Independent Assessment of the Nuclear Criticality Safety Program at the Portsmouth Site

November 2021

Office of Enterprise Assessments
U.S. Department of Energy

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Acronyms

ACR	Anomalous Condition Report
ANS	American Nuclear Society
ANSI	American National Standards Institute
CFR	Code of Federal Regulations
DOE	U.S. Department of Energy
EA	Office of Enterprise Assessments
FBP	Fluor-BWXT Portsmouth, LLC
FR	Facility Representative
FTE	Full-time Equivalent
ITS	Issues Tracking System
LCO	Limiting Condition for Operation
NCS	Nuclear Criticality Safety
NCSD	Nuclear Criticality Safety Determination
NCSE	Nuclear Criticality Safety Evaluation
NCSP	Nuclear Criticality Safety Program
NCSPDD	Nuclear Criticality Safety Program Description Document
NDA	Non-destructive Assay
OFI	Opportunity for Improvement
PORTS	Portsmouth Site
PPPO	Portsmouth/Paducah Project Office
PR	Problem Report
QSNDA	Quality System for Non-destructive Assay

INDEPENDENT ASSESSMENT OF THE NUCLEAR CRITICALITY SAFETY PROGRAM AT THE PORTSMOUTH SITE

Executive Summary

The U.S. Department of Energy (DOE) Office of Enterprise Assessments (EA) conducted an independent assessment of the nuclear criticality safety program at the Portsmouth Site (PORTS) from May 31 to June 22, 2021. This assessment was performed at the request of the DOE Office of Environmental Management (EM) Portsmouth/Paducah Project Office (PPPO) and evaluated the effectiveness of Fluor BWXT-Portsmouth, LLC (FBP) in managing and maintaining criticality safety performance through nuclear criticality safety evaluations and the processes used to make determinations of criticality credibility. PPPO oversight of the nuclear criticality safety program was also evaluated.

EA identified the following strengths, including one best practice:

- FBP nuclear criticality safety program staff members, including criticality safety engineers and criticality safety officers, are highly knowledgeable and experienced in implementing the nuclear criticality safety program at PORTS.
- The non-destructive assay process is mature and effectively uses a variety of measurement techniques. Unique to DOE, PPPO requires non-destructive assay service providers to have an approved quality system in place before the performance of work. (Best Practice)
- The interaction between criticality safety engineers and criticality safety officers is characterized by open and regular communication and feedback.
- PPPO personnel provide oversight of the nuclear criticality safety program through qualified facility representatives and subject matter experts who are experienced and highly knowledgeable of PORTS operations.

EA also identified several programmatic vulnerabilities and weaknesses:

- FBP does not have a formal process for archiving criticality safety evaluation review comments and comment resolution.
- FBP does not formally track all nuclear criticality safety program issues that are not captured in "anomalous condition reports."
- Some FBP personnel lacked full knowledge of the Issues Tracking System and issues management processes.
- The current level of PPPO facility representative staffing, in part responsible for nuclear criticality safety oversight, is not consistent with the approved staffing analysis.

In summary, the FBP nuclear criticality safety program implemented at PORTS adequately ensures that nuclear criticality safety is achieved by evaluating hazards and controlling system parameters within subcritical limits. In addition, PPPO provides adequate oversight of the FBP nuclear criticality safety program. Nevertheless, addressing the concerns identified in this report will help to mitigate vulnerabilities and potential increases in risk posed by nuclear criticality safety hazards at PORTS.

As a follow-up to this assessment, EA plans to visit PORTS facilities and observe the implementation of criticality safety controls and the conduct of criticality safety control system surveillances later in FY 2022.

INDEPENDENT ASSESSMENT OF THE NUCLEAR CRITICALITY SAFETY PROGRAM AT THE PORTSMOUTH SITE

1.0 INTRODUCTION

The U.S. Department of Energy (DOE) Office of Nuclear Safety and Environmental Assessments, within the independent Office of Enterprise Assessments (EA), conducted an assessment of the effectiveness of the Portsmouth Site (PORTS) nuclear criticality safety program (NCSP), as implemented by Fluor-BWXT Portsmouth, LLC (FBP). This assessment was conducted remotely, with interviews occurring between May 31 and June 22, 2021, due to the Coronavirus Disease 2019 pandemic.

