



Independent Assessment of Shutdown and Inactive Facility Risk Management at the Hanford Site

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Acronyms

CPCCo	Central Plateau Cleanup Company
DA	Design Authority
DID	Defense-in-depth
DOE	U.S. Department of Energy
DSA	Documented Safety Analysis
EA	Office of Enterprise Assessments
ECR	Engineering Change Request
FR	Facility Representative
FY	Fiscal Year
iCAS	Integrated Contractor Assurance System
JCS	Job Control System
MAR	Material at Risk
NCO	Nuclear Chemical Operator
NMMP	Nuclear Maintenance Management Program
OFI	Opportunity for Improvement
OOD	Operations Oversight Division
ORP	Office of River Protection
PUREX	Plutonium Uranium Extraction Plant
REDOX	Reduction-Oxidation Plant
RL	Richland Operations Office
SE	System Engineer
SHR	System Health Report
S&M	Surveillance and Maintenance
SOE	Stationary Operating Engineer
SSCs	Structures, Systems, and Components
TSR	Technical Safety Requirement
USQ	Unreviewed Safety Question
WESF	Waste Encapsulation and Storage Facility

INDEPENDENT ASSESSMENT OF SHUTDOWN AND INACTIVE FACILITY RISK MANAGEMENT AT THE HANFORD SITE

Executive Summary

The U.S. Department of Energy (DOE) Office of Enterprise Assessments (EA) conducted an independent assessment of the effectiveness of risk management by the Central Plateau Cleanup Company (CPCCo) at shutdown and inactive facilities at the Hanford Site in December 2022. This assessment evaluated the effectiveness of CPCCo in managing the risks associated with shutdown or inactive hazard category 2 nuclear facilities, specifically the Plutonium Uranium Extraction Plant, Reduction-Oxidation Plant, B Plant, and Waste Encapsulation and Storage Facility. This assessment also evaluated the effectiveness of the DOE Richland Operations Office's and Office of River Protection's (together "DOE Hanford") oversight of CPCCo's management of these facilities.

EA identified the following strengths, including one best practice:

- DOE Hanford's integration of its oversight and issues management system with CPCCo's issues management system automates entries for issues identified during DOE Hanford oversight activities and facilitates monitoring of CPCCo's actions planned and taken. (Best Practice)
- CPCCo's maintenance backlog for the assessed facilities is well managed with a very low volume of deferred maintenance.

EA also identified several areas of concern, as summarized below:

- Due to facility status, some areas cannot be accessed to verify the assumed configuration of nuclear material at risk.
- Contrary to requirements, CPCCo is not inspecting the Plutonium Uranium Extraction Plant and B Plant facility roofs annually for deterioration, including in areas that are known to be leaking.
- CPCCo does not always effectively use the issues management system to track and manage longstanding adverse conditions observed during facility surveillances.

In summary, CPCCo has generally effective surveillance and maintenance processes for risk management at shutdown and inactive hazard category 2 nuclear facilities at the Hanford Site. Additionally, DOE Hanford's oversight of shutdown and inactive facility risk management is effective. However, weaknesses were identified in completion of surveillances to verify the assumed configuration of material at risk and in assessing some facility structures, including roofs. Until the concerns identified in this report are addressed or effective mitigations are put in place, the risk associated with undetected facility degradation or changes in the configuration of material at risk remains elevated.

INDEPENDENT ASSESSMENT OF SHUTDOWN AND INACTIVE FACILITY RISK MANAGEMENT AT THE HANFORD SITE

1.0 INTRODUCTION

The U.S. Department of Energy (DOE) Office of Nuclear Safety and Environmental Assessments, within the independent Office of Enterprise Assessments (EA), conducted an assessment of the effectiveness of risk management at shutdown and inactive facilities at the Hanford Site. EA conducted the onsite portion of this assessment on December 5-8, 2022.

