

**Office of Enterprise Assessments
Assessment of the Idaho Site Radioactive Waste
Management Complex Contractor Assurance
System for the Idaho Cleanup Project**



January 2019

**Office of Nuclear Safety and Environmental Assessments
Office of Environment, Safety and Health Assessments
Office of Enterprise Assessments
U.S. Department of Energy**

Table of Contents

Acronyms.....	ii
Executive Summary	iii
1.0 Purpose.....	1
2.0 Scope.....	1
3.0 Background	1
4.0 Methodology	2
5.0 Results.....	3
5.1 Development and Implementation of a Contractor Assurance System.....	3
5.2 Assessment Planning, Scheduling, and Conduct	5
5.3 Issues Management System	9
6.0 Findings.....	13
7.0 Opportunities for Improvement.....	14
Appendix A: Supplemental Information.....	A-1
Appendix B: Key Documents Reviewed, Interviews, and Observations.....	B-1
Appendix C: Deficiencies.....	C-1

Acronyms

AI	Action Item
AMWTP	Advanced Mixed Waste Treatment Project
ARP	Accelerated Retrieval Project
CARB	Corrective Action Review Board
CAS	Contractor Assurance System
CFR	Code of Federal Regulations
CRD	Contractor Requirements Document
DOE	U.S. Department of Energy
DOE-ID	DOE Idaho Operations Office
DSA	Documented Safety Analysis
EA	Office of Enterprise Assessments
EMD	Executive Management Directive
ESRB	Executive Safety Review Board
FY	Fiscal Year
IAS	Integrated Assessment System
ICP	Idaho Cleanup Project
ISMS	Integrated Safety Management System
LO/TO	Lockout/Tagout
MCP	Management Control Procedure
MOP	Management Observation Program
MWV	Management Workplace Visit
OFI	Opportunity for Improvement
PDD	Program Description Document
PEB	Project Evaluation Board
PRD	Program Requirements Document
QA	Quality Assurance
RWMC	Radioactive Waste Management Complex
SMP	Safety Management Program

Office of Enterprise Assessments
Assessment of the Idaho Site Radioactive Waste Management Complex
Contractor Assurance System for the Idaho Cleanup Project

EXECUTIVE SUMMARY

The U.S. Department of Energy (DOE) Office of Environment, Safety and Health Assessments, within the independent Office of Enterprise Assessments (EA), conducted an assessment of the contractor assurance system (CAS) at the Radioactive Waste Management Complex (RWMC) at the Idaho Site, as operated by Fluor Idaho, LLC (Fluor). EA conducted this assessment from August 13 through 23, 2018.

The focus of this assessment was on the effectiveness of Fluor's CAS for the environmental remediation activities being conducted at the RWMC. Fluor was selected to support the Department's environmental management cleanup mission under the Idaho Cleanup Project Core contract in 2016. Shortly after Fluor took over the contract, the DOE Idaho Operations Office noted problems with CAS implementation. In response, Fluor obtained corporate support for a deep-dive evaluation of the CAS program to identify the problems and initiated a CAS improvement plan. EA conducted this 2018 independent assessment to ascertain whether the improvements made in the CAS have adequately addressed the problems and are being implemented effectively.

Fluor has made improvements in its CAS over the last 12 months. Overall, the updated CAS program is thorough and detailed. Fluor management is focusing attention on improving the implementation of CAS elements through a number of internal actions. In general, Fluor has an effective process for scheduling and performing internal independent assessments, including annual reviews of safety management programs that are required by the documented safety analysis. For the sample of assessments that EA reviewed, the issues management system adequately identifies, tracks, and corrects most adverse conditions. Fluor has made upgrades to the TrackWise issues management software to improve its effectiveness, particularly with the addition of a process for tracking and trending low-level issues that do not require further corrective action. Fluor line management is routinely monitoring performance through both formal and informal means. At the RWMC, the management observation program, known as "management workplace visits" generates substantial management presence in the field. As a result, many issues are identified and corrected immediately.

However, EA identified some weaknesses in the CAS program in the records reviewed that warrant further management attention and improvement. Although the assessment program is generally adequate, some assessments are delinquent and some are not sufficiently self-critical or thorough, thereby missing the opportunity to improve organizational performance. Some processes intended to improve management presence in the field and allow for identification of low-level issues for the purpose of tracking and trending are bypassing the issues management system. As a result, not all corrective action items are adequately captured in the issues management system, and in some cases, corrective actions are not sufficiently completed prior to closure. Effectiveness reviews are not always sufficiently rigorous. In some instances, incorrect effectiveness reviews allow inadequate causal analysis practices to persist. In other cases, root cause determinations do not fully address the identified condition, and corrective actions do not completely address the issues.

Office of Enterprise Assessments
Assessment of the Idaho Site Radioactive Waste Management Complex
Contractor Assurance System for the Idaho Cleanup Project

1.0 PURPOSE

The U.S. Department of Energy (DOE) Office of Environment, Safety and Health Assessments, within the independent Office of Enterprise Assessments (EA), performed an assessment of the contractor assurance system (CAS) implemented at the Radioactive Waste Management Complex (RWMC) at the Idaho Site. The purpose of this EA assessment was to evaluate the effectiveness of the CAS for the environmental remediation activities conducted at the RWMC under the Idaho Cleanup Project (ICP) Core contractor, Fluor Idaho, LLC (Fluor).

EA performed this assessment from August 13 through 23, 2018. This report discusses the scope, background, methodology, results, and conclusions of the assessment, as well as the opportunities for improvement (OFIs) identified by the review team.

2.0 SCOPE

EA conducted this assessment in accordance with the *Plan for the Office of Enterprise Assessments Assessment of Fluor Idaho's Contractor Assurance System Implemented at the Radioactive Waste Management Complex for the Idaho Cleanup Project CORE at the Idaho Site, August 2018*. This assessment evaluated the effectiveness of the CAS as implemented by Fluor at the RWMC, with a focus on the Advanced Mixed Waste Treatment Project (AMWTP) and Accelerated Retrieval Project (ARP). This assessment did not evaluate the effectiveness of DOE oversight at the RWMC, since an independent assessment of Federal oversight had been conducted in June 2018.

3.0 BACKGROUND

The Idaho Site contains numerous facilities, with DOE program direction and oversight provided by either the DOE Office of Environmental Management (EM) or by the DOE Office of Nuclear Energy. Locally, field oversight is performed by the DOE Idaho Operations Office (DOE-ID), which serves both program offices. Within DOE-ID, the EM organization provides oversight for the ICP Core contract, which includes management and operation of the RWMC facilities on the Idaho Site.

In June 2016, Fluor became the principal contractor for the ICP Core at the Idaho Site. The Fluor contract merged operation of the ARP, which was previously managed and operated by CH2M-WG Idaho, LLC, and the AMWTP, previously managed by the Idaho Treatment Group. Fluor's contract for the ICP Core is a cleanup contract for the purposes of shipping waste out of Idaho to satisfy the Idaho Settlement Agreement. Fluor is responsible for planning, managing, integrating, and executing the ICP work scope, as well as furnishing all requisite personnel, facilities, equipment, supplies, and services.

The contract transition consolidating management of the two different facilities was challenging in several ways, especially in establishing an effective CAS program. CAS users indicated that the CAS program under CH2M-WG Idaho used the "ICARE" system, which was tailored and user friendly, whereas the new "TrackWise" system brought in by Fluor was generic and not customized to their needs. In December 2016, Fluor's initial CAS program was identified in a DOE-ID quarterly evaluation report as "ineffective and weak" in several key areas. In 2017, DOE-ID continued to report marginal CAS

performance, as well as concern regarding increasing incident and injury rates. In May 2017, Fluor developed PLN-5375, *ICP Core Contractor Assurance System Improvement Plan*, to address several cross-cutting issues identified by DOE-ID. This plan listed specific remedial actions intended to address the problems and improve CAS performance.

