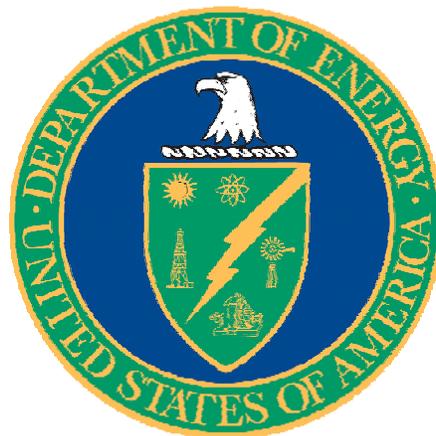


# Waste Isolation Pilot Plant Maintenance Implementation Plan

Revision 1

July 1, 2008  
to  
June 30, 2010

U.S. Department of Energy  
Carlsbad Field Office



This document supersedes DOE/WIPP-06-3335, Rev. 0.

# Waste Isolation Pilot Plant Maintenance Implementation Plan

July 1, 2008  
to  
June 30, 2010

WTS Approval: Approval on File 2/19/09  
Wesley Bryan, Manager of Operations and Disposal Date

CBFO Concurrence: Approval on File 2/19/09  
Vernon Daub, Deputy Manager Date

CBFO Concurrence: Signature on File 2/19/09  
David C. Moody, Manager Date

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**ABBREVIATIONS AND ACRONYMS**

BOP	Balance of Plant
CBFO	Carlsbad Field Office
CH	contact-handled
CHAMPS	Computerized History and Maintenance Planning System
DID	defense-in-depth
DOE	U.S. Department of Energy
DSA	Documented Safety Analysis
EER	Engineering Equipment Register
EM-1	DOE Office of Environmental Management
FIMS	Facilities Information Management System
ISMS	Integrated Safety Management System
LWA	Land Withdrawal Act
MEL	Master Equipment List
MIP	Maintenance Implementation Plan
OJT	on-the-job training
RH	remote-handled
SAT	Systematic Approach to Training
SC	Safety Class
SDD	System Design Description
SS	Safety Significant
SSC	Systems, Structures, and Components
TRU	transuranic
TSR	Technical Safety Requirements
USQ	unreviewed safety question
VPP	Voluntary Protection Program
VSS	Vital Safety System
WHB	Waste Handling Building
WIPP	Waste Isolation Pilot Plant
WTS	Washington TRU Solutions LLC

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## **1.0 INTRODUCTION – MAINTENANCE OVERVIEW**

This Maintenance Implementation Plan (MIP) provides a biennial performance-based plan fulfilling requirements of the U.S. Department of Energy (DOE) at the Waste Isolation Pilot Plant (WIPP). This plan focuses on compliance with the requirements of DOE Order (O) 433.1A, *Maintenance Management Program for DOE Nuclear Facilities*, and, subsequently, DOE O 430.1B, *Real Property Asset Management*.

This document describes the roles, responsibilities, and interfaces for the WIPP maintenance program regarding contact-handled (CH) and remote-handled (RH) waste, and site equipment, facilities, and the infrastructure. The MIP is an overview as to how the maintenance activities required in the DOE Orders are transformed into performance at the WIPP site. The supporting procedures and policies referenced are used as the primary source for in-depth details of maintenance roles, responsibilities, and activities. This section (Introduction) provides background information on WIPP by describing its major facilities, mission, and identifying the principal organizations involved in daily operations. This section also provides a brief overview of the maintenance program philosophy and structure in operation at WIPP.

### **1.1 History/Scheduled Life**

WIPP is in Eddy County in southeastern New Mexico, 26 miles due east of Carlsbad. The land set aside for the WIPP includes an area of 10,240 acres. WIPP is located in an area of low population density with less than 30 permanent residents living within a ten-mile radius. The area surrounding the facility is used primarily for grazing and development of potash, oil, and natural gas resources. As a result of land use restrictions imposed by the U.S. Bureau of Land Management, and administrative action by the DOE to purchase lease holdings, no resource development is allowed within the 10,240 acres set aside for WIPP (with the exception of existing leases). The WIPP facility is designed for an operating life of 30 years, plus a five-year closure period.

### **1.2 Design Capabilities**

The WIPP facility is designed to receive and handle 6.2 million cubic feet of CH transuranic (TRU) waste, including 250,000 cubic feet of RH TRU waste. However, the actual amount of waste to be received at WIPP is governed by the WIPP Land Withdrawal Act (LWA) (Public Law 102-579, Waste Isolation Pilot Plant Land Withdrawal Act), which sets the total volume for CH and RH TRU waste combined at a maximum of 6.2 million cubic feet. The LWA restricted RH TRU waste to a maximum activity of 23 curies per liter and not to exceed a total of 5.1 million curies.

### **1.3 WIPP Facilities**

The WIPP facility is divided into three basic groups of structures: surface structures, shafts, and underground structures.