Central Plateau Cleanup Company (CPCCo) manages Hanford's river corridor cleanup mission under the direction and oversight of the DOE Richland Operations Office (RL) and Office of River Protection (ORP) (together "DOE Hanford"). The river corridor cleanup mission includes the surveillance and maintenance (S&M) of former chemical processing facilities and current and former storage facilities while they await eventual decontamination and demolition.

This assessment evaluated the effectiveness of CPCCo programs and processes for managing the risks associated with shutdown or inactive hazard category 2 nuclear facilities, specifically the Plutonium Uranium Extraction Plant (PUREX), Reduction-Oxidation Plant (REDOX), B Plant, and Waste Encapsulation and Storage Facility (WESF). This assessment also evaluated the effectiveness of DOE Hanford's oversight of CPCCo's management of these facilities. The original scope of the assessment, which was later modified to remove one facility,¹ is described in the *Plan for the Independent Assessment of Shut-Down and Inactive Facility Risk Management at the Hanford Site, December 2022*.

2.0 METHODOLOGY

The DOE independent oversight program is described in and governed by DOE Order 227.1A, *Independent Oversight Program*, which EA implements through a comprehensive set of internal protocols, operating practices, assessment guides, and process guides. This report uses the terms "best practices, deficiencies, findings, and opportunities for improvement (OFIs)" as defined in the order.

As identified in the assessment plan, this assessment considered requirements related to managing the risks associated with the selected shutdown or inactive hazard category 2 nuclear facilities. Criteria to guide this assessment were based on those listed in sections SF.1 through SF.5 of EA Criteria and Review Approach Document (CRAD) 31-36, Rev. 0, *Shutdown Facility Risk Management*. EA also used criteria from section SF.8 of EA CRAD 31-36 and selected elements of EA CRAD 30-07, Rev. 0, *Federal Line Management Oversight Processes*, to collect and analyze data on DOE Hanford oversight activities related to risk management at shutdown and inactive facilities.

EA examined key documents, such as system descriptions, work packages, procedures, manuals, analyses, policies, documented safety analyses (DSAs), technical safety requirement (TSR) documents, and training and qualification records. EA also interviewed key personnel responsible for developing and executing the associated programs; observed S&M activities; and walked down significant portions of the selected facilities, focusing on the condition of the facilities and the structures, systems, and components

¹ The 105K West Facility was originally included as a shutdown hazard category 2 nuclear facility. However, active decontamination and demolition activities at the facility put it outside the scope of this assessment, which was focused on facilities in long-term surveillance and maintenance.

(SSCs) credited to maintain safety. The members of the assessment team, the Quality Review Board, and the management responsible for this assessment are listed in appendix A.

There were no previous findings for follow-up addressed during this assessment.

3.0 RESULTS

3.1 Maintenance of Safety Design

This portion of the assessment evaluated whether (1) CPCCo has updated the safety basis for the facility to keep it current and to reflect changes in the facility, work, and hazards as they are analyzed in the DSA; and (2) the engineering design and analyses implement safety basis requirements to demonstrate the protection of the public, workers, and the environment from facility hazards.

Work Scope and Facility Configuration

The WESF DSA describes the scope of work at the facility as currently limited to maintenance activities, inspections, decontamination, and radioactive material capsule movement, storage, and surveillance. EA observed the facility configuration during a walkdown and confirmed that the capsules are adequately stored in six active pool cells.

The PUREX DSA describes the scope of work at the facility as currently limited to S&M. EA observed the facility configuration and conditions during a walkdown of accessible portions of the facility and identified several areas of apparent water intrusion. DOE/RL-98-35, *Surveillance and Maintenance Plan for the Plutonium-Uranium Extraction (PUREX) Facility*, and CPSM-PRO-OP-50668, *Surveillance of PUREX Facility*, are credited by CP-14977, *Plutonium Uranium Extraction Facility Documented Safety Analysis*, and require annual inspections of passive design features with the objectives of ensuring adequate containment of contaminants, providing physical safety and access controls, and maintaining the facility in a manner that will minimize risk to human health and the environment. Two reviewed annual surveillance reports (calendar years 2019 and 2021) demonstrated that appropriate pre-planned walkdown paths were used during the inspections, and facility conditions (including for the areas affected by water intrusion) were monitored and adequately recorded.

