Independent Assessment of Software Quality Assurance Program Implementation at the Nevada National Security Sites

November 2023

Office of Enterprise Assessments
U.S. Department of Energy

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Acronyms

CFR	Code of Federal Regulations
CRAD	Criteria and Review Approach Document
DOE	U.S. Department of Energy
EA	Office of Enterprise Assessments
LTO	Less Than Other
MSTS	Mission Support and Test Services, LLC
NFO	Nevada Field Office
NNSS	Nevada National Security Sites
NQA	Nuclear Quality Assurance
QA	Quality Assurance
QAP	Quality Assurance Program
SQA	Software Quality Assurance

INDEPENDENT ASSESSMENT OF SOFTWARE QUALITY ASSURANCE PROGRAM IMPLEMENTATION AT THE NEVADA NATIONAL SECURITY SITES

Executive Summary

The U.S. Department of Energy (DOE) Office of Enterprise Assessments (EA) conducted an independent assessment of software quality assurance (SQA) program implementation at the Nevada National Security Sites (NNSS) from June to July 2023. The purpose of this assessment was to evaluate the performance of the Mission Support and Test Services, LLC (MSTS) SQA program. This assessment also evaluated the effectiveness of the National Nuclear Security Administration Nevada Field Office (NFO) in providing oversight of the SQA program.

EA identified the following strengths:

- MSTS self-identified inadequate management of design software used for safety and non-safety activities.
- Reviews performed by the MSTS cyber team that examine procurement process outcomes are used to inform the SQA process when making software purchases.
- MSTS performs both internal and external penetration testing of systems to help ensure adequate mitigation of unauthorized software access.
- NFO recognized that a different Federal oversight organization needed to review part of the MSTS quality assurance program, and then appropriately referred that section to the proper organization for review.
- NFO employs an SQA subject matter expert who maintains the DOE-STD-1172, *Safety Software Quality Assurance Functional Area Qualification Standard,* qualification and who has completed *NQA-1 Lead Auditor Certification Training* and the *ASME NQA-1 Applied to Software for DOE Federal Staff* course.

EA also identified several weaknesses, including two findings, as summarized below:

- The MSTS quality assurance program and SQA implementing documents do not adequately establish requirements and processes for identifying and controlling all software. (Finding)
- MSTS has not adequately implemented the SQA program for all software. (Finding)
- MSTS has not established adequate SQA training for all roles and responsibilities.
- MSTS does not document all SQA-related recommendations from management assessments and surveillances as “opportunities for improvement.”
- The MSTS safety software inventory does not identify the specific nuclear facility where each safety software application is used.
- MSTS does not adequately maintain the information included in the safety and non-safety software inventory.
- MSTS does not adequately apply or document the grading process for all non-safety software.
- MSTS has not established and implemented procedures to detect and prevent software quality problems.
- NFO’s oversight of the MSTS SQA program did not identify significant programmatic and implementation weaknesses.

MSTS has made a conscientious effort to tailor their SQA program to the specific needs of NNSS operations, and with NFO, makes a deliberate effort to provide oversight of that program. While the identified inadequacies in their program performance largely affect software that is applied to operations of lower risk significance (e.g., non-safety software), overall, the MSTS SQA program does not adequately incorporate the requirements of DOE Order 414.1D, *Quality Assurance*. In addition, the program's implementation does not adequately ensure that all software is managed in a way that maintains software quality. Further, oversight provided by NFO did not identify significant SQA program weaknesses. Addressing the weaknesses identified in this report will strengthen the performance of the MSTS SQA program and provide reasonable assurance of initial and maintained software quality at the Nevada Nuclear Security Sites.

INDEPENDENT ASSESSMENT OF
SOFTWARE QUALITY ASSURANCE PROGRAM IMPLEMENTATION
AT THE NEVADA NATIONAL SECURITY SITES

1.0 INTRODUCTION

The U.S. Department of Energy (DOE) Office of Nuclear Engineering and Safety Basis Assessments, within the independent Office of Enterprise Assessments (EA), conducted an assessment of software quality assurance (SQA) program implementation at the Nevada National Security Sites (NNSS) from June to July 2023. The purpose of this assessment was to evaluate the SQA program implemented by the management and operating contractor, Mission Support and Test Services, LLC (MSTS). This assessment also evaluated the effectiveness of the National Nuclear Security Administration Nevada Field Office (NFO) in providing oversight of the SQA program.