This assessment was performed at the request of the DOE Office of Environmental Management (EM) Portsmouth/Paducah Project Office (PPPO). As stated in the *Plan for the Assessment of the Criticality Safety Program at the Portsmouth Gaseous Diffusion Plant, June 2021*, this assessment evaluated the effectiveness of FBP in managing and maintaining criticality safety performance and evaluated new and/or revised nuclear criticality safety evaluations (NCSEs) and the processes used to make determinations of criticality credibility, including non-destructive assay (NDA) processes. PPPO oversight of the NCSP was also evaluated.

The high-assay process buildings of the former Portsmouth Gaseous Diffusion Plant, operated historically at the Portsmouth Site, are in various states of decontamination and decommissioning. Internal components (e.g., equipment, piping, and cabinets) of process buildings X-330 and X-333 are still being removed and placed in onsite disposal cells, while all equipment from process building X-326 has been removed and shipped off site. In May 2019, FBP submitted a "criticality incredible" declaration for building X-326. PPPO completed an independent review of the building X-326 criticality incredible declaration in June 2020, and the PPPO report was issued in December 2020. In accordance with 10 CFR 830.204(b)(6) and DOE Order 420.1C, Change 1, *Facility Safety*, the FBP NCSP is required to ensure that operations remain subcritical under all normal and credible abnormal conditions; meet applicable American National Standards Institute and the American Nuclear Society (ANSI/ANS) Subcommittee 8 National Standards; and provide adequate protection to the public, workers, and the environment.

2.0 METHODOLOGY

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

EA used the criteria of Objectives CS.1 and CS.2 of EA Criteria and Review Approach Document (CRAD) 31-30, *Criticality Safety Program and Criticality Safety Controls Implementation*, Rev. 4, to assess the effectiveness of the FBP NCSP and the adequacy of NCSEs and controls. Additionally, criteria three and four of Objective CS.3 were used to assess how non-adherences to criticality safety controls are resolved and how operations are reviewed to ensure effective implementation and to ensure that process conditions remain within the assumptions of the NCSEs. EA also used elements of CRAD EA-30-07, *Federal Line Management Oversight Processes*, Rev. 0, to collect and analyze data on the oversight of criticality safety by PPPO.

EA examined key documents, such as system descriptions, work packages, procedures, manuals, analyses, policies, and training and qualification records. EA also interviewed key personnel responsible for developing and executing the associated programs. The members of the assessment team, the Quality Review Board, and management responsible for this assessment are listed in Appendix A.

There were no past items for follow-up addressed during this assessment.

3.0 RESULTS

3.1 Nuclear Criticality Safety Program

The objective of this portion of the assessment was to determine whether, in accordance with DOE Order 420.1C, Change 1, FBP has established and implemented an NCSP for PORTS facilities and activities that provides adequate protection of the public, workers, and the environment.

The NCSP is described in FBP-NSE-PDD-00001, *Nuclear Criticality Safety Program Description Document*, which is consistent with reviewed safety basis documents. FBP developed and maintains an effective flowdown crosswalk matrix for the safety basis documents to track structures, systems, and components (SSCs) with limiting condition(s) for operations (LCOs); design features; initial conditions; and administrative controls. This matrix also tracks specific administrative controls from the safety basis to implementing documents and processes, as required by POEF-FBP-020, Section 17.3.5, *Safety Analysis Services*. PPPO appropriately approved all current FBP safety basis documents, as documented in signed safety evaluation reports. Although PPPO amended the contract to include DOE Order 420.1C, Change 1, as a required directive, FBP has not submitted the required documents for PPPO approval of updates to FBP-NSE-PDD-00001 to achieve full compliance. This issue was identified in a September 2020 PPPO assessment of the FBP NCSP, and subsequently, FBP submitted, and PPPO approved, a corrective action plan to revise the NCSP description document. As of September 2021, submission of the final revised NCSP description document that addresses this minor change is pending. PPPO determined, and EA agrees that only minor revisions to the NCSP are needed. PPPO found that the gaps in the current NCSP description document, Rev. 3, compared to the requirements of DOE Order 420.1C, Change 1, are not significant, and the program description documents appropriately commit to the invoked standards for criticality safety (i.e., the ANSI/ANS Subcommittee 8 National Standards and DOE-STD-3007-2017, *Preparing Criticality Safety Evaluations at Department of Energy Nonreactor Nuclear Facilities*).