Additionally, EA inquired about roof inspections during the walkdown. The roof of the PUREX canyon building is designated as defense-in-depth (DID) to prevent loss of confinement from roof collapse due to excessive snow loads or excessive water intrusion. Contrary to DOE/RL-98-35, which requires that annual surveillance inspections include checking for indications of roof deterioration, the surveillance checklists in the reviewed annual surveillances did not include a tour path for roof inspection. The facility manager conducting the walkdown stated that the roof had not been inspected during the last surveillance and is not routinely inspected. (See **Deficiency D-CPCCo-1**.) A recent five-year roof inspection report reviewed by EA documented that the inspection was performed by personnel walking around the outside of the PUREX facility and observing the roof from the ground and reviewing previously taken aerial photographs; such an inspection is inadequate to identify early signs of degradation in confinement integrity. Not routinely performing adequate structural inspections of the facility roof could result in undetected degradation of confinement features.

The REDOX DSA describes the scope of work at the facility as S&M, waste removal, cold and dark activities (e.g., electrical utilities isolation), and limited decontamination and decommissioning risk mitigation activities. The DSA states that the ventilation system provides active confinement and treatment of radioactive particulate before the exhaust is released to the environment; however, no

accident mitigation or prevention is credited. The ventilation sand filter is credited as DID. EA observed the current facility conditions during a walkdown, including the ventilation system sand filter, which was confirmed to be a functional system. EA also observed a new non-credited temporary ventilation system, along with associated HEPA filters, that was being installed. This ventilation system will be tied into the existing ventilation system between the building and the system stack. After installation, testing, and acceptance of the new ventilation system, the existing DID sand filter will be decommissioned. An updated DSA revision was transmitted to DOE Hanford and was under review during the onsite portion of this assessment.

The B Plant DSA describes its current mode as S&M, which it is expected to remain in for an extended period. EA was unable to observe the interior of the facility during the assessment because the facility was inaccessible due to a ventilation outage. A new roof consisting of a steel structure with metal panels was installed on the B Plant canyon building in 2002. The roof was built over and encloses the old roof and is designed with a slope to drain any precipitation runoff. The roof of the canyon building is designated as DID to prevent loss of confinement from roof collapse due to excessive snow loads or excessive water intrusion. DOE/RL-98-19, *Surveillance and Maintenance Plan for the 202-S Reduction Oxidation (REDOX) Facility*, and CPSM-PRO-OP-50669, *B-Plant Annual Facility and Grounds Surveillance*, sec. 1.3, implement surveillances credited by HNF-14804, *B Plant Documented Safety Analysis*, to monitor the integrity of structures and to look for changing conditions with respect to known remaining hazardous materials and indications of degradation of SSCs, including checking for indications of roof deterioration. Contrary to CPSM-PRO-OP-50669, which requires a walk-through surveillance of the exterior and interior to be conducted and documented annually, an annual facility surveillance, including inspection of the roof, was not conducted in fiscal year (FY) 2022. (See **Deficiency D-CPCCO-1.**) Not routinely inspecting the facility, including the roof, could result in undetected degradation of confinement features.

Facility Hazards

When facility operations ended, hazards identifications in chapter 3 of the PUREX, REDOX, and B Plant DSAs were appropriately revised to remove controls for normal operating hazards and include controls for hazards associated with deactivation and S&M activities due to the configuration of nuclear material at risk (MAR) during S&M. For example:

- The PUREX facility structure is appropriately credited to provide DID for confinement of the MAR within the facility.
- The REDOX facility has a sand filter for a non-credited active exhaust ventilation system that adequately provides DID for confinement of the MAR within the filter.
- The B Plant canyon facility structure is appropriately credited as DID for confinement of the MAR.

Hazard identifications in chapter 3 of the WESF DSA were appropriately revised to address pool cell operating hazards and mitigated hazards resulting from deactivation of hot cells A through F and grouting of the K3 ducts and filters. For example, the K1 exhaust ventilation system is appropriately designated as a DID control to mitigate hydrogen buildup in the pool cell area.

