



Maintenance Implementation Plan

Advanced Mixed Waste Treatment Project

(Signature on file. See DCR-5415.)

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Pending DOE-ID Approval

Date

Next Periodic Review: TBD

<p style="text-align: center;">Advanced Mixed Waste Treatment Facility</p> <p style="text-align: center;">Maintenance Implementation Plan</p>

1.0 INTRODUCTION

This document is the Maintenance Implementation Plan required by DOE Order 433.1A, Maintenance Management Program for DOE Nuclear Facilities. This plan describes how maintenance management systems and processes used at the Advanced Mixed Waste Treatment Project (AMWTP) implement the requirements of DOE O 433.1A.

2.0 APPROACH AND RESPONSIBILITIES

2.1 Approach

AMWTP uses various types of documents and procedures, including management procedures, instructions, program descriptions, and plans, to incorporate regulatory and contractual requirements into the operation of the project.

- Management procedures (MPs) are upper-tier documents that address, from a global perspective, how an activity or process will be approached. MPs usually describe a process with specific steps to be performed at the office or administrative level.
- Written work instructions (INSTs) provide the detail of how a process or activity will be performed at AMWTP. INSTs must comply with DOE O 5480.19, Chapter 16.
- Program descriptions (PDs) are purely informative and descriptive in nature. There are no action steps (commands) in PDs.
- Plans (PLNs) are documents that describe future plans for the project.

The maintenance program at AMWTP is described in MP-CMNT-10.1, Maintenance Management, and is fully integrated with all applicable DOE orders, guides, and manuals, and with the Code of Federal Regulations, as required by Section 1 of the Contractor Requirements Document (CRD) (Attachment 1 to DOE O 433.1A).

Section 3.0 of this plan provides an overview of how AMWTP implements all elements of a maintenance management program as specified in Section 2 of the CRD. Section 5.0 of this plan identifies the documents used at AMWTP to support these elements.

AMWTP does not claim any deviations from or exceptions to the required elements of a maintenance management program as allowed by Sections 3 and 4 of the CRD.

This plan will be reviewed every two years and submitted to DOE for approval as required by Section 5 of the CRD.

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2.2 Responsibilities

The AMWTP Vice President of Operations approves the policies governing work on the project and is responsible for the operation and maintenance of project assets. The Vice President of Operations assigns the responsibility for the maintenance program to the Plant Services Manager. Specific responsibilities for the maintenance program are provided in applicable MPs and INSTs as identified in Section 5.0.

3.0 IMPLEMENTATION PLAN ELEMENT SUMMARY

AMWTP has developed this Maintenance Implementation Plan, which incorporates all requirements of the CRD. The following sections of this MIP summarize the requirements of the CRD as listed.

- Section 3.1 summarizes the requirements of Section 2.a.
- Section 3.2 summarizes the requirements of Sections 2.b(1) and 2.b(2).
- Section 3.3 summarizes the requirements of Section 2.b(3).

Section 5.0 of this document provides a detailed list of documents that implement requirements of the CRD.

3.1 CRD Section 2.a

- 3.1.1 The administrative control of maintenance is achieved through the MAXIMO Computerized Maintenance Management System (CMMS). MAXIMO contains a Master Equipment List (MEL) that provides the backbone for identification of all work orders, preventive maintenance, equipment inventories, hoisting and rigging lists, etc. The MEL is discussed in more detail in INST-CMNT-10.19, Maintenance Management.
- 3.1.2 AMWTP facilities and equipment are maintained in a safe and productive condition through a program of scheduled inspections and proactive maintenance. A suite of procedures (MP-CMNT-10.7, Estates and Logistics; INST-CMNT-10.7.1, Seasonal Facility Maintenance; and INST-CMNT-10.7.2, Building Inspections) describes many facility activities undertaken over the course of a year. System Engineers, as described in PLN-CD&M-001, System Engineer Program, are responsible to maintain configuration control of their equipment and also to ensure neither degradation nor obsolescence will threaten performance or safety.

