

**Office of Enterprise Assessments  
Assessment of the Contractor Assurance System  
for Safety at the Paducah Gaseous Diffusion  
Plant**



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**Office of Nuclear Safety and Environmental Assessments  
Office of Environment, Safety and Health Assessments  
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## Acronyms

CAS	Contractor Assurance System
CFR	Code of Federal Regulations
ConOps	Conduct of Operations
CPAP	Contractor Performance Assurance Program
CRAD	Criteria and Review Approach Document
CRD	Contract Requirements Document
DOE	U.S. Department of Energy
EA	Office of Enterprise Assessments
ERB	Executive Review Board
FFS	Fluor Federal Services, Inc.
FY	Fiscal Year
IAS	Integrated Assessment Schedule
ISMS	Integrated Safety Management System
MTS	Management Tracking System
OFI	Opportunity for Improvement
PGDP	Paducah Gaseous Diffusion Plant
PPPO	Portsmouth/Paducah Project Office
R2A2	Roles, Responsibilities, Authorities, and Accountabilities
SMP	Safety Management Program

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**at the Paducah Gaseous Diffusion Plant**

**EXECUTIVE SUMMARY**

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 contractor assurance system (CAS) for safety at the Paducah Gaseous Diffusion Plant (PGDP), which is being deactivated under a contract with Fluor Federal Services, Inc. (FFS). This EA assessment also included a review of contractor safety oversight provided by the DOE Portsmouth/Paducah Project Office (PPPO). PPPO management specifically requested this assessment during a planning meeting with EA in May 2016.

FFS assumed responsibility for management of the PGDP site in 2014 from a commercial entity licensed by the Nuclear Regulatory Commission. The original contract was limited in scope, with staff reduced to around 400. In 2015, however, the scope and staff of the deactivation project grew, and in February 2016, a PPPO assessment of the FFS Integrated Safety Management System indicated that the CAS was no longer supporting the infrastructure due to inadequate resources and software limitations. In that report, PPPO issued a finding of a “significant condition adverse to quality” to FFS regarding the CAS (also referred to as the contractor performance assurance program). In response to this finding, FFS has taken actions to develop and maintain a more robust program, including reorganization and increased staffing of the contractor performance assurance program.

With some minor exceptions, FFS has established a well-defined CAS, with supporting procedures, processes, and implementing documents contributing to the effective management of PGDP. A structured assessment program is implemented that adequately assesses programs, processes, and performance related to the ongoing scope of operations. As a best practice, the FFS contractor performance assurance program description and implementing procedure incorporates provisions to evaluate the extent of cause in addition to the extent of condition in the corrective action process. The event reporting and investigation processes fully met requirements and effectively supported the corrective action development processes. FFS maintains a suite of appropriate performance indicators and associated analysis to assist management in monitoring performance levels in key areas affecting safety performance. FFS draws upon corporate resources to perform statistical analysis on the metrics to identify trends, and make performance adjustments. This statistical process trend analysis is a best practice. These performance indicators also prompt responsible management for further evaluation or corrective actions when warranted and serve as a tool for driving continuous improvement. The managers and subject matter experts who were interviewed were capable, proactive, and focused on effective performance and continuous improvement.

Despite these strengths, EA identified that FFS’s integrated assessment schedule does not include a triennial training assessment as required by DOE Order 426.2, *Personnel Selection, Training, Qualification, and Certification Requirements for DOE Nuclear Facilities*, and DOE Standard 1070, *Criteria for Evaluation of Nuclear Facility Training Programs*, and a triennial training assessment has not been performed during the FFS contract term. Although technically not yet a deficiency in that PGDP has been under DOE control for less than three years, FFS is required to complete an assessment by the end of the current integrated assessment schedule. Some exceptions found in the otherwise effective CAS included a few examples of a lack of attention to detail in the scheduling, planning, performing, and documenting assessment activities. In addition, a few areas in issues management processes have resulted in corrective actions not always being accurately and rigorously implemented to ensure that problems are effectively addressed. The CAS has undergone significant changes and FFS needs more time to fully

educate plant personnel, implement additional features of the new issues management software, improve assessment planning and performance, and effectively incorporate feedback from recent assessments.

EA also determined that a functioning DOE CAS oversight program is implemented and is actively and effectively used by PPPO to improve safety and mission performance. PPPO has improved its assessment planning to include references to the regulatory drivers for the assessment. However, staffing issues in PPPO have excessively burdened the one qualified Facility Representative and contributed to the prolonged existence of outdated procedures that do not reflect current oversight practices.

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## **1.0 PURPOSE**

The U.S. Department of Energy (DOE) Office of Office of Nuclear Safety and Environmental Assessments, within the independent Office of Enterprise Assessments (EA), conducted an assessment of the contractor assurance system (CAS) at the former Paducah Gaseous Diffusion Plant (PGDP), which is being deactivated under a contract with Fluor Federal Services, Inc. (FFS). FFS and its subcontractors are also referred to as the Fluor Federal Services, Inc. Paducah Deactivation Project; however, for simplicity, this report uses FFS to represent the entire organization. The purpose of this assessment was to evaluate the implementation of the CAS, the line management oversight requirements, and the overall effectiveness of the programs. The responsible DOE field element at Paducah is the Portsmouth/Paducah Project Office (PPPO). PPPO management specifically requested this assessment during a planning meeting with EA in May 2016. EA conducted the onsite portion of this assessment from October 17–20 and November 7-10, 2016.

## **2.0 SCOPE**

This assessment evaluated the implementation and effectiveness of specific elements of the FFS CAS (also called the contractor performance assurance program [CPAP] by FFS) as required by DOE Order 226.1B, *Implementation of Department of Energy Oversight Policy*. This assessment focused on the effectiveness of the contractor in identifying, correcting, and preventing recurrence of issues that adversely impact the environment, safety, health, and mission of the PGDP. EA evaluated key elements of the CPAP, consistent with the review scope defined in the *Plan for the Office of Enterprise Assessments Assessment of the Contractor Assurance System at the Paducah Gaseous Diffusion Plant*, dated October 20, 2016. This assessment also evaluated the adequacy of Federal line oversight of the contractor's CAS as performed by PPPO.