The currently approved NCSP ensures that, before a new operation is begun or before an existing operation is changed, a determination is made so that the entire process will remain subcritical under both normal and credible abnormal conditions. FBP-NSE-PRO-00084, *Nuclear Criticality Safety*, states, "this procedure has been developed to provide guidance (instructions) for personnel who are involved in fissile material operations for implementation of the Fluor-BWXT Portsmouth, LLC (FBP) Nuclear Criticality Safety (NCS) Program." FBP-NSE-PRO-00084 effectively establishes roles and responsibilities and provides guidance to ensure that all fissile material operations are identified and evaluated for NCS prior to initiation of the operations. Due to the remote nature of this assessment, a performance-based, field-level evaluation of fissile material operations was not possible. Nevertheless, EA determined the adequacy of the FBP process to identify and evaluate fissile material operations through interviews with key personnel and review of a sample of various implementing documents, such as NCSEs and nuclear criticality safety determinations (NCSDs), and work performance documents for fissile material operations (see section 3.2).

Reviewed NCSP documentation and implementing procedures demonstrate that FBP has the appropriate mechanisms in place to ensure that all nuclear operations are covered by facility-specific procedures for controlling nuclear criticality hazards. POEF-FBP-020, section 6.4, *Criticality Controls*, states, "All approved NCSEs and NCSDs are implemented through a formal implementation program. The implementation program includes field walkdowns, examination of training records, and verification of flowdown of NCS requirements into the appropriate work performance documents and postings/labeling." This statement was verified by review of FBP-NSE-PRO-00148, *Use and Maintenance of the Flowdown Data Base*, which provides adequate direction for Nuclear Safety and NCS engineers. Through interviews with staff, including NCS management, engineers, officers, and fissile material workers, and review of a sample of various implementing documents such as NCSEs, EA determined that the procedure provides adequate direction.

Nuclear Criticality Safety Program Conclusions

FBP has established and implemented an NCSP that provides adequate protection to the public, workers, and the environment. Although the NCSP does not currently meet the updated requirements contained in DOE Order 420.1C, Change 1, PPPO determined, and EA agrees that the gaps are not significant. A corrective action plan, approved by PPPO, is in place to ensure that the applicable version of the Order is referenced by the NCSP.

3.2 Nuclear Criticality Safety Evaluations

The objective of this portion of the assessment was to evaluate whether NCSEs are technically adequate and compliant with applicable requirements, such that they demonstrate that processes involving fissionable materials will remain subcritical under normal and credible abnormal conditions, including those initiated by design basis events. Although the nuclear criticality safety standards refer to fissionable material, at PORTS, fissionable materials that present nuclear criticality safety hazards are also fissile. Therefore, this report refers to fissile materials in the context of the PORTS NCSP.

At PORTS, NCSEs document the basis for establishing limits and controls for the safe handling, processing, and storage of fissile materials to preclude a nuclear criticality accident. In addition, for certain fissile material operations where controls to prevent nuclear criticality are determined to be unnecessary, an NCSD is performed. The FBP processes to perform NCSEs and NCSDs are adequately documented in FBP-NSE-PRO-00059, *Nuclear Criticality Safety Evaluation and Approval*, and FBP-NSE-PRO-000149, *Nuclear Criticality Safety (NCS) Criticality Incredible Determination*, respectively, and each document describes thorough processes for evaluation, review, and approval. All interviewed NCS engineers, who are responsible for performing NCSEs and NCSDs, were appropriately trained and qualified, and demonstrated a thorough understanding of these processes as detailed in the procedures. However, EA noted that although NCSE and NCSD review comments are generally handled through electronic tools in word processing software (e.g., Microsoft Word "Tracked Changes" feature) and hand-written notes, neither the NCSE nor NCSD process describes a formal method to track and archive comments and comment resolution, and not all NCSE and NCSD reviews capture comments using these electronic tools. Without a formal process for archiving comments and comment resolution following the sometimes iterative and detailed process, the documentation of the decision-making process may be lost. (See **OFI-FBP-1**.)

EA reviewed 33 out of 164 of approved NCSEs and all 14 of the approved NCSDs completed within the last two years. All reviewed NCSEs and NCSDs demonstrated the use of sound engineering principles. In the reviewed NCSEs, the methodologies used to establish subcritical limits and controls for the operations being evaluated were well documented, and assumptions were supported by appropriate bases. National consensus standards, such as ANSI/ANS Series 8 Standards that establish relevant critical and/or

subcritical limits, validated calculational techniques, and accepted handbooks of critical and/or subcritical limits, were used. Additionally, EA confirmed that the calculational techniques used by FBP meet the requirements of ANSI/ANS-8.24-2017, *Validation of Neutron Transport Methods for Nuclear Criticality Safety Calculations*. The critical limits and controls identified in the analyses were adequately summarized in the reviewed NCSEs and effectively translated into the safety basis through appropriate flow down to procedures and postings.