This assessment was performed consistent with *EA Plan for Phase 2 of the Enterprise-wide Independent Assessment of Software Quality Assurance Process Implementation, January 2023*, which describes the second phase of a two-phase, enterprise-wide, targeted assessment of SQA processes. The first phase of this targeted assessment process examined and analyzed the design of SQA programs implemented throughout the DOE enterprise, helping to identify general, complex-wide strengths and weakness. The first phase also helped inform the development of an EA plan for conducting assessments of SQA program implementation. Accordingly, the second phase of the assessment evaluated SQA program implementation by examining MSTS SQA processes. The assessment evaluated a sample of both safety and non-safety software, software that has been assigned varying grading levels, and software that is implemented for a variety of functions (e.g., nuclear and radiological safety analyses, administrative activities).

2.0 METHODOLOGY

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

As identified in the assessment plan, this assessment considered requirements related to software, as presented in 10 CFR 830, subpart A, *Quality Assurance Requirements*, and DOE Order 414.1D, *Quality Assurance*, and applicable consensus standards, including American Society of Mechanical Engineers Nuclear Quality Assurance (NQA)-1, *Quality Assurance Requirements for Nuclear Facility Applications.* EA used EA CRAD 30-10, Revision 0, *Software Quality Assurance*, to guide this assessment.

EA examined key documents, such as program plans and descriptions, implementing procedures, software lifecycle management documentation, assessment reports, corrective action plans, and training and qualification records. EA also interviewed key personnel responsible for developing and executing the associated programs and observed meetings and activities that support SQA program implementation. The members of the assessment team, the Quality Review Board, and the management responsible for this assessment are listed in appendix A.

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

3.0 RESULTS

3.1 Quality Assurance Program

This portion of the assessment evaluated the MSTS quality assurance program (QAP) for safety and non-safety software.

Safety Software

MSTS has established a generally adequate NNSS QAP for safety software, as described in the DOE-approved program description document PD-0001.002, *Quality Assurance Program*. The QAP adequately describes the implementation of NQA-1-2015, *Quality Assurance Requirements for Nuclear Facility Applications*, and, with exceptions noted below, meets quality requirements in accordance with 10 CFR 830, *Nuclear Safety Management*, subpart A, *Quality Assurance Requirements*, and DOE Order 414.1D, attachment 2, *Quality Assurance Criteria*, and attachment 4, *Safety Software Quality Assurance Requirements for Nuclear Facilities*. MSTS has established and implemented an adequate two-tier software grading process that includes safety software and other software (i.e., non-safety software). In general, the QAP adequately addresses the use of software included on the DOE Safety Software Central Registry (hereinafter called the Central Registry), appropriately requiring that users are sufficiently qualified to use the code, input parameters are valid, software is registered, and required user verifications have been completed.

In general, MSTS adequately manages and maintains SQA implementing documents using the Opentext Electronic Content Management/Records Management System (iCON) applications and workflows that are accessible throughout the organization. With exceptions noted below, SQA requirements are adequately flowed down from the QAP into key implementing documents. MSTS demonstrated SQA oversight over the past 24 months through one management assessment and four surveillances; one surveillance appropriately identified inadequate management of design software, and three findings were noted and entered into the issues management system. During the current assessment, EA discovered that an MSTS procedure instruction directed users to an incorrect reference. MSTS responded appropriately by entering a “document management suggestion” into the document management system.

Although MSTS adequately manages certain aspects of the QAP for safety software, contrary to DOE Order 414.1D, attachment 1, section 1.b, and attachments 2 and 4, the MSTS QAP and implementing SQA procedures do not ensure adequate identification and control of all safety software. (See **Finding F-MSTS-1**.) Specifically, EA identified the following weaknesses:

- Contrary to the QAP, section 23.3.9.3, which addresses DOE Order 414.1D, attachment 4, section 2.a.(2), the MSTS safety software inventory does not ensure identification of the specific nuclear facility where each safety software application is used. Without identifying the nuclear facility where a software application is used, risks associated with software upgrades may not be fully evaluated and extent-of-condition reviews for error notifications cannot be ensured.
- Contrary to DOE Order 414.1D, attachment 2, section 4.a, and attachment 4, section 2.a.(2), MSTS does not adequately maintain the information included in the safety software inventory. Without accurate information, the inventory is unreliable, can be misleading, and is of limited use. Software listed on the inventory is identified as “Is Existing,” “To Be Purchased,” or “To Be Developed.” EA requested documentation for software identified as “Is Existing;” however, this documentation was unavailable for some software because the software had not been purchased as planned or was retired. Also, several of the listed responsible software owners are no longer with MSTS.