## **3.0 BACKGROUND**

The Paducah Site is located on a 3,553 acre Federal reservation in western Kentucky, approximately 10 miles west of Paducah, Kentucky, and 3.5 miles south of the Ohio River, and includes the PGDP and the Depleted Uranium Hexafluoride Conversion Facility, managed under a separate contract. The PGDP portion of the site includes hundreds of buildings that make up the government-owned uranium enrichment plant that was constructed in the early 1950s and operated by DOE and its predecessor agencies for the purpose of manufacturing enriched uranium for the fabrication of fuel assemblies to support commercial and military nuclear reactors and to support weapons development activities. The PGDP includes Hazard Category 2 Nuclear Facilities based on the uranium inventory.

The site is currently managed and operated under three contracts: Swift & Staley is responsible for site infrastructure and support; B&W Conversion Services (soon to be replaced by Mid-America Conversion Services, LLC) is responsible for operation of the Depleted Uranium Hexafluoride Conversion Facility; and FFS is responsible under a task order for deactivating the PGDP and preparing the facilities for future demolition.

FFS was the prime contractor for assisting with the transfer and acceptance of the PGDP facilities from the United States Enrichment Corporation to DOE in October 2014. FFS responsibilities include facility

and infrastructure stabilization and deactivation, surveillance and maintenance of the shutdown production and associated support facilities, and remediation and waste-management activities at the site of the shutdown PGDP.

## **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. EA did not identify any findings or deficiencies during this assessment.

As identified in the assessment plan, this assessment considered requirements related to the CAS detailed in DOE Order 226.1B, *Implementation of the Department Of Energy Oversight Policy*. Criteria for this assessment were selected from EA Criteria and Review Approach Document (CRAD) 30-01, *Contractor Assurance System*, Rev. 0. This assessment also collected and analyzed data on the effectiveness of PPPO’s oversight of the FFS CAS, using selected elements of CRAD 45-21, *Feedback and Continuous Improvement Inspection Criteria and Approach – DOE Field Element*, Rev. 1.

EA examined key documents, including policies, procedures, manuals, schedules, and reports. EA also conducted interviews of key personnel responsible for developing and executing the associated programs; and observed assessment-related activities. The members of the EA assessment team, the Quality Review Board, and EA management responsible for this assessment are listed in Appendix A. The key documents reviewed, personnel interviewed, and observations made during this assessment, relevant to the findings and conclusions of this report, are listed in Appendix B.

EA had not conducted a previous assessment of the CAS implemented by FFS. Therefore, there were no items for follow-up evaluated during this assessment.

## **5.0 RESULTS**

### **5.1 Development and Implementation of Contractor Assurance System**

*Criteria:*

*A CAS description is documented and approved by DOE. (DOE Order 226.1B Contract Requirements Document [CRD] 2.a, c)*

*Requirements of the CRD flow down to the subcontractors to ensure subcontractors’ acceptable safety performance. (DOE Order 226.1B CRD 1)*

*CAS monitors and evaluates work and safety performance of contractor and subcontractor compliance with contract and facility safety requirements. (DOE Order 226.1B CRD 1)*

*Contractor management responsibilities and accountabilities are assigned and performed. (DOE Order 226.1B CRD 2.a)*

*CAS compiles and analyzes results of assurance processes to provide evidence of safe, secure, and compliant work. (DOE Order 226.1B CRD 2.a)*

*Personnel are selected and trained for effective performance of the CAS responsibilities. (DOE Order 226.1B CRD 2.b (3)(b)(3))*

FFS has a CAS (referred to as the Contractor Performance Assurance Program or CPAP) described by CP2-QA-3000, *Contractor Performance Assurance Program Description Fluor Federal Services, Inc., Paducah Deactivation Project*, dated November 20, 2014. This program description document was approved by PPPO by letter PPP0-02-2670854-15, dated March 10, 2014. The program description is sufficiently detailed, with references to implementing procedures. Implementing procedures continue to undergo revisions to incorporate corrective actions, lessons learned, and best practices. One procedure remains to be revised to reflect the recent implementation of the new Reliance issues management database. The CPAP issues management process includes criteria for the consideration of extent of condition per DOE Guide 226.1-2A. In addition, the CPAP description and implementing procedure incorporates the extent of cause in the causal analysis process, which EA identified as a best practice.

Requirement flow down for DOE Order 226.1B into implementing documents was generally adequate. The standards and requirements process guides the flow down of contract requirements to FFS procedures and subcontractors.

However, EA identified some concerns regarding this flow down methodology. For example:

- The functional area manager was unaware of the requirement to perform a triennial training assessment. Additionally, this requirement was not captured or implemented by the program documents (see Section 5.2, below).
- Assessments to confirm that program requirements correctly flow down were not identifiable from the 2016 and 2017 assessment schedules and records of completion reviewed.
- A recent PPPO independent surveillance of FFS indicated that requirements relating to Conduct of Operations (ConOps) did not flow down to subcontractors. Afterwards, contracting processes were revised to emphasize ConOps and Work Control.
- A recent assessment of the DOE Integrated Safety Management System (ISMS) and Emergency Management System found weaknesses relating to the flow down of worker safety requirements to subcontractors (Issues II-FY16-1057-03-06).

FFS Quality Assurance is actively performing surveillance oversight of construction activities, which are a significant portion of the higher risk activities on site. A staffing shortage for the quality group limits the full functionality desired for the organization. As a means to ameliorate the situation, FFS intends to pursue qualifying line organization personnel to perform receipt inspection of lower quality level items. Implementing procedures were not yet developed that demonstrate how conflict of interest will be avoided (e.g., preventing the quality receipt inspection from being performed by the individual who needs the item).

The CPAP assessment schedule and completed assessments cover a reasonably risk-informed overview of safety program implementation, as discussed below in Section 5.2. The integrated assessment schedule (IAS) for 2016 reflects a high completion rate for independent, management, and self-assessments. The IAS is currently maintained on an Excel spread sheet. Although the Reliance system has the capability to



perform this function, it has not been implemented yet. FFS indicated that this capability may be implemented in the future to facilitate schedule maintenance. The recent increase of issues that have been entered into the issues management system reflects a healthy attitude toward identifying and correcting issues identified during formal assessments and by other means. Review of selected independent, management, and self-assessments and performance observations indicates that the current oversight processes are sufficiently clear to base acceptability or support findings and observations.

