price	12/28/01 / Complete	Engineering Management Observation to review effectiveness.
RPP-FR-01-03-c	Institute a process to conduct system operability evaluations for degraded or nonconforming conditions.	Issue new HNF-IP-0842, Volume 4, Section 2.20, <i>Operability Evaluations</i> . Operability evaluations.	C. DeFigh-Price	09/05/01 / Complete	In April 2002, a management assessment will be completed, assessing the effectiveness of the program.
RPP-FR-01-03-f	Require System Engineers to evaluate semi-annually the status of their systems and provide a written report on suggested actions to improve system performance.	Issue new HNF-IP-0842, Volume 4, Section 2.21, <i>Conduct of System Engineering</i> . System health reports.	C. DeFigh-Price	01/20/02 / Complete	Management assessment to confirm the effectiveness of the System Engineer program.
RPP-FR-01-03-g	Design Engineering (Fire Protection) will evaluate if the wall is required to have a two-hour rating. If the rating is required, Design Engineering will complete an analysis to ascertain the suitability of the ducting as equivalent to a two-hour fire rating.	Drawing change or engineering analysis.	A. H. Fribcrg	02/28/02 / Complete	If the wall is required to have a two-hour rating, the analysis to ascertain if the ducting is equivalent to a two-hour fire rating will resolve the identified issue. If the ducting is not equivalent, additional corrective actions will be taken. Verification of corrective action completion will be performed.

8.4 CHG Training and Qualification (Issue 4)

Identifier: RPP-FR-01-04

Issue Statement: Some CHG personnel are not trained and qualified to perform assigned responsibilities in hazardous environments, as required by DOE Policy 450.4, *Safety Management System*, increasing the risk of adverse exposures.

Issue Manager: Dale I. Allen, Senior Vice President of Operations, CHG

Discussion: CHG performed a comprehensive evaluation of Safety Issue 4 and identified one program element: Employee Proficiency. Within this program element, CHG identified three areas of concern (discussed below in the program element) supported by eight specific statements of concern. Specific statements of concern directly related to employee proficiency in the work control process were analyzed and addressed in Section 8.1, *CHG Work Planning and Control*. Causal factors were assigned to the specific statements of concern, and corrective actions were identified. CHG utilized corrective action matrices to verify that the corrective actions will address the causes and minimize the possibility of recurrence of the areas of concern.

The following discusses CHG's approach to ensure employees obtain adequate training to address the scope of their job and obtain and maintain proficiency.

Employee Proficiency

The RPP-FR Safety Issue 4 identified three areas of concern within this program element.

1. The large number of operators certified as watch standers (several with multiple certifications) for various tank farm operations results in limited individual watch-standing time, affecting operator proficiency for safety-significant systems.
2. Conduct of Operations weaknesses exist during watch standing and proficiency (use of procedures during walk downs, valve alignments, interviews, observation of activities).
3. CHG has not implemented a formal program for industrial hygiene technician qualification and continuing training. No formal program for industrial hygiene technician qualification and continuing training has been in place since 1995.

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CHG's evaluation identified eight specific statements of concern related to these three areas of concern. Causal factors assigned to the specific statements of concern pointed to lack of commitment to program implementation, inadequate program monitoring, and inadequate program design (vagueness in procedures).

CHG identified corrective actions to address the identified causal factors. CHG has performed a review to revalidate that DOE Order 5480.20A, *Personnel Selection, Qualification, and Training Requirements for DOE Nuclear Facilities*, requirements are addressed through training. Line management will perform an evaluation of, and make changes to, proficiency requirements to ensure they support performance expectations. These actions, in addition to the other corrective actions identified in the table below, will enhance overall employee proficiency, will ensure CHG's expectations are met, and will ensure that previous program element weaknesses are corrected and continuously improved.

CHG will develop and/or revise performance indicators to monitor employee proficiency to ensure that performance is meeting expectations. CHG will conduct an assessment that will focus on employee proficiency. This assessment will be included in CHG's integrated assessment schedule.

The following table identifies the specific action to address the program element and to improve CHG's employee proficiency.