Following a series of events involving injuries and inadequate work performance, DOE-ID issued a Letter of Concern to Fluor in September 2017 expressing the need for further improvements in work control and conduct of self-assessments. In response, Fluor executed a work stand-down on all nonessential operations, entered a practice of “deliberate operations,” and issued two Executive Management Directives (EMDs) to reinforce management expectations. Management placed a priority on completion of the CAS improvement plan and scheduled a corporate review of the CAS program.

In November 2017, Fluor convened a corporate team of subject matter experts to conduct a deep-dive evaluation of the CAS, using criteria from the Energy Facility Contractors Group (EFCOG) Best Practice 195, *Contractor Assurance System Effectiveness Validation*. The team’s report, *Contractor Assurance System Deep Dive Evaluation Report*, issued in December 2017, provided an evaluation of four main aspects of the CAS program and listed several conclusions and recommendations, including comments regarding the safety culture of the ICP Core. The corrective action plan for the deep dive report is currently open pending additional work to complete the corrective actions.

EA conducted this assessment of the current CAS program to determine whether the improvement initiatives to date are adequate and to identify any potentially weak aspects that, if addressed, could facilitate greater effectiveness and continued improvement.

4.0 METHODOLOGY

The DOE independent oversight program is described in and governed by DOE Order 227.1A, *Independent Oversight Program*. EA implements the independent oversight program through a comprehensive set of internal protocols, operating practices, assessment guides, and process guides. Organizations and programs within DOE use varying terms to document specific assessment results. In this report, EA uses the terms “deficiencies, findings, and opportunities for improvement (OFIs)” as defined in DOE Order 227.1A. In accordance with DOE Order 227.1A, DOE line management and/or contractor organizations must develop and implement corrective action plans for the deficiencies identified as findings. Other important deficiencies not meeting the criteria for a finding are also highlighted in the report and summarized in Appendix C. These deficiencies should be addressed consistent with site-specific issues management procedures.

As identified in the assessment plan, this assessment considered requirements for a CAS as specified in DOE Order 226.1B, *Implementation of Department of Energy Oversight Policy*, Attachment 1, Contractor Requirements Document (CRD). EA used the criteria and lines of inquiry for successful CAS assessments identified in EA 30-01, *Contractor Assurance System – Criteria and Review Approach Document*, Revision 1, to evaluate contractor performance.

EA examined key documents, such as program descriptions, assessment schedules, assessment reports, corrective action reports, causal analysis reports, effectiveness reviews, and trending analyses. EA also interviewed key personnel responsible for developing and executing the associated programs, observed contractor meetings, and performed walkdowns where appropriate. The members of the EA assessment team, the Quality Review Board, and EA management responsible for this assessment are listed in

Appendix A. A detailed list of the documents reviewed, personnel interviewed, and observations made during this assessment, relevant to the conclusions of this report, is provided in Appendix B. There were no items from previous EA assessments requiring follow-up during this assessment.

5.0 RESULTS

5.1 Development and Implementation of a Contractor Assurance System

This section discusses EA's assessment of Fluor's development and implementation of a CAS that includes the assignment of management responsibilities and accountabilities, and provides evidence to assure both DOE and the contractor's management that work is being performed safely, securely, and in compliance with all requirements; that risks are being identified and managed; and that the systems of control are effective and efficient.

Criteria:

- *An acceptable CAS description is documented and approved by DOE. (DOE Order 226.1B, CRD 2.a, c)*
- *Contractor management responsibilities and accountabilities are assigned and performed. (DOE Order 226.1B, CRD 2.a)*
- *CAS effectively monitors and evaluates work and safety performance of contractor and subcontractor compliance with contract and facility safety requirements. (DOE Order 226.1B, CRD 1)*
- *Personnel are selected and trained for effective performance of their assigned CAS responsibilities. (DOE Order 226.1B, CRD 2.b(3)(b)(3))*
- *An appropriate set of requirements of the CRD is formally assigned to the subcontractors to ensure subcontractors' acceptable safety performance. (DOE Order 226.1B, CRD 1)*

The Fluor CAS program is documented in Program Description Document (PDD)-159, *ICP Contractor Assurance System*, which adequately defines multiple processes used to identify issues and OFIs, report issues to the responsible managers and authorities, and ensure that corrective and preventive actions are established and effectively implemented. Fluor's CAS processes appropriately include a variety of elements, such as assessments, operational awareness activities, quality assurance (QA) programs, lessons learned programs, injury/illness and accident investigations, worker feedback mechanisms, performance indicators/measures, event reporting processes, analysis of causes, identification of corrective actions, corrective action tracking and monitoring, closure of corrective actions and verification of effectiveness, and analysis of trends. DOE-ID approved Fluor's CAS in January 2017.

In May 2017, a CAS improvement plan was initiated to address weaknesses identified early in the contract, followed by an in-depth corporate review that identified a number of actions and resulted in further improvements. The CAS program is receiving increased Fluor management attention and is continuing to be refined and improved. Fluor has initiated a dedicated effort to correct problems and strengthen the CAS, with corrective actions in progress.

The management responsibilities for implementing the CAS are appropriately described in PDD-1005, *ICP Core Management and Operations Manual*, and PDD-159. Project-specific roles and responsibilities

are listed in other documents, including Program Requirements Documents (PRDs) and Management Control Procedures (MCPs), most notably PRD-338, *ICP Contractor Assurance System*; PRD-5091, *Assessments*; PRD-5087, *Corrective Action*; MCP-8, *Self-Assessments*; MCP-1270, *Annual Effectiveness Review of the Integrated Safety Management System and the Contractor Assurance System*; and MCP-598, *Corrective Action System*.

These documents establish clear and unambiguous lines of authority and responsibility at all organizational levels for ensuring safety, health, and environmental protection. Interviews with Fluor management and staff indicated that they possessed an adequate understanding of their responsibilities.

As specified in PDD-159, ICP management is required to conduct oversight of their work activities through management assessment processes. These processes include both formal management assessments and informal management workplace visits (MWVs) to monitor performance and to ensure safe and compliant execution of work. The MWV program provides immediate feedback to the work group or facility manager and typically results in immediate correction of any identified unsafe behavior or deficient condition.

The CAS program is evaluated annually as part of the Integrated Safety Management System (ISMS) review in accordance with MCP-1270. This procedure adequately implements the requirements of 48 CFR Part 970, *DOE Management and Operating Contracts*, to verify the effectiveness of the Fluor ISMS, as well as the requirements of DOE Order 226.1B to conduct annual reviews of the CAS. The Fluor ISMS is described in PDD-1004, *Integrated Safety Management System*. The primary responsibility for implementation and assessment of the CAS falls on the Performance Assurance organization, with significant support provided by the QA organization; the Environment, Safety, Health, and Quality (ESH&Q) organization; and the Executive Safety Review Board (ESRB).

EA verified a sample of training records and interviewed several managers and workers who implement the CAS at the RWMC, and found them to be trained, qualified, and knowledgeable consistent with their specific roles, as described in PDD-1044, *RWMC Nuclear Facility Training Program*. Training and qualification of staff is carried out in accordance with detailed written procedures, such as MCP-33, *Personnel Qualification and Certification*, which implements DOE Order 426.2, *Personnel Selection, Training, Qualification and Certification Requirements for DOE Nuclear Facilities*, at the RWMC.