Roles, responsibilities, authorities, and accountabilities (R2A2) for the CPAP are not clearly detailed by FFS in a cohesive organizational manner. CP2-QA-3000, *Contractor Performance Assurance Program Description*, was issued in November 2014. Section 1.1 of the CPAP description identifies the FFS organization by titles, but does not describe the responsibilities of the CPAP Manager and key staff or other organizational responsibilities that support implementation of the CPAP. Management responsibilities and accountabilities are adequately described in Human Resources position descriptions for a few positions, such as the CPAP Manager, although most position descriptions reviewed are related to hiring, and refer to education and experience. Several managers interviewed pointed to the responsibilities sections of procedures to fulfill this requirement. Although responsibilities are captured to a limited extent by implementing procedures, they describe who-does-what to implement the procedure, but the responsibilities or accountabilities are not defined. The inadequate descriptions of R2A2 were partially addressed in dispositioning a previous issue, but not sufficiently or in a holistic approach as required by DOE Order 226.1B, and as discussed in DOE Policy 450.4A, *Integrated Safety Management Policy*, which states, “Clear and unambiguous lines of authority and responsibility for ensuring safety are established and maintained at all organizational levels within the Department and its contractors.” (See **Section 5.3 and OFI-FFS-01.**)

Assessments, feedback from work performance, observations by managers and workers, and many other sources are captured by the issues management process, where they are analyzed, categorized, and assigned for action. Effective and timely resolution of the issues and actions is monitored by the executive review board (ERB). Trends and metrics are monitored to identify areas that may need additional management focus. These processes are discussed further in Section 5.3, below.

The key position of lead assessor was vacant during this EA assessment, but the CPAP Manager is acting in that position and is fully engaged in that role. Staffing of the CPAP group is nominal, but sufficient for the size of the FFS organization. Personnel who lead audits and independent assessments are trained to American Society of Mechanical Engineers Nuclear Quality Assurance Standard 1 (NQA-1), *Quality Assurance Requirements for Nuclear Facility Applications*, lead auditor standards under procedure CP3-QA-1008, *Assessor Qualification, Training, and Certification*. These personnel are sufficiently trained and competent in assessments. A recent initiative stemming from a corrective action was to develop a training course for assessors to improve the quality of assessments, including being sufficiently self-critical.

A selection of key personnel supporting the CPAP are well qualified and demonstrate a high level of pride and vigor in conducting their duties as shown by reviewing records and interviews. The lead assessor position, although currently vacant, is integral to the continued improvement of the assessment program, mentoring assessors, and quality and usefulness of assessment reports.

Overall, the CPAP description is sufficiently detailed, and the CAS is implemented by qualified and capable leads. The competence and energy level of the manager and staff are exemplary. Corrective actions are being implemented to improve assessor and lead assessor capabilities. Nevertheless, personnel external to the CPAP group that support the CAS are sufficiently trained and qualified to perform competently. The requirements flow down process has undergone recent improvements resulting

from corrective actions for assessment findings. However, FFS has not sufficiently detailed R2A2 within its organization. (See **OFI-FFS-01.**)

## 5.2 Assessment Planning and Scheduling

*Criteria:*

*CAS 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 must be risk-informed and appropriately cover potentially high consequence activities. (DOE Order 226.1B CRD 2.b(2))*

*CAS includes a method to validate the effectiveness of assurance system processes by using third-party audits, peer reviews, independent assessments, effectiveness reviews, etc. (DOE Order 226.1B CRD 2.b(1))*

The CPAP description CP2-QA-3000, Section 3.5, *Risk-Informed Planning*, adequately describes the process and considerations for developing the IAS. The IAS – updated to the end of the third quarter of fiscal year (FY)16 – reflects a high completion rate of assessments for FY16 that cover a reasonably risk-informed overview of a broad scope of functional areas. During this assessment, the FY17 IAS had not been finalized in the detailed Excel spreadsheet, but the data in the Reliance database reflects that about 75 management, self-, and independent assessments and surveillances are planned for FY17.

The FY16 IAS reflects a broad scope of planned management, self-, and independent assessments, and managers interviewed indicated engagement in the assessment planning process. The *Management and Self-Assessment* and *Independent Assessment Program* procedures detail the process for developing an assessment schedule under the leadership of the CPAP Manager. The process relies upon the SME's to identify required assessments without the aid of a verified list of contract and regulatory required assessments.

However, EA noted a gap in the IAS, which did not include the triennial assessment of training as required by DOE Order 426.2 and DOE-STD-1070. Consequently, the required assessment has not yet been performed during the FFS contract term. Although technically not a deficiency in that PGDP has been under DOE control for less than three years, FFS is required to complete an assessment by the end of the current integrated assessment schedule. CP3-QA-1003, *Management and Self-Assessment*, Section 6.1.1, requires the responsible program/project manager to “Develop a list of management assessments necessary to assess the status, adequacy, and effectiveness of the organization’s own programs, processes, and/or procedures. The list must include assessments necessary to meet annual or triennial program requirements.” The training program manager has only been in this role for approximately 6 months and was not aware of the triennial review requirement when interviewed. During a subsequent interview, the manager indicated it was being added to the schedule. (See **OFI-FFS-02.**)

During interviews, FFS management reported that, overall, the assessments that were conducted and documented met expectations. As would be expected by the structure of the assessment program, EA observed that the depth and thoroughness of assessments increased with the corresponding level of formality of the assessment. Independent assessments were generally well documented and followed the assessment plan. Management and self-assessments do not require a qualified lead assessor and generally resulted in acceptable, but less rigorous and methodical reviews. If developed, review plans are not routinely archived with the reports.

However, some examples of poor implementation of assessment protocols were noted, including:

- A management self-assessment for Interim Transfer Cart Operations went outside the scope for the approved readiness review plan to evaluate programs that were not credited by the Documented Safety Analysis, while not clearly documenting the criteria established in the approved plan of action. Because the plan of action was not followed, it was unclear what criteria were used for the assessment and whether management's desired scope for the assessment was performed.
- Assessment plans did not consistently include review of open actions for related issues.
- Four of six self- and management assessments reviewed by EA used checklists in a manner that did not sufficiently record the basis for acceptability of the item reviewed. Assessment Number MA-FY 16-0033, *FPDP Training Improvement Plan Review*, contained results that stated, "Same as 3.1," for over half the lines of inquiry, providing poor documentation that the specific improvement plan item was actually reviewed. MA-FY16-0035, *FFS Training Program/Conduct of Training*, noted that "FFS has met the periodic review requirements [for the DOE-STD-1070 assessment]." However, this management assessment did not identify that a triennial assessment of training had not been scheduled or performed, as discussed above. Similarly, MA-FY16-0007, an assessment of ConOps to evaluate implementation, addressed some lines of inquiry, such as, "Are shift routines and operating practices *performed* [emphasis added] in accordance with DOE Order 422.1?" by identifying the procedures that flow down the requirements rather than by observing actual performance and implementation in the field. In evaluating independent verification methods for critical equipment, this assessment also cited the operating procedure and stated, "CP2-QA-3000, *Contractor Performance Assurance Program Description*, and CP3-QA-1004, *Independent Audit/Assessment Program*, provide guidance for verification of independent oversight." This response created doubt about the assessor and team lead's knowledge of the subject matter being assessed.