Further, the reviewed NCSEs adequately documented that sufficient factors of safety are incorporated into process designs so that at least two unlikely, independent, and concurrent changes in process conditions are necessary before a criticality accident is possible, which is referred to as the double contingency principle. As described in FBP-NSE-PDD-00001, for any process identified that does not meet double contingency, a justification for the deviation is documented in the safety basis for PPPO approval. The technical safety requirements appropriately establish LCOs where a single change in process conditions could potentially result in criticality. For example, LCOs were appropriately established for operations to handle large product cylinders with liquid uranium hexafluoride (UF6) and cascade equipment with greater than an always safe mass (i.e., safe mass at optimum conditions of moderation, reflection, and geometry) outside the cascade.

At PORTS, criticality safety officers (CSOs) are responsible for facilitating field-level implementation of the criticality safety controls determined necessary by NCSEs. CSOs assist the fissile material workers in understanding the controls identified by the NCS engineers, as the fissile material workers perform the operations to install, maintain, and operate the controls. All CSOs interviewed were knowledgeable about the significance of their role and capable of providing input to the NCSE process. During development of NCSEs, CSOs are consulted to ensure that operations are properly characterized and consistent with field conditions. All reviewed NCSEs were independently peer reviewed for technical accuracy, reasonableness of assumptions, clarity, and consistency with applicable requirements in accordance with FBP-NSE-PRO-00059, *Nuclear Criticality Safety Evaluation and Approval*.

Thirty-one of the 33 reviewed NCSEs were conducted in accordance with DOE-STD-3007-2017; however, two NCSEs (NCSE-PLANT033.E07 and NCSE-PLANT085.E13) were inconsistent with the documentation requirements in section 3.2, *Description*, and section 3.4, *Methodology and Validation*, of the standard. Specifically, these NCSEs used an older format that did not include a process description or discussion of methodology. Nevertheless, in these instances, normal and credible abnormal conditions were analyzed, and appropriate controls were identified.

The FBP NDA program helps determine the amount of fissile material deposited in process equipment to assist with ensuring that criticality safety limits are satisfied. The program uses a variety of measurement techniques to locate the deposits and quantify the mass of the material. These techniques include direct in situ field measurements using portable detection equipment, as well as more quantifiable fixed geometry measurements on removed components. In addition to proper evaluation of hazards to criticality safety, the FBP NDA program supports successful and effective implementation of the NCSP at PORTS. Unique to the DOE complex, PPPO requires NDA service providers to have an approved Quality System for Non-destructive Assay (QSNDA) characterization in place before the performance of work. The QSNDA provides assurance to PPPO that selected NDA characterization service providers are committed to generating data of known, documented, and legally defensible quality, which meets the requirements of DOE Order 414.1D, *Quality Assurance*, and Nuclear Quality Assurance (NQA)-1 2004, *Quality Assurance Requirements for Nuclear Facility Applications*, with addenda through 2007. Further, the PPPO-approved QSNDA ensures that selected NDA service providers operate a quality system, are technically proficient and able to generate and maintain valid and defensible data to support the implementation of the NCSP. (**Best Practice**)

Criticality Safety Evaluations Conclusions

The reviewed NCSEs complied with NCSP requirements and were technically adequate. The NCSEs were performed and independently reviewed by qualified NCS engineers; appropriate limits on controlled parameters were adequate; and, when appropriate, double contingency was assured to prevent each credible accident sequence leading to an inadvertent criticality. The PPPO-approved QSNDA is a DOE Best Practice.

3.3 Criticality Safety Control Performance Assurance

The objective of this portion of the assessment was to evaluate whether criticality safety controls are effectively implemented, in accordance with the requirements of the ANSI/ANS-8 series for NCS using documented and approved processes.

Due to the remote nature of this assessment, a performance-based, field-level evaluation of criticality safety control implementation was not possible. As such, EA evaluated FBP's management of identified criticality safety control issues and NCSP performance measures.

FBP performs periodic assessments of multiple NCS topics, and in accordance with requirements set forth in FBP-NSE-PRO-00105, *Nuclear Criticality Safety Walk-Through and Review Program*, FBP is required to perform at least one annual "Walk Through" review of all areas with known or potential fissile material operations. In addition, the FBP contractor assurance organization plans and conducts an annual management assessment of the NCSP. EA reviewed the last two annual NCSP assessments, as well as 10 additional NCS management assessments of various areas of program implementation. All assessments were conducted using established criteria and documented lines of inquiry when necessary. All reports appropriately identified observations to be entered into the FBP Issues Tracking System (ITS), using problem reports (PRs), for tracking, resolution, and closure.