Safety Structures, Systems, and Components

SSC descriptions in chapter 4 of the facility DSAs were appropriately revised to reflect current conditions and identify the proper performance criteria necessary to provide reasonable assurance that functional requirements will be met for credited systems. The WESF DSA appropriately includes safety significant SSCs to ensure adequate confinement of MAR in the capsules, such as the area 2 structure (hot cells), the area 3 structure (pool cells), the capsules, the pool cell 12 fill pipe, the pool cell cleaning system piping,

and the pool cell transfer ports. EA observed a nuclear chemical operator (NCO) surveillance of the WESF active pool cell water levels and transport valve positions. The readings of active pool cell water levels and visual observations of the valve positions were appropriately monitored and recorded in accordance with HNF-8759, *Waste Encapsulation and Storage Facility Technical Safety Requirements*. The PUREX DSA adequately addresses the MAR configuration in storage tunnels one and two, including the modified soil overburden (3 feet) for tunnel two, which is credited as a safety significant design feature that provides a 50% reduction of dose consequences from tunnel related accidents. Three reviewed annual surveillances appropriately addressed soil erosion over the tunnels, specifying that none had been observed. The REDOX and B Plant DSAs do not include any safety significant SSCs. The REDOX DSA currently states that the sand filter is DID, even though the ventilation system is not credited. The B Plant DSA appropriately credits the facility structure as DID for confinement with no active ventilation.

Technical Safety Requirements

The TSRs in chapter 5 of the facility DSAs were appropriately revised to reflect changes to credited systems for deactivated facilities. For example:

- The WESF TSRs appropriately require maintaining active exhaust ventilation or passive ventilation in the pool cell area to protect against hydrogen buildup and/or capsule failure due to a hydrogen explosion in the pool cell area. During an observed surveillance, a stationary operating engineer (SOE) visually confirmed the duct pressures and flow readings for the DSA-credited K1 exhaust system, which serves the pool cell area. In addition, EA reviewed three previous SOE surveillance reports that confirmed past monitoring of ventilation systems.
- The PUREX, REDOX, and B Plant TSRs do not include any limiting conditions for operation or surveillance requirements.

Engineering Design and Analyses

The design bases and assumptions identified in the WESF DSA were appropriately translated into all 12 engineering change requests (ECRs) reviewed by EA. These ECRs included drawing revisions, design calculations, and reports. Credited design features were appropriately analyzed and verified to meet safety basis requirements. For example, a reviewed ECR for WESF pool cell area beta monitor modifications was adequately documented in ECR-18-000536, *Pool Cell Beta Monitor Modification*. These modifications included adequate revisions to affected drawings, design requirements, and acceptance criteria and methods for the system. An independent peer reviewer appropriately design-verified the ECR.

EA did not review any ECRs, drawing revisions, design calculations, or reports for PUREX, REDOX, or B Plant because these facilities are inactive and currently in S&M mode. There were no current engineering design changes to credited systems in these facilities.

CPCCo has established and implemented a system engineer (SE) program in accordance with procedure CPCC-PRO-EN-16331, *System Engineer Program*, to provide engineering oversight for activities affecting systems credited to provide safety functions. This procedure appropriately requires the SE to maintain system notebooks/logs and prepare periodic system health reports (SHRs). In addition, component failures, open/completed corrective maintenance work packages, overdue preventive maintenance activities, and any open integrated Contractor Assurance System (iCAS) reports are appropriately required to be tracked in the SHRs. All six system notebooks/logs reviewed by EA were adequate. Further, all four reviewed FY 2022 quarterly SHRs for the DSA-credited WESF K1 and K3

exhaust systems were adequate and appropriately identified that the systems satisfactorily met operability goals (greater than 95%), availability goals (greater than 95%), and reliability goals (less than two failures per quarter). There was one corrective maintenance item for the K1 exhaust system completed during the first quarter, and there were no overdue preventive maintenance work packages during FY 2022. There were no open condition reports during FY 2022 for the DSA-credited exhaust systems. However, the infrequent use of iCAS to document adverse conditions identified in SE quarterly assessments and walkdowns hinders the tracking and trending of such issues. (See **OFI-CPCCo-2**.)