Corrective Actions:

Number	Description	Deliverables	Responsible Actionee	Planned Completion Date / Status	Performance Measurement / Effectiveness Verification
RPP-FR-01-04-a	Review the job analyses for the positions requiring qualifications per DOE Order 5480.20A.	Revalidate/update job analyses.	M. D. Hasty	12/31/01 / Complete	Quarterly review of PER trending to detect performance issues related to training causes. Performance indicator to monitor performance issues related to training.

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Number	Description	Deliverables	Responsible Actionee	Planned Completion Date / Status	Performance Measurement / Effectiveness Verification
RPP-FR-01-04-b	Line management will change proficiency requirements for operations positions to ensure they support performance expectations.	Revise HNF-IP-0842, Volume 3, Section 10.6, <i>Proficiency Requirements</i> .	W. E. Ross	05/30/02 / In Progress	Direct Line Management quarterly assessment through fiscal year 2002 of operators performing non-routine qualified positions. Quarterly assessments to verify performance expectations. Performance indicator to track the percentage of PERs due to operator proficiency causes.
RPP-FR-01-04-c	Implement an Industrial Hygiene Technician Qualification Program.	Industrial Hygiene Technician Qualification Card and Guide, 350893. HNF-IP-0842, Volume 3, Section 10.15, <i>Industrial Hygiene Technician Qualification Program Description</i> .	R. E. DeBusk	02/24/02 / Complete	Quarterly review of PER trending to detect performance issues related to Industrial Hygiene deficiencies. Direct Line Management quarterly assessment through fiscal year 2002 of Industrial Hygiene Technician's field effectiveness.

8.5 CHG Feedback and Improvement Processes (Issue 5)

Identifier: RPP-FR-01-05

Issue Statement: CHG feedback and improvement processes are not sufficiently established or implemented to effectively drive continuous improvement or prevent recurrence of ES&H program and performance deficiencies as required by DOE Policy 450.5, *Line Environment, Safety, and Health Oversight*.

Issue Manager: Dale I. Allen, Senior Vice President of Operations, CHG

Discussion: CHG implemented compensatory measures until a comprehensive evaluation of the RPP-FR was performed. CHG implemented a zero threshold problem reporting system for bottoms up identification of problems, Management Directive RPP-MD-058, *Problem Evaluation Request* (completed May 23, 2001, AR 29010214/1). A routine senior management meeting to review and disposition PERs was created, Management Directive RPP-MD-061, *Senior Management Facility Review Meeting* (completed May 31, 2001,

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AR 29010216/1). An Event Investigation Team was established to provide immediate background investigation of factual evidence to support analysis and the establishment of corrective actions, Management Directive RPP-MD-068, *Event Investigation Team* (completed July 25, 2001, AR 29010218/3).

CHG's evaluation of Safety Issue 5 identified three program elements: a) Assessment Program; b) Corrective Action Management System; and c) Lessons Learned. Within these program elements, CHG identified five areas of concern (discussed below in the program elements) supported by 26 specific statements of concern. Causal factors were assigned to the specific statements of concern, and corrective actions were identified. CHG utilized corrective action matrices to verify that the corrective actions will address the causes and minimize the possibility of recurrence of the areas of concern. As described in Section 3.0, CHG conducted a review of previously initiated company level corrective actions to identify where existing initiatives address program element weaknesses.

The following discusses CHG's approach to improve the ability to identify, analyze, correct, and use feedback to resolve and proactively prevent problems.

a) **Assessment Program**

The RPP-FR Safety Issue 5 identified three areas of concern within this program element.

1. Key assessment processes, such as the management observation program and other management assessments, are not adequately and formally delineated to ensure that roles and responsibilities are clear, reports contain essential information, and findings are rigorously managed to resolution.
2. Many assessment findings are not consistently or conservatively documented and evaluated, and effective corrective actions are not developed, implemented, and tracked to closure.

CHG's evaluation identified 15 specific statements of concern related to these two areas of concern. Causal factors assigned to the specific statements of concern pointed to inadequate interface among organizations, inadequate program monitoring, lack of program evaluation process, lack of organizational authority, and inadequate program design (vagueness in procedures, inadequate scope or feedback from the field work force, inadequate interface requirements).

