VOLUME III

Independent Oversight Inspection of Emergency Management at the Hanford Site

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Office of Independent Oversight
and Performance Assurance

INDEPENDENT OVERSIGHT
INSPECTION OF
EMERGENCY MANAGEMENT AT THE
HANFORD SITE

VOLUME III
Table of Contents

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ACRONYMS

Acronym	Definition
BED	Building Emergency Director
BHI	Bechtel Hanford, Incorporated
CHG	CH2M Hill Hanford Group, Incorporated
CVDF	Cold Vacuum Drying Facility
CY	Calendar Year
DOE	U.S. Department of Energy
EAL	Emergency Action Level
EPHA	Emergency Planning Hazards Assessment
EPIP	Emergency Plan Implementing Procedure
ERO	Emergency Response Organization
FEB	Facility Evaluation Board
FHI	Fluor Hanford, Incorporated
HS	Hazards Survey
IC	Incident Commander
MOU	Memorandum of Understanding
ORP	Office of River Protection
PUREX	Plutonium - Uranium Extraction (Plant)
RL	Richland Operations Office

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INDEPENDENT OVERSIGHT INSPECTION OF EMERGENCY MANAGEMENT AT THE HANFORD SITE

VOLUME III

1.0 Introduction

The Secretary of Energy's Office of Independent Oversight and Performance Assurance conducted an emergency management program review at the Hanford Site during July and August, 2001. The inspection was performed by Independent Oversight's Office of Emergency Management Oversight.

Independent Oversight performed a comprehensive inspection at the Hanford Site during July and August 2001.

The U.S. Department of Energy (DOE) Office of Environmental Management is the cognizant secretarial office for the Hanford Site. As such, it has overall Headquarters responsibility for programmatic direction and funding of activities at the site. Line management responsibility for the operation of the Hanford Site falls under the Richland Operations Office (RL) and the Office of River Protection (ORP). Both RL and ORP report directly to the Office of Environmental Management. RL is responsible for the operation of the Hanford Site with the exception of the tank farms. As directed by Congress in fiscal year 1999, ORP is responsible for managing all aspects of tank waste remediation systems, which include approximately 53 million gallons of highly radioactive waste. The overall management, direction, and control of site emergencies at the Hanford Site are the responsibility of RL. Specific ORP responsibilities within the emergency response organization are presently being defined as part of the ongoing RL/ORP interface clarification discussions. Under contract with RL, Fluor Hanford, Incorporated (FHI) performs the Project Hanford Management Contract, which involves direct and subcontractor performance of a full range of work to support site cleanup. Additionally, FHI is responsible for the development and administration of many emergency preparedness elements, such as incident response, fire suppression, site security, communications, training, and emergency operations center management and staffing. CH2M Hill Hanford Group, Inc. (CHG) is the prime contractor to ORP for tank farm management.

The inspection of emergency management involved programmatic reviews and performance tests.

The purpose of this inspection was to assess Hanford's readiness to protect site personnel and the public from the consequences of onsite events that might result in the release of hazardous materials. The inspection was accomplished by conducting programmatic reviews of selected emergency management system elements and tabletop performance tests involving individuals responsible for initial decisions in the event of an emergency. In preparation for the tabletop performance tests, facility walkthroughs were conducted at the Cold Vacuum Drying Facility (CVDF) and the Plutonium-Uranium Extraction (PUREX) Plant. Additionally, feedback and improvement processes were examined to determine the effectiveness of DOE line management and

contractor mechanisms for identifying, analyzing, and addressing program deficiencies; implementing corrective actions; and demonstrating and verifying the effectiveness of those actions. The review focused on the following specific elements of the emergency management program:

- Emergency management plans and procedures
- Categorization and classification
- Protective actions
- Feedback and improvement.

DOE Order 151.1A, *Comprehensive Emergency Management System*, was the basis for this review; it provides the framework for the Department's comprehensive emergency management system. This framework includes developing, coordinating, controlling, and directing all emergency planning, preparedness, response, and recovery functions. DOE operations/field offices and Headquarters elements are required to develop and participate in this integrated and comprehensive activity. For the Hanford Site, the Department's emergency management responsibilities are divided between the site contractor organizations, RL and ORP. Each has specific roles, depending on the location and nature of the incident. Therefore, these organizations must ensure that the roles and responsibilities for managing and responding to Hanford-related incidents are clearly defined, and that the mechanisms for their implementation are comprehensive, well integrated, and formal.

Current site activities, primarily related to environmental cleanup and management of the site's legacy wastes, involve both radiological and non-radiological hazardous materials. Large quantities of radiological materials from the various separations, waste storage, special nuclear material storage, research, and previous production and manufacturing activities present significant hazards requiring emergency planning. Other materials requiring a similar level of emergency planning include petrochemicals, explosives, toxic chemicals and chemical products, and fuel gases (e.g., propane and butane).

Following a chemical explosion at the Hanford Site in May 1997, the Secretary of Energy issued a series of directives requiring DOE sites to re-evaluate their existing emergency management programs and to take corrective actions in response to lessons learned from the Hanford event. As part of these directives, an Independent Oversight review of emergency management programs across the DOE complex was conducted in early 1998. Since the 1998 complex-wide review, the Secretary of Energy has made significant changes to the DOE organizational structure to clarify and modify Headquarters roles and responsibilities in emergency management policy and independent oversight.

The Hanford Site was evaluated in June 1998 as part of the 1998 Independent Oversight emergency management review. Positive attributes and programmatic weaknesses were identified in the Hanford Site emergency management program. Overall, the 1998 review found that in spite of identified weaknesses, the Hanford Site was in the process of implementing a fundamentally sound and effective emergency management program.

Results show a generally effective and well integrated program.

The results of this inspection indicate that despite the fact that the Hanford Site is managed by two DOE field offices that are supported by numerous contractor organizations, the emergency management program is comprehensive, thoroughly documented, and well integrated. DOE and contractors operate as a single cohesive unit in response to events at the site. Additional strengths include well designed emergency action level (EAL) tables that facilitate the classification of emergencies and an effective process for evacuating and accounting for personnel during an emergency. Critical reviews provided by the self-assessment process provide ongoing opportunities for

programmatic improvement. Although some weaknesses were identified, the Hanford Site emergency management program provides confidence that site workers and the public can be protected in the event of a hazardous material release.

Section 2 of this report provides an overall discussion of inspection results that characterize the Hanford Site emergency management program elements. Section 3 provides Independent Oversight's conclusions regarding the overall effectiveness of the program. Section 4 presents the ratings assigned as a result of this inspection. Appendix A provides supplemental information, including team member composition. Appendix B identifies the findings that require corrective action and follow-up. Appendices C through F detail the results of the reviews of individual emergency management program elements.

Results

2.1 Positive Program Attributes

Plans, procedures, event classification, and self-assessments are program strengths.