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- 3.1.3 The CMMS, as discussed in INST-CMNT-10.19, Maintenance Management, is used to control maintenance at AMWTP. INST-CMNT-10.19 and drawing PSK-55-10001 describe the work flow process and post-maintenance testing. Material procurement and handling is described in the procurement suite of procedures MP-PCMT-15.1 through -15.23. Control and calibration of measuring and test equipment (M&TE) is described in MP-CMNT-10.5, Calibration of Measuring and Test Equipment Program.
- 3.1.4 The roles and responsibilities of maintenance personnel at AMWTP are described in MP-CMNT-10.1, Maintenance Management.
- 3.1.5 The interfaces between maintenance and other organizations at AMWTP are described in MP-COPS-9.2, Operations Organization Administration; MP-CMNT-10.1, Maintenance Management; and MP-M&IA-17.1, Management Assessments.
- 3.1.6 PD-ISM-01, Integrated Safety Management System (ISMS) Program Description, describes how ISMS is integrated throughout AMWTP. Real property asset management, as required by DOE O 430.1B, Real Property Asset Management, is described in MP-CMNT-10.7, Estates and Logistics. To ensure maintenance work does not affect the authorization bases, the work control suite of procedures (PD-COPS-9.18, Work Control; INST-COPS-9.18.1, Approved Method of Work; INST-COPS-9.18.2, Permit to Work; and INST-COPS-9.18.4, Hazard Assessments) interfaces with MP-NSPC-3.2, Unreviewed Safety Question (USQ) Process, and with MP-CD&M-11.1, Change Control. MP-CMNT-10.1, Maintenance Management, describes the interface with Quality Assurance requirements.
- 3.1.7 Configuration management at AMWTP is described in MP-CD&M-11.1, Change Control, and MP-CMNT-10.1, Maintenance Management.
- 3.1.8 Prioritization of work at AMWTP, as described in MP-CMNT-10.19, Computerized Maintenance Management System, is established at the Plan of the Day and Plan of the Week meetings. These meetings are attended by the project management team and the priorities are set.
- 3.1.9 Feedback and improvement are accomplished as part of the work flow process described in MP-CMNT-10.1, Maintenance Management, and MP-CMNT-10.19, Computerized Maintenance Management System.
- 3.1.10 PLN-CD&M-001, System Engineer Program, describes the responsibilities and requirements of System Engineers and Cognizant System Engineers. Responsibilities of System Engineers in relation to the work flow and maintenance processes are described in MP-CMNT-10.1, Maintenance Management.

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3.1.11 The maintenance history is maintained on the CMMS, and reports are generated as needed on specific systems as described in MP-CMNT-10.19, Computerized Maintenance Management System. The information collected is available to trend equipment behavior and failure. Various programs are in place for analysis and trending of equipment performance at AMWTP. The two most common are oil analysis, which is performed regularly and trended for the hydraulic systems, and thermography, which is used on electrical and mechanical systems.

3.2 CRD Section 2.b.(1) and 2.b.(2)

3.2.1 The feedback and improvement information collected as part of the work flow process described in MP-CMNT-10.19, Computerized Maintenance Management System, is available to establish metrics to measure performance and identify maintenance issues requiring corrective action and lessons learned. All aspects of work order status can be tracked to provide meaningful metrics for maintenance management. For example, how long work orders take to get through each of the status flags (as designated on Drawing PSK-555-10001) can help identify bottlenecks in the work flow process.

3.2.2 When appropriate, System Engineers incorporate voluntary consensus standards into work orders and maintenance instructions as described in MP-CMNT-10.19, Computerized Maintenance Management System; INST-CMNT-10.1.4, Maintenance Instructions; INST-CMNT-10.1.5, Job Plans; and INST-CMNT-10.1.6, Method Statement.

3.3 CRD Section 2.b.(3)

3.3.1 The maintenance organization and administration is described in MP-CMNT-10.1, Maintenance Management. MP-M&IA-17.1, Management Assessments, describes how maintenance activities are assessed by AMWTP personnel. Maintenance is performed within the Plant Services group. The organizational structure can be found on the AMWTP internal web site on the Human Resources home page. The objective of the group is to provide a high level of performance in facility maintenance through safe, responsive, and compliant support in all aspects of maintenance and repair. The Plant Services Manager reports directly to the Vice President of Operations. The Maintenance Manager, System Engineering Manager, and Subcontracts/Landlord Manager all report directly to the Plant Services Manager.