SEs are properly qualified in accordance with CPCC-PRO-TQ-40175, *Engineering Training Program Description*. EA's review of the qualification cards for the SE responsible for the WESF K1 and K3 exhaust systems confirmed that qualification requirements were met. At the time of this assessment, CPCCo had only one qualified SE for these credited exhaust systems; while three additional engineers were in the process of becoming qualified, the current lack of qualified backup engineers is a potential weakness in the SE program.

Maintenance of Safety Design Conclusions

CPCCo has appropriately updated and maintained facility safety bases addressing work scope and facility configuration, facility hazards, safety SSCs, and TSRs for all reviewed facilities. CPCCo has established adequate engineering design products that support the safety basis. Reviewed ECRs appropriately included engineering design and analyses required to implement safety basis requirements to demonstrate protection of the public, workers, and the environment from facility hazards. CPCCo has established and implemented an adequate SE program to ensure adherence to the safety basis, but currently has no qualified backup SEs for WESF. However, some facility areas have not been inspected as required, including roofs that are known to be leaking.

3.2 Configuration Management

This portion of the assessment evaluated whether CPCCo's configuration management programs and processes are adequate to ensure safety systems continue to meet safety basis requirements and changes are properly controlled.

Consistency Between Requirements, Documents, and Physical Configuration

CPCCo has established and implemented an effective configuration management program through CPCC-PRO-EN-20050, *Engineering Configuration Management*. This procedure appropriately reflects the requirements of DOE-STD-1073-2016, *Configuration Management*. CPCCo has implemented an adequate system to ensure that requirements and performance criteria are effectively integrated. During walkdowns of the evaluated facilities, system components were observed to be properly labeled to ensure correct configuration and operation, and system components were installed consistent with system drawings. CPCCo effectively uses quality control and quality assurance requirements to ensure that performance criteria are maintained. For example, in four reviewed design change notices, system modifications were reviewed by all appropriate personnel, including the SE or the design authority (DA).²

² SEs are assigned to cover systems credited with a safety function, and DAs are assigned to systems of lesser designation. There are no active safety significant SSCs for the evaluated facilities; therefore, no engineers are required to be qualified as cognizant system engineers per DOE Order 420.1C, *Facility Safety*.

Change Control

Changes to work performance instructions and system documentation are effectively controlled to ensure that systems continue to meet functional requirements. Interviewed SEs and DAs demonstrated a thorough understanding of the unreviewed safety question (USQ) process and when it was required. USQ evaluators appropriately evaluated four reviewed design change packages using the USQ process; all four were screened out or were categorically excluded. Proposed system changes were adequately described, providing sufficient detail to understand design details, component specifications, and potential impacts. For example, a change proposal to cut and cap raw water service piping to building 293-S at REDOX included all necessary drawings and provided adequate detail to describe the change. Engineering management appropriately approved all four design change packages.

System Assessments

Reviewed systems were adequately assessed to ensure proper system performance. SEs or DAs perform monthly and annual system assessments. Six reviewed monthly and annual system assessments conducted over the previous year showed that these assessments identified system abnormalities and verified that the systems continued to meet their safety functions. Quarterly and annual SHRs are conducted for all DSA-credited systems. Two reviewed SHRs conducted during the previous year confirmed that the SHRs adequately assess system operability, reliability, and trending of system issues.

Configuration Management Conclusion

CPCCo has established and implemented an effective configuration management program. The observed physical configurations of the systems were in alignment with documentation and requirements. All reviewed system changes were properly evaluated through the USQ process. System assessments were appropriately conducted to verify that the systems continued to meet their safety functions.

3.3 Surveillance and Maintenance

This portion of the assessment evaluated whether CPCCo's surveillance and maintenance activities are properly planned, scheduled, and performed to ensure that safety systems can reliably perform intended safety functions when required.