CHG identified corrective actions to address the identified causal factors. One of these corrective actions, centralizing the assessment program responsibilities to establish accountability, manage company-wide program requirements, evaluate company-wide assessment results, and perform assessments for process improvements, was previously initiated. Furthermore, CHG will

revise procedure HNF-IP-0842, Volume 1, Section 2.10, *Assessment Program*, to ensure consistent assessment performance and reporting requirements, a broader coverage of assessment topics, and integration with the corrective action management system to facilitate timely and meaningful feedback to line management. In addition, training will be developed for the assessment program and training will be conducted. These actions, in addition to the other corrective actions identified in the table below, will enhance the overall effectiveness of the assessment program, will ensure that expectations, requirements, and processes are delineated in implementing procedures, and will ensure that previous implementation weaknesses are corrected and processes are continuously improved.

CHG will develop and/or revise performance indicators to monitor the effectiveness of the assessment program to ensure that performance is meeting expectations. CHG will conduct an assessment that will focus on the effectiveness of program changes, training, content of assessment reports, processing of assessment findings, and schedule adherence. This assessment will be included in CHG's integrated assessment schedule.

3. Many worker post-job reviews are not completed as required by procedure to support continuous improvement of work documents.

CHG's evaluation identified two specific statements of concern related to this area of concern. The causal factor assigned to the specific statements of concern pointed to a lack of a program evaluation process. To address this causal factor, CHG will conduct an evaluation of post-job reviews of operational and maintenance activities to identify barriers that may be inhibiting effective implementation.

CHG will develop and/or revise performance indicators, and will conduct an assessment to measure the effectiveness of the corrective actions applied to this area of concern.

b) Corrective Action Management System

CHG identified one area of concern within this program element.

1. The corrective action management system has been ineffective in the identification, resolution, tracking, and trending of assessment program and other ISMS performance deficiencies.

CHG's evaluation identified six specific statements of concern related to this area of concern. Causal factors assigned to the six specific statements of concern pointed to a lack of a program evaluation process, and inadequate program design (vagueness in procedures).

CHG identified corrective actions to address the identified causal factors. CHG has established a senior management level Corrective Action Review Board (CARB) to assess the adequacy of root cause analyses, problem resolution, and proposed corrective actions, and to drive improvements in the timeliness and effectiveness of corrective actions. Procedure HNF-IP-0842, Volume 1, Section 2.4, *Corrective Action Management*, will be revised to require a narrative to clarify or describe rationale for cause determinations, and to require quarterly assessment of completed cause analyses for emphasis to line management of developing problem trends. Training will be developed and conducted on the resolution of PERs. These actions, in addition to the other corrective actions identified in the table below, will enhance the overall effectiveness of the corrective action management program, and will ensure that previous implementation weaknesses are corrected and processes are continuously improved.

CHG will develop and/or revise performance indicators, and will conduct an assessment to measure the effectiveness of the corrective actions applied to this area of concern. This will be a comprehensive independent assessment of the corrective action program to validate user participation and to evaluate issues identified in logs, assessments, post-job reviews, etc., to verify entry into PERs where appropriate, to evaluate timeliness of closure of corrective actions, and evaluate the quality of detailed root cause analysis where required. This assessment will be included in CHG's integrated assessment schedule.

c) Lessons Learned

The RPP-FR Safety Issue 5 identified one area of concern within this program element.

1. Lessons learned information is not presented in a format to facilitate and encourage use by work planners and as part of training.

CHG's evaluation identified three specific statements of concern related to this area of concern. Causal factors assigned to the three specific statements of concern pointed to inadequate program design (vagueness in procedures, inadequate interface requirements).

CHG identified corrective actions to address the identified causal factors. CHG has initiated the development of a search engine for the work force to navigate and retrieve information from the work control web site, which will enhance the work force's ability to obtain information. This search engine will be similar to the search engine currently available in the company level Lessons Learned web site. Furthermore, CHG will perform a management assessment to benchmark CHG's Lessons Learned Program against other

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DOE contractor programs to obtain program efficiencies and to enhance effectiveness of lessons learned as a tool. These actions will enhance the work planner's ability to effectively utilize internal and external lessons learned during the work planning process.