Each quarter, FBP tracks the number and type of personnel supporting the NCSP, upcoming and performed NCSP surveillances and assessments, new/revised and recently implemented NCSP documents, and NCSP lessons learned. In addition, FBP tracks and trends the number of NCS anomalous conditions observed in the field (i.e., the number of anomalous condition reports (ACRs) that have been documented) during that quarter. Using this data, FBP appropriately draws conclusions about positive and negative trends that may be occurring with fissile material operations that may impact the effectiveness of the NCSP. This tracking and trending of program performance is captured in a quarterly NCSP Metrics Report. Though no metric goals are formally established for the data that is tracked and trended, this process, established through FBP procedural requirements, is consistent with the expectations of ANSI/ANS Series 8 to frequently review fissile material operations. However, the FBP ITS contains NCS-related PRs that are not associated with ACRs, but the data provided by those PRs is not tracked as part of the formal program performance trending. (See **OFI-FBP-2**.)

The number of ACRs reported is the key indicator used by FBP to evaluate NCSP performance; therefore, it is important that all anomalous conditions are documented in ACRs. All personnel can identify an anomalous condition, but typically, FBP personnel in the field, including fissile material workers and NCS officers, make the observations that generate ACRs. FBP-NSE-PRO-00089, *Response to Nuclear Criticality Safety (NCS) Anomalous Conditions*, clearly states that all personnel who identify any potential NCS violation/non-compliance or suspicion are responsible for submitting a PR, in accordance with FBP-QP-PRO-00020, *Problem Reporting and Issues Management*, prior to reporting an anomalous condition. The FBP-QP-PRO-00020, Section 6.1.5, action directs the originator of a reported problem to complete the FBP PR Form (FBP-QP-PRO-00020, Attachment A); however, the originator's

responsibilities in FBP-QP-PRO-00020, Section 5.1, omit reference to completion of the FBP PR Form, thereby making the directions incomplete.

FBP-NSE-PRO-00089 states that NCS engineers are responsible for completing the *NCS Anomalous Condition Incident Report*; however, no form by that title exists in FBP-NSE-PRO-00089. Multiple sections of FBP-NSE-PRO-00089 assign the NCS engineer the action of completing "Attachment A," and FBP-NSE-PRO-00089, Attachment A, is the *NCS ACR Form*. Therefore, the reference to the *NCS Anomalous Condition Incident Report* should be to the *NCS ACR Form*.

As required by the FBP process, all ACR forms are maintained in the ACR database, and EA's review of a sample of 10 ACR forms showed that an associated PR was entered into ITS. However, some interviewed FBP personnel, who are responsible for implementing aspects of the NCSP, expressed uncertainty regarding the process of how PRs and ACRs are generated following the identification of anomalous conditions. In addition, some personnel expressed a general lack of familiarity with ITS and the issues management process. Because all personnel may identify anomalous conditions, and anomalous conditions are tracked in two databases (i.e., ITS and the ACR database), it is important to the integrity of data used for trending that procedures used for documenting anomalous conditions are clear, consistent, and well understood by all FBP personnel. (See **OFI-FBP-3**.)

Criticality Safety Control Performance Assurance Conclusions

FBP adequately reviews the implementation of NCS controls established by NCSEs, in accordance with the expectations of applicable consensus standards. FBP has established effective processes to track and correct issues affecting NCS control implementation. However, the responsibilities of NCSP personnel in implementing these processes are unclear. In addition, NCSP implementation does not take full advantage of opportunities to formally trend all available data.

3.4 Field Element Oversight

The objective of this portion of the assessment was to assess the effectiveness of PPPO oversight of the NCSP, including technical capability, knowledge of site and contractor activities, and ability to categorize and communicate issues to the contractor to ensure that problems are evaluated and corrected in a timely manner.