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### **1.3.1 Surface Structures**

The WIPP site consists of 16 square miles of land. Within these 16 square miles there is a 35-acre WIPP property protection area. All land is public access, except for 1,454 acres; grazing of cattle is allowed on all but 277 acres. All new mining and drilling has been excluded from the 16 square miles. The surface structures accommodate personnel, equipment and support services required for receipt, preparation, and transfer of waste from the surface to the underground. The primary surface structure is the Waste Handling Building (WHB), which is divided into the CH TRU waste handling area, the RH TRU waste handling area, and support areas.

The CH TRU waste handling area includes the entrance airlocks, CH Bay, a shielded holding area and CH TRU support facilities.

The RH TRU waste handling area includes the Hot Cell Complex, shipping and receiving areas, a shielded cell for cask unloading, a waste canister inspection area, and an area for facility cask loading prior to transfer underground.

### **1.3.2 Shafts**

The vertical shafts extending from the surface to the underground horizon are the Waste Shaft, Salt Handling Shaft, Exhaust Shaft, and Air Intake Shaft. These shafts are lined from the shaft collar to the top of the salt formation and are unlined through the salt formation. The waste shaft is located between the CH TRU and RH TRU areas in the WHB. It is 19 feet in diameter and is serviced by a hoist cage designed for transporting CH TRU and RH TRU waste from the surface to the underground disposal area.

### **1.3.3 Underground Facilities**

The underground area consists of the waste disposal area, shaft pillar area, experimental area and associated support facilities. The waste disposal area consists of eight panels, each of which contains seven rooms. Currently only five waste panels have been mined. At present, a 30-year operating time period is estimated to mine and fill all eight panels, the four access drifts and the crosscuts in the WIPP repository. At the end of the 30-year period, it is currently estimated that up to five years will be required for decontamination (if required) and decommissioning and closure activities.

## **1.4 Mission**

The Washington TRU Solutions LLC (WTS) Maintenance Management Program provides maintenance support in a professional business atmosphere where customer needs, requirements, and expectations of improvement are of highest priority, and, innovation and excellence in execution are WTS standards. The WTS mission is to provide a proactive approach to facility maintenance.

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The WTS Maintenance Management Program will continuously and safely provide predictive, preventive, modification and corrective maintenance support for all phases of operations in support of the WIPP mission.

### **1.5 WIPP Organization**

The overall responsibility for the design, construction, operation, and decommissioning of the WIPP facility rests solely with the DOE Headquarters. The Assistant Secretary for Environmental Management (EM-1) is responsible for implementing the radioactive waste disposal policy. The Carlsbad Field Office (CBFO) is responsible for implementing the WIPP Project and serves as the primary liaison with the DOE, New Mexico agencies, and stakeholders, as well as other DOE facilities. The CBFO is responsible for managing and administering on-site project activities. WTS serves as the prime managing contractor and is responsible for the daily management and operation of the facility.

Organizationally, the prime operating contractor conducts all maintenance activities at WIPP. A graded approach is used to determine the depth of detail required and magnitude of resources expended for each maintenance activity. The manager of Operations is the single focal point of WIPP maintenance and retains responsibility for maintenance activities delegated to other organizations or subcontracted.

### **1.6 Maintenance Goal**

The maintenance goal at WIPP is to maintain DOE assets in a safe and reliable condition. This goal is achieved with a maintenance philosophy of conducting activities in a manner that will ensure preservation, availability and reliability of SSCs required for safe and reliable operation of the plant. This goal is carried out using a graded approach, which is described in Section 1.12 of this document.

### **1.7 Maintenance Philosophy**

WTS has developed a rigorous maintenance philosophy that addresses safety culture as the most important component, or cornerstone, of all craft activity. This philosophy is demonstrated by the strict adherence to safety requirements by every maintenance person on each work assignment. Personnel are taught to believe that all accidents can be prevented, and that they must assume the full responsibility for their safety and the safety of those working around them. Job scenarios are analyzed for safety implications by maintenance engineers, the craft and craft supervisors as a normal part of each job preparation. Proof of adherence to this philosophy is reflected in the excellent WIPP maintenance safety record. WIPP has obtained the Integrated Safety Management Systems (ISMS) certification and is the first Voluntary Protection Program (VPP) Star site in the DOE complex, the first DOE facility to receive VPP recertification, and the first DOE nuclear facility to be certified to the ISO 14001 standard.

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Organizational efficiency is another important component of the WIPP maintenance philosophy. Maintenance at WIPP is organized into a zone maintenance concept, which is an integrated maintenance management and performance system. Each zone is provided adequate resources to fully address the initiation and preparation of work packages to completion of work.

The team accountability approach of maintenance zones has resulted in significant reduction in maintenance backlog and increased productivity. Safety related backlog at WIPP has virtually been eliminated.

Monitoring maintenance activities and zone management efficiency allows for continued improvement. This is an important feature of the