3.3.2 Training and qualification of maintenance personnel are documented in each maintenance technician's training record as described in MP-RTQP-14.1, Preparation and Administration of Individual Training Plans; MP-RTQP-14.4, Personnel Qualification and Certification; and MP-RTQP-14.20, Training Implementation Matrix. Each technician is qualified to a minimum journeyman qualification or equivalent program where equivalence must be at least 8 years relevance in a similar environment (e.g., nuclear navy or an associate degree in the required discipline). Additionally, the individual must complete a suite of required reading, which includes all aspects of the

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Maintenance program and the authorization basis related features of the project. The individual must also complete a documented familiarization program with the plant and equipment that the project uses.

- 3.3.3 Maintenance facilities equipment and tools at AMWTP are sufficient to effectively support a strong maintenance program. The tool program is managed under INST-CMNT-10.1.3, Maintenance Facilities and Equipment, and INST-CMNT-10.3.1, Tool Crib Operations and Controls.
- 3.3.4 Types of maintenance that are practiced at AMWTP, as described in MP-CMNT-10.1, Maintenance Management, are:
- Predictive (or condition based) tasks: Actions taken to monitor and analyze trends, parameters or properties to discern whether an SSC may be deteriorating
 - Preventive: Planned, systematic, or periodic maintenance actions to prevent SSC failure and to extend operating life
 - Corrective: The repair of failed or malfunctioning equipment to its intended function or design condition
 - Failure-finding: Tasks to discover hidden failures through detection of degradation of the function.

These types of maintenance are balanced to ensure that equipment degradation is identified and corrected in a timely manner, that equipment life is optimized, and that the maintenance program is cost effective.

- 3.3.5 Maintenance procedures, as described in INST-CMNT-10.1.4, Maintenance Instructions; INST-CMNT-10.1.5, Job Plans; and INST-CMNT-10.1.6, Method Statements, standardize the development of the different types of maintenance documents. MP-CMNT-10.1, Maintenance Management, provides more information on maintenance procedures.
- 3.3.6 Planning, scheduling, and coordination of maintenance are described in MP-CMNT-10.1, Maintenance Management; and MP-CMNT-10.19, Computerized Maintenance Management System. The flow path is depicted on drawing PSK-55-10001.
- 3.3.7 Control of maintenance activities at AMWTP is managed under PD-COPS-9.18, Work Control; INST-COPS-9.18.1, Approved Method of Work; INST-COPS-9.18.2, Permit to Work; INST-COPS-9.18.3, Lockout/Tagout; and INST-COPS-9.18.4, Hazard Assessments. This program is applied equally to all tasks in all departments and to employees and sub-contractors alike.

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- 3.3.8 Post-maintenance testing is required to verify that SSCs are capable of performing their intended function when returned to service following maintenance. This ensures that the original deficiency is corrected and no new or related problems have been created by the maintenance activity. Post-maintenance testing is addressed in MP-CMNT-10.19, Computerized Maintenance Management System.
- 3.3.9 Procurement of parts, materials, and services is discussed in the procurement suite of documents, MP-PCMT-15.1 through -15.23.
- 3.3.10 Receipt, inspection, handling, storage, retrieval, issuance, and disposal turn-in of personal property are discussed in the procurement suite of documents, MP-PCMT-15.1 through -15.23.
- 3.3.11 The program for control and calibration of measuring and test equipment at AMWTP complies with all applicable requirements from 10 CFR 830, Subpart A. This program is described in MP-CMNT-10.5, Calibration of Measuring and Test Equipment Program; and INST-CMNT-10.5.1, Calibration and Control of Measuring and Test Equipment. This program ensures that all instrumentation and equipment will operate within the design accuracy requirements and be durable enough for their intended applications.
- 3.3.12 The control of maintenance tools and equipment is described in INST-CMNT-10.3.1, Tool Crib Operations and Controls. This procedure ensures that adequate tools and equipment are available to maintenance technicians.
- 3.3.13 Facility equipment inspection is accomplished at AMWTP under the guidance of MP-CMNT-10.7, Estates and Logistics; INST-CMNT-10.7.1, Seasonal Facility Maintenance; and INST-CMNT-10.7.2, Building Inspections.
- 3.3.14 Management involvement is evident at all levels of the maintenance process as described in MP-CMNT-10.1, Maintenance Management; MP-CD&M-11.4, Project Management; and MP-M&IA-17.1, Management Assessment.
- 3.3.15 Maintenance history and trending are described in MP-CMNT-10.1, Maintenance Management, and MP-CMNT-10.19, Computerized Maintenance Management System. The maintenance history is maintained on the MAXIMO system, and reports are generated as needed on specific systems. The information collected is available to trend equipment behavior and failure.
- 3.3.16 Analysis of maintenance problems to determine root causes of failures, is accomplished at AMWTP through several documents, including MP-Q&SI-5.1, Investigations and Root Cause Analysis; MP-Q&SI-5.4, Identification of Nonconforming Conditions; MP-CMNT-10.1, Maintenance Management; MP-CMNT-10.19, Computerized Maintenance Management System; and MP-M&IA-17.1, Management Assessments.
- 3.3.17 Modification work to AMWTP SSCs is governed by MP-CD&M-11.1, Change Control.