The Hanford Site has an effective emergency management program that is well integrated among the numerous contractors on the site. Additionally, the strength of the feedback and improvement programs provides confidence that the program will continue to be effective and improve. Positive attributes of the emergency management program include:

- **The Hanford emergency management plan and procedures are well documented and provide a good foundation for the development of sitewide implementing procedures and contractor facility-specific response plans.** The Hanford Emergency Management Plan establishes the strategy, including roles and responsibilities, for emergency preparedness at the site and is supported by both RL and ORP. As a result, there is one integrated, sitewide emergency management program for this large site, which is managed by two DOE field offices and numerous contractor organizations. This strategy is implemented with a hierarchy of well-written and comprehensive sitewide and facility-level procedures. The Hanford emergency management plan and procedures are well coordinated with, and promote active participation from, state and local agencies who share responsibility for information and protective action recommendations provided to the public in the event of an emergency.

- **An effective process is in place for classifying emergency events and for implementing protective actions.** The Hanford Site process for categorizing and classifying emergencies facilitates the implementation of timely protective actions. It includes well-designed procedures for performing emergency response tasks. The resulting system vests classification authority in positions most capable of understanding facility or site conditions in order to make the appropriate classification in a timely manner. Pre-planned onsite protective actions and pre-planned offsite protective action recommendations are linked to the classification level and location of the event, making them easy to use in a time urgent response. Additionally, systems are in place for promptly notifying workers of protective actions and offsite agencies of protective action recommendations.

- **An aggressive and critical self-assessment program demonstrates a commitment to identifying and correcting problems, and is accompanied by an active and well-integrated lessons-learned program.** RL and FHI have a fully functional program to provide feedback and continuous improvement. The program comprises procedures, oversight activities, issues management, tracking and

trending, performance reporting, and a lessons-learned process. The program has demonstrated its capability to provide detailed reviews of the emergency management program, identify deficiencies, implement corrective actions, and verify their effectiveness. The program is active in identifying and disseminating lessons learned from site operations as well as those from the DOE complex. Lessons learned from actual events, such as wildland fires, are effectively used to identify problems and take corrective actions to strengthen the overall program. However, self-identified weaknesses in the ORP and CHG issues management programs will require sustained management attention to ensure the timely and effective completion of program upgrades.

2.2 Program Weaknesses and Items Requiring Attention

Weaknesses were noted in the technical basis for classifying some events and in initial decision-making.

Despite the many strengths, inconsistencies among actual site conditions, analysis, and procedures were noted. Additionally, tabletop performance tests indicate areas where the proficiency of initial decision-makers needs improvement. Specific weaknesses include:

- **Several technical documents used to support the emergency management program were either not maintained or did not provide an adequate technical basis for classifying certain events.** Hazards surveys and emergency planning hazards assessments (EPHAs) do not, in all cases, provide the technical basis for the Hanford Site's emergency management program. The FHI hazards survey was not updated to reflect changes in site operations. In addition, no formal integrated process exists to ensure that changes in facility design, operations, and hazardous material inventories are reviewed to determine whether the EPHA needs to be updated. Finally, several EALs used to classify events are not supported by, or are inconsistent with, the EPHA analyses.

- **Initial decision-makers did not always make timely and accurate emergency classifications during tabletop performance tests.** Building Emergency Directors and Incident Commanders are responsible for initial decisions regarding classification of events that involve the release of hazardous materials in order to initiate emergency response actions, such as activating the emergency response organization and initiating protective actions. Although procedural steps for classification are adequate, the procedures were not methodically followed during tabletop performance tests. As a result, several persons filling these positions did not make timely and accurate emergency classifications.

3.0 Conclusions

The Hanford Site has an effective emergency management program that includes well-developed plans and procedures, an effective process for categorizing and classifying events and taking protective actions, and a feedback and improvement process that provides assurance that the program will be maintained and enhanced.

The Hanford Site emergency management program is integrated sitewide and is supported by both RL and ORP. RL and ORP have implemented a hierarchy of site plans and procedures flowing from the Hanford Site emergency plan down to facility/building-specific response plans. RL and ORP roles and responsibilities are clearly delineated for responding to and mitigating the consequences of potential onsite events that may result in the release of hazardous materials. Procedures that guide development of EPHAs and EALs are well designed and ensure that all facilities use a standard format and content. Also, the site has clear procedures for categorizing and classifying events and taking protective actions.

Classification authority is vested in the emergency response organization positions that are most capable of understanding facility and site conditions, enabling them to classify events in a timely manner. Hanford's pre-planned protective actions, based on the classification level and location of the event, facilitate timely implementation of protection actions. Additionally, systems are in place for quickly notifying workers of protective actions and offsite agencies of protective action recommendations. Performance tests of initial decision-makers demonstrated that they understood their roles and responsibilities for initiating protective actions for site workers and for recommending protective actions for the public.

Some weaknesses were identified in the Hanford Site emergency management program. The technical basis was not provided for some EALs, and the contractors' site hazards survey has not been maintained to reflect changes in facility design, operations, or hazardous material inventories, in accordance with DOE Order 151.1A. Additionally, during tabletop performance tests, some emergency response initial decision-makers did not systematically follow their procedures for classifying the event. However, the Hanford Site has an overall strong program for classifying events, including staff assigned to assist initial decision-makers in event classification.

The RL and FHI feedback and continuous improvement programs are well defined and comprehensive. RL and FHI have developed corrective-action and lessons-learned programs, and consistently use these programs to implement corrections and enhancements to the emergency management program. FHI self-assessments are thorough and provide meaningful feedback on program performance. These elements, along with RL oversight, provide the framework for an effective feedback and continuous improvement program to improve the overall performance of the emergency management program.

The ORP and CHG feedback and continuous improvement programs were previously self-identified as being ineffective. Corrective actions are being implemented that, when completed, should provide fully functional feedback and improvement programs. These programs will remain a weakness in the overall Hanford Site program until current corrective action plans are implemented and effectiveness is demonstrated.

Overall, the results of this inspection indicate that despite the fact that the Hanford Site is managed by two operations offices that are supported by numerous contractor organizations, the emergency management program is comprehensive, thoroughly documented, and well integrated. Although some weaknesses were identified, the Hanford Site emergency management program provides confidence that both site workers and the public can be protected in the event of a hazardous material release.

4.0 Ratings

The Hanford emergency management program is effectively implemented.

Overall the Hanford Site's emergency management program provides reasonable assurance that the site's emergency responders are ready to respond promptly and effectively to an emergency event or condition. Therefore the program is rated SATISFACTORY.