Surveillance

CPCCo has an adequate safety system surveillance process, governed appropriately by CPCC-PRO-WKM-12115 and CPCC-PRO-MN-19304. Annual surveillances are generally conducted for each facility and are scheduled and tracked through the JCS. With the notable exception of the weaknesses described in section 3.1 and below, these surveillances verify proper facility conditions and system operations. Surveillances required by the WESF TSRs are performed in accordance with WESF-PRO-OP-51871, *Perform SOE Surveillance*, and WESF-PRO-OP51869, *WESF NCO Surveillance*. Both surveillances adequately include the checks of system operation required by the TSRs. Based on EA's observation of these surveillances, NCOs and SOEs were extremely knowledgeable of the systems and fully understood the importance of the surveillances. A review of both the NCO- and SOE-completed surveillance work packages confirmed that these surveillances were properly performed.

The use of calibrated measurement and test equipment (M&TE) was properly controlled as required. Previously completed calibration work packages CPSM-PRO-MN-50706, *B Plant Transmitters and Gauges Calibration*, and CPSM-PRO-MN-50707, *B Plant Flow Transmitter Calibration*, both appropriately required the use of calibrated M&TE in the performance of the calibrations. Reviewed

completed performance records confirmed that calibration information was properly recorded on performance data sheets.

EA identified weaknesses associated with some surveillance-identified issues not being resolved and some hard-to-access areas of facilities not being inspected. First, discussions during an observed post-job review of the B Plant annual surveillance revealed that several issues identified during the surveillance were not being addressed. Several adverse conditions observed during the 2022 annual surveillance were documented in the prior annual surveillance, but not addressed. All personnel in attendance at the post-job review were unaware of the status of the issues. For example, several electrical issues were documented in the annual surveillance as “not sure if electrically cleared (same as last year),” demonstrating that the issues were not placed into an appropriate system to ensure that they would be properly addressed. (See **OFI-CPCCo-1.**)

Furthermore, during facility walkdowns and reviews of annual surveillances, EA identified that hard-to-access areas of some facilities are not being inspected. (See section 3.1 and **Deficiency D-CPCCo-1.**) For example, assumed MAR configurations in some areas at PUREX are not verified by inspection because a crane needed to perform such inspections has been decommissioned. Additionally, CPCCo personnel stated that safety concerns with personnel accessing the roofs have prevented direct inspection since the early 1990s. (See **OFI-CPCCo-2.**)

Maintenance

CPCCo has appropriately established a documented nuclear maintenance management program (NMMP) to maintain safety systems and mission-essential equipment and manage the maintenance backlog. CPCCo’s NMMP is documented in CPCC-MP-MN-40443, *Nuclear Maintenance Management Program (NMMP) Description Document*. DOE Hanford approved the NMMP on November 18, 2020, in accordance with the three-year approval requirement in DOE Order 433.1B, *Maintenance Management Program for DOE Nuclear Facilities*. The NMMP addresses all aspects of DOE Order 433.1B.

CPCCo’s approved NMMP includes the appropriate preventive, predictive, and corrective maintenance processes. During interviews, the nuclear maintenance manager demonstrated thorough knowledge of the maintenance processes. Preventive and predictive maintenance are appropriately scheduled and managed in accordance with CPCC-PRO-MN-19304, *Periodic Maintenance Process*. Predictive maintenance, such as vibration analysis, is used on fans and motors to detect deteriorating conditions. Review of work package SM-21-04913, *Perform 221B-EF-101 Reassembly and Preventive Maintenance Activities for 221B-EF-102*, confirmed that vibration analysis techniques are being effectively employed. Four previously completed corrective maintenance work packages reviewed by EA demonstrated effective performance. In all four work packages, work instructions were documented as having been properly performed, and the required information was recorded. Work package SM-21-04913 also provided evidence that the pen-and-ink change process was used and properly applied. Additionally, work package SM-22-03222, *Inspect and Lube 221B-EF-102 Fan Bearings*, properly recorded post-maintenance testing data. All four reviewed work packages contained detailed work record summaries that accurately captured work activities.