EA reviewed documentation of PPPO assessments and surveillance plans, a sampling of assessment reports, and the responsive FBP corrective action plans to resolve findings and observations from these oversight activities. EA also interviewed PPPO personnel concerning how the oversight staff follows up on issues through final resolution. The evaluation of this information demonstrated that PPPO oversight of the NCSP is critical and appropriately identifies significant issues for FBP resolution. For example, the 2020 PPPO assessment of the NCSP identified and documented some examples of failure to meet requirements, such as:

- FBP-NSE-PDD-00001, Rev. 6, did not incorporate all applicable requirements specified in DOE Order 420.1C, Chg. 1.
- NCSE-0333_033, *X-333 Bundle and Cooler Storage*, Rev. 4, did not meet all requirements of ANSI/ANS-8.19-2014, *Administrative Practices for Nuclear Criticality Safety*; American National Standard, Section 7; and DOE-STD-3007-2007.
- Several NCS reports, which are documents that supplement NCSEs and contain relevant analyses or calculations, set limits but did not include a process analysis that defines normal and credible abnormal conditions, contrary to requirements specified in ANSI/ANS-8.19-2014.

PPPO continues to appropriately follow up on FBP's actions to correct these conditions that are captured in FBP's corrective action plan.

In general, PPPO field element personnel maintain operational awareness and conduct routine discussions with FBP NCSP management on at least a weekly basis. However, a staff resource shortage, particularly the in the number of Facility Representatives (FRs) who provide field-level oversight to facilities and projects, is a vulnerability. According to the most recent PPPO staffing analysis, the actual full-time equivalents (FTE) onboard to perform the required oversight functions is 3.51 FTE; however, the analysis indicates that 14.20 FTE are needed for facility coverage. There are currently only two qualified FRs covering PORTS. PPPO is taking credit for oversight functions performed by other staff serving as subject matter experts in other key areas. For example, a certified safety professional, a radiological protection expert, a uranium management specialist, and quality specialists, among others, join with an NCS specialist, safety systems oversight engineers, and the nuclear safety systems lead to augment the FR coverage and provide additional oversight to reach the 3.51 FTE reported as actual coverage. This staffing level still represents a shortfall of 10.70 FTE from what is needed.

At the current level of staffing, PPPO is limited in its ability to sample FBP NCSP performance in the field and is also limited in its ability to observe and/or participate in FBP NCSP-impacting activities (e.g., Corrective Action Review Board meetings, Plant Operations Review Committee meetings). In addition, a staffing shortfall presents an obstacle to developing sound knowledge transfer processes, which serve to prepare the oversight organization for workforce attrition and other impacts. (See **OFI-PPPO-1**.)

Field Element Oversight Conclusions

PPPO oversees FBP's NCSP with effective processes for assessing FBP's NCSD performance, including monitoring the scope and implementation of contractor activities, management programs, and assurance systems. However, the current staffing shortfall significantly limits the ability of PPPO to plan for future changes to the nuclear criticality safety oversight workload and presents an obstacle to developing sound knowledge transfer processes.

4.0 BEST PRACTICES

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

- PPPO requires NDA service providers to have an approved QSNDA characterization in place before the performance of work, which requires the service provider to operate a quality system, be technically proficient, and be able to generate and maintain valid and defensible data to support the implementation of the NCS.

5.0 FINDINGS

There were no findings identified as part of this assessment.

6.0 DEFICIENCIES

There were no deficiencies identified as part of this assessment.

7.0 OPPORTUNITIES FOR IMPROVEMENT

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

Fluor-BWXT Portsmouth, LLC

OFI-FBP-1: Consider establishing a formal, electronic process in procedures FBP-NSE-PRO-00059 and FBP-NSE-PRO-00149 to capture and archive NCSE and NCSD comments to enable their availability for reference during future revisions.

OFI-FBP-2: Consider expanding the NCSP performance data used for formal trending to include NCS issues documented in the ITS that are not associated with ACRs.

OFI-FBP-3: Consider evaluating NCSP personnel knowledge and understanding of the problem reporting and anomalous condition reporting processes, as well as their level of familiarity with the FBP ITS, and consider reviewing and revising procedures FBP-NSE-PRO-00089 and FBP-QP-PRO-00020 to improve clarity and consistency.

Portsmouth/Paducah Project Office

OFI-PPPO-1: Consider formally evaluating the causes and risks associated with the current staffing shortfall and developing strategies to increase staff resources and mitigate the potential impact on current operations and future oversight planning.

8.0 ITEMS FOR FOLLOW-UP

Due to the constraints of a remotely conducted assessment, EA was unable to evaluate the field-level implementation of criticality safety controls. Therefore, a site visit is planned within the next fiscal year to walk down PORTS facilities, observe implementation of criticality safety controls in the field, and observe the conduct of criticality safety control system surveillances.

Appendix A
Supplemental Information

Dates of Assessment

Remote Assessment: May 31 – June 22, 2021

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