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3.3.18 Seasonal facility preservation is accomplished at AMWTP using MAXIMO to prompt and identify necessary actions as described in MP-CMNT-10.7, Estates and Logistics, and INST-CMNT-10.7.1, Seasonal Facility Maintenance.

4.0 REFERENCES

- (1) DOE O 430.1B, Real Property Asset Management
- (2) DOE O 433.1A, Maintenance Management Program for DOE Nuclear Facilities
- (3) MP-CMNT-10.1, Maintenance Management

(For additional references, see the implementing documents listed in Section 5.0.)

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5.0 IMPLEMENTATION PLAN

AMWTP satisfies all requirements of the Contractor Requirements Document (Attachment 1 to DOE O 433.1A), as follows:

DOE O 433.1A CRD ¶ #	Requirement	Applicable? Yes/No	Implemented? Yes/No	Implementing Document(s)/Justification
2.a.(1)	Develop and submit for DOE approval a maintenance implementation plan (MIP) that clearly defines the master equipment lists (MELs) of structures, systems, and components (SSCs) included in the program, typically all safety SSCs identified in the nuclear facility safety basis, critical to mission objectives or facility operations or desirable for inclusion in the maintenance program for other reasons.	Yes	Yes	MP-COPS-9.2, Operations Organization Administration MP-CMNT-10.1, Maintenance Management INST-CMNT-10.1.1, Maintenance Analysis Program MP-CMNT-10.19, Computerized Maintenance Management System MP-M&IA-17.1, Management Assessments
2.a.(2)	Develop and submit for DOE approval a MIP that clearly defines periodic inspection of SSCs and equipment to determine whether degradation or technical obsolescence threatens performance or safety.	Yes	Yes	INST-ISIH-2.11.8, Maintenance and Calibration of Industrial Hygiene Equipment MP-CMNT-10.1, Maintenance Management INST-CMNT-10.1.1, Maintenance Analysis Program MP-CMNT-10.7, Estates and Logistics INST-CMNT-10.7.1, Seasonal Facility Maintenance INST-CMNT-10.7.2, Building Inspections MP-CMNT-10.19, Computerized Maintenance Management System