The ratings for the individual program elements are:

Emergency Management Plans and Procedures
SATISFACTORY

Categorization and Classification
SATISFACTORY

Protective Actions
SATISFACTORY

Feedback and Improvement
SATISFACTORY

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APPENDIX A

SUPPLEMENTAL INFORMATION

A.1 Dates of Inspection

	Beginning	Ending
Onsite Visit, Report Writing	July 23, 2001	August 2, 2001
Outbriefing	August 2, 2001	August 2, 2001

A.2 Inspection Team Composition

A.2.1 Management

Glenn S. Podonsky, Director, Office of Independent Oversight and Performance Assurance
Michael A. Kilpatrick, Deputy Director, Office of Independent Oversight and Performance Assurance
Charles Lewis, Director, Office of Emergency Management Oversight
John E. Hyndman, Deputy Director, Office of Safeguards and Security Evaluations (Team Lead)
Ralph C. Kurtzman, Assistant Team Lead

A.2.2 Quality Review Board

Michael A. Kilpatrick	Dean C. Hickman	Bradley A. Peterson
Barbara R. Stone	Robert M. Nelson	

A.2.3 Inspection Team

Alan J. Cerrone (Topic Lead)	James B. O'Brien
J.R. Dillenback	Thomas Rogers

A.2.4 Administrative Support

Jeffrey A. Robertson	Margaret V. Stroud
Linda D. Briggs	Leisa D. Weidner

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APPENDIX B

SITE-SPECIFIC FINDINGS

Table B-1. Site-Specific Findings Requiring Corrective Action Plans

FINDING STATEMENT	REFER TO PAGES
Hanford Site hazards surveys have not been updated to reflect significant changes in plant operations in accordance with the requirements of DOE Order 151.1A.	15
Not all of the Hanford Site emergency action levels have a technical basis in an emergency planning hazards assessment as required by DOE Order 151.1A.	16
Some Hanford Site emergency response initial decision-makers did not demonstrate appropriate use of categorization and classification procedures during simulated emergency events.	18

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APPENDIX C

EMERGENCY MANAGEMENT PLANS AND PROCEDURES

C.1 INTRODUCTION

An emergency management plan defines and conveys top-level management's emergency management philosophy. Specific implementing procedures must be developed that conform to the documented program, and these procedures must be usable by the personnel responsible for their implementation. Plans and implementing procedures must clearly identify detailed roles and responsibilities; applicable standards and requirements; and the detailed processes to be used.

This Independent Oversight evaluation focused on the Hanford Emergency Management Plan and implementing procedures for the U.S. Department of Energy (DOE) Richland Operations Office (RL), the DOE Office of River Protection (ORP), and site contractors. The primary goal was to determine whether the emergency management plans and procedures meet the appropriate standards established by DOE policy and are capable of providing appropriate protection to site personnel and the public in the event of an accident at the site. Data collection activities included various plan and document reviews and interviews with site points of contact, emergency response organization (ERO) members, and facility emergency planners.

C.2 STATUS AND RESULTS

The 1998 Independent Oversight emergency management review identified numerous program weaknesses in emergency response plans and procedures, and the process for disseminating accurate and timely information to the public and employees. This Independent Oversight review determined that significant improvements have been made in the program and the integration of resources.

The Hanford Emergency Management Plan is supported by both RL and ORP. This plan incorporates an overview of the sitewide emergency management program and is written to meet the requirements set forth in DOE Order 151.1A and the Washington State Administrative Code. The plan is based on the incident command system, and emergency response across the site is conducted under this philosophy. Additionally, the plan sets forth the requirements to be incorporated in sitewide emergency plan implementing procedures (EPIPs) developed by RL, ORP, and site contractors. In support of these EPIPs, contractors on the Hanford Site develop building emergency plans or facility response plans. These plans establish specific contractor responsibilities for response to, and recovery and restoration from, the emergencies identified in the hazards survey and hazards assessment. Alarm response plans and emergency response procedures provide facility-specific checklists used for responding to an emergency or abnormal plant condition with the potential for adverse health, safety, or environmental impact.

Over the past four years, RL has reviewed and revised their emergency management plans and improved the site emergency management organizational structure. Procedures were tested and revised based on real emergencies, such as wildland fires. The overall emergency management program for the Hanford Site is well documented with comprehensive, detailed mechanisms and procedures. It clearly outlines the roles, responsibilities, and interrelationships of the contractors and DOE offices located at the Hanford Site. Additionally, ORP is a committed participant in the Hanford emergency program and requires contractor compliance within their respective contracts. ORP has adopted the emergency management program requirements established in the Hanford Emergency Management Plan and incorporated those requirements into the River Protection Project Waste Treatment Plant Contract.

Fluor Hanford, Incorporated (FHI), CH2M Hill, Pacific Northwest National Laboratory, and Bechtel Hanford, Incorporated, emergency management plans and procedures are integrated sitewide and conform with the Hanford emergency management plan and EPIPs. Emergency preparedness program requirements and templates are provided on the Hanford Intranet for use by the various contractors in the development of facility emergency plans. During an emergency, these contractors serve as members of the ERO and initiate mechanisms that allow senior managers to commit support contractor resources required for the emergency, regardless of the responsible party. The ORP contract with Bechtel National, the construction contractor for the waste treatment plant project, requires compliance with the Hanford Emergency Management Plan. However, there is no provision for a construction emergency response plan to provide required protective actions for the planned 3,000-person construction crew. ORP issued a contract modification dated July 30, 2001, to Bechtel National, requiring a construction emergency response plan.

RL convenes monthly coordination meetings with offsite emergency preparedness representatives and coordinates such activities with ORP. Offsite support is documented in memoranda of understanding (MOUs). With the exception of the National Weather Service MOU, which is under review, the 16 MOUs listed in the Hanford emergency management plan are current. ORP and RL are currently collaborating on a memorandum of agreement regarding emergency preparedness services. While the draft memorandum of agreement references the roles and responsibilities in the Hanford Emergency Management Plan, it does not provide the degree of detail required by the plan to ensure effective organizational integration.

RL, ORP, and state and local governments share the responsibility to provide accurate and timely emergency information to the public. The Hanford Site has a coordinated and comprehensive emergency public information program supported by RL, ORP, all their contractors, and state and local governments. Emergency public information activities at Hanford Site are coordinated through the Joint Information Center, which is part of the ERO and is a dedicated facility within the Federal Building complex. The plan clearly delineates the processes for disseminating timely and accurate information to the public. In an effort to provide a more intelligible message, media training is given to any responder who might interface with the media, and spokesperson training is given to lead DOE and contractor personnel, consequence assessment managers, and project issue managers who participate in public meetings.

C. 3 CONCLUSIONS

The Hanford Emergency Management Plan is a well integrated plan supported by both RL and ORP. This plan incorporates an overview of the sitewide emergency management program. Additionally, RL and ORP have implemented a hierarchy of site plans and procedures that flow down from the Hanford Emergency Management Plan to facility/building-specific response plans. RL and ORP roles and responsibilities are clearly delineated for responding to and mitigating the consequences of potential onsite events that might result in the release of hazardous materials. Overall, RL, ORP and the site contractors function as a single unit in response to events.

C.4 RATING

Emergency management plans and procedures at the Hanford Site are effectively implemented. A rating of SATISFACTORY is therefore assigned.