Preventive maintenance is appropriately scheduled and tracked in the job control system (JCS) as described in CPCC-PRO-WKM-12115, *Work Management*. The JCS produces a report for preventive maintenance activities that are coming due. Preventive maintenance is being conducted as scheduled as demonstrated by the 96% completion rate in CPCCo’s December JCS report. The CPCCo contractor assurance system metrics showed that the maintenance backlog is being effectively managed.

CPCCo performs facility condition inspections in accordance with documented preventive maintenance requirements. EA reviewed completed facility condition inspections for each evaluated facility, all of which demonstrated adequate attention to age-related system degradation. Identification of maintenance issues and any decision to defer that maintenance was properly justified in the inspection report. The reviewed REDOX and B Plant facility condition inspections show that the facilities and systems are functioning well and need no corrective maintenance.

Safety system reliability is adequately supported through maintenance activities. Vendor manuals, industry standards, DOE orders, and other requirements to establish lubrication and inspection schedules were appropriately incorporated in preventive maintenance activities. Post-maintenance testing was used to verify proper operation of equipment following the maintenance activities. For example, SM-22-03222 and SM-21-04913 appropriately applied vendor manual recommendations regarding run time following maintenance to ensure that steady state operations were reached prior to recording testing data.

Surveillance and Maintenance Conclusions

CPCCo has established an adequate NMMP. Reviewed JCS reports show that maintenance and surveillance activities are properly scheduled, tracked, and performed. However, EA identified weaknesses associated with some surveillance-identified issues not being resolved and some hard-to-access areas of facilities not being inspected.

3.4 Federal Oversight

This portion of the assessment evaluated DOE Hanford's oversight of CPCCo's risk management for shutdown and inactive facilities.

DOE Hanford has developed a plan to conduct assessments and other oversight activities of the shutdown and inactive facilities. The RL Operations Oversight Division (OOD) provides oversight of surveillance, maintenance, and daily operations of the evaluated shutdown and inactive facilities, with support from other DOE Hanford oversight groups. OOD maintains a master oversight plan, which includes a schedule for planned oversight activities within the division. OOD updates this plan quarterly to account for changing scheduled activities and indicators of contractor performance, such as oversight issues, Occurrence Reporting and Processing System reports, open condition reports, and delinquent corrective action plans. Similarly, other groups within DOE Hanford maintain their own oversight schedules. Based on interviews, these oversight schedules are maintained inconsistently using a variety of tools and are not combined into an integrated assessment schedule. This practice could have a correspondingly negative impact on coordinating assessments, obtaining subject matter expert support as needed, and ensuring that all required oversight activities are planned. (See **OFI-DOE Hanford-1**.)

DOE Hanford oversight responsibilities are described in DOE-PRO-PAI-50085, *Integrated Oversight*. Additional responsibilities for DOE Hanford Facility Representatives (FRs) are described in DOE-PPD-PAI-51864, *Facility Representative Program*. Although these documents apply to FRs and subject matter experts throughout DOE Hanford, interviewees stated that many subordinate guidance documents, such as desk guides, differ between RL and ORP, contributing to inconsistencies in oversight documentation. Interviewees further stated that DOE Hanford is updating these documents to provide more consistent guidance and to clarify the responsibilities and expectations for FRs and supporting staff.

DOE Hanford requires that FRs complete technical and job-specific qualifications. A sampling of records for shutdown and inactive facility FRs provided evidence that the FRs have satisfied the required qualifications. As documented in previous EA assessment reports, DOE Hanford management continues to address ongoing challenges in maintaining a full complement of qualified FRs.

DOE Hanford shutdown and inactive facility FRs maintain operational awareness of their facilities, including routine, non-routine, and project activities. Interviewed FRs described a graded approach in prioritizing oversight activities, with considerations for hazards and risk, work complexity, and recent contractor performance. EA observed FRs attending contractor work planning and release meetings, conducting work observations, and participating in an annual surveillance post-job review. During these activities, the FRs tactfully engaged contractor leadership and workforce personnel with a questioning attitude. The FRs demonstrated technical knowledge and concern with ensuring that operations are conducted in accordance with approved work planning and control and safety basis requirements.