CHG will develop and/or revise performance indicators to monitor use of lessons learned during the work planning and training processes. CHG will conduct an assessment to measure the effectiveness of the program change, field training, and data use by work planners and trainers. This assessment will be included in CHG's integrated assessment schedule.

The following table identifies the actions to address the program elements and to improve CHG's feedback and continuous improvement processes.

Corrective Actions:

Number	Description	Deliverables	Responsible Actionee	Planned Completion Date / Status	Performance Measurement / Effectiveness Verification
RPP-FR-01-05-a	<p>Implement Assessment Program corrective actions.</p> <ul style="list-style-type: none"> • Assign a manager as owner of the Assessment Program. • Revise HNF-IP-0842, Volume 1, Section 2.10, <i>Assessment Program</i>, capturing: <ul style="list-style-type: none"> ○ Standards/Requirements Identification Document (S/RID) and contractual requirements in the development of assessment criteria. ○ Documentation of issues using the PER process. ○ Trending PERs identified during assessments. ○ Forwarding completed assessment reports to the Assessment Program organization. 	Revise HNF-IP-0842, Volume 1, Section 2.10, <i>Assessment Program</i> .	C. V. Phillips	12/14/01 / Complete	<p>Monthly review of completed assessment reports to evaluate assessment schedule compliance and quality of assessments.</p> <p>Performance indicator to monitor scheduled assessments versus completed assessments.</p> <p>Performance indicator to monitor scoring of completed assessments.</p>

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Number	Description	Deliverables	Responsible Actionee	Planned Completion Date / Status	Performance Measurement / Effectiveness Verification
RPP-FR-01-05-b	<p>Upgrade the Assessment Program.</p> <ul style="list-style-type: none"> • Benchmark the Assessment Program against Institute of Nuclear Power Operations (INPO), industry, and other good practices to identify areas for improvements (complete). • Revise HNF-IP-0842, Volume 1, Section 2.10, <i>Assessment Program</i> (complete). <ul style="list-style-type: none"> ○ Include areas of improvement identified from the benchmarking. ○ Include more thorough direction on the development of assessment expectations, requirements, and assessment reporting. ○ Include the review of assessment reports to ensure corrective measures are identified, and adequate topic coverage is achieved. ○ Include direction for the development of an integrated assessment schedule. • Develop and implement training of the revised Assessment Program (04/27/02). <ul style="list-style-type: none"> ○ Develop and provide training of the upgraded Assessment Program for supervisors and managers. ○ Develop and provide training for personnel who perform assessments. 	<p>Benchmark report.</p> <p>Revise HNF-IP-0842, Volume 1, Section 2.10, <i>Assessment Program</i>.</p> <p>Revise training plan and schedule.</p>	C. V. Phillips	05/31/02 / In Progress	<p>Monthly review of completed assessment reports to evaluate assessment schedule compliance and quality of assessments.</p> <p>Performance indicator to monitor scheduled assessments vs. completed assessments.</p> <p>Performance indicator to monitor scoring of completed assessments.</p> <p>Performance of the second Independent Performance Evaluation (IPE-II).</p>

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Number	Description	Deliverables	Responsible Actionee	Planned Completion Date / Status	Performance Measurement / Effectiveness Verification
RPP-FR-01-05-c	Include assessment and corrective action training in supervisor and manager training matrices.	Printed copies of manager and supervisor training profiles/matrices from ITEM.	J. M. Morris	03/25/02 / Complete	Performance indicator to monitor scoring of assessments completed by supervisors and managers.
RPP-FR-01-05-d	<p>Upgrade the Corrective Action Management System.</p> <ul style="list-style-type: none"> Assign CHG Project Manager dedicated to corrective action process improvements (complete). Revise corrective action management process procedures to require quarterly assessment of completed cause analyses for emphasis to line management of developing problem trends (complete). Conduct training on use of PERs (complete). Conduct training on resolution of PERs (complete). Implement web-based PER management system. (complete). 	<p>Organization announcement.</p> <p>Revise corrective action management procedures that identify the requirement for management to do an assessment of completed cause analysis.</p> <p>Training material presented at tailgate meetings.</p> <p>Training material and attendance rosters.</p> <p>Web-based PER management system.</p>	D. B. Faust	03/22/02 / Complete	<p>Quarterly assessments of completed cause analyses.</p> <p>PER performance indicators monitoring:</p> <ul style="list-style-type: none"> PER Cycle Time PER Delinquencies PER Significant Event Rate PER Extension Rate Problem self-identification ratio Root Cause Quality Index