DOE Order 226.1B, Attachment 1, CRD, requires contractors to monitor and evaluate all work performed under their contracts, including the work of subcontractors. To ensure effective hazard prevention and control, Fluor assigns a Subcontractor Technical Representative (STR) to accompany the subcontractors during hazardous work as required by MCP-4021, *Acquisition of Material and Services*. The STR provides day-to-day technical direction to the subcontractor, coordinates with other work groups, and verifies that the subcontractor has demonstrated acceptable knowledge and understanding of the subcontract requirements. The STR is responsible for ensuring that all subcontracted work at the ICP is accomplished in accordance with applicable requirements, and in a safe and efficient manner. STRs are qualified in accordance with the requirements listed in Qualification Standard QC000STR, *ICPC Subcontractor Technical Representative*, documented on FRM-540.45, *Subcontract Technical Representative Core Qualifications*. EA verified a sampling of STR qualification records and interviewed an STR, who was both qualified and highly knowledgeable of his role.

Development and Implementation of a CAS Conclusions

Fluor has worked to improve its CAS and the updated CAS program is thorough and detailed. Fluor management is aware of their assigned responsibilities and is focusing attention on improving the implementation of the CAS, including arranging for corporate resources to conduct a deep-dive

evaluation of the CAS program to identify recommended actions. Fluor line management routinely monitors and evaluates the performance of work, including work performed by subcontractors, through both formal and informal means. Managers and workers who implement the CAS at the RWMC are adequately trained and knowledgeable. Corrective actions for improvement of the CAS program have been identified and are continuing to be implemented.

5.2 Assessment Planning, Scheduling, and Conduct

This section focuses on whether assessments are planned, scheduled, and conducted using a risk-informed approach to evaluate performance and determine the effectiveness of policies, programs, and procedures. EA reviewed the fiscal year (FY) 2018 assessment schedules for the AMWTP and the ARP, and selected a limited sample of reports issued within the last year for detailed review.

Criteria:

- *CAS adequately identifies and schedules a suite of assessments that vary in depth and scope based on requirements and risk. (DOE Order 226.1B, CRD 2.a)*
- *Rigorous, risk-informed and credible self-assessment and feedback and improvement activities are performed and documented. Assessment programs are risk-informed and appropriately cover potentially high consequence activities. (DOE Order 226.1B, CRD 2.b(2))*
- *Internal independent assessments are effectively performed by contractor organizations or personnel that have authority and independence from line management, to support unbiased evaluations. (DOE Order 226.1B, CRD 2.a and 2.b(1))*
- *CAS includes a method to validate the effectiveness of assurance system processes. (DOE Order 226.1B, CRD 2.b(1))*
- *The CAS, as a minimum expectation, has an adequate baseline assessment program that effectively evaluates the safety management programs described in the site Documented Safety Analysis (DSA). (10 CFR Part 830)*

A few documents, in conjunction with the QA requirements, establish an adequate framework for Fluor's assessment programs. The CAS Program Description, PDD-159, describes the assessment program, including self-assessments and independent assessments. MCP-8 describes a suite of self-assessments, including management assessments, management reviews, management observation programs (MOPs), surveillances, and inspections. MCP-1539, *Project Evaluation Board*, addresses independent assessments for potentially high consequence activities, including special reviews, effectiveness reviews, and readiness reviews.

Assessment Scheduling

Overall, Fluor has an adequate process for developing an integrated assessment schedule that includes required and elective assessments. The schedule of planned assessments is required by MCP-8 to include the assessments identified in LST-202, *Company-Level Required Assessments*, as well as elective assessments. LST-202 is the mechanism for capturing required assessments and is updated annually as part of the assessment scheduling process. The annual integrated assessment schedule is managed through the Integrated Assessment System (IAS), which is a user-friendly scheduling and tracking system

with extensive search capability, status of completed/cancelled/overdue assessments, and links to completed assessments.

The ARP FY 2018 assessment schedule appropriately includes the LST-202 required assessments, as well as elective assessments in relevant areas such as conduct of operations and Human Performance Improvement metrics. No assessments are overdue, and an appropriate justification was provided for cancellations. The ARP FY 2018 assessment schedule appropriately includes both required and elective assessments, and self-assessments cover a variety of relevant topics.

The AMWTP FY 2018 assessment schedule includes some management assessments, such as programmatic reviews of the safety management programs (SMPs), but does not include all of the LST-202 required assessments. Specifically, the required assessments for criticality safety, safety system health assessments, and National Fire Protection Association (NFPA) 70 electrical safety program controls were not included in the IAS schedule. EA verified that completed assessments existed for the criticality safety area and the safety system health assessments. However, Fluor personnel could not locate the completed assessment report for the NFPA 70 electrical safety program. Eight quarterly safety and health inspections were scheduled to be completed during the first quarter of FY 2018; however, none of these assessments were completed due to scheduling errors. After this issue was identified, AMWTP conducted some of the scheduled safety and health inspections but the inspection of the entire facility did not occur each quarter as required. **(Deficiency)**

Management Assessments

EA reviewed completed 2018 management assessments for AMWTP and ARP and found mixed results. For AMWTP:

- Four completed management assessments were compliance assessments performed by subject matter experts (Configuration Management IAS18762, Criticality Safety IAS18549, and TRU Waste Program IAS18730 and IAS18731) and appropriately met the MCP-8 criteria of documenting the results with sufficient details to reach objective conclusions and demonstrate achievement of the assessment purpose.
- Four of the completed assessments did not meet the definition of a management assessment (IAS18619, *Operator Aids Inspections in accordance with MCP-2986*; IAS18729, *Annual Caution Tags*; IAS18732, *Annual Assessment of Shipping Caution and Out of Service Tags*; and IAS18744, *Validate Alternative Methods for LO/TO*). The first three reports included a statement of compliance with no supporting detail. The fourth was a simple inspection report which included checklist criteria and results but did not meet the expectations for a management assessment as defined in MCP-8, *Self-Assessments*.
- The remaining two completed management assessments were IAS18503, *MCP-8 Assessment of the MWV/Work Observation Team (WOT)*, and IAS18498, *MCP-2973 Assessment of the Effectiveness of Policies, Plans and Procedures*. IAS18503 was a compilation of meeting minutes documenting the monthly Corrective Action Review Board (CARB) review of the MWVs. LST-202 states that the manager may use the CARB review to assist in the evaluation of the MWV/WOT data; however, the CARB meeting does not perform the same function as a management assessment. The CARB meeting and associated meeting minutes are not evaluations of the adequacy and effectiveness of the MOP. Fluor could not produce a copy of IAS18498.

EA reviewed 10 management assessments completed by ARP personnel:

- The assessment of the FY 2018 ARP schedule (IAS18752, *Assessment of FY 18 RWMC/ARP Assessment Program*) appropriately included a recommendation that an additional monthly assessment should be added to the assessment schedule for a more comprehensive and ongoing evaluation of operational activities. This recommendation was incorporated into the inspection schedule, resulting in a monthly review to follow up on each previous month's CARB meeting focus areas.
- The three system health report assessments (IAS1876, *System Health Report for ARP 2,3,4,5 Overhead Door Systems*; IAS1877, *System Health Report for ARP VIII Propane System*; and IAS1878, *System Health Report for ARP 3 HVAC System*) included an appropriately completed Form 431.71, *Structure, System or Component Health Report*. In general, these assessments are thorough and provide an adequate evaluation of the systems. IAS1876 resulted in a work order to perform yearly inspections of the overhead doors, which should have resulted in a finding being entered in TrackWise. Please refer to the discussion in Section 5.3 on entering findings in TrackWise.
- Two assessments of MCP-2973, *Assessment of the Effectiveness of Policies, Plans and Procedures*, appropriately included the status of scheduled assessments, MWVs, CARBs, and follow-up on action items (AIs) associated with EMD-44, *Field Work Controlled by MCP-101, MCP-2985, MCP-3450, and MCP-3562*.