DOE Hanford shutdown and inactive facility FRs document and communicate oversight results to the contractor using iCAS. EA reviewed a sample of oversight reports that FRs had completed within iCAS. In instances where FRs identified an issue, the FRs documented the issue within the system and assigned appropriate attributes per DOE Hanford's procedures. DOE Hanford's issues management system is integrated with the contractor's issues management system to automatically populate entries and action items for identified issues into the contractor's system. The integration between the Federal and contractor systems, which EA cites as a **Best Practice**, also provides Federal oversight personnel with unfettered visibility to evaluate the contractor's actions and disposition of issues, and triggers automated email notifications to the Federal initiator upon issue closure.

OOD managers stay apprised of FR activities and communicate oversight results with both DOE line management and contractor management. EA observed informal meetings and discussions between FRs and OOD management. OOD managers provide weekly written reports and monthly briefs to DOE Hanford line management. In addition to the use of the issues management system, OOD management communicates results to contractor management through bi-weekly meetings and quarterly meetings with the contractor's president.

Federal Oversight Conclusions

DOE Hanford implements a field element oversight program that maintains operational awareness and uses a graded approach to support resource allocation for shutdown and inactive facility oversight. OOD has an adequate assessment plan and schedules assessment activities; however, oversight schedules are not maintained consistently among the various divisions having oversight responsibilities. DOE Hanford shutdown and inactive facility FRs meet the qualification requirements for their specific positions. DOE Hanford implements an oversight documentation system that is integrated with the contractor's issues management system to automate issue entries and notifications, which is cited as a best practice.

4.0 BEST PRACTICES

Best practices are safety-related practices, techniques, processes, or program attributes observed during an assessment that may merit consideration by other DOE and contractor organizations for implementation. The following best practice was identified as part of this assessment:

- DOE Hanford's integration of its oversight and issues management system with the contractor's issues management system automates entries for issues and notifications for the closure of issues.

5.0 FINDINGS

No findings were identified during this assessment.

6.0 DEFICIENCIES

Deficiencies are inadequacies in the implementation of an applicable requirement or standard. A deficiency that did not meet the criteria for a finding is listed below, with the expectation from DOE Order 227.1A for site managers to apply their local issues management processes for resolution.

Central Plateau Cleanup Company

Deficiency D-CPCCo-1: CPCCo did not perform or document complete required annual surveillances of PUREX or B Plant, including all exterior and interior areas of the facilities and roofs. (CP-14977; DOE/RL-98-35; CPSM-PRO-OP-50668, sec. 1.3.1; HNF-14804; DOE/RL-98-19; CPSM-PRO-OP-50669, sec. 1.3)

7.0 OPPORTUNITIES FOR IMPROVEMENT

EA identified three OFIs to assist cognizant managers in improving programs and operations. While OFIs may identify potential solutions to findings and deficiencies identified in assessment reports, they may also address other conditions observed during the assessment process. These OFIs are offered only as recommendations for line management consideration; they do not require formal resolution by management through a corrective action process and are not intended to be prescriptive or mandatory. Rather, they are suggestions that may assist site management in implementing best practices or provide potential solutions to issues identified during the assessment.

Central Plateau Cleanup Company

OFI CPCCo-1: Consider entering deficiencies identified during surveillances into the approved issues management system.

OFI CPCCo-2: Consider applying alternate inspection techniques (e.g., the use of drones) to inspect roofs or other hard-to-access areas of shutdown and inactive facilities.

DOE Hanford

OFI-DOE Hanford-1: Consider implementing a process in which all divisions performing required oversight activities plan and document these activities in an integrated assessment schedule.

Appendix A Supplemental Information

Dates of Assessment

Onsite Assessment: December 5-8, 2022

Office of Enterprise Assessments (EA) Management

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