C.5 OPPORTUNITIES FOR IMPROVEMENT

This Independent Oversight inspection identified the following opportunities for improvement. These potential enhancements are not intended to be prescriptive. Rather, they are intended to be reviewed and evaluated by the responsible DOE and contractor line management and prioritized and modified as appropriate, in accordance with site-specific programmatic emergency management objectives.

- Clearly describe the emergency management program expectations in the memorandum of agreement between RL and ORP to include the authorities, roles, and responsibilities of RL and ORP. To ensure effective organizational integration into the Hanford emergency management program, specify the emergency management requirements to be included in the development and maintenance of ORP procedures, including facility-specific procedures.

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APPENDIX D

CATEGORIZATION AND CLASSIFICATION

D.1 INTRODUCTION

U.S. Department of Energy (DOE) Order 151.1A requires development of a hazards survey (HS) and an emergency planning hazards assessment (EPHA) to provide the technical basis for a site's emergency preparedness program. The HS identifies and qualitatively assesses site-specific hazards and associated emergency conditions. If the HS identifies hazardous material quantities that could pose a serious threat to workers or public health and safety, a quantitative EPHA is performed to estimate the severity of the impact. An output product of the HS and EPHA is the technical basis for developing the emergency action levels (EALs) used to categorize and classify events. DOE's emergency management system includes requirements for categorizing and classifying significant abnormal events or conditions caused by, involving, or affecting DOE facilities, sites, or activities. The purpose of this emergency management requirement is to ensure that there is a means for promptly assessing the significance of an event so that pre-determined emergency response actions (e.g., notifications, activation of the emergency response organization, and implementation of initial protective actions) are promptly initiated.

The Independent Oversight team's assessment of this program element included a review of emergency procedures, a walkdown of facilities to verify the availability and appropriateness of indicators used in classifying events, and tabletop performance tests of emergency response personnel responsible for implementing categorization and classification procedures. In addition, the Independent Oversight team reviewed a sample of HSs and EPHAs and the process for maintaining these documents to determine how well they serve as the technical basis for the EALs used to classify events.

D.2 STATUS AND RESULTS

D.2.1 Hazards Surveys and Hazards Assessments

The HSs initially developed for the Hanford Site in 1999 are still in effect. The HSs are organized in accordance with DOE Order 151.1A and contain a good overview of the site conditions and hazards. Particularly noteworthy is the Bechtel Hanford, Incorporated (BHI) HS, which includes additional information on each facility beyond that prescribed in DOE's Emergency Management Guide. This added information has proven useful to a number of BHI organizations besides the emergency management organization.

Although the HSs generally comply with DOE Order 151.1A requirements, a number of weaknesses were identified with the Fluor Hanford, Incorporated (FHI) and CH2M Hill Hanford Group, Incorporated (CHG) HSs that make them less than fully effective. Specifically, the FHI and CHG HSs do not identify facilities as having hazardous materials unless the type and amount of hazardous material exceed the threshold that requires the development of an EPHA for the facility. In addition, the FHI HS has not been updated as required by DOE Order 151.1A even though facilities have undergone significant changes. For example, the Cold Vacuum Drying Facility (CVDF) is not identified in the FHI HS, even though this new operation involves significant hazards and an EPHA was prepared for the facility.

FINDING: Hanford Site hazards surveys have not been updated to reflect significant changes in plant operations in accordance with the requirements of DOE Order 151.1A.

The Hanford Site has developed EPHAs for 34 facilities. In general, the EPHAs that were reviewed were methodically developed in the manner prescribed in the Emergency Management Guide and resulted in uniform, stand-alone documents for analyzed facilities. Event identification and supporting quantitative assessments are detailed and complete for the postulated accidents that were analyzed. Furthermore, beyond-design-basis events, such as earthquakes and volcanic eruptions, and malevolent acts are explicitly addressed. However, a weakness was identified in the use of EPHAs to provide the technical basis for a number of EALs. Specifically, certain events that have been identified as EALs in the Hanford Site categorization and classification procedure have not been quantitatively analyzed in the EPHA. For example, an Alert level EAL is contained in the CVDF EAL table for a facility fire; however, the CVDF EPHA concluded that a fire could not cause a release of radioactive material. In addition, the CVDF EAL table includes an EAL for criticality events, but the potential consequences of a criticality event were not quantitatively analyzed in the EPHA. Similar discrepancies were identified between EALs and events analyzed in the Plutonium-Uranium Extraction (PUREX) Plant EPHA. Because these events have not been quantitatively analyzed, there is no technical basis for the classification level (e.g., Alert versus Site Area Emergency) assigned to the event in the EAL table. In addition, information about the areas that could be impacted from the event is not identified in the EPHA.

FINDING: Not all of the Hanford Site EALs have a technical basis in an emergency planning hazards assessment as required by DOE Order 151.1A.

The Hanford Site has an emergency plan implementing procedure (EPIP) to guide the development of the EPHA. This procedure is an excellent guide for the development and maintenance of EPHAs and includes good instructions for considering the impact of temporary processes, for noting significant changes in facilities, and for notifying emergency preparedness personnel of changes in the EPHA that might warrant changes in other emergency preparedness documents (e.g., EALs). This guide serves to ensure that uniform EPHAs are produced by the various contractors at the Hanford Site.

Although the EPHA EPIP provides expectations for maintenance of EPHAs, processes to support the maintenance of EPHAs are not completely effective. For example, FHI has not implemented a formal process to ensure that changes in facility safety analysis reports are forwarded to the emergency preparedness organization for updating EPHAs if necessary. Furthermore, most contractors do not have a formal process in their chemical inventory system to identify when chemical inventories exceed threshold values that would warrant changes in the EPHA.

In summary, the Hanford Site HSs and EPHAs generally meet the intent of the DOE Order 151.1A and provide a good basis for categorizing and classifying events. Although a number of weaknesses were identified with the HSs and EPHAs, they do not prevent them from being effective overall.

D.2.2 Categorization and Classification Process

A building emergency director (BED) (during normal working hours) or an Incident Commander (during non-working hours) initially categorizes and classifies events initiated at a facility. For non-facility events, the initial event classification is done by the on-call Emergency Duty Officer. When the emergency operation center is operational, the Site Emergency Director is responsible for managing the emergency operations center technical staff and developing recommendations for event re-classification for the approval of the Richland Operations Office/Office of River Protection (RL/ORP) Emergency Manager. Although the Hanford Site's process for categorizing and classifying events is complex, with responsibility vested in many different persons (depending on the event location and type), the process

is organized to provide for prompt categorization and classification by the individuals most knowledgeable of facility and site conditions.