The four conduct of operations assessments (IAS18834, IAS18835, IAS18837, and IAS18754) were completed as inspection reports, and did not provide sufficient evidence to determine that the criteria had been met. The purpose of these assessments is to verify that the monthly conduct of operations focus area (e.g., April 2018 monitor radio communications, closed-circuit television (CCTV) room and field communications) has been addressed. The assessments consist of a review of the monthly CARB report to ascertain the number of applicable MWVs that had been conducted, and if concerns were identified and had been corrected. However, no specific information was provided. The inspection reports do not indicate which facilities/areas were reviewed, what the review criteria were, or what the concerns were.

Management Observation Program

Fluor has developed an effective MOP, resulting in substantial management presence in the field and the identification and correction of low-level issues in a timely manner. Focus areas are identified for future MOP activities through the CARB review. EA observed a CARB meeting that included a review of July management observations totaling over 200 documented MWVs and Senior Supervisory Watches at the ARP facility, and over 300 documented MWVs and Senior Supervisory Watches at the AMWTP facility. These totals are well above the RWMC goal of six documented MOP activities per month per manager, and substantially above the goal of two MOP activities per month, as established by the Fluor Program Manager (correspondence CCN 321192). The MOP activities covered a wide variety of activities, were appropriately documented, and identified concerns and recommended resolution. Focus areas for the next month's MOP activities were identified.

Internal Independent Assessments

Fluor has an effective process for performing internal independent assessments, in accordance with MCP-1539, *Project Evaluation Board*. The Project Evaluation Board (PEB) is responsible for performing independent assessments, including special reviews, startup/restart readiness, and effectiveness reviews. This organization is located within the Performance Assurance organization which reports to the Program

Manager and, as such, is independent of line management. The acting manager of the PEB is knowledgeable and experienced. EA reviewed an assessment performed by the PEB, IAS16154, *Fluor Idaho Annual Assessment of the ICP Core Lockout/Tagout Program*, and found it to be compliant with MCP-1539. An assessment plan that included a Criteria and Review Approach Document and lines of inquiry was issued. The assessment report was appropriately detailed and demonstrated that the purpose and scope had been met. Findings, negative observations, OFIs, strengths, and positive observations were appropriately identified.

Procedure MCP-1126, *Performing Management Self-Assessments*, establishes the requirements for readiness management self-assessments. EA reviewed an example of a readiness assessment report prepared by the PEB: IAS188, *Contractor Readiness Assessment Report for Resumption of Operations of Integrated Waste Treatment Unit for Simulant Run 2*. The contractor readiness assessment report included pre-start and post-start findings, as well as observations, OFIs, and strengths. The team member assignments were addressed, and a lessons-learned section was included. Detailed appendices addressed the verification of prerequisites and the assessment results for each area. An appropriate recommendation, based upon the results of the assessment, was provided. The PEB also conducts effectiveness reviews, which are evaluated in Section 5.3.

Validation of the Assurance System Processes

The Fluor CAS was included in the ISMS Phase I and II assessments, where the DOE assessment team concluded that it was compliant with DOE Order 226.1B. The Phase II assessment was issued in July 2017. MCP-1270 describes an adequate process for performing an annual effectiveness review. Fluor has scheduled the first annual assessment of CAS since its validation in 2017, but the review had not been completed at the time of this assessment.

Safety Management Programs

The annual review of DSA-required SMPs is appropriately included in LST-202, and for the most part, these assessments are included in the integrated assessment schedule. At the time of this assessment, FY 2018 management assessments were completed for all but two programs: configuration management and training. The configuration management assessment was in progress during this assessment. The FY 2017 training assessment had been completed late (October 2017), and consequently, the FY 2018 training assessment had not originally been scheduled to be completed before the end of FY 2018; however, Fluor recognized and corrected this issue.

EA reviewed the completed FY 2018 SMP assessments and found one, IAS18334, *Annual QA SMP Program Review (SAR-100/TSR-100)*, to be thorough and self-critical. This annual review met MCP-8 requirements, included a thorough evaluation of the program, and resulted in 10 findings and 7 OFIs. However, some of the SMP self-assessments are not sufficiently self-critical and attribute problems to implementation by line organizations without performing a review for potential programmatic causes. **(Deficiency)** Examples include:

- IAS18554, *Annual Conduct of Operations SMP Performance Report*, listed 25 issues that had been identified during the FY, including a recurring Occurrence Reporting and Processing System report involving lockout/tagout (LO/TO). Other identified weaknesses included those that resulted in an EMD (EMD-44, *Work Control*) to place work on hold, a fire in pyrophoric waste, a test well pump falling, a drum exothermic event, and failure to adhere to procedures. Despite the number and severity of these events, the report concluded that, with the exception of LO/TO, these were project-isolated issues that did not indicate problems with the conduct of operations SMP. This annual review did not include a review of the issues to look for common

causes or trends, or otherwise look for ways that the conduct of operations program could be improved.

- IAS18558, *Annual Maintenance Safety Management Program*, included a listing of 59 assessments performed during FY 2018, but the report only addressed 4 of these assessments. There was no evaluation of the other assessments or reviews for common causes or trends. Also, the assessment did not mention an improvement plan implemented this year, EMD-44, *Work Control*.
- During the ESRB, the Criticality Safety program was given a positive review despite 10 infractions, including 6 incorrect calculations of fissile gram equivalents, which resulted in exceeding the limits for the drum storage area; 2 procedure violations; an inadequate implementation of a criticality safety control; and an operational event (dropped drum). The report stated that the number of infractions was a concern, but did not indicate less-than-adequate performance of the criticality safety program. When challenged, the line manager referred to the fact that only the margin was impacted. MCP-8 contains the expectation that self-assessments be self-critical.

Assessment Planning, Scheduling, and Conduct Conclusions

Fluor has an effective process for developing an integrated assessment schedule, including required assessments and elective assessments. LST-202 is an effective procedure for capturing required assessments. The IAS system is a user-friendly system with extensive search capability. For the sample that EA reviewed, the assessments at ARP are scheduled and conducted as planned. At AMWTP, some assessments were not scheduled in IAS and some were not completed as scheduled. Fluor has implemented an effective MOP using MWVs, resulting in substantial management presence in the field, and the identification and correction of low-level issues in a timely manner. However, Fluor places a stronger emphasis on providing oversight through the MWVs in lieu of detailed management assessment reports, which represents a vulnerability because the MWVs are simple walk-arounds, whereas management assessments determine program performance. Fluor has an effective process for performing internal independent assessments and an adequate process for performing an annual effectiveness review of assurance system processes. DSA-required SMPs are reviewed on an annual basis; however, some of the assessments are not fully evaluating critical criteria and are not sufficiently self-critical.

5.3 Issues Management System

This section evaluates Fluor's development and implementation of a structured issues management process that reports deficiencies, categorizes issues based on risk and potential consequences, ensures that issues are effectively communicated to the responsible manager, and ensures that problems are evaluated and corrected on a timely basis. In addition, EA evaluated the issues management system that Fluor uses to ensure that deficiencies are fully corrected and prevent recurrence. EA selected a sample of documents produced or closed within the last two years for this detailed review.