The CPAP Manager receives and acknowledges each assessment report, signifying that the assessment is completed per procedure and is approved for distribution. The manager is not tasked with performing a critical review of completed assessments or providing feedback to the author. (See **OFI-FFS-03.**)

As discussed in Section 5.1 above, FFS is developing training for lead assessors and was piloting the training during the review period. A corrective action to encourage management assessors to be more self-critical resulted in the development of an optional computer-based training on conducting self- and management assessments.

A management self-assessment of Interim Transfer Cart Operations identified several safety management programs (SMPs) that did not have a sufficient level of implementation (e.g., CAS, Work Control, ConOps). The ERB is tasked by its charter to review SMPs on a biennial basis. This review is done through the quarterly review of metrics and trending indicators. Other DOE sites have adopted a practice of performing formal SMP health assessments and presenting the results on a periodic basis to the ERB or equivalent senior management group. These other site program health assessments use metrics as a component, and additionally provide a summary review of program health, including verification of correct requirements and their flow down, staffing, qualification, procedure quality, implementation results, work group culture, etc. (See **OFI-FFS-04.**)

The CPAP has assessed the effectiveness of assurance system processes through third-party audits, peer reviews, independent assessments, ERB oversight, and effectiveness reviews. While FFS provided a good description of the CPAP, it did not initially staff or support the program effectively, as indicated by the PPPO finding. Recent efforts by FFS senior management in supporting the program has markedly improved its site-wide visibility and implementation in the last year.

Overall, assessments are planned and conducted as appropriate, with the assessment results guiding appropriate improvement actions. While FFS is adequately meeting the criteria in this section, EA found a few areas where inadequate rigor is limiting the effectiveness of the assessment program. One gap was noted in the absence of a planned triennial assessment of training. Other problems affecting the CPAP include the vacancy in the assessment lead position, minimally effective SMP management assessments, and informal aspects of assessment scheduling.

### **5.3 Issues Management and Corrective Action System**

*Criteria:*

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

*For higher significance findings, a documented casual 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))*

CP3-QA-3001, *Issues Management*, defines the FFS process for managing issues and corrective actions. The issues management system casts a sufficiently broad net to capture issues that require evaluation, correction, or trending. Assessments, events, trends, lessons learned, and management and worker observations are among the sources that generate issues tracked by the system. Issue categorization is competently performed by a daily screening committee chaired by the CPAP Manager. Quality Assurance staff are active members of the screening committee and provides effective integration of cross-cutting issues, such as nonconformance reports. Operational event and Price Anderson Amendments Act reporting (per 10 C.F.R. Part 820, *Procedural Rules for DOE Nuclear Activities*.) is actively managed by a regular member of the screening committee who provides direct access to event information, issues, and planned actions. The recently implemented database for issues management (Reliance) has significantly improved the process flow for corrective actions and site-wide access to system users. Roll-out of Reliance has been well received by the work force and is effectively used in many areas. With a renewed emphasis on CAS, backlogs of actions and issues are being effectively managed. Senior management is actively involved in issues management, helping reduce the overdue corrective actions and overdue issues. FFS management, as part of procurement and implementation of the Reliance software, had the foresight to classify the software appropriately as important to safety, consistent with FFS procedures and DOE Guide 414.1-4, *Safety Software Guide*, for use with 10 CFR 830 Subpart A, *Quality Assurance Requirements*, and DOE Order 414.1C, *Quality Assurance*. While only implemented since August 1, 2016, FFS is effectively using the Reliance system to manage issues. Many interviews with personnel indicated an openness and willingness to use the new issues management system.

FFS categorization of issues has not been constrained by the level of effort required when issues are categorized at higher significance levels. Most categorization judgments are sufficiently conservative. Management has been fully supportive of the process and its implementation. Senior management reinforces expectations for attention to trends and timely corrective actions in the weekly “War Room” meetings and ERB meetings. Overdue issues and corrective actions have been significantly reduced as a result of senior management attention.

Personnel who lead causal analyses possess both training and experience. EA reviewed the causal analyses supporting the corrective action plans for the significant conditions adverse to quality identified by the PPPO ISMS review. The root cause for the work control significant condition adverse to quality

was attributed to inadequate implementing documents and the CAS, disregarding the problem of the accountable manager not implementing the work control program as written or self-identifying problems. Rather than identifying the lack of responsibility for the poorly implemented work control systems, the cause analysis found fault with an oversight organization, contrary to the first guiding principle of integrated safety management (DOE Policy 450.4A, *Integrated Safety Management Policy*), which states, “Line managers do not depend on supporting organizations to build safety into line management work activities.” The causal analyses did not identify a valid cause for why management did not implement the necessary management programs.

Weak corrective action development and implementation was evident in a few recurring assessment findings that indicated a lack of, or weak R2A2 in other program areas. For example, corrective actions were assigned to modify implementing procedures (specifically, the performance section for who does which step), rather than identify responsibility and establish the necessary accountability. This example relates to the accountability of managers discussed in Section 5.1 and **OFI-FFS-01**.

Management’s response to the serious nature of the significant conditions adverse to quality was to establish regular management meetings in the War Room. These meetings also provide senior management review, input, and approval for significant issues and other specific corrective actions. As a result, issues are being effectively resolved. A selection of corrective action closures for both high and moderate significance level issues were reasonably accurate in addressing the problem.

Effectiveness reviews are appropriately scheduled for significant corrective actions (and less significant issues when deemed appropriate by management). Appendix D to CP3-QA-3001, *Issues Management*, provides a thorough and helpful compilation of philosophy and specific guidance for performing an effectiveness review and verifying the extent of condition review was adequate. This appendix also includes extent of condition guidance and extent of cause. While DOE Order 226.1B requires the CAS issues management process to consider extent of condition, the CPAP description and the issues management procedure also incorporate the best practice of evaluating the extent of cause from the causal analysis process. Other DOE contractor corrective action programs include a retrospective common cause analysis process, but using extent of cause in proactive corrective action development makes it a best practice.