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DOE O 433.1A CRD #	Requirement	Applicable? Yes/No	Implemented? Yes/No	Implementing Document(s)/Justification
2.a.(3)	Develop and submit for DOE approval a MIP that clearly defines the management systems that control maintenance of defined SSCs (work control, post-maintenance testing, material procurement and handling, and control and calibration of test equipment).	Yes	Yes	MP-Q&SI-5.4, Control of Non-conforming Conditions MP-COPS-9.2, Operations Organization Administration MP-COPS-9.18, Work Control INST-COPS-9.18.1, Approved Method of Work INST-COPS-9.18.2, Permit to Work INST-COPS-9.18.4, Hazard Assessment MP-CMNT-10.1, Maintenance Management INST-CMNT-10.1.7, Equipment Removed from Service MP-CMNT-10.2, Pressurized Systems MP-CMNT-10.4, Information Technology INST-CMNT-10.6.2, Fire Protection System Impairments MP-CMNT-10.9, Electrical Safety Program MP-CMNT-10.10, TRUPACT-II Maintenance Program MP-CMNT-10.11, Welding MP-CMNT-10.14, In-Plant and Process Instrumentation Testing Program INST-CMNT-10.14.1, Testing In-Plant and Process Instrumentation MP-CMNT-10.19, Computerized Maintenance Management System MP-CD&M-11.1, Change Control MP-RTQP-14.20, Training Implementation Matrix MP-M&IA-17.1, Management Assessments
2.a.(4)	Develop and submit for DOE approval a MIP that clearly defines the assignment of roles and responsibilities.	Yes	Yes	MP-COPS-9.2, Operations Organization Administration MP-CMNT-10.1, Maintenance Management MP-M&IA-17.1, Management Assessments

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DOE O 433.1A CRD ¶ #	Requirement	Applicable? Yes/No	Implemented? Yes/No	Implementing Document(s)/Justification
2.a.(5)	Develop and submit for DOE approval a MIP that interfaces between maintenance and other organizations (e.g., operations, engineering, and training).	Yes	Yes	MP-COPS-9.2, Operations Organization Administration MP-CMNT-10.1, Maintenance Management MP-M&IA-17.1, Management Assessments
2.a.(6)	Develop and submit for DOE approval a MIP that clearly defines integration with— (a) the ISMS established by DOE P 450.4 and 48 CFR 970.5204-2, (b) real property asset management programs under DOE O 430.1B, (c) required nuclear safety bases established under 10 CFR Part 830, Subpart B, and (d) quality assurance programs established in 10 CFR Part 830, Subpart A	Yes	Yes	MP-Q&SI-5.4, Control of Non-conforming Conditions MP-COPS-9.2, Operations Organization Administration MP-COPS-9.18, Work Control INST-COPS-9.18.1, Approved Method of Work INST-COPS-9.18.2, Permit to Work INST-COPS-9.18.4, Hazard Assessment MP-CMNT-10.1, Maintenance Management INST-CMNT-10.1.4, Maintenance Instructions INST-CMNT-10.1.5, Job Plans INST-CMNT-10.1.6, Method Statement MP-CMNT-10.19, Computerized Maintenance Management System MP-CD&M-11.1, Change Control MP-RTQP-14.20, Training Implementation Matrix MP-M&IA-17.1, Management Assessments
2.a.(7)	Develop and submit for DOE approval a MIP that clearly defines the integration with the configuration management processes to ensure the integrity of the identified nuclear facility safety SSCs using a graded approach.	Yes	Yes	INST-CMNT-10.1.8, Temporary Hardwired Changes MP-CD&M-11.1, Change Control INST-CD&M-11.1.1, Facility Modification Screening INST-CD&M-11.1.2, Facility Modification Proposal Preparation MP-CD&M-11.2, Software Quality Assurance INST-CD&M-11.2.1, Software Version Control INST-CD&M-11.2.6, Temporary Software Override MP-CD&M-11.3, Design Control MP-CD&M-11.5, Drawing Control
2.a.(8)	Develop and submit for DOE approval a MIP that clearly defines the prioritization processes that place proper emphasis on	Yes	Yes	MP-CMNT-10.19, Computerized Maintenance Management System

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DOE O 433.1A CRD ¶ #	Requirement	Applicable? Yes/No	Implemented? Yes/No	Implementing Document(s)/Justification
	safety requirements, maintenance backlog, system availability, and requirements for infrastructure elements identified as part of nuclear facility safety bases.			
2.a.(9)	Develop and submit for DOE approval a MIP that clearly defines the processes for feedback and improvement based on relevant information from the results of operations, maintenance, and assessment efforts.	Yes	Yes	MP-COPS-9.18, Work Control INST-COPS-9.18.1, Approved Method of Work INST-COPS-9.18.2, Permit to Work INST-COPS-9.18.4, Hazard Assessment MP-CMNT-10.19, Computerized Maintenance Management System
2.a.(10)	Develop and submit for DOE approval a MIP that clearly defines descriptions of how system engineers assigned to safety systems are involved in the planning and execution of maintenance activities affecting their assigned systems with— (a) requisite knowledge of the system safety design basis and operating limits from the safety analysis and (b) lead responsibility for the configuration management of the design.	Yes	Yes	PLN-CD&M-001, System Engineer Program
2.a.(11)	Develop and submit for DOE approval a MIP that clearly defines accurate maintenance histories that compile retrievable structures, systems, and components data and other maintenance, resource, and cost data in a form that allows entering required maintenance costs, actual maintenance costs, and availability data and failure rates for mission-critical and safety	Yes	Yes	MP-CMNT-10.1, Maintenance Management MP-CMNT-10.19, Computerized Maintenance Management System