A Hanford Site EPIP provides instructions for categorization of operational emergencies according to the type of event (e.g., health and safety, environmental, offsite transportation). This procedure provides clear guidance for categorizing events in accordance with the process prescribed in DOE Order 151.1A and is organized to facilitate its use. Another EPIP provides instructions for classifying hazardous material release events in accordance with their severity (i.e., Alert, Site Area Emergency, and General Emergency). This procedure includes a well defined checklist directing the classification process. In addition, the procedure includes an appendix, for each hazardous facility, containing well organized tables of EALs for a wide spectrum of postulated emergency conditions and generic EALs to compensate for unforeseen events. The Hanford Site also has a procedure for developing EALs that ensures facility involvement and is designed to promote a consistent format and content for EALs for all Hanford Site facilities. This procedure is a very good tool for EAL development.

The CVDF EALs were reviewed in detail during this assessment, including a walkdown of the facility to verify that indications were available to support classification. The CVDF EALs are all event-based; symptom-based EALs with specific instrument readings and set points were not developed. Although event-based EALs are good tools for classifying events, EAL sets can be enhanced by including symptom-based EALs with specific instrument set points for some facilities (e.g., where processes occur). During a walkdown of the facility, sufficient plant indications were confirmed to be available to support classifying events, and the BED participating in the walkdown demonstrated that these plant indications could be used to classify events.

Overall, the process for classifying events has many positive attributes, including a system for prompt classification of events by the personnel most knowledgeable of facility or site conditions and a well designed set of categorization and classification procedures.

D.2.3 Categorization and Classification Performance Test Results

Tabletop performance tests and interviews were conducted with emergency response initial decision-makers to verify that they were knowledgeable of their responsibilities and could use the procedures effectively to categorize and classify events and to develop and implement protective actions. Facility-specific event scenarios for the CVDF and PUREX Plant were developed to test a sample of personnel filling the positions of BED, Incident Commander, Emergency Duty Officer, Occurrence Notification Center Emergency Duty Officer, and Site Emergency Director. The results of these tabletop tests that are related to categorization and classification are discussed below. The results of the tabletop tests that are related to protective actions are discussed in Appendix E.

All the BEDs (three from the CVDF and two from the PUREX Plant) who were tested demonstrated good knowledge of their emergency response duties. The BEDs made appropriate initial contacts to the Patrol Operations Center to notify them of the events and appropriately interacted with simulated fire response personnel. When conditions necessitated facility evacuation, the CVDF BED took along the appropriate emergency response procedures (e.g., building emergency plan and appropriate EPIPs) so they would have the necessary information to direct the emergency response. All the BEDs demonstrated good understanding of the incident command structure and appropriately relied on incident command post staff to support them in performing their emergency response duties. However, two out of five BEDs did not follow their emergency response procedures step by step to ensure that all necessary emergency response actions were performed. This shortcoming contributed to one BED

failing to recognize the need to classify the event after conditions warranting an Alert declaration were introduced. During the PUREX Plant tabletop, both of the BEDs recognized that the event conditions did not exactly match any of the facility-specific EALs. After thoroughly reviewing all EALs that would correspond to the event, one BED appropriately classified the event as a Site Area Emergency. However, a second BED did not carefully review all of the EALs (including the generic EALs) and, as a result, inappropriately classified the event as an Alert.

The Incident Commanders (ICs) who were interviewed also had a good understanding of their emergency response duties and of the overall Hanford emergency response structure. The ICs understood their responsibility to classify facility events that occur off-hours, when support would be provided by the Occurrence Notification Center. The ICs had the appropriate documents in their response vehicle to support event classification, including the 2000 Emergency Response Guidebook and the RL implementing procedure for categorization and classification. However, during a walkthrough of a transportation event scenario, one of the ICs indicated that the classification of events would not be a priority item during his response. Although on-scene personnel protection is of highest priority, event classification should still be a high priority in order to initiate the appropriate pre-planned protective actions and to initiate augmentation of the emergency response organization. A second IC did not follow his procedure step by step, and thus missed a step that would require classifying the event as an Alert based upon his determination that a Level III fire department response was warranted.

Although the proficiency of the BED and IC in classifying events is a weakness, these positions are normally supported by staff specifically assigned to assist in event classification. This system provides assurance that the problems identified during the tabletop test would not have a significant impact during a real event.

FINDING: Some Hanford Site emergency response initial decision-makers did not demonstrate appropriate use of categorization and classification procedures during simulated emergency events.

Both Emergency Duty Officers performed well during a walkthrough of postulated scenarios and made appropriate use of their procedures. However, the procedure for classifying the onsite transportation event required the Emergency Duty Officer to obtain a large amount of detailed information regarding the event from the IC before classifying it. Gathering the necessary information could delay classification of an onsite transportation event.

The emergency operations center staff members who were interviewed (Occurrence Notification Center Duty Officer, Site Emergency Director, and consequence assessment manager) all demonstrated good understanding of their roles and responsibilities. All of these personnel indicated that the emergency operations center staff worked as a team and supported each other in re-evaluating the initial event categorization and classification. During the presentation of the same hypothetical accident scenarios provided to the BEDs and ICs, the emergency operations center staff demonstrated their proficiency in using emergency response procedures to categorize and classify the events.

D. 3 CONCLUSIONS

Overall, the Hanford Site has a good process in place for categorizing and classifying events, including well designed procedures for performing emergency response tasks and a system that vests event classification authority in the positions most capable of understanding facility or site conditions to make the appropriate classification in a timely manner. The Hanford Site has procedures in place that guide

development of EPHAs and EALs to ensure that all facilities use a standard format and content. Although weaknesses were identified in the technical basis for some EALs and in the proficiency of some emergency response initial decision-makers in methodically following their procedures, these weaknesses do not degrade the program enough to raise concerns that the site cannot protect its workers and the public. The noted weaknesses are mitigated by a strong overall program, which includes an incident command support structure to assist the initial decision-maker in categorizing and classifying events.

D.4 RATING

The Hanford Site has established an effective program for categorizing and classifying potential operational emergencies. A rating of SATISFACTORY is therefore assigned.

D.5 OPPORTUNITIES FOR IMPROVEMENT

This Independent Oversight inspection identified the following opportunities for improvement. These potential enhancements are not intended to be prescriptive. Rather, they are intended to be reviewed and evaluated by the responsible DOE and contractor line management and prioritized and modified as appropriate, in accordance with site-specific programmatic emergency management objectives.

RL and ORP

- Ensure that a formal process is developed for ensuring that significant changes in facility design, operations, or hazardous material inventories are evaluated to determine whether the EPHA needs to be revised.

- Evaluate EALs to determine whether they can be enhanced by the addition of symptom-based EALs that include specific instrument set points. Installed instruments and indicators, such as water level or exhaust stack radiation monitor readings, should be incorporated into EALs where possible to facilitate timely classification of events.

RL

- During the training and drilling of initial decision-makers, emphasize the need to methodically follow procedures. Tabletop performance tests indicated that a number of initial decision-makers did not follow their procedures in a step-by-step manner, so that some simulated events were not classified in a timely and accurate manner.