Criteria:

- *The issues management system effectively captures program and performance issues from many sources, and issues are appropriately categorized to ensure problems are evaluated, reported, and corrected (including compensatory actions when needed) on a timely basis. (DOE Order 226.1B, CRD 2.b(3))*

- *Program and performance deficiencies, regardless of their source, are captured in a system or systems that provide for effective analysis, resolution, and tracking. Issues management must include structured processes for:*
 - a. *Determining the risk, significance, and priority of deficiencies. (DOE Order 226.1B, CRD 2.b(3)(b))*
 - b. *Evaluating the scope and extent of the condition or deficiency (e.g., applicability to other equipment, activities, facilities, or organizations). (DOE Order 226.1B, CRD 2.b(3)(a))*
 - c. *Determining event reportability under applicable requirements (e.g., Price-Anderson Amendments Act, Occurrence Reporting and Processing System, security incident reporting). (DOE Order 226.1B, CRD 2.b)*
 - d. *Identifying root causes (applied to all items using a graded approach based on risk). (DOE Order 226.1B, CRD 2.b(3)(b)(1))*
 - e. *Verifying that corrective actions are fully complete. (DOE Order 226.1B, CRD 2.b(3)(b)(2))*
 - f. *Validating that corrective actions are effectively implemented and correct the entire extent of condition, using a graded approach based on risk. (DOE Order 226.1B, CRD 2.b(3)(b)(3))*
 - g. *Ensuring that individuals and organizations are accountable for effectively performing their assigned responsibilities. (DOE Order 226.1B, CRD 2.b(3)(a) and (b)(1)(2)(3)(4)(5))*
- *For higher significance findings, an effective causal factor analysis/evaluation, timely actions and plans to correct and prevent reoccurrence, tracking plans and actions to closure, and performing effectiveness reviews must be completed. (DOE Order 226.1B, CRD 2.b(3)(b))*

The issues management process is governed by MCP-598 and PDD-155, *Feedback and Improvement*. Fluor's Quality Assurance organization captures high-level issues and addresses them with an appropriate level of significance. For the samples that EA reviewed, the TrackWise issues management system adequately tracks issues requiring a cause determination and formal corrective actions. Fluor has been engaged in an ongoing effort to address feedback on the effectiveness of the TrackWise system. TrackWise was recently upgraded to add a mechanism to capture lower-level issues for tracking and trending, known as "Quick Capture" items. These issues include minor deviations from requirements that are corrected on the spot. The Quick Capture process is not allowed for issues that require the development of corrective actions to resolve, and for nonconformances associated with items; materials; or structures, systems, and components.

EA reviewed the 13 Quick Capture items written since the inception of the process. One entry categorized as a Quick Capture (Quick Capture ID number 121732) should have been addressed with corrective actions and, therefore, did not fit the definition of a Quick Capture item. This item dealt with failure to maintain the appropriate temperature in a welding oven.

The identification and tracking of issues for follow-up corrective actions is at times circumvented by the MWV process (discussed in Section 5.2). The MWV process has included items that should have been documented in TrackWise for follow-up corrective actions. A search of TrackWise issues entered by Fluor during the past nine months identified only 13 items originating from MWVs. In addition, EA reviewed the MWVs for July 2018 and identified 26 items that warranted a TrackWise entry, based on required follow-up corrective actions, but were not included in the TrackWise system. Examples included changes to a lift plan, inadequate tooling, and actions to address high neutron dose rates. Contrary to DOE Order 226.1B and MCP-598, issues that need corrective actions are not being tracked appropriately in the issues management system. (See **Finding F-Fluor-01.**)

Procedure MCP-190, *Event Investigation And Occurrence Reporting*, describes the process for determining the reportability of events in accordance with DOE Order 232.2A, *Occurrence Reporting and Processing of Operations Information*. EA reviewed MCP-190 and the software system used for

determining reportability requirements, and interviewed individuals responsible for these determinations. EA determined that the process meets the intent of the order.

MCP-598 adequately describes the appropriate causal analysis method to address an issue. The procedure provides clear causal analysis methods, and a training process is in place to ensure that only qualified individuals perform causal analyses. EA reviewed six root cause analyses, performed in the last two years that included formal cause analyses and documented apparent cause analyses. Fluor is following the appropriate process for each analysis. EA noted that one event had an incorrect root cause, as identified in the Fluor effectiveness review and discussed later in this section. With few exceptions, recent root cause analyses focus on the appropriate issues and adequately determine causes and corrective actions to prevent recurrence.

EA identified one case in which the root cause was addressed differently than the others. The root cause for the “Puncture Wound Event in the AMWTP Treatment Facility Supercompactor Glovebox” identified “Management failed to recognize the significance of the hazards associated with the Supercompactor criticality cleanout.” EA noted that an appendix to the formal causal analysis was included, which provided a lengthy discussion on the shortcomings of the nuclear safety culture at the RWMC. However, nuclear safety culture is not identified as a root or contributing cause to the event, nor does the Nuclear Safety Culture appendix identify any corrective actions. In addition, the corrective actions are very focused on the Supercompactor glovebox criticality cleanout and not more broadly applied to AMWTP or ARP operations. The impact of potential nuclear safety culture issues is not adequately addressed.

Fluor implemented an improvement plan to address the challenges in the CAS. EA reviewed the Fluor ICP Core Contractor Assurance System Improvement Plan and the 16 closed AIs. EA identified six closures where the actions were not adequately completed prior to closeout of the corrective action report, as shown below. (See **Finding F-Fluor-01.**)

- AI 111264 and AI 111265: Implement Apparent Cause Analysis and Corrective Action Process Training. The action was closed after the training was developed, but did not document the scheduling or conduct of the training. No action remains open to conduct the training.
- AI 111266: Implement training on the management assessment program to improve its effectiveness. This action was closed after the training was developed. The closure did not document the scheduling or conduct of the training. No action remains open to conduct the training.
- AI 111273, AI 111274, and AI 111275: Implement procedure changes for STD-1113, *Cause Analysis and Corrective Action Development*, and MCP-598. These actions were closed, but the procedures were not yet issued. Both procedures await approval from the Waste Isolation Pilot Plant contact-handled transuranic waste program. There are no actions tracking final approval.

Fluor conducted seven effectiveness reviews of RWMC causal analyses during the previous 12 months. EA reviewed these effectiveness reviews and identified three that lacked rigor (IAS15728, IAS1852, and IAS1862). The three effectiveness reviews erroneously concluded that the causal analyses and corrective actions were effective; however, the cause identified in the causal analysis was incorrect in two cases, and the lack of timely resolution in the third case led to an event recurrence. (See **Finding F-Fluor-01.**)

- IAS15728 documented the effectiveness review for a hydraulic hose failure and identified the root cause to be “the demanding work evolutions EX-4 performs.” However, the effectiveness review identified that the modifications made to the excavator caused the hydraulic hoses to rub and rupture. It also identified that the corrective actions focused only on mitigating the effects of the fire instead of

preventing the fire. In spite of these shortcomings, this effectiveness review still found the causal analysis to be effective.

- IAS1852 documented the effectiveness review for recurring events with powered air purifying respirators (also known as PAPRs) in which the root cause was determined to be “respirator design.” However, the effectiveness review acknowledged that a subsequent assessment by an industrial hygienist determined that the events were human performance related and that the design was appropriate. The effectiveness review also identified that some corrective actions were not implemented and that there had been a recurrence of the event. This effectiveness review still found the causal analysis to be effective.
- IAS1862 documented the effectiveness review for a Technical Safety Requirement violation involving the failure to document independent verification of a manual waste drum barcode entry. The root cause for this May 16, 2016 event was determined to be a human performance error. No compensatory actions were implemented following the event, while completion of the permanent corrective actions was pending. A recurrence of the event occurred on September 27, 2017. The final corrective action was completed on November 13, 2017, 18 months after the original event. Although the effectiveness review acknowledged the untimely completion of corrective actions and the recurrence, the review still found all effectiveness criteria to be met, including the criteria to prevent recurrence.