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Number	Description	Deliverables	Responsible Actionee	Planned Completion Date / Status	Performance Measurement / Effectiveness Verification
RPP-FR-01-05-e	<p>Improve causal analysis methodology, determination, and documentation.</p> <ul style="list-style-type: none"> Obtain an outside expert review of the existing root cause program and methodology (complete). Implement recommendation noted in the expert review of the existing root cause program and methodologies (complete). Provide enhanced causal analysis and root cause training (complete). Establish a requirement for a narrative to clarify or describe rationale for cause determination (complete). 	<p>PII report on the common cause analysis of the root cause program and methodologies.</p> <p>Disposition matrix demonstrating resolution of recommendations.</p> <p>Training rosters for personnel trained by PII on cause analysis.</p> <p>Management Directive RPP-MD-058, <i>Problem Evaluation Request</i>.</p>	H. M. Hassell	01/31/02 / Complete	<p>Performance indicator monitoring root cause quality index assigned by CARB.</p> <p>Performance of the second Independent Performance Evaluation (IPE-II).</p>
RPP-FR-01-05-f	<p>Establish a senior management level Corrective Action Review Board (CARB) to assess the adequacy of root cause analyses, problem resolution, and proposed corrective actions, and to drive improvements in the timeliness and effectiveness of corrective actions.</p>	<p>Management Directive RPP-MD-067, <i>Corrective Action Review Board</i>.</p>	H. M. Hassell	07/03/01 / Complete	<p>Performance indicator monitoring root cause quality index assigned by CARB.</p>
RPP-FR-01-05-g	<p>Perform a management assessment of CHG's Lessons Learned program to include a comparison with other DOE contractor programs on methods for dispositioning external lessons learned. Implement actions to address any gaps identified in the assessment.</p>	<p>Management assessment report with lines of inquiry and comparison to other DOE contractor programs.</p> <p>Closure package dispositioning each gap identified in the assessment report.</p>	H. M. Hassell	03/28/02 / Complete	<p>Refer to RPP-FR-01-05-d performance indicators.</p>

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Number	Description	Deliverables	Responsible Actionee	Planned Completion Date / Status	Performance Measurement / Effectiveness Verification
RPP-FR-01-05-h	<p>Improve the work control feedback and lessons learned program.</p> <ul style="list-style-type: none"> Develop process for identification, evaluation, and feedback of lessons learned from field work. Develop a web-based lessons learned site and search engine. 	<p>Develop and issue procedure(s).</p> <p>Work control feedback and lessons learned web site and search engine.</p>	T. L. Hissong	04/30/02 / Complete	<p>Performance indicator to monitor repeat work planning/work execution issues.</p> <p>Performance of the second Independent Performance Evaluation (IPE-II).</p>

8.6 ORP Oversight (Issue 6)

Identifier: RPP-FR-01-06

Issue Statement: ORP line management has not established and implemented management systems that ensure effective oversight of contractor safety programs and performance as required by DOE Policy 450.5, *Line Environment, Safety, and Health Oversight*.

Issue Manager: S. L. Johnson, Assistant Manager for Environmental, Safety, Health and Quality, ORP

Discussion: ORP performed a comprehensive evaluation of the RPP-FR to identify the overall program weaknesses. For Safety Issue 6, the RPP-FR identified four program elements: a) Contractor Oversight; b) Commitment Tracking and Trending; c) Self-Assessment; and d) Safety Basis Implementation Management. ORP's causal analysis pointed to poor understanding of contractor oversight policies, lack of necessary programs or procedures, and lack of clear personnel assignments for implementation of the oversight processes to ensure safe operations in the tank farms. ORP management has defined contractor oversight and management assessment policies in the *ORP Safety Management Functions, Responsibilities, and Authorities Manual (FRAM) ORP M 411.1-1*, dated January 12, 2001, but effective understanding and implementation of these policies by ORP program staff have not been achieved. ORP Facility Representatives performed substantial contractor oversight, but lacked the management systems to trend and consistently identify systemic deficiencies in contractor performance.