- Review the steps in the Emergency Duty Officer portion of the transportation appendix of the classification procedure to determine whether they should be re-ordered to allow for more timely classification. The procedure requires the Emergency Duty Officer to obtain a large amount of detailed information about the event from the IC before classifying the event. The procedure could be improved by directing the Emergency Duty Officer to obtain general event information, such as the hazardous material involved and nature of the event, (e.g., large spill, small spill, and/or fire), so that he/she quickly obtains the information needed to classify the event.

BHI

- Review the PUREX Plant EAL set to determine whether additional EALs and clarification of some existing EALs are warranted. The scenario for the tabletop test of the PUREX Plant BEDs included a plausible scenario where a fire occurred on a building exhaust filter. No EAL included in the PUREX Plant EAL tables matched this accident condition. Although the EAL set does include some fire-related EALs, none identified a fire involving the exhaust filter. In addition, the loss-of-confinement EAL could be improved by clarifying that the exhaust system is considered to be part of the PUREX Plant confinement.

APPENDIX E

PROTECTIVE ACTIONS

E.1 INTRODUCTION

The primary objective of the U.S. Department of Energy (DOE) emergency management system is to provide the means for taking appropriate protective actions to minimize the impact of any serious event on site workers, emergency responders, and the public. Pre-planned onsite protective actions and offsite protective action recommendations are to be developed based upon analysis of potential emergency conditions. In addition, provisions are to be established to re-assess protective actions throughout an emergency.

The Independent Oversight team's assessment of this program element included a review of emergency procedures, walkdown of several facilities, and interviews with and tabletop performance tests of emergency response organization positions responsible for determining and implementing protective actions.

E.2 STATUS AND RESULTS

E.2.1 Protective Action Process

The concept for developing and implementing protective actions is described in the Hanford Site emergency plan, with details provided in the emergency plan implementing procedures. In accordance with the plan and procedures, protective actions are generally divided into three categories: locally affected area/facility, site area protective actions, and offsite protective action recommendations.

For emergencies initiated within a facility, the building emergency director (BED) is responsible for initiating initial protective actions in accordance with facility-specific emergency plans. Facility-specific emergency plans provide details on protective actions for facility occupants, including the means for notifying personnel, evacuation routes, and staging areas. During this assessment, facility-specific emergency plans for the Cold Vacuum Drying Facility (CVDF) and Plutonium-Uranium Extraction (PUREX) Plant were reviewed in detail. These building emergency plans are well organized and concise, and they include very good instructions for taking protective actions. For example, the plans provide clear instructions for evacuating personnel, including the identification of primary and alternate evacuation routes and staging areas. In addition, the plans provide clear instructions for accounting for evacuated personnel, securing classified material, shutting down equipment, and sheltering personnel.

During a tour of the CVDF and the PUREX Plant, the Independent Oversight team verified that the emergency plans for both buildings were available at appropriate locations for use by the BEDs. The evacuation routes were identified, and facility personnel were familiar with their emergency response actions. A noteworthy practice is the Hanford Site's use of emergency response boards posted at the entrance to all buildings. These boards contain information useful to support emergency response, including how to take protective actions.

The BEDs are also responsible for notifying the Patrol Operations Center of the need to initiate area protective actions (e.g., at 100 Area or 200 Area) for emergencies at their facilities. Area protective

actions are pre-planned and are based on the severity of the hazardous material release event. Upon declaration of an event, the Patrol Operations Center is notified of the event classification and then activates the appropriate siren (evacuation or take cover) to notify personnel outside facilities and makes automated emergency phone calls ("crash" calls) to notify personnel inside facilities. The Patrol Operations Center has a checklist that includes the pre-planned protective actions for each area based upon the event classification. This system ensures that protective actions are promptly taken for collocated workers.

If the BED is not on site, the Incident Commander (IC) is responsible for performing these duties. Both the BED and the IC are supported by a number of personnel organized in accordance with the nationally recognized incident command system. This support organization plays an important role in ensuring that adequate protective actions are formulated and implemented. Once the Hanford emergency operations center is operational, it evaluates the potential consequences of the event based on real-time input from the field and provides additional onsite and offsite protective action recommendations.

Recently, the Hanford Protective Action Task Force formally reviewed all of the onsite pre-planned protective actions to determine how they could be improved to provide the most effective protection of onsite personnel. This effort resulted in changing onsite protective actions to better prioritize notification to the 200 East and West areas.

The offsite pre-planned protective action recommendations were developed based on the classification level of the emergency and the area in which the emergency occurs. These recommended actions are identified on the Hanford emergency notification form and are communicated to offsite agencies by the Occurrence Notification Center. Offsite pre-planned protective actions include evacuation of people on the Columbia River and from other specifically identified areas. The Hanford Site and offsite agencies determined that a pre-planned protective action recommendation to shelter in place was not needed, given the nature of emergency conditions postulated in the emergency planning hazards assessments (EPHAs).

In summary, the Hanford Site process for performing protective actions is well designed and provides the tools needed for promptly implementing protective actions for site workers and for providing protective action recommendations for the public.

E.2.2 Protective Action Performance Tests

As described in Appendix D of this volume, tabletop performance tests and interviews were conducted with several emergency response initial decision-makers and emergency operations center staff members in order to verify that the personnel staffing these positions were knowledgeable of their responsibilities and could use the procedures effectively to categorize and classify events and to develop and implement protective actions. The results of these tabletop tests that are related to protective actions are discussed below. The results of the tabletop tests that are related to categorization and classification are discussed in Appendix D.

During the tabletop performance tests, the BEDs and ICs demonstrated a good understanding of their roles and responsibilities for directing protective actions for building occupants and for informing the Patrol Operations Center to initiate protective actions for the plant area and sitewide, and to notify the Occurrence Notification Center to provide offsite protective action recommendations. All the BEDs who were evaluated during tabletop performance tests performed personnel accountability well and demonstrated an appropriate level of concern for protecting plant personnel. Notifications to the Patrol

Operations Center regarding the nature of the event were promptly performed and provided the appropriate information to initiate area-wide protective actions. Noteworthy was one BED action to notify the Patrol Operations Center to initiate immediate protective actions locally before taking time to classify the event when the hazardous situation was identified. The Hanford event response procedure is designed to allow for this action. The ICs demonstrated that they were capable of utilizing the 2000 Emergency Response Guidebook to establish initial isolation zones for the simulated transportation event.

The emergency operations center staff members demonstrated good understanding of their roles and responsibilities for assessing the initial protective actions developed by the BED and IC. They had a good understanding of the use of consequence assessment to re-evaluate the adequacy of pre-planned onsite protective actions and offsite protective action recommendations.

E. 3 CONCLUSIONS

Hanford has established a good program for developing and implementing protective actions. Pre-planned protective actions have been developed based on the classification level and location of the event. Additionally, systems are in place for notifying workers of protective actions and offsite agencies of protective action recommendations. Initial decision-makers and the emergency operations center staff understood their roles and responsibilities and demonstrated the ability to implement the procedures for accounting for evacuated personnel, initiating protective actions for site workers, and recommending protective actions for the public.