Overall, FFS has established and implemented the elements of an effective issues management system supporting the deactivation project, and management support and active staff engagement have significantly contributed to the project’s success.

## **5.4 Performance Metrics and Improvement**

*Criteria:*

*The CAS includes effective means of communicating issues and performance trends/analysis to managers to enable informed decisions and correction of negative performance/compliance trends. (DOE Order 226.1B CRD 2.b (3)(b)(5))*

*Continuous feedback and improvement processes are established that solicit and use corrective action, worker feedback, and lessons learned to improve work planning, hazards identification, program, and process implementation. (DOE Order 226.1B CRD 2.b (5))*

*The CAS provides timely communication of issues and performance trends to contractor management and the Contracting Officer and electronic access to assurance-related information. CAS provides evidence*

*to assure DOE and contractor management that work is being performed safely, that risks are being identified and managed, and that control systems are effective. (DOE Order 226.1B CRD 2.b(4), 2.d))*

*CAS establishes metrics (performance indicators) and targets, and performs trending and analysis to support appropriate, proactive decisions. (DOE Order 226.1B CRD 2.b (6))*

The ERB and War Room meetings are effective forums for FFS internal communication of issues, evaluation of trends, and performance analysis. Metrics developed for the weekly War Room meetings are adequate to show resolution of concerns and identification of potential new issues. The War Room meetings are a senior management initiative that provides focus, prioritization, and allocation of resources to emergent issues. War Room meetings observed by EA were effective in support of the CPAP and fostered robust internal dialogue on issues.

Based on interviews and a significant reduction in backlogs of unresolved issues, the implementation of the Reliance issues management system for communicating issues, assigning actions, and tracking status across the FFS organization is a substantial improvement over the previous spreadsheet method. During the assessment and evaluation of the issues management process, the CPAP team imported performance history from the start of the contract transition into the program, allowing analysis of trends based on performance history instead of waiting for statistically-significant data to be built up.

The procedure CP2-SM-1000, *Activity Level Work Planning and Control Program Paducah Gaseous Diffusion Plant Deactivation and Remediation Project*, provides explicit guidance for the active solicitation of feedback from all workers and organizations, including line management, support (e.g., crafts, workers, planners, engineers), and PPPO representatives regarding performance concerns and opportunities for improvement. The work control process includes requirements for pre- and post-job briefings, with intentional use of feedback to improve job performance. During interviews, Facility Managers who oversee work and perform pre-job briefings and post-job reviews discussed their observations and could articulate the inputs placed into the CAS system. The CPAP manager provided copies documenting resolution of the discussed scenarios. Specific briefing requirements, including documentation requirements, are identified in CP3-SM-1102, *Activity Level Work Execution and Closeout*. The PGDP contractor performance observation process, defined by CP3-OP-0009, *Performance Observations*, provides an additional means to document and provide feedback for management observations during work performance. Both the work planner and the Work Control Manager are responsible for identifying and incorporating lessons learned in the work control documents per CP3-SM-1101, *Activity Level Work Request, Planning, Scheduling and Release*. Record review substantiated implementation and interviews found managers and workers to be acceptably knowledgeable of the requirements.

CP3-QA-3002, *Operating Experience/Lessons Learned*, established guidelines for collecting, sharing, and evaluating operating experiences. This procedure identifies the process for FFS employees to document and distribute operating experiences from both external and internal sources and directs the integration of operating experience into work planning activities and daily work performance. The guidance for documentation and dissemination of lessons learned is specified in CP3-QA-3002. While not referenced explicitly in the CP3-QA-3002 procedure, FFS participates in the DOE's OPEXSHARE lessons learned database. While external sharing is not extensive, FFS is making use of the lessons available to them.

Interviews with contractor personnel at each organizational level (e.g., planners, trainers) showed an understanding of the CAS process consistent with their reliance on CAS to meet the requirements of their position. One exception was the bargaining unit operators who could only articulate the existence of the process. Upon further probing, the operators clarified that they were responsible for bringing issues to their shift manager. Operators consistently reported a high level of confidence in the shift managers to

document the issues and provide resolution feedback. During an interview, the shift manager indicated that he would prefer the operators to be more proactive in the CAS reporting process, but feels positional responsibility for documentation and tracking of operator-identified issues.

Performance objectives, measures, and commitments are established through formal performance management processes with PPPO. A set of metrics, trended in dashboard format, is provided monthly to the senior management team and PPPO, and a Quarterly Trending Analysis Report is provided to the PPPO. EA reviewed six months of monthly reports. Trends and pending corrective actions are captured in the War Room. FFS senior management routinely assign actions based on trends and indicators. The most recent quarterly report, FPDP-RPT-0050, reported two issues regarding emerging trends. The ERB initiated Issue CA-000002 for the Facilities, Operations, and Infrastructure manager to evaluate human performance issues and to evaluate re-establishing a human performance improvement program. The issues management screening committee identified a second potential negative trend and documented it in Issue CA-000132 regarding the number of procedure changes/revisions that were being completed without the waste certification official's review. Review of the results and interviews with various managers, including the Metrics Coordinator, indicated that the metrics program is effectively implemented, although not established by a procedure, as discussed below.

The FFS metrics coordinator uses a Fluor corporate reach-back resource of an American Society for Quality certified quality engineer and senior statistician to evaluate metrics that are more analytical than conventional trend results. These metrics analyses follow trend lines, determine statistical significance of data, and adjust baselines and statistical limits around performance. This statistical process trend analysis determines whether events are the result of a stable process or of a significant change in the process, and uncovers trends not readily apparent. The use of a reach-back corporate resource for statistical analysis is a best practice.

The process for establishing and gaining PPPO approval of the Performance objectives, measures, and commitments is described in procedure CP3-HS-1000, *Annual Integrated Safety Management System Effectiveness Review and Performance Objectives, Measures, and Commitment Development and Reporting*. Other than identifying the CPAP as nominally in the scope of the annual ISMS effectiveness review, this procedure does not assign responsibilities or describe the current methods used to implement the CPAP elements of metrics, performance indicators, and key performance indicators. Responsibility for the CAS falls under the Health Safety Support and Quality organization, under the ISM manager. (See **OFI-FFS-04**.)