In March 2001, ORP commissioned an independent assessment of the ORP Directives and Standards Management Systems. The corrective action plan made recommendations for improvements that have been adopted in the *ORP Implementing Directives (ORPID) System Manual*, ORP M 251.1, dated August 21, 2001. Directives developed and approved according to this revised approach are under configuration

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control and are available to all employees via the ORP web site. This system will provide a foundation for ORP's successful growth to a disciplined team where expectations are clearly communicated, verified, and enforced.

The following sections discuss the ORP approach for resolving the deficiencies in the identified program elements.

a) Contractor Oversight

The RPP-FR Safety Issue 6 identified three areas of concern within this program element.

1. A comprehensive contractor oversight process that integrates ORP organizations, including ES&H and Quality, has not been established. Furthermore, monitoring and assessment by organizations other than the Tank Operations Division has been minimal.
2. ORP has not consistently identified systemic issues and held CHG accountable for performance deficiencies.
3. ORP oversight of CHG failed to identify conflicting information in standards/requirements identification document assessments and other CHG and ORP assessment results.

In accordance with requirements in the ORP FRAM, ORP is nearing completion of the annual review of the FRAM and has made necessary revisions to correctly reflect safety management oversight responsibilities. Because the FRAM only assigns responsibilities at the organizational level, the individual organizations will further divide and document the specific oversight tasks into individual personnel assignments as well as document the assignments and frequencies in the Integrated Assessment Schedule. The Integrated Assessment Schedule is available to all ORP employees on the Hanford intranet and is controlled by *ORP Integrated Assessment Program*, ORP M 220.1, dated October 1, 2001.

To fulfill the assigned oversight responsibilities in a formal manner, ORP developed the Integrated Assessment Program and is conducting training and qualification to ensure program and oversight staffs have the knowledge and tools to effectively perform their oversight responsibilities.

To better use the information acquired from oversight activities, ORP will develop a performance measure tracking, trending and evaluation system (described further in *Commitment Tracking and Trending* below). This will aid in determining whether DOE and contractor corrective actions are effectively implemented. Operation of this system will require that performance measures be identified – preferably during development of any planned corrective actions – and measurement frequencies be defined and

assigned. ORP staff must provide analysis results to both management and staff at least quarterly to enable program managers to identify systemic issues and to take timely action to ensure work is performed safely and the ORP mission is accomplished.

Completion of these corrective actions – the FRAM update, the Integrated Assessment Program and Schedule, employee training and qualification, a trending analysis data management system – will enable ORP to move beyond reactive measures to proactive, deliberate efforts to maximize worker and public safety and keep commitments to state and federal agencies. Sustained success in using these tools will only be achieved through diligent management and independent assessments followed by ORP commitment to disciplined program management and oversight.

b) Commitment Tracking and Trending

The RPP-FR Safety Issue 6 identified one area of concern within this program element.

1. Deficiency and commitment tracking systems are fragmented and informal, hindering trending and senior management awareness of issue status.

ORP also recognized this area of concern, and began implementation of a comprehensive commitment tracking system in August 2001, with a new web-based tool and the procedure ORP M 412.1, *Consolidated Action Reporting System (CARS)*. As of October 31, 2001, all ORP organizations have entered their commitments into the new tool, and personnel have been trained in its use. With the tracking system in place, ORP is continuing with development of CARS enhancements, driven largely by staff input, such as electronic mail notification of pending commitments and a trending tool to track ORP performance in meeting due dates.

Performance measures include determination of individual ORP organization use of the new system as well as accomplishment rates of the commitments tracked in the system. An evaluation of commitment tracking effectiveness will be performed at least quarterly through a management and/or independent assessment.

c) Self-Assessment

The RPP-FR Safety Issue 6 identified one area of concern within this program element.