E.4 RATING

The Hanford Site has established an effective program for developing and implementing protective actions. A rating of SATISFACTORY is therefore assigned.

E.5 OPPORTUNITIES FOR IMPROVEMENT

This Independent Oversight inspection identified the following opportunities for improvement. These potential enhancements are not intended to be prescriptive. Rather, they are intended to be reviewed and evaluated by the responsible DOE and contractor line management and prioritized and modified as appropriate, in accordance with site-specific programmatic emergency management objectives.

- Provide training to initial decision-makers on how atmospheric stability affects the potential extent of areas impacted by a hazardous material release. The BEDs and ICs who were interviewed did not understand how the atmospheric stability class might impact the dispersion of hazardous material.

- Review EPHA event scenarios to determine whether pre-planned offsite protective action recommendations could be enhanced by including a recommendation for sheltering in place for certain events. Sheltering in place might protect the public better than evacuation during events involving the release of hazardous materials that present primarily inhalation hazards (e.g., chemicals and alpha-emitting radioactive material) and when all personnel cannot be evacuated before exposure to such materials. Although documentation of a meeting with offsite officials indicated that the relative benefits of evacuation versus shelter-in-place were considered in developing pre-planned offsite protective action recommendations, there may be an opportunity to enhance these recommendations.

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APPENDIX F

FEEDBACK AND IMPROVEMENT

F.1 INTRODUCTION

Feedback and improvement constitute one of the five core functions defined by U.S. Department of Energy (DOE) Policy 450.4, *Safety Management System*. Feedback and continuous improvement programs provide the mechanisms to identify, track, and correct deficiencies and program weaknesses. Additionally, these programs include provisions for providing assessments of performance and for sharing lessons learned.

The program elements that were assessed included the identification and tracking of issues, tracking and management of corrective actions, root cause determinations, corrective action closure, and dissemination of lessons learned. The assessment was performed by interviewing responsible individuals, exercising selected corrective action tracking databases, and reviewing documents.

F.2 STATUS AND RESULTS

The feedback and continuous improvement program used at the Hanford Site is made up of a multitude of plans, procedures, databases, and personnel representing the two DOE field offices and each of the prime contractors. Each prime contractor at the Hanford Site maintains its own sitewide tracking system for higher-level issues and a facility-level tracking system for lower-level issues as part of their feedback and continuous improvement program. The Independent Oversight team selected DOE and contractor programs for the review of programmatic elements and output documents.

F.2.1 RL and FHI

Richland Operations Office (RL) and Fluor Hanford, Incorporated (FHI) have a fully functional program to provide feedback and continuous improvement composed of procedures, oversight personnel, databases, tracking and trending activities, performance reporting, and a lessons-learned process. The procedures clearly describe the process from identification of issues through closure of corrective actions, performance reporting, and issuance of lessons learned. All elements of an effective feedback and continuous improvement program are contained in their program.

RL manages issues identified by external and internal organizations within their feedback and continuous improvement programs. The internal reviews performed by RL include regularly scheduled emergency preparedness program reviews of one of their facilities on an annual basis. Issues identified by these reviews are contained in the tracking system and are being adequately managed. The issues are controlled by RL, the status of each is easily identified, and corrective actions are generally completed on schedule. The requirements for closure verification are graded, depending on the significance of the issue. The issues management portion of the feedback and continuous improvement program is being effectively implemented.

The RL lessons-learned program is administered by an assigned RL lessons-learned coordinator and is defined by a procedure. Lessons learned developed by organizations internal and external to RL are used within the program. The lessons-learned program is integrated throughout the Hanford Site and the DOE

complex through a system of lessons-learned points of contact who work through the organizations to disseminate lessons learned to appropriate personnel. The lessons learned are disseminated primarily through e-mail, but many are also linked on a Hanford Site web site. The RL lessons-learned coordinator is currently involved in further improving the program by developing performance indicators and pursuing ways to incorporate lessons learned from international programs. These key elements of an effective lessons-learned program are being actively implemented. Additionally, FHI has an assigned lessons-learned coordinator who is integrated within the RL lessons-learned program.

FHI, the prime contractor to RL, maintains a separate issues management program, though they share a common tracking database and issues management process. The FHI program evaluates issues identified in assessment reports, occurrence reports, non-conformance reports, radiological problem reports, corrective action requests, deficiency reports, and final reports from readiness reviews. Drill critique comments are excluded from this process but are tracked at the facility level under a facility-level procedure and database. If a drill critique comment is identified as a deficiency, by procedure it is required to be elevated to the FHI sitewide program. The FHI issues management program effectively captures pertinent issues generated from both internal and external sources.

The implementation of the FHI program was verified through review of the records for issues contained in three assessment reports. All issues within the selected reports were evaluated and documented in accordance with the corrective action management procedure requirements. There were, however, records that did not accurately reflect the actual process for screening and correcting identified problems. For example, the authoritative source log justified the screening of many items based on a deficiency evaluation group review, when in fact the items were screened out so that this group did not have to review them. Another corrective action closure file was reviewed involving the use of out-of-date alarm response procedures in the field. The required corrective action was for management to communicate the proper use and control of procedures. However, the Independent Oversight team determined that this action did not address the root cause of the problem, which was that the field procedures were never properly placed in the document control program. A follow-up discussion with the assigned manager determined that in addition to the documented corrective actions, the procedures were entered into the document control program and other facility alarm response procedures in the field were checked to ensure that they were being properly maintained by the document control program. These actions are not contained in the corrective action closure package. The additional actions taken to address the actual root cause are commendable; however, incomplete records of corrective actions may hinder the lessons-learned process.

The FHI self-assessment program includes formal Facility Evaluation Board (FEB) reviews, formal annual management assessments, and informal self-assessments. The FEB assessments are comprehensive reviews of a facility and contain an emergency management functional area. The results are well documented in a formal report and represent a very critical review of facility performance. The disposition of the issues from an FEB review and a management assessment were evaluated against the requirements of the corrective action management program. The corrective actions associated with these reports were properly processed and managed, and were in accordance with program requirements.

The most recent FEB review was performed for the FHI 222-S Analytical Laboratory. It indicated that the emergency management functional area was rated as “red,” the lowest rating. The results of this report are currently being processed through the feedback and continuous improvement program. At the time of the Independent Oversight review, the corrective action plan was being routed for approval before the corrective actions could be entered into the corrective action tracking system. This report included several significant programmatic weaknesses in emergency preparedness at the laboratory. Many of these issues are cited as repeat problems for this facility from a prior FEB review, performed in January 2000.