EA observed one CARB meeting and one ESRB meeting during this assessment. During the RWMC CARB, EA observed that only corrective actions with near-term due dates were reviewed, and only to the extent necessary to ascertain that the responsible managers would meet the due dates. The observed CARB meeting did not include a quality review of corrective action closures, conduct of causal analysis, or effectiveness review of corrective actions as required by PDD-243, *ICP Corrective Action Review Board*. The primary focus of the meeting was to review MWVs.

However, in contrast, a review of recently issued INTEC CARB minutes shows a broader and more thorough evaluation of organizational issues in accordance with PDD-243. During the ESRB meeting, EA observed a discussion on a new set of metrics for the CAS and a review of SMP assessment results. The board concluded that each safety program presented was being implemented effectively, despite 10 infractions in the Criticality Safety program.

EA reviewed a sample of EMDs used to address organizational shortcomings. EMDs are appropriately issued by the Fluor Program Manager if there is a need for a broader set of corrective actions across the organization, for example, as a result of multiple similar events. EMDs provide a focus for the organization to address emerging issues.

- EMD-43, *EMD to PRD-5051, “Lockout and Tagout,” MCP-3651, “Level I&II Lockouts and Tagouts,” and PDD-1066, “Lockout and Tagout Training Program,”* was issued September 14, 2017, to address multiple recent cases of personnel performing LO/TO activities without appropriate or active qualifications. Specific actions to correct the problem are included in the EMD.
- EMD-44, *Field Work Controlled by MCP-101, MCP-2985, MCP-3450, and MCP-3562,* was issued October 19, 2017, to address a series of recent events that revealed weaknesses in the planning, execution, oversight, and approval of work. All field work was placed on hold, and the facilities entered into a “deliberate operations” condition, in which work would only be released if certain criteria were met and safety was demonstrated.

The EMD process is not fully integrated with the issues management process, and EMDs do not include the conduct of any formal common cause analysis. The EMDs assign actions to the staff, and the staff enters these actions into TrackWise. However, the actions are not always tied to the broader issue and are not the outcome of any causal analysis. As a result, in some cases, the actual cause may not be addressed and the actions may only address symptoms. In addition, the effectiveness review process is not implemented for these items.

Issues Management System Conclusions

The issues management system procedural processes are generally adequate. The organization has made upgrades to the TrackWise issues management system to improve its effectiveness. However, implementation of some aspects of the issues management system lacks adequate rigor. Some management field observations are not being addressed using the corrective action system, and corrective actions are sometimes closed without completing the actions as assigned. In addition, effectiveness reviews are not always sufficiently rigorous.

6.0 FINDINGS

Findings are deficiencies that warrant a high level of attention from management. If left uncorrected, findings could adversely affect the DOE mission, the environment, the safety or health of workers and the public, or national security. DOE line management and/or contractor organizations must develop and implement corrective action plans for EA appraisal findings. Cognizant DOE managers must use site- and program-specific issues management processes and systems developed in accordance with DOE Order 227.1A to manage these corrective action plans and track them to completion. In addition to the findings, deficiencies that did not meet the criteria for a finding are listed in Appendix C, with the expectation from DOE Order 227.1A for site managers to apply their local issues management processes for resolution.

Fluor Idaho, LLC

Finding F-Fluor-01: The TrackWise issues management system is not always being effectively used for entering, tracking, correcting, and preventing the recurrence of issues. (DOE Order 226.1B, and MCP-598)

Specifically, EA identified the following examples:

- One issue that required follow-up for resolution was incorrectly listed as a Quick Capture item and did not receive the required corrective actions.
- The July 2018 MWVs included 26 items requiring follow-up actions that were not entered into the TrackWise issues management system.
- Six corrective action reports associated with the Fluor ICP Contractor Assurance Improvement Plan were closed out without sufficiently completing the assigned corrective actions.
- Three completed effectiveness reviews identified inappropriate root or apparent causes, as well as untimely and inappropriate corrective actions, but nevertheless incorrectly concluded that the issues had been effectively resolved.

7.0 OPPORTUNITIES FOR IMPROVEMENT

EA did not identify any OFIs.

Appendix A Supplemental Information

Dates of Assessment

Onsite Assessment: August 13 through 23, 2018

Office of Enterprise Assessments (EA) Management

William A. Eckroade, Acting Director, Office of Enterprise Assessments
Thomas R. Staker, Director, Office of Environment, Safety and Health Assessments
William E. Miller, Deputy Director, Office of Environment, Safety and Health Assessments
C.E. (Gene) Carpenter, Jr., Director, Office of Nuclear Safety and Environmental Assessments
Kevin G. Kilp, Director, Office of Worker Safety and Health Assessments
Gerald M. McAteer, Director, Office of Emergency Management Assessments

Quality Review Board

Steven C. Simonson
John S. Boulden III
Michael A. Kilpatrick

EA Site Lead for Idaho Site

Rosemary B. Reeves

EA Assessors

Rosemary B. Reeves – Lead
Jeffrey G. Snook
Frank A. Inzirillo
Terry B. Olberding

Appendix B

Key Documents Reviewed, Interviews, and Observations

Documents Reviewed

Fluor Idaho, LLC

- 361.A31, *Instructional Material for Corrective Action System and Apparent Cause Analysis*, Rev. 3, 09/12/16
- AI 111262, *ICP Core Contractor Assurance System Improvement Plan – CAS Improvement Plan Actions*, 05/31/18
- AI 111264, *PLN-5375-Implementation Activities – Apparent Cause Analysis Training*, 06/08/17
- AI 111265, *PLN-5375-Implementation Activities – Corrective Action Process Training*, 06/08/17
- AI 111266, *PLN-5375-Implementation Activities – Management Assessment Training*, 06/08/17
- AI 111267, *PLN-5375-Implementation Activities – Training CARB Program Description Document*, 06/08/17
- AI 111269, *PLN-5375-Implementation Activities – Training – ESRB review of corrective actions for significant CAQs.*, 06/08/17
- AI 111273, *PLN-5375-Implementation Activities – Process and Procedural Improvements – Revise STD-1113*, 06/08/17
- AI 111274, *PLN-5375-Implementation Activities – Process and Procedural Improvements – Revise MCP 598, Corrective Action System*, 06/08/17
- AI 111275, *PLN-5375-Implementation Activities – Process and Procedural Improvements – Revise MCP-8, Management Assessments*, 06/08/17
- AMWTP Tailgates, 05/26/2016 through 08/08/2018
- AST-2017.03.27-126829, *Fluor Idaho, LLC Integrated Safety Management System Phase II Verification Report*, Rev. 0, June 2017
- Bi-Weekly Open Issues Report, 08/08/18
- CAR No: 117915, *Corrective Action Report, PDD-159 ICP Contractor Assurance Program – External Corporate CAS Assessment*, Date Opened: 02/14/18
- CAR No: 122293, *Safety and Health Inspections not complete*, 9/5/18
- CARB reports for AMWTP and ARP for August 2018
- CAS Review Team In-Brief, 08/13/18
- CCN 321192, *Management Workplace Visits*, 09/07/17
- CCN 321234, *Fluor Idaho Plan of Action to Address Unacceptable Safety Performance*, 09/19/17
- CTR-161, *Charter, Executive Safety Review Board*, Rev. 9, 09/18/17
- DOE Idaho Operations Office letter, A. Nebeker to T. Williams, *Contract No. DE-EM0004083 - Fluor Idaho, LLC, Combined Contractor Assurance System Description Approval (AS-CMD-ICP/Fluor-17-039)*, 01/03/17
- DOE Idaho Operations Office letter (CCN 321224), J. Zimmerman to F. Hughes, *Contract No. DE-EM0004083 - Unacceptable Safety Performance (EM-NSP-17-043)*, 09/14/2017
- DOE Idaho Operations Office Memorandum, *Contract No. DE-EM0004083 Fluor Idaho LLC Quarterly Evaluation Report for the Fourth Quarter Fiscal Year 2017, July-September 2017 (EM-NSP-17-054)*, 12/07/2017
- DOE Office of River Protection Memorandum, *TRS:RMI 18-TRS-0008, U.S. DOE Radioactive Waste Management Complex Accelerated Retrieval Project (ARP) V Event Federal Oversight Assessment*, 06/06/18