- Contrary to DOE Order 414.1D, attachment 4, section 2.a.(4)(b), the MSTS SQA program does not require re-evaluation of software when its grading level is increased. Without completing a re-evaluation process after changing grading levels, the software documentation may not be adequately updated or maintained to reflect the change in risk or necessary controls.
- Contrary to DOE Order 414.1D, attachment 2, section 4.a, and attachment 4, sections 2.a.(1) and 2.a.(4)(j), CD-1007.000, *Software Quality Assurance*, does not implement some of the SQA requirements from the QAP. Omitting requirements from the implementing SQA processes reduces program effectiveness and increases the probability of errors. EA identified the following examples of missing requirements:
    - CD-1007.000 does not flow down Facility Design Authority (FDA) SQA responsibilities from PD-0001.002, section 23.3.9. Although the Responsible Software Technical Authority (RSTA) may be the same individual as the FDA for some safety software, when that is not the case, the RSTA must ensure appropriate FDA involvement in SQA activities.
    - CD-1007.000 does not flow down the requirements of PD-0001.002, section 23.3.9.2 and appendix M for training personnel in the design, development, use, and evaluation of safety software.

Additionally, contrary to DOE Order 414.1D, attachment 2, sections 2.a and 2.b, MSTS has not established adequate initial and continuing training for all safety software roles and responsibilities. (See **Deficiency D-MSTS-1**.) Inadequate training inhibits personnel from becoming proficient in the skills needed to implement requirements. Specifically, EA identified the following weaknesses:

- Contrary to DOE Order 414.1D, attachment 2, section 2, the MSTS SQA program training is outdated, does not include requirements for continuous training, and does not address the SQA roles of tester or auditor. Continuous training requirements help to ensure that SQA personnel maintain proficiency. If training content is not updated when source documents are revised, work may not be completed according to the latest requirements and processes. The SQA web-based training course, 1BSQAW01, *Software Quality Assurance (SQA) Briefing (WBT)*, which was last revised in July 2020, incorrectly references superseded document CCD-QAS1.001, *Software Quality Assurance*, instead of CD-1007.000.
- Contrary to DOE Order 414.1D, attachment 2, section 2, PD-0001.002, section 23.3.9.1 does not require Central Registry software users to be trained on the need to understand the documented gaps and limitations of the posted Central Registry software. Required user verifications include determining the suitability of the Central Registry software for the intended use by MSTS.

Non-safety Software

MSTS has established a generally adequate NNSS QAP for non-safety software, as described in DOE-approved PD-0001.002. The QAP adequately describes implementation of NQA-1-2015, and with exceptions noted below meets the quality requirements in accordance with 10 CFR 830, subpart A, and DOE Order 414.1D, attachment 2. As previously stated, MSTS has established and implemented a generally adequate two-tier software grading process that includes safety software and other software. Other software is further categorized as safety affecting software, critical software, general software, and less than other (LTO) software.

Further, as was discussed with respect to safety software, MSTS adequately manages and maintains SQA implementing documents using the iCON applications and workflows that are accessible throughout the organization. With the noted exceptions, SQA requirements are adequately flowed down from the QAP into key implementing documents. MSTS SQA oversight over the past 24 months included one management assessment and four surveillances. One of these surveillances appropriately identified inadequate management of design software, and the three findings were entered into the issues management system.

While MSTS adequately manages certain aspects of the QAP for non-safety software, contrary to DOE Order 414.1D, attachments 1 and 2, and PD-0001.002, the MSTS QAP and SQA implementing documents do not adequately establish requirements and processes for identification and control of all non-safety software. (See **Finding F-MSTS-1**.) Specifically, EA identified the following weaknesses:

- Contrary to DOE Order 414.1D, attachment 2, section 4.a, MSTS does not adequately maintain the information included in the non-safety software inventory. Without accurate information, the non-safety software inventory is unreliable, can be misleading, and is of limited use. Software listed on the inventory is identified as "Is Existing," "To Be Purchased," or "To Be Developed." EA requested documentation for non-safety software identified as "Is Existing;" however, this documentation was unavailable for some software because the software had not been purchased as planned or was retired. Also, several of the listed responsible software owners are no longer with MSTS.
- Contrary to DOE Order 414.1D, attachment 2, section 4.a, and PD-0001.002, appendix M, CD-1007.000, table 2, identifies all SQA activities for LTO software as "Not applicable" even though many are marked as "Optional" in PD-0001.002. Not identifying the applicable SQA work activities for LTO software as "Optional" inhibits the ability to select them when appropriate.
- Contrary to DOE Order 414.1D, attachment 1, section 1.b, MSTS does not require responsible software owners to complete form FRM-2902, *Software Grade Determination*, to record software grading decisions for LTO software. Not documenting LTO software grading decisions prevents review and oversight, precluding reversal of any grading errors and thereby potentially resulting in omission of software from the software inventory as well as reduced awareness of the software's existence.
- Contrary to DOE Order 414.1D, attachment 1, section 1.b, MSTS has not implemented the SQA program for security software obtained from other NFO contractors, and most security-related software is not included in the MSTS non-safety software inventory. Omitting security software from the SQA program does not ensure inclusion of the software on the software inventory through the grading process and does not ensure that controls are established commensurate with the risks associated with the software.
- Contrary to DOE Order 414.1D, attachment 2, section 4.a, MSTS procedure CD-1007.000 states that LTO software is exempt from the SQA program requirements without mentioning other applicable quality requirements. Neglecting to mention other quality requirements may lead readers to assume that LTO software is exempt from all quality assurance (QA) requirements, potentially resulting in noncompliance with the general QA program.

Additionally, contrary to DOE Order 414.1D, attachment 2, sections 2.a and 2.b, MSTS has not established adequate initial and continuing training for all non-safety software roles and responsibilities, as was also observed for safety software. (See **Deficiency D-MSTS-1**.) Inadequate training inhibits the ability of personnel to establish and maintain proficiency in implementing requirements.

MSTS performs oversight assessment activities to periodically evaluate its SQA program; however, EA observed that identified issues were not always managed appropriately. Contrary to DOE Order 414.1D, attachment 2, section 3.d, MSTS did not document SQA-related recommendations from a management assessment and a surveillance as "opportunities for improvement." (See **Deficiency D-MSTS-2**.) Not documenting recommendations as opportunities for improvement restricts their evaluation and potential improvements in SQA performance. While three recommendations were identified as "additional discussion and supplementary information," the assessment of the Nuclear Material Management's manual data entry process resulted in no findings or opportunities for improvement. The identified recommendations were regarding lack of training for staff, draft status of the desktop instruction, and potential development of an auto-feed capability to increase efficiency. Additionally, while one surveillance yielded a recommendation, as shown in the associated report, three of the non-safety surveillances had no issues identified. The identified recommendation was to evaluate the software associated with the notifier fire alarm control panel installations at the U1a Complex to verify compliance with CD-1007.000 requirements.

Quality Assurance Program Conclusions

MSTS has established a generally adequate NNSS QAP for safety and non-safety software. However, while the MSTS SQA program establishes requirements and implementation processes, it does not ensure adequate software quality for all safety and non-safety software. Several areas of weakness prevent the MSTS SQA program implemented at NNSS from being fully compliant with NQA-1-2015, 10 CFR 830, and DOE Order 414.1D. These areas of weakness include the flow down of requirements, omission of security software and LTO software from the SQA program, software inventory management, SQA initial and continuing training, and issues management of recommendations.

3.2 Software Quality Assurance Program Implementation

This portion of the assessment evaluated MSTS implementation of, and adherence to, SQA program procedures for safety software and non-safety software.

EA reviewed SQA program implementation for the following four safety software applications as identified in the MSTS inventory list:

- Monte Carlo N-Particle (MCNP) Transport Version v6.2
- MathCAD Prime v6.0
- SCALE v6.2.3
- STAAD V20.04.00.40.

In addition, EA reviewed SQA program implementation for the following 13 non-safety software applications as identified in the MSTS inventory list:

- Upload PSDR
- LWIS Core
- Microsoft Windows
- Microsoft 365 (including Microsoft Excel)
- Opentext Electronic Content Management/Records Management System
- RadPro
- Retention Curve Software
- S&C IntelliTeam SG Automation System Installer
- Sentinel Access Control and Radiation Protection Software
- Photodiode Calibration
- WebSphere Base
- Vacuum Decay Pressure Decay Suitcase Test System Software
- Maximo.