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DOE O 433.1A CRD ¶ #	Requirement	Applicable? Yes/No	Implemented? Yes/No	Implementing Document(s)/Justification
	SSCs into the DOE Facility Information Management System.			
2.b.(1)	Contractor maintenance management programs should . . . establish metrics to measure performance and identify maintenance issues requiring corrective action and lessons learned	Yes	Yes	MP-CMNT-10.1, Maintenance Management MP-CMNT-10.19, Computerized Maintenance Management System
2.b.(2)	Contractor maintenance management programs should . . . incorporate appropriate voluntary consensus standards, and	Yes	Yes	MP-CMNT-10.1, Maintenance Management MP-CMNT-10.19, Computerized Maintenance Management System
2.b.(3)	The Maintenance Management Program should address the following elements as appropriate.			
2.b.(3)(a)	Maintenance Organization and Administration that must ensure a high level of performance through effective implementation and control of activities.	Yes	Yes	MP-CMNT-10.1, Maintenance Management MP-M&IA-17.1, Management Assessments
2.b.(3)(b)	Training and Qualification for Maintenance Personnel that must be implemented to develop and maintain the knowledge and skills needed by personnel to perform maintenance activities effectively.	Yes	Yes	MP-Q&SI-5.1, Investigations and Root Cause Analysis MP-COPS- 9.2, Operations Organization Administration MP-RTQP-14.1, Preparation and Administration of Individual Training Plans MP-RTQP-14.4, Personnel Qualification and Certification MP-RTQP-14.20, Training Implementation Matrix MP-M&IA-17.1, Management Assessments

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DOE O 433.1A CRD ¶ #	Requirement	Applicable? Yes/No	Implemented? Yes/No	Implementing Document(s)/Justification
2.b.(3)(c)	Maintenance Facilities, Equipment, and Tools that support nuclear facility maintenance and training efficiently.	Yes	Yes	MP-RC&S-6.14, Radioactive Material Storage MP-CMNT-10.1, Maintenance Management INST-CMNT-10.1.3, Maintenance Facilities and Equipment MP-CMNT-10.3, Supply Chain Management INST-CMNT-10.6.3, Fire Prevention MP-CMNT-10.7, Estates and Logistics INST-CMNT-10.7.1, Seasonal Facility Maintenance INST-CMNT-10.7.2, Building Inspections
2.b.(3)(d)	Types of Maintenance that balance corrective and preventive maintenance properly to provide a high degree of confidence that nuclear facility equipment degradation is identified and corrected, that equipment life is optimized, and that the maintenance program is cost effective.	Yes	Yes	INST-ISIH-2.11.8, Maintenance and Calibration of Industrial Hygiene Equipment MP-CMNT-10.1, Maintenance Management INST-CMNT-10.1.1, Maintenance Analysis Program MP-CMNT-10.19, Computerized Maintenance Management System
2.b.(3)(e)	Maintenance Procedures and other work-related documents (e.g., drawings and instructions) prepared and used to provide appropriate work direction and to ensure that maintenance is performed safely and efficiently.	Yes	Yes	INST-CMNT-10.1.4, Maintenance Instructions INST-CMNT-10.1.5, Job Plans INST-CMNT-10.1.6, Method Statement MP-CD&M-11.3, Design Control MP-CD&M-11.5, Drawing Control MP-CD&M-11.6, Engineering Design Files MP-DOCS-18.1, Developing Written Work Instructions MP-DOCS-18.3, Developing Management Procedures MP-DOCS-18.4, Document Control