Overall, FFS has established and implemented processes for communicating CAS feedback and improvement data, trends, and metrics supporting the deactivation project. Management support and active staff engagement have been significant contributors to the effectiveness. The process of reaching back to a Fluor corporate senior statistician to develop statistical process evaluation leading to probing and revealing metrics is a best practice.

## **5.5 DOE Field Element Oversight**

*Criteria:*

*DOE field element line management has established and implemented oversight processes that evaluate contractor and DOE programs and management systems, including the contractor assurance system, for effectiveness of performance (including compliance with requirements). (DOE Order 226.1B 4b (1))*

*The DOE field element line oversight program includes written plans and schedules for planned assessments, focus areas for operational oversight, and reviews of the contractor's self-assessment of processes and systems. (DOE Order 226.1B 4b (2))*

*The DOE field element has an issues management process that categorizes findings based on risk and priority, ensures relevant line management findings are effectively communicated to the contractors, and ensures that problems are evaluated and corrected on a timely basis. For issues categorized as high significance findings, the issues management process invokes a high level of rigor to prevent recurrence. (DOE Order 226.1B 4b (4))*

*Oversight processes are tailored according to the effectiveness of contractor assurance systems, the hazards at the site/activity, and the degree of risk, giving additional emphasis to potentially high consequence activities. (DOE Order 226.1B 4b (5))*

*DOE field element line management reviews and approves the initial contractor assurance system program description (if formally delegated, otherwise reviews and forwards to Headquarters for approval). The field element reviews and assesses the effectiveness of the Contractor Assurance System (DOE Order 226.1B 5e (4))*

Federal oversight of the CPAP at Paducah is provided by PPPO, with the aid of technical and administrative support service contractors. PPPO's oversight processes appropriately include core, supplemental, and management assessments and surveillances. PPPO-M-226.1-2, *Oversight Program Plan*, requires PPPO to develop an integrated assessment plan/schedule annually, factoring in recent events, site priorities, specific activities, and risks. PPPO-2533131, *Assessment and Surveillance Process*, provides more detailed steps on the development and approval of the annual integrated assessment/surveillance schedule and requires assessments to be led by staff with NQA-1 lead auditor certification or to include a certified lead auditor on the team.

PPPO has been actively involved in reviewing, approving, and assessing FFS's SMPs throughout the contract transition. One prime example of independent assessments of FFS conducted by PPPO is provided in the report PADU-16-IA-100962, *Final Report FPDP Integrated Safety Management System Phase I-II Verification Review at the Paducah Gaseous Diffusion Plant*. This assessment concluded that the ISMS core functions and guiding principles are "marginally effective" in five specific areas and identified these areas as "significant conditions adverse to quality." The CAS was listed as one of these specific areas. By putting the appropriate level of importance on the significant weaknesses in the CAS, PPPO communicated the importance of needed improvements to the contractor.

Planning, scheduling, conducting, and reporting assessments and surveillances follows the procedure PPPO-2533131, *Assessment and Surveillance Process*, Rev. 2. A list of approximately 30 completed 2016 assessments included 2 formal assessments, 20 surveillances of FFS, a PPPO self-assessment, and a surveillance of training status for DOE oversight. The FY17 PPPO assessment plan/schedule includes 18 FFS assessments and 5 PPPO management (self-) assessments, in accordance with DOE Guide 226.1. The new assessment schedule/plan also includes annotation of core and supplemental assessments, and the specific regulatory driver for the scope and frequency of the assessment or surveillance. Both of these aspects were not observed on the previous two annual plans, indicating improvement in the assessment planning process.

One qualified Facility Representative is currently supporting the Paducah site, although the *Annual Workforce Analysis and Staffing Plan Report* indicates that three Facility Representatives are needed. Understaffing creates an overly burdensome workload, which severely limits the single qualified Facility Representative's ability to conduct field walkthroughs and make observations. Because of numerous



collateral duties assigned to the Facility Representative, assessments normally done by a Facility Representative are performed by contracted technical support personnel. Operators in one facility had never met or seen the Facility Representative in their facility. PPPO self-identified that some technical personnel did not have training required to access facilities. The understaffing is partly the result of insufficient planning for backfill of the retiring DUF6 Facility Representative primarily responsible for the Depleted Uranium Hexafluoride Conversion Facility (self-identified in PADU-16-MS-101005) and partly the time-consuming Federal hiring process. A newly hired Facility Representative, on the job for fewer than two weeks at the time of this assessment, has been instructed to focus on training and qualification instead of being bogged down with field work and job assignments, indicating an appropriate priority on training and the Federal Technical Qualification Program.

Issues that are identified are tracked using the computer-based Management Tracking System (MTS). The MTS includes the annual assessment/surveillance schedule and is updated weekly for the Paducah PPPO Oversight meeting. The procedure for implementation of the MTS is still in draft form. Based on a review of specific MTS records, the MTS does not contain sufficient status detail to justify closure of issues. Further, it does not contain many issues identified by external reports, such as out-of-date procedures. PPPO indicated that funding has been allocated for improving the MTS in the near term. PPPO manually reviews at least 25% of the contractor's closed corrective actions each month, but have yet to obtain the offered training or access the contractor's new Reliance software program for issues management.

Several key procedures and plans implementing DOE Order 226.1B are not current. For example, PPPO-M-226.1-2, *Oversight Program Plan*, contained references to obsolete DOE directives, and PPPO-M-414.1-1, *Corrective Action Program*, described an obsolete database for tracking corrective actions. PPPO is aware of this issue and the PPPO Quality Assurance Lead is actively working to update the set of PPPO plans and procedures.

Overall, PPPO has implemented a functioning CAS oversight program and is actively and effectively using it to improve safety and mission performance. PPPO's newest assessment plan includes the annotation of core and supplemental assessments, and the specific regulatory driver for the scope and frequency of the assessment, both of which indicate an improvement over previous annual assessment plans. However, staffing issues in PPPO have overburdened the only qualified Facility Representative to the point that support service contractors provide most of the oversight in the field. In addition, these staffing shortages have contributed to prolonged existence of outdated procedures that do not reflect current oversight practices.

## **6.0 FINDINGS**

EA identified no findings or deficiencies during this assessment.