1. No formal self-assessment process exists to provide management information on the adequacy of line oversight programs and performance and provide a framework for continuous improvement.

The *ORP Quality Assurance Program Description (QAPD)* identifies the requirement for a “Management Assessment;” a concept that involves periodic (e.g. annual) assessments conducted within each Assistant Manager’s or Office Director’s organization. An additional management feedback tool identified in the QAPD is the “Independent Assessment,” which entails oversight performed by personnel with no direct responsibility for the activity being assessed. Subsequent planned corrective actions would be prioritized, tracked and closed prior to the next assessment. The *ORP Quality Assurance Policy* and the QAPD are both readily available through the new ORP directive system on the Hanford intranet, and a new procedure, *ORP Management and Independent Assessments*, ORP M 220.1-1, was issued on October 31, 2001. Employee training and scheduling of the management assessments remains to be accomplished.

As management and independent assessments are scheduled, these commitments will be tracked in CARS. All aspects of the management assessment program can then be evaluated – from actual performance of the assessment, to development and tracking of corrective actions, to effectiveness verification of the corrective actions during future assessments.

d) Safety Basis Implementation Management

The RPP-FR Safety Issue 6 identified three areas of concern within this program element.

1. There were weaknesses in the ORP approval process for authorization of the installation and operation of the high efficiency particulate air (HEPA) filter differential pressure interlock as an alternative to the continuous air monitor interlock before a documented technical basis was in place.
2. There were weaknesses in communicating ORP expectations for system operation to CHG.
3. ORP did not adequately perform oversight of authorization basis implementation and the actions directed by the safety evaluation report. ORP was unaware that the continuous air monitor interlock had been in bypass for nearly two months, leaving the HEPA filter differential pressure interlock as the only interlock.

ORP is developing a procedure to describe the entire process of safety basis document review and approval. The procedure will both formalize the process as well as provide clear expectations of DOE and contractor performance at each step. Checklists will be used where appropriate to ensure thorough acceptance reviews and technical reviews are documented. Prior to actual implementation in the field, a readiness verification performed by ORP will ensure that safety basis page changes meet the intent of ORP direction, applicable procedure changes have been prepared, and personnel training is completed. Following actual field implementation of the safety basis modification, ORP will again verify satisfactory accomplishment.

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Applicable steps in the review and approval process will be entered into CARS to promote timely processing of safety basis modifications as well as to ensure implementation verification actions are performed. The overall success of this program will be evaluated during the annual management assessments and quarterly performance measurements to aid in continuous improvement of safety basis management.

The following table identifies the specific actions in progress or completed in support of ORP's oversight processes.

Corrective Actions:

Number	Description	Deliverables	Responsible Actionee	Planned Completion Date/ Status	Performance Measurement / Effectiveness Verification
RPP-FR-01-06-a	Develop and implement organization/ individual responsibility for performing contractor oversight and an assessment program prioritized to the ORP mission and available resources.	Implement revised assessment program in accordance with procedure ORP M 220.1.	S. L. Johnson	02/28/02 / Complete	Perform management assessment to verify that ORP conducts a comprehensive, integrated assessment program from scheduling to personnel assignments to assessment completion.
		<ul style="list-style-type: none"> Update the FRAM, ORP M 411.1-1, and develop implementing documents to identify current organization and individual responsibility for oversight, such as the work breakdown schedule, resource-loaded schedules, or program plans. 	S. L. Johnson	1 2/15/01 / Complete	Perform management assessment to verify that the Integrated Assessment Program and Schedule reflect the responsibilities assigned in the FRAM and division-specific implementing documents, consistent with ORP priorities and staffing.
		<ul style="list-style-type: none"> Implement an ORP Integrated Assessment Schedule, which includes all ORP oversight activities. The intergraded schedule includes all ORP assessments, audits, inspections, surveillances, self-assessments, and contains the responsible individual and scheduled month of performance. 	C. J. Bosted	02/28/02 / Complete	On a monthly basis, track assigned oversight activities against the tally of completed oversight activities, and provide tracking charts and justifications for deviations to ORP management. Also provide quality evaluation of the completed oversight reports.
		<ul style="list-style-type: none"> Train personnel responsible for oversight activities. 	R. C. Sorensen	01/31/02 / Complete	Verify initial conduct of training and verify quarterly that ORP staff and contract support staff who have performed oversight are qualified to perform oversight.