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DOE O 433.1A CRD ¶ #	Requirement	Applicable? Yes/No	Implemented? Yes/No	Implementing Document(s)/Justification
2.b.(3)(f)	<p>Planning, Scheduling, and Coordination of Maintenance system implemented to—</p> <ol style="list-style-type: none"> 1. ensure that maintenance and surveillance associated with technical safety requirements (TSRs) are accomplished in a timely manner, 2. improve efficiency, 3. reduce chemical and physical hazard and radiation exposure to as-low-as-reasonably-achievable (ALARA), 4. increase equipment availability, 5. ensure worker safety through training and proper use of personal protective equipment, 6. ensure that hazardous waste is properly segregated, treated, or disposed, and 7. ensure that hazards are appropriately identified, assessed and controlled prior to commencing maintenance work. 	Yes	Yes	<p>MP-COPS-9.2, Operations Organization Administration MP-CMNT-10.1, Maintenance Management INST-CMNT-10.1.1, Maintenance Analysis Program MP-CMNT-10.19, Computerized Maintenance Management System MP-M&IA-17.1, Management Assessments</p>

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2.b.(3)(g)	Control of Maintenance Activities that includes management involvement to ensure that safe, reliable nuclear facility operations that are integrated with work authorization and control requirements for conduct of operations.	Yes	Yes	MP-Q&SI-5.4, Control of Non-conforming Conditions MP-COPS-9.2, Operations Organization Administration MP-COPS-9.18, Work Control INST-COPS-9.18.1, Approved Method of Work INST-COPS-9.18.2, Permit to Work INST-COPS-9.18.4, Hazard Assessment MP-CMNT-10.1, Maintenance Management INST-CMNT-10.1.7, Equipment Removed from Service MP-CMNT-10.2, Pressurized Systems MP-CMNT-10.4, Information Technology INST-CMNT-10.6.2, Fire Protection System Impairments MP-CMNT-10.9, Electrical Safety Program MP-CMNT-10.10, TRUPACT-II Maintenance Program MP-CMNT-10.11, Welding MP-CMNT-10.14, In-Plant and Process Instrumentation Testing Program INST-CMNT-10.14.1, Testing In-Plant and Process Instrumentation MP-CMNT-10.19, Computerized Maintenance Management System MP-CD&M-11.1, Change Control MP-RTQP-14.20, Training Implementation Matrix MP-M&IA-17.1, Management Assessments
2.b.(3)(h)	Post-Maintenance Testing performed to verify that components fulfill their design functions when returned to service after maintenance.	Yes	Yes	MP-COPS-9.18, Work Control INST-COPS-9.18.1, Approved Method of Work INST-COPS-9.18.2, Permit to Work MP-CMNT-10.1, Maintenance Management INST-CMNT-10.1.4, Maintenance Instructions
2.b.(3)(i)	Procurement of Parts, Materials, and	Yes	Yes	MP-Q&SI-5.7, Quality Inspection

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	Services required for maintenance activities available when needed.			MP-CMNT-10.3, Supply Chain Management MP-CMNT-10.13, Davis-Bacon Act Implementation Plan INST-CD&M-11.1.3, Approved Equivalent Parts MP-PCMT-15.1, Purchase Requisition Preparation MP-PCMT-15.3, Purchase Order/Subcontract Preparation and Control MP-PCMT-15.6, Acceptance of Items and Services MP-PCMT-15.7, Vendor Qualification and Performance Evaluation
2.b.(3)(j)	Receipt, Inspection, Handling, Storage, Retrieval, Issuance, and Disposal Turn-in of Personal Property used for maintenance covered by effective implementation of policies and procedures; suspect and counterfeit item control requirements; and high-risk personal property management and control requirements from the time an item is received for installation in or maintenance of the nuclear facility until it is turned in for disposal.	Yes	Yes	MP-Q&SI-5.4, Identification of Non-conforming Conditions MP-CMNT-10.3, Supply Chain Management INST-CMNT-10.6.1, Flammable and Combustible Liquids INST-CD&M-11.2.2, Software Inventory Classification MP-PCMT-15.6, Acceptance of Items and Services MP-M&IA-17.1, Management Assessments
2.b.(3)(k)	Control and Calibration of Measuring and Test Equipment consistent with quality assurance requirements to ensure the acceptable accuracy and precision of nuclear instrumentation and equipment.	Yes	Yes	MP-CMNT-10.5, Calibration of Measuring and Test Equipment Program INST-CMNT-10.5.1, Calibration and Control of Measuring and Test Equipment