- DOE Prime Contract # DE-EM0004083, *Mandatory Flowdown Clauses for Subcontracts and Procurement*, 07/11/2018
- EMD-43, *EMD to PRD-5051, "Lockout and Tagout," MCP-3651, "Level I&II Lockouts and Tagouts," and PDD-1066, "Lockout and Tagout Training Program,"* Rev. 1, 09/14/17
- EMD-44, *Field Work Controlled by MCP-101, MCP 2985, MCP-3450, and MCP-3562*, Rev. 4, 10/19/17
- EM-ID--FID-AMWTF-2018-0006, *Occurrence Report, Management Concern - GSA Van Event*, 06/27/18
- EM-ID--FID-RWMC-2018-0001, *Occurrence Report, ARP V Drum Over-pressurization Event*, 04/17/2008
- ESRB Meeting Minute Excerpts of Quarterly Reports, 05/30/17, 08/28/17, 11/15/17, 01/25/18, and 02/22/2018
- Fluor *Contractor Assurance System Deep Dive Evaluation Report*, 12/08/17
- Fluor Idaho Organization Chart, August 6, 2018
- Fluor Idaho Position Description – Quality Field Support Manager, 01/05/17
- Fluor Idaho Position Description – Quality Assurance Engineer, 01/31/17
- Fluor Idaho Position Description – Principal Quality Assurance Inspector II, 05/17/17
- Fluor Idaho Position Description – Quality and Performance Assurance Program Manager, 01/03/17
- Fluor Idaho Interoffice Memorandum, Letter of Appointment – Subcontract Technical Representative (Lopez), 2/28/2017
- Fluor Idaho Interoffice Memorandum, Letter of Appointment – Subcontract Technical Representative (Slay), 3/8/2017
- Fluor Idaho, LLC, *Special Provisions for On-Site Services*, Rev. 3, 07/11/2018
- FRM-540.10, *Subcontract Requirements Manual (SRM) Applicability*, Rev. 28, 06/04/18
- FRM-540.40, *Subcontractor Training Requirements*, Rev. 10, 05/09/17
- FRM-540.45, *Subcontract Technical Representative Core Qualifications*, Rev. 11, 05/22/18
- FRM-431.71, *Structure, System or Component Health Report*, no date
- FRM-2207, *Supplier Performance Evaluation Rating Form Services*, Rev. 0, 11/17/16
- GDE-165, *Subcontractor Technical Representative (STR) Handbook*, Rev. 6, 05/22/2018
- IAS15728, *Effectiveness Review of DR 108159, Small Fire in Excavator 4*, Rev 0, 7/31/17
- IAS188, *Contractor Readiness Assessment Report for Resumption of Operations of Integrated Waste Treatment Unit for Simulant Run 2, R1*, 08/13/18
- IAS1852, *Validation/Effectiveness Assessment of CAR 104609, Recurring Events Regarding Powered Air Purifying Respirator (PAPR) Use at the Advanced Mixed Waste Treatment Plant (MWTP)*, Rev 0, 6/20/18
- IAS1863, *Assessment Plan for the Fluor Annual Assessment of the ICP Lockout/Tagout Program*, 08/15/18
- IAS1862, *Validation/Effectiveness Assessment of Significant Deficiency CAR-102410*, Rev 0, 3/27/18
- IAS1876, *System Health Report for ARP 2,3,4,5 Overhead Door Systems*, 12/19/17
- IAS1877, *System Health Report for ARP VIII Propane System*, 3/15/18
- IAS1878, *System Health Report for ARP 3 HVAC System*, 6/26/18
- IAS18334, *Annual QA SMP Program Review (SAR-100/TSR-100)*, 06/07/18
- IAS18554, *Annual Conduct of Operations SMP Performance Report*, 07/24/18
- IAS18555, *Annual Hoisting and Rigging Safety Management Program Performance Report*, 07/26/18
- IAS18558, *Annual Maintenance Safety Management Program*, July 2018
- IAS17231, *Integrated Safety Management System Reverification Assessment*, January 2017
- IAS18503, *MCP-8 Assessment of the MWV/WOT*, 07/10/18

- IAS18540, *VPP Inspection Report*, 03/14/18
- IAS18549, *AMWTP Criticality Safety Controls List Compliance Performance Summary*, May 2018
- IAS16154, *Fluor Idaho Annual Assessment of the ICP Core Lockout/Tagout Program*, 10/30/17
- IAS18730, *Semi-Annual Report to Management on Status of Transuranic Waste Program Quality Assurance Activities*, 2/7/2018
- IAS18731, *Semi-Annual Report to Management on Status of Transuranic Waste Program Quality Assurance Activities*, July 2018
- IAS18752, *Assessment of FY 18 RWMC/ARP Assessment Program*, March 2018
- IAS18762, *Configuration Management Functional Support Area Surveillance*, 3/7/18
- IAS18619, *Operator Aids Inspections in accordance with MCP-2986*, April 2018
- IAS18729, *Annual Assessment of Shipping Caution and Out of Service Tags*, May 2018
- IAS18732, *Conduct Annual Assessment on Out of Service Tags for Characterization Areas per MCP-2978*, July 2018
- IAS18744, *Validate Alternative Methods for LO/TO*, February 2018
- IAS18754, *Conduct of Operations Assessment*, 03/15/18
- IAS18834, *Conduct of Operations Assessment*, 05/15/18
- IAS18835, *Conduct of Operations Assessment*, 06/27/18
- IAS18837, *Conduct of Operations Assessment*, 07/26/18
- ICP Core Issues Management - Open Items as of August 13, 2018, 08/13/18
- LST-1, *Responsible Managers, Functional Support Managers, and Subject Matter Experts*, Rev. 97, 03/28/18
- LST-202, *Company-Level Required Assessments*, Rev. 18, 02/08/18
- MCP-8, *Self-Assessments*, Rev. 16, 7/30/18
- MCP-33, *Personnel Qualification and Certification*, Rev. 14, 3/19/2018
- MCP-101, *ICP Integrated Work Control Process*, Rev. 10, 03/14/18
- MCP-165, *Initial Fact Finding to Support Event Investigation*, Rev. 12, 10/18/17
- MCP-190, *Event Investigation and Occurrence Reporting*, Rev. 26, 01/24/18
- MCP-192, *Processing Lessons Learned and Operating Experience Information*, Rev. 17, 02/02/17
- MCP-591, *Supplier Evaluation and Qualification*, Rev. 26, 09/25/17
- MCP-598, *Corrective Action System*, Rev. 36, 07/30/18
- MCP-1126, *Performing Management Self-Assessments*, Rev. 13, 05/22/17
- MCP-1269, *Establishing, Monitoring, and Reporting ESH&Q Performance Objectives, Goals, and Measures*, Rev. 7, 09/01/16
- MCP-1270, *Annual Effectiveness Review of the Integrated Safety Management System and the Contractor Assurance System*, Rev. 5, 10/17/17
- MCP-1539, *Project Evaluation Board*, Rev. 8, 04/05/18
- MCP-4021, *Acquisition of Material and Services*, Rev. 1, 05/18/17
- Management Workplace Visits Tailgate Training Class, August 2018
- PDD-155, *Feedback and Improvement*, Rev. 5, 11/21/16
- PDD-243, *ICP Corrective Action Review Boards (CARB)*, Rev. 0, 09/18/17
- PDD-1001, *Subcontractor Requirements Program Description*, Rev. 8, 1/31/2017
- PDD-1004, *Integrated Safety Management System*, Rev. 21, 02/21/17
- PDD-1005, *ICP Core Management and Operations Manual*, Rev. 19, 03/14/18
- PDD-1044, *RWMC Nuclear Facility Training Program*, Rev. 1, 7/12/18
- PDD-159, *Program Description Document, ICP Contractor Assurance System*, Rev. 12, 1/04/18