## **7.0 OPPORTUNITIES FOR IMPROVEMENT**

EA identified some OFIs to assist cognizant managers in improving programs and operations. While OFIs may identify potential solutions to findings and deficiencies identified in appraisal reports, they may also address other conditions observed during the appraisal process. EA offers these OFIs 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.

**Fluor Federal Services, LLC:**

- OFI-FFS-01:** FFS should consider developing a complete set of R2A2s for the organization.
- OFI-FFS-02:** FFS should consider conducting a critical review of completed assessments to provide lessons learned feedback to the author.
- OFI-FFS-03:** FFS should consider conducting a thorough review of the requirements and schedule to ensure that no required assessments are missing from the assessment schedule.
- OFI-FFS-04:** FFS should consider adopting a practice of performing formal SMP health assessments and presenting the results on a periodic basis to the ERB or equivalent senior management group, similar to the continuous improvement process at Hanford.
- OFI-FFS-05:** FFS should consider establishing a procedure that describes the current implementation of the metrics program, including key performance indicators, R2A2s and methods.

## **Appendix A Supplemental Information**

### **Dates of Assessment**

Onsite data gathering, interviews, and observations: October 17–20 and November 7–10, 2016

### **Office of Enterprise Assessments (EA) Management**

Glenn S. Podonsky, Director, Office of Enterprise Assessments  
William A. Eckroade, Deputy 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, Director, Office of Nuclear Safety and Environmental Assessments  
Patricia Williams, Director, Office of Worker Safety and Health Assessments  
Gerald M. McAteer, Director, Office of Emergency Management Assessments

### **Quality Review Board**

William A. Eckroade  
John S. Boulden III  
Thomas R. Staker  
William E. Miller  
C.E. (Gene) Carpenter  
Patricia Williams  
Gerald M. McAteer  
Michael A. Kilpatrick

### **EA Site Lead for Paducah Gaseous Diffusion Plant**

Rosemary B. Reeves

### **EA Assessors**

Rosemary B. Reeves – Lead  
Eric R. Swanson  
James H. Wicks

**Appendix B**  
**Key Documents Reviewed, Interviews, and Observations**

**FFS/FPDP Documents Reviewed**

- CP1-HR-0105, Open Door Policy, Rev. 0
- CP1-HR-0147, Differing Professional Opinion, Rev. 0
- CP2-HR-0131, Employee Concerns (EC) Program, Rev. 1
- CP3-HS-1000, Annual Integrated Safety Management System Effectiveness Review and Performance Objectives, Measures, and Commitment Development and Reporting, Rev. 1
- CP3-HS-2004, Job Hazard Analysis, Rev. 2
- CP2-SM-1000, Activity Level Work Planning and Control Program Paducah Gaseous Diffusion Plant Deactivation and Remediation Project, Rev. 3
- CP3-SM-1101, Activity Level Work Request, Planning, Scheduling and Release, Rev. 0
- CP3- SM-1102, Activity Level Work Execution and Closeout
- CPI-TR-0100, Training Program, Rev. 1
- CP3-OP-0002 Developing and Maintaining FPDP Performance Documents, Rev. 2
- CP3-OP-0009 Performance Observations, Rev. 3
- CP2-QA-1000, Quality Assurance Program Description, Rev. 1A
- CP3-QA-1001, Graded Approach, Rev.2
- CP3-QA-1003, Management and Self-Assessments, Rev. 1A
- CP3-QA-1004, Independent Assessment Program, Rev. 1
- CP3-QA-1008, Auditor/Assessor Qualification, Training and Certification, Rev. 1
- CP3-QA-2002, Surveillance, Rev. 0
- CP2-QA-3000, Contractor Performance Assurance Program Description, Rev. 0
- CP2-QA-3000, Contractor Performance Assurance Program Description, Rev. 1
- CP3-QA-3001, Issues Management, Rev. 2
- CP3-QA-3001-F02, Form: Issues Identification Part A, Rev. 3
- CP3-QA-3002, Operating Experience/Lessons Learned, Rev. 2
- CP3-OP-3003, Standards and Requirements Management, Rev. 1
- CP3-QA-3004, Evaluation and Reporting of Potential PAAA Non-compliances, Rev. 0
- CP3-QA-3005, Occurrence Reporting, Rev. 1
- CP3-QA-3007, Issue Investigation and Causal Analysis, Rev. 1
- CP3-QA-3008, Fact Finding, Rev. 1
- CP2-RD-0001, Records Management and Document Control, Rev. 1
- CP3-RD-0010, Records Management Process, Rev. 5
- FPAD-16-2024, CPAP System Changes
- FPDP-RPT-0030, MSA Report for ICT Deposit Removal
- Executive Review Board Charter, Rev. 0
- FPDP-RPT-0038, Fluor Federal Services, Inc., Paducah Deactivation Project—Root Cause Analysis and Corrective Action Plan in Response to the U.S. Department of Energy’s Independent Assessment of Fluor Federal Services, Inc.’s, Integrated Safety Management System and Environmental Management System Program, PADU-16-IA-10096, June 2016