Reviewed safety and non-safety software applications demonstrated that, contrary to DOE Order 414.1D, attachments 2 and 4 (when applicable), and CD-1007.000, MSTS personnel did not adequately adhere to and implement SQA requirements in the development and use of these 4 safety and 13 non-safety software applications. (See **Finding F-MSTS-2**.) Not following the established SQA program precludes the implementation of risk-informed software controls. Specifically, EA identified the following weaknesses:

- The MSTS safety software inventory does not identify graded software that was not acquired or graded software that is no longer in use.
- MSTS does not adequately document the process used for assigning grading levels to all safety software. (DOE Order 414.1D, att. 4, sec. 2.a.(3))
- By not documenting procurement procedures, MSTS does not adequately ensure that approved software suppliers always provide acceptable items and services. (DOE Order 414.1D, att. 2, sec. 7.c)
- Requirements specifications do not adequately address software function or performance methodology, which explain what the software accomplishes and how it is accomplished. (DOE Order 414.1D, att. 2, sec. 4.a)
- MSTS software management plans did not identify an approved process or the associated responsibilities for planning, scheduling, and providing resources for managing software. (DOE Order 414.1D, att. 2, sec. 1.a)
- MSTS does not sufficiently document the overall software architecture and workflow based on a process model for all software that is consistent with an approved consensus standard. (DOE Order 414.1D, att. 2, sec. 6)
- MSTS did not provide adequate configuration documentation for all observed software installations. (DOE Order 414.1D, att. 2, secs. 5.a and 5.b)
- MSTS did not provide testing documentation for the testing, peer review, and audits during each stage of the software development workflow. (DOE Order 414.1D, att. 2, secs. 8.a and 10.a)
- MSTS did not provide adequate user training documentation for the design, development, use, and evaluation of safety software and, therefore, did not demonstrate appropriate training aligned with user roles. (DOE Order 414.1D, att. 2, sec. 2)
- MSTS does not document or implement adequate access control measures to prevent unauthorized access to digital assets or to protect software from damage, loss, or deterioration. (DOE Order 414.1D, att. 2, sec. 5.c)
- MSTS does not always document the risk analyses performed for software applications to demonstrate effective mitigation of potential loss of data or functionality. (DOE Order 414.1D, att. 2, sec. 5.c)

Software Quality Assurance Program Implementation Conclusions

MSTS does not adequately adhere to software quality procedures established in accordance with the DOE-approved SQA program and is generally ineffective in managing the reviewed safety and non-safety software applications.

3.3 Software Security

This portion of the assessment evaluated the MSTS processes used to ensure the security of safety and non-safety software.

MSTS has established and implemented effective security controls for safety and non-safety software. CD-5500.003, *Information Technology Assessment and Authorization Process*, and CD-5500.004, *Cyber Security Program*, provide a cybersecurity process for review and approval of software security controls. The adequacy of this program as it applies to the implementation of processes to address all cybersecurity requirements was not in the scope of this assessment. This process addresses such key elements as procurement, scanning for web-based and internal vulnerabilities to software, internal and external penetration testing, access controls, and internal review. Additionally, CD-1007.000 includes requirements for software owners to request cyber reviews. CD-5500.004 shows that approval by the cyber team is required before each software purchase. In addition, development, testing, and production systems are appropriately scanned weekly for web-based and internal vulnerabilities. MSTS also performs both internal and external penetration testing of systems to help ensure adequate mitigation of unauthorized software access. Documentation reviewed for 17 software applications addressed access controls, in accordance with CD-5500.003, section 4.3. Additionally, an internal review, CR515544 RWMC-CR-2019-002, *Upload PSDR [Package, Shipment and Disposal Request] Software Change*, provides a comprehensive analysis, review, and final approval of the Upload PSDR non-safety software application, addressing software security as required by CD-5500.003.

Software Security Conclusions

MSTS ensures the security of safety and non-safety software managed under its SQA program by implementing comprehensive procedures that flow down applicable security requirements.

3.4 Federal Oversight

This portion of the assessment evaluated NFO oversight of the MSTS SQA program.

NFO reviews and approves the MSTS QAP. During a review of the most recent revision, NFO appropriately identified that a different NNSA oversight office (i.e., NA-ESH-11, Packaging and Transportation Division) was required to review a specific section of the MSTS QAP, and subsequently referred that section to the proper organization for review.