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Number	Description	Deliverables	Responsible Actionee	Planned Completion Date / Status	Performance Measurement / Effectiveness Verification
RPP-FR-01-06-b	Develop and implement a performance measure tracking, trending, and evaluation system for contractor oversight and ORP management assessment to ensure measurement of effective corrective action implementation.	Implement a performance measure tracking, trending and evaluation program	C. J. Bosted	06/30/02 / In Progress	Perform a management assessment to verify that contractor oversight and self-assessment performance measures are tracked, trended, and evaluated sufficiently to allow ORP management to identify new issues, determine effectiveness of past corrective actions, provide direction, and improve overall performance.
		<ul style="list-style-type: none"> Develop procedure for tracking/trending/evaluation. 	C. J. Bosted	01/31/02 / Complete	Verify that the new procedure is developed and adequate output (tracking/trending) is being obtained. Evaluate the new procedure against requirements in procedure ORP M 251.1, <i>ORP Implementing Directives System Manual</i>
		<ul style="list-style-type: none"> Develop performance metrics for ORP and contractor activities. 	C. J. Bosted	02/28/02 / Complete	Compare estimated work task metrics against actual performance. Use the comparison (feedback) to develop corrective actions and/or revise metrics. Verify that the metrics are in place and monthly comparisons are performed.
		<ul style="list-style-type: none"> Perform monthly reporting of oversight performance analysis to ORP management. 	C. J. Bosted	06/30/02 / In Progress	Chart the timely completion of the individual briefs. ORP management will provide feedback to improve content and usefulness of the briefings.
RPP-FR-01-06-c	Consolidate the commitment tracking systems within ORP.	Implement the <i>Consolidated Action Reporting System (CARS)</i> – a comprehensive web-based tracking and reporting system.	S. D. Ruchl	10/31/01 / Complete	On a weekly basis, review CARS entries for timeliness of completion. Perform quarterly self-assessment of the commitment tracking system to verify entry and tracking of appropriate ORP commitments.

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Number	Description	Deliverables	Responsible Actionee	Planned Completion Date / Status	Performance Measurement / Effectiveness Verification
RPP-FR-01-06-d	Develop and implement self-assessment program.	<p>Develop procedure describing ORP generic and organization-specific self-assessment criteria.</p> <p>Implement procedure ORP M 220.1-1, <i>ORP Management and Independent Assessments</i>, to include training, scheduling, and completion of self-assessments.</p>	<p>R. C. Sorensen</p> <p>R. C. Sorensen</p>	<p>02/28/02 / Complete</p> <p>12/30/02 / In Progress</p>	<p>Verify self-assessment criteria for each ORP organization are updated following annual update of the FRAM.</p> <p>Quarterly, review the integrated assessment schedule to verify that ORP self-assessments have been scheduled.</p> <p>Semiannually, verify each organization in ORP has performed management and independent assessments in accordance with ORP M 220.1-1, has identified and tracked corrective actions through closure in CARS, and has evaluated effectiveness through objective program improvements and feedback.</p>
RPP-FR-01-06-c	<p>Develop a revised procedure consistent with 10 CFR 830, <i>Nuclear Safety Management</i>, for safety basis review and approval which addresses:</p> <ol style="list-style-type: none"> 1) Basis for acceptance of quality and for technical approval. 2) Readiness to proceed and field verification following implementation. 	Implement ORPID 5480.23-1, <i>Safety Basis Document Review and Approval</i> .	J. J. Bevelacqua	02/28/02 / Complete	<p>Safety basis modification implementation by the contractor will be field verified upon every safety basis modification approval.</p> <p>Perform quarterly evaluation of selected closure packages for safety basis modifications (entered and tracked in CARS) to verify compliance with review processes, readiness reviews and implementation assessments.</p>