Facility performance has declined since the calendar year (CY) 2000 review, indicating that previous corrective actions were ineffective. As a result of the unsatisfactory performance and declining trend, immediate compensatory actions were taken, including the assignment of a full-time emergency preparedness coordinator to the facility, the assignment of an emergency preparedness mentor to the facility, the assignment of an emergency preparedness subject matter expert to the facility, and the correction of identified procedure problems. As an indication of how seriously management regarded the deficiencies, suspension of operations within the facility was considered. The suspension was not implemented after a documented evaluation that considered the satisfactory performance of facility personnel in response to actual occurrences within the facility over the past two years and the lack of significant risk reduction expected from suspension of operations. Additional corrective actions are expected as part of the corrective action plan that is being processed. The FEB reviews of this facility provided critical and thorough evaluations of facility performance. However, corrective actions following the CY 2000 review were not effective, and currently planned corrective actions have not progressed far enough to evaluate their effectiveness.

In addition to formal program reviews, the FHI drill program provides feedback on emergency preparedness program performance. The critique comments from the FHI drill programs are controlled at the facility level through administrative procedures and a facility tracking system. These comments are adequately tracked, but there is no trending capability that would help identify reoccurring problems.

F.2.2 ORP and CHG

The Office of River Protection (ORP) feedback and continuous improvement program is in transition. The need to change ORP's program was mandated by ORP management in CY 2000, when it became evident that the program in use at that time was not effective. At that time, the ORP feedback and continuous improvement program relied on 16 different and independent databases that tracked commitments and corrective actions. In December 2000, a corrective action tracking system was proposed and subsequently developed. On July 13, 2001, the new system was declared operational, and a management directive prohibited the use of all other tracking systems. The new, consolidated action reporting system now contains the items that were tracked in the previous databases, but administrative elements of the program are still being completed. Items yet to be completed include the development of administrative procedures for the program, training ORP emergency preparedness personnel in its use, and updates of previously tracked items. Updating the system is necessary so that previously tracked issues are compatible with the new system fields in order to provide complete and accurate output documents. It is commendable that ORP has made this change in such an expeditious manner; however, current output products will not be available until the owner organizations finish updating the database. A demonstration of the system capabilities did, however, provide assurance that it should be able to provide the necessary elements that are conducive to a sound feedback and continuous improvement program. The ORP corrective action program will remain a weakness in the overall Hanford Site program until all program upgrades are complete and demonstrated to be effective.

ORP's oversight of the tank farm contractor's emergency preparedness has been limited by the size of its staff, and depends on other organizations to support the assessment program. ORP performed an emergency preparedness assessment in 1998 and has taken credit for an emergency preparedness review as part of a 1999 readiness assessment. An emergency preparedness assessment by ORP is also scheduled for November 2001.

The ORP lessons-learned program includes the same program elements as those used by RL. A lessons-learned coordinator is assigned to ORP to administer the program. Like RL, the ORP program makes use of lessons learned from Hanford and throughout the DOE complex.

CH2M Hill Hanford Group, Incorporated (CHG) is responsible for waste tank operations under ORP. Their feedback and continuous improvement program is currently undergoing a major transition similar to ORP's. In October of 2000, CHG embarked on a performance enhancement program in order to ensure safe and improved operations. In support of this, CHG commissioned a self-assessment to baseline its performance over a number of functional areas, one area being emergency preparedness. The results of this assessment are published in a senior management-level Performance Evaluation Plan. This CHG review determined that the feedback and continuous improvement program was fragmented within CHG to the point where tracking, trending, and performance improvement were ineffective. To remedy this, CHG is now transitioning to a new, single system, to be completed in December 2001, that will track all issues within CHG. The scope of the change includes procedures, the database, and performance indicators. Currently, interim procedures are being used to capture and process all potentially deficient conditions, with some exceptions, such as drill critique comments. The software for the new database has been ordered, and performance indicators have been developed; neither is yet available. Because CHG has already self-identified a significant deficiency within their feedback and continuous improvement program and because they are in the early stages of implementing their corrective action plan, a further review of program output products was not pursued. The current state of the CHG program is considered to be a weakness in the overall Hanford Site program until all recommendations of the performance enhancement plan are implemented and are demonstrated to be effective. A review of the drill critique comments indicates that there is a high reliance on lessons-learned training sessions for remedies. CHG does have an assigned lessons-learned coordinator and is integrated with the site program to identify and disseminate lessons learned.

F. 3 CONCLUSIONS

RL and FHI feedback and continuous improvement programs are well defined and comprehensive. Issues identified by internal and external organizations are entered into the program and processed in accordance with program requirements. RL and FHI have well-developed corrective-action and lessons-learned programs, and consistently use these programs to implement corrections and enhancements to the emergency management program. RL oversight of emergency preparedness programs is adequate, and FHI self-assessments are through and well documented. These elements provide the framework for an effective feedback and continuous improvement program, which RL and FHI have used to improve the overall performance of the emergency management program.

ORP and CHG feedback and continuous improvement programs have been self-identified as being ineffective within the last year. However, corrective actions are being implemented that, when completed, should provide for a fully functional feedback and improvement program. Their programs cannot be completely evaluated until they are fully operational. The ORP and CHG feedback and continuous improvement programs will remain weaknesses in the overall Hanford Site program until the self-identified weakness are corrected and their programs are demonstrated to be effective.

F.4 RATING

The feedback and continuous improvement programs used by RL and FHI are effectively implemented. However, the ORP and CHG feedback and continuous improvement programs are being upgraded to address self-identified weaknesses. The strength of the RL and FHI programs and the recognition that weaknesses in the ORP and CHG programs were self-identified and are being upgraded under comprehensive, approved corrective action plans impact the overall rating. A rating of SATISFACTORY is assigned.

F.5 OPPORTUNITIES FOR IMPROVEMENT

This Independent Oversight inspection identified the following opportunities for improvement. These potential enhancements are not intended to be prescriptive. Rather, they are intended to be reviewed and evaluated by the responsible DOE and contractor line management and prioritized and modified as appropriate, in accordance with site-specific programmatic emergency management objectives.

RL

- Routinely review the deficiency screening process to ensure that deficiencies are screened and documented in accordance with FHI procedures.

- Provide additional emphasis on the level of DOE oversight at facilities scoring less-than-adequate on a FEB assessment.

FHI

- Ensure the quality and accuracy of deficiency evaluation records regarding the actual screening process used (i.e., deficiency evaluation group or authoritative source).

- Provide feedback within the issue closure packages when additional corrective actions are required (beyond those prescribed by the deficiency evaluation group).

- Determine the cause of the ineffectiveness of corrective actions at the 222-S Analytical Laboratory and provide appropriate lessons learned.

- Routinely evaluate the effectiveness of drill critiques and ensure that lessons learned are identified and trending is performed.

ORP

- Implement an ORP/RL staffing strategy to facilitate effective oversight of the ORP facility-level emergency management programs.

CHG

- Routinely evaluate the effectiveness of drill critiques and ensure that lessons learned are identified and trending is performed.