NFO employs a QA/SQA subject matter expert who maintains the DOE-STD-1172, *Safety Software Quality Assurance Functional Area Qualification Standard*, qualification and who has completed *NQA-1 Lead Auditor Certification Training* and the course *ASME NQA-1 Applied to Software for DOE Federal Staff*. In 2021, the subject matter expert led an NFO QAP self-assessment, which resulted in findings related to inadequate oversight of MSTS with respect to certain functional areas, including SQA, and performing work using unapproved work documents. NFO also self-identified that a gap has existed since 2019 in documented QA oversight of MSTS. Corrective actions revised NFO quality and oversight program documents and established a three-year MSTS QA oversight cycle to address the DOE Order 414.1D quality criteria requirements in attachment 2, the suspect/counterfeit items requirements in attachment 3, and the safety software requirements in attachment 4. NFO recently completed the second year of a three-year cycle of QA program oversight of MSTS but has not reviewed the MSTS safety SQA program using the improved NFO oversight program processes.

During an operational awareness activity of CD-1007.000, which was performed after the self-assessment, NFO identified that MSTS was inappropriately exempting firmware and measuring and test equipment from some SQA requirements, and appropriately tracked the MSTS corrective actions through completion. However, contrary to DOE Order 414.1D, attachment 2, section 10.a, NFO independent oversight of the MSTS SQA program did not identify the significant weaknesses that were documented in this report. (See **Deficiency D-NFO-1**.) Insufficient NFO oversight hinders discovery of needed improvements to the MSTS SQA program and their implementation.

Federal Oversight Conclusions

The 2021 NFO self-assessment of its QAP identified inadequacies in SQA oversight, among other functional areas, and improvements have been made to NFO quality and oversight program documents. Oversight of the full MSTS SQA program has not been performed using the improved processes. Although recent NFO oversight has identified findings to improve the MSTS SQA program, NFO did not identify the significant weaknesses that are documented in this report.

4.0 BEST PRACTICES

No best practices were identified during this assessment.

5.0 FINDINGS

Findings are deficiencies that warrant a high level of attention from management. If left uncorrected, findings could adversely affect the DOE mission, the environment, the safety or health of workers and the public, or national security. DOE line management and/or contractor organizations must develop and implement corrective action plans for findings. Cognizant DOE managers must use site- and program-specific issues management processes and systems developed in accordance with DOE Order 226.1, *Implementation of Department of Energy Oversight Policy*, to manage the corrective actions and track them to completion.

Mission Support and Test Services, LLC

Finding F-MSTS-1: The MSTS QAP and SQA implementing documents do not adequately establish requirements and processes for identifying and controlling all software. (DOE Order 414.1D, Chg 2 (LtdChg), att. 1, sec. 1.b; att. 2, sec. 4.a; and att. 4, secs. 2.a.(1), 2.a.(2), 2.a.(4)(b), and 2.a.(4)(j); and PD-0001.002, sec. 23.3.9.3 and app. M)

Finding F-MSTS-2: MSTS does not adequately implement SQA requirements for all software. (DOE Order 414.1D, Chg 2 (LtdChg), att. 2, secs. 1.a, 2, 4.a, 5.a, 5.b, 5.c, 6, 7.c, 8.a, and 10.a, and att. 4, sec. 2.a.(3); and CD-1007.000)

6.0 DEFICIENCIES

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

Mission Support and Test Services, LLC

Deficiency D-MSTS-1: MSTS has not established adequate SQA training for all roles and responsibilities. (DOE Order 414.1D, Chg 2 (LtdChg), att. 2, secs. 2.a and 2.b)

Deficiency D-MSTS-2: MSTS does not document all SQA-related recommendations from management assessments and surveillances as "opportunities for improvement," contrary to requirements. (DOE Order 414.1D, Chg 2 (LtdChg), att. 2, sec. 3.d)

Nevada Field Office

Deficiency D-NFO-1: NFO oversight of the MSTS SQA program did not identify significant programmatic and implementation weaknesses. (DOE Order 414.1D, Chg 2 (LtdChg), att. 2, sec. 10.a)

7.0 OPPORTUNITIES FOR IMPROVEMENT

No opportunities for improvement were identified during this assessment.

Appendix A
Supplemental Information

Dates of Assessment

Offsite Assessment: June – July 2023

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