- PLN-2085, *Project Execution Plan for the ICP Radioactive Waste Management Complex Project*, Rev. 4, July 2009
- PLN-5375, *ICP Core Contractor Assurance System Improvement Plan*, Rev. 1, 10/10/17
- PRD-199, *Fire Protection Program*, Rev. 14, 5/30/2018
- PRD-338, *ICP Contractor Assurance System*, Rev. 6, 08/15/16
- PRD-393, *Subcontractor Fossil Fueled Motor Vehicles and Heavy Industrial Equipment – Technical Safety Requirement Limits for RWMC-AMWTP/ARP*, Rev. 0, 1/31/2017
- PRD-1004, *Step Back and Stop Work Authority*, Rev. 1, 4/24/2006
- PRD-1006, *Safety Surveillance*, Rev. 3, 1/2/2017
- PRD-1501, *Work Control*, Rev. 3, 1/16/2017
- PRD-2012, *Lockouts and Tagouts*, Rev. 7, 12/15/2016
- PRD-5006, *Subcontractor/Supplier Quality Plan (SQP)*, Rev. 6, 1/30/2017
- PRD-5071, *Quality Assurance Program*, Rev. 25, 03/29/17
- PRD-5072, *Personnel Qualification and Certification*, Rev. 20, 09/14/17
- PRD-5073, *Audit Personnel Qualification and Certification*, Rev. 19, 03/29/17
- PRD-5087, *Corrective Action*, Rev. 18, 11/10/16
- PRD-5091, *Assessments*, Rev. 16, 11/10/16
- QC000STR, *ICPC Subcontractor Technical Representative*, no date
- Quick Capture No. 121732, “The weld filler metal oven(TC-MA-DRYROD) located in CPP-663 had not been checked for temperature since 8/1/17,” 08/09/18
- Quick Capture No. 121733, “Weld filler material located in the upper level of the weld shop was lacking a little for organization and some containers were not easily identified with the QL marking,” 08/09/18
- RPT-1581, *ICP Core ESH&Q FY 2017, Third Quarter, Quarterly Performance Analysis for June 27, 2016, through July 2, 2017 (MAR 110675)*, September 2017
- RPT-1612, *ICP Core ESH&Q FY 2017, Fourth Quarter, Quarterly Performance Analysis for October 03, 2016, through October 01, 2017 (MAR 110676)*, November 2017
- RPT-1626, *ICP Core FY 2018, First Quarter, Quarterly Performance Analysis Report for January 02, 2017, through December 24, 2017 (IAS 18180)*, March 2018
- RPT-1647, *ICP Core FY 2018, Second Quarter, Quarterly Performance Analysis Report for April 03, 2017, through March 25, 2018 (IAS 18182)*, June 2018
- RPT-1658, *Formal Cause Analysis Report for Puncture Wound Event in the AMWTP Treatment Facility Supercompactor Glovebox*, July 2018
- RPT-1660, *ICP Core FY 2018, Third Quarter, Quarterly Performance Analysis Report for July 03, 2017, through June 24, 2018 (IAS 18184)*, Rev. 0, August 2018
- RWMC Corrective Action Review Board Agenda, 8/13/2018
- RWMC Overview, 08/13/18
- Safety Performance Objectives, Measures, and Commitments (SPOMC) Report, June 2018
- Safety Performance Objectives, Measures, and Commitments (SPOMC) Report, May 2018
- SAR-100, *ICP Standardized Safety Analysis Report (SAR) Chapters*, Rev. 18, 07/26/18
- STD-1109, *Nuclear Facility Manager, Building/Facility Manager Qualification*, Rev. 7, 05/13/08
- STD-1113, *Cause Analysis and Corrective Action Development*, Rev. 7, 11/10/16
- TSR-100, *ICP Standardized Technical Safety Requirements (TSR) Document*, Rev. 15, 07/26/18
- Work Order No. 530094, *WMF Roof Repairs*, Rev. 0, 10/30/17
- Work Order No. 530974, *Install Rain Gutter Heat Trace System*, Rev. 1, 06/04/18

Interviews

Fluor Idaho, LLC

- Contractor Assurance System and Performance Assurance Manager
- Integrated Assessment Scheduling Coordinator
- Performance Assurance Analysis/Trending
- Issues Management Program Lead
- Operating Experience/Lessons Learned Coordinator
- Causal Analysis Team Leader
- Employee Concerns Coordinator
- Price Anderson Amendment Act Coordinator/Performance Measurement Program Causal Analysis
- RWMC Director
- RWMC Nuclear Operations Manager/Deputy Director
- RWMC Maintenance & Utilities Manager
- RWMC Training Manager
- RWMC Nuclear Operations Support/Tracking & Performance
- AMWTP Facility Operations Manager
- ARP Facility Operations Manager
- Treatment Facility Shift Operations Manager
- AMWTP Shift Supervisors (2)
- ARP Shift Supervisors (2)
- AMWTP Operators (2)
- ARP Operators (2)
- Project Evaluation Board-Independent Assessment Director (Acting)
- Internal Audit Director
- Quality and Performance Assurance Director
- QA Program Director
- Quality Engineer/Lead Auditor (Qualified Supplier List)
- Causal Analysis Team Lead
- RWMC Staff Engineers (4)
- RWMC Radiation Technicians (4)
- Industrial Safety Staff (3)
- RWMC Subcontract Coordinator
- Subcontract Technical Representative/System Engineer
- Training Specialist

DOE-ID

- DOE Assistant Manager, Nuclear and Safety Performance
- Supervisor, Facility Safety Team
- Supervisor, Facility Representatives
- DOE-ID Senior Facility Representatives (3)

Observations

- Management Workplace Visit at the AMWTP
- Conduct of self-assessment of training records

- Operational demonstration of TrackWise issues management system
- Operations start-of-shift meeting/shift turnover
- Maintenance Activity pre-job brief/post-job review
- Executive Safety Review Board meeting, 8/21/2018
- RWMC Corrective Action Review Board meeting, 8/15/2018

Appendix C

Deficiencies

Deficiencies that did not meet the criteria for a finding are listed below, with the expectation from DOE Order 227.1A for site managers to apply their local issues management processes for resolution.

- Contrary to DOE Order 226.1B, Attachment 1, Paragraph 2.b.(2); LST-202, *Company-Level Required Assessments*; and MCP-8, *Self-Assessments*, some assessments are not scheduled in IAS, some are not completed as scheduled, and some completed reports are not available. (See Section 5.2.)
- Contrary to DOE Order 414.1D Chg 1, Paragraph 6.m, and MCP-8, some of the required annual reviews of the SMPs are not sufficiently self-critical, and lack evaluation of relevant information for common causes or trends. (See Section 5.2.)