- Fluor Federal Services, Inc., Paducah Deactivation Project—Nuclear Criticality Safety Program Corrective Action Plan, July 14, 2016
- Fluor Federal Services, Inc., Paducah Deactivation Project- Corrective Action Plan in Response to the U.S. Department of Energy’s Independent Surveillance of Fluor Federal Services, Inc.’s, Conduct of Operations Program, April 15, 2016
- Fluor Federal Services, Inc., Paducah Deactivation Project—Response to U.S. Department of Energy Independent Surveillance of the Fluor Federal Services, Inc., Cognizant System Engineer Program, April 15, 2016
- FPDP-RPT-0030, Management Self-Assessment Report of In Situ Chemical Treatment Operations for Deposit Removal at the Paducah Gaseous Diffusion Plant Paducah, Kentucky, April 22, 2016
- FPAD-16-1258, Revision to Contractor Operational Readiness Review Plan of Action, January 15, 2016
- IA-FY16-0005, Independent Assessment of FPDP’s Quality Assurance Program, December 29, 2015
- IA-FY16-0008, Audit of Fluor Federal Services, Inc. Paducah Deactivation Project Nevada National Security Site Waste Certification Program Paducah, KY, April 8, 2016IA-FY16-0009, 2016 Final Environmental Management System Assessment Report, September 2, 2016
- MA-FY16-0007, Conduct of Operations Program, December 15, 2015
- MA-FY16-0033, FPDP Training Improvement Plan Review, August 8, 2016
- MA-FY16-0035, FFS Training Program/Conduct of Training, August 26, 2016
- MA-FY16-0038, Contractor Performance Assurance Program (CPAP) ISMS SCAQ Corrective Action Plan (CAP) Verification, October 10, 2016
- MA-FY16-0009, Integrated Safety Management Corrective Action Assessment, December 29, 2015
- SR-FY16-0017, On-Site Surveillance of Murtco at Their Gholson Road Fabrication Shop, January 29, 2016
- SR-FY16-0020, Gholson Facility Activities and C-335 Separation System FAI060 Work Area, April 20, 2016
- SR-FY16-0023, Gholson Facility Activities and C-335 Separation System FAI060 Work Area, June 14, 2016
- SR-FY16-0076, NCS Program, October 6, 2016
- Investigation and Cause Analysis Report for Ground Fault at C-333, July 2015
- FPAD-16-1294, Fluor Federal Services, Inc., Paducah Deactivation Project-Submittal of First Quarter Fiscal Year 2016 Quarterly Trending Analysis Report, January 28, 2016
- FPAD-16-1682, Fluor Federal Services, Inc., Paducah Deactivation Project-Submittal of Second Quarter Fiscal Year 2016 Quarterly Trending Analysis Report, May 5, 2016
- FPAD-16-1867, Fluor Federal Services, Inc., Paducah Deactivation Project-Submittal of Third Quarter Fiscal Year 2016 Quarterly Trending Analysis Report, July 14, 2016
- FPAD-16-2139, Fluor Federal Services, Inc., Paducah Deactivation Project-Submittal of Fourth Quarter Fiscal Year 2016 Quarterly Trending Analysis Report, October 13, 2016
- 16-ERB-0069, Performance Observation and Feedback Metrics 4th Quarter 2016
- Metrics – Dashboard August-September, 2016

- FY 2016 Integrated Assessment Schedule, November 9, 2016
- FY 2017 Assessment Schedule from Reliance, November 9, 2016
- Reliant™ Issues Management and Corrective Actions database (numerous entries)

### **PPPO Documents Reviewed**

- PPPO-M-226.1-2, Oversight Program Plan, Rev 1, March 2010
- PPPO-M-414.1, Corrective Action Program, Rev. 1, March 2010
- PPPO-M-420.1-3, Safety Systems Oversight Program Plan, Rev. 1, September 2012
- PPPO-2533131, Assessment and Surveillance Process, Rev. 2, October 2014
- PPPO-2691323, Facility Representatives Program Plan, Rev. 3, March 2015
- FY 2015 Paducah Assessment and Surveillance Plan, 7-10-14
- FY 2016 Paducah Assessment and Surveillance Plan, 4-29-15
- FY 2017 Paducah Assessment and Surveillance Plan,
- PPPO Observation Custom Report (Sample of MTS Data - Third Quarter FY2014), 7-8-14
- Weekly Report 10/1/2015-9/30/2016 PADU Assessment & Surveillance Plan, October 21, 2015
- Weekly Report 10/1/2016-9/30/2017 PADU Assessment & Surveillance Plan, October 21, 2016
- DOE Organization Chart (with staffing levels, Lexington, Paducah, Portsmouth), August 8, 2016
- PADU-16-TA-100962, Independent Assessment of the Fluor Federal Services, Inc.'s, Integrated Safety Management System and Environmental Management System Program, February 22, 2016
- PADU-16-IA- 1001002, Independent Assessment of the Fluor Federal Services, Inc., Nuclear Criticality Safety Program, March 2, 2016
- PADU-16-IS-100979, Independent Surveillance of the Fluor Federal Services, Inc., Conduct of Operations Program, March 17, 2016
- PADU-16-IS-100985, Independent Surveillance of the Fluor Federal Services, Inc., Cognizant System Engineer Program, March 17, 2016
- PADU-16-IA-100995, Independent Surveillance of the Fluor Federal Services, Inc., Training Program, October 19, 2016
- PADU-16-MS-101005, Training for DOE/Oversight Personnel, June 2, 2016
- Corrective Action Plan for PADU-16-MS-101005, Training for DOE/Oversight Personnel (undated)
- PPPO-02-2670854-15, Approval Of Deliverable No. 157 Contractor Performance Assurance Program Description, CP2-QA-3000, March 10, 2015
- PPPO-02-3389522-16B, Contract DE-EM001131, Task Order DE-DT0007774: Independent Assessment of the Fluor Federal Services, Inc.'s, Integrated Safety Management System and Environmental Management System Program, PADU-16-IA-100962, May 3, 2016
- PPPO-02-3389522-16C, Contract DE-EM001131, Task Order DE-DT0007774: Approval of Fluor Federal Services, Inc.'s, Integrated Safety Management System and Environmental Management System Program Corrective Action Plan, PADU-16-IA-100962, July 22, 2016

## **Interviews**

### **Contractor Personnel**

- Program Manager
- Contractor Performance Assurance Manager (CAS Manager)
- HSSQ Manager
- Chief Engineer
- Nuclear Safety Manager
- Standards and Requirements Manager
- Surveillance and Maintenance Manager
- Work Planning and Control Manager
- Assessments Lead
- Issues Management System Coordinator
- Metrics Coordinator (ISMS Senior Lead)
- Operating experience/Lessons Learned Coordinator
- ORPS/NTS Reporting Lead
- Facility Operations Manager (2)
- Front Line Managers (2)
- Plant Shift Supervisor
- Cause Analysts (3) and Lead
- System Engineering Manager
- Cognizant System Engineers for safety systems (3)
- Assessors, Auditors, & Inspectors
- Training Manager
- Training Coordinator
- ECP, DPO coordinator
- Facility Operators (2)
- Quality Specialist (3 surveillance personnel)

### **PPPO Personnel**

- PPPO Field Office Manager
- PPPO Nuclear Safety Oversight Lead
- PPPO Quality Assurance and CAS Lead
- Paducah Site Lead
- Paducah Quality Assurance Specialist
- Paducah Facility Representatives (2)
- Paducah Safety Systems Oversight

### **Observations**

- FPDP War Room Meeting (Senior Management Review Meeting)
- Plan of the Week meeting
- Executive Review Board Meeting

- Plan of the Day meeting
- Issues Management Screening meetings
- Walkdown/Tour of C-400