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DOE O 433.1A CRD #	Requirement	Applicable? Yes/No	Implemented? Yes/No	Implementing Document(s)/Justification
2.b.(3)(l)	Maintenance Tools and Equipment Control methods established to provide for storage, issuance, and maintenance of an adequate and readily available supply of tools and equipment and for the development of special tools and equipment as needed.	Yes	Yes	INST-CMNT-10.1.3, Maintenance Facilities and Equipment MP-CMNT-10.3, Supply Chain Management MP-CMNT-10.8, Hoisting and Rigging INST-CMNT-10.8.1, Control of Rigging Equipment INST-CMNT-10.8.2, Production Lifting Activities
2.b.(3)(m)	Facility Condition Inspection conducted by management periodically direct independent assessments of equipment and facilities to ensure safe nuclear facility condition and housekeeping and to meet fire protection and natural hazard phenomena mitigation requirements of DOE O 420.1B, Facility Safety.	Yes	Yes	MP-CMNT-10.7, Estates and Logistics INST-CMNT-10.7.1, Seasonal Facility Maintenance INST-CMNT-10.7.2, Building Inspections
2.b.(3)(n)	Management Involvement of corporate and nuclear facility officials sufficiently to be technically informed and personally familiar with facility status and conditions.	Yes	Yes	MP-CMNT-10.1, Maintenance Management MP-CD&M-11.4, Project Management MP-M&IA-17.1, Management Assessments
2.b.(3)(o)	Maintenance History and trending program to document historical information for maintenance planning and support maintenance and performance trending of nuclear facility systems and components with all records and documentation maintained according to an approved site-specific records retention and disposition schedule.	Yes	Yes	MP-CMNT-10.1, Maintenance Management MP-CMNT-10.19, Computerized Maintenance Management System

**Advanced Mixed Waste Treatment Facility
Maintenance Implementation Plan**

DOE O 433.1A CRD ¶ #	Requirement	Applicable? Yes/No	Implemented? Yes/No	Implementing Document(s)/Justification
2.b.(3)(p)	Analysis of Maintenance Problems to determine and correct root causes of unplanned occurrences related to maintenance.	Yes	Yes	MP-Q&SI-5.1, Investigations and Root Cause Analysis MP-Q&SI-5.4, Identification of Nonconforming Conditions MP-CMNT-10.1, Maintenance Management MP-CMNT-10.19, Computerized Maintenance Management System MP-M&IA-17.1, Management Assessments
2.b.(3)(q)	Modification Work at nuclear facilities accomplished under the same basic administrative controls as those applied to nuclear facility maintenance so that risk to the facility, equipment, environment, or personnel does not increase because of modifications. Controls should be integrated with— safety basis, nuclear safety, fire protection, and natural hazard phenomena mitigation; pressure safety and suspect and counterfeit item control; and control of equipment and system status.	Yes	Yes	INST-CMNT-10.1.8, Temporary Hardwired Changes MP-CD&M-11.1, Change Control INST-CD&M-11.1.1, Facility Modification Screening INST-CD&M-11.1.2, Facility Modification Proposal Preparation MP-CD&M-11.2, Software Quality Assurance INST-CD&M-11.2.1, Software Version Control INST-CD&M-11.2.6, Temporary Software Override MP-CD&M-11.3, Design Control MP-CD&M-11.5, Drawing Control
2.b.(3)(r)	Seasonal Facility Preservation to prevent equipment and building damage resulting from weather conditions.	Yes	Yes	MP-CMNT-10.7, Estates and Logistics INST-CMNT-10.7.1, Seasonal Facility Maintenance
5	The Contractor will review and update the MIP every 2 years and submit any changes to DOE for approval.	Yes	Yes	MP-DOCS-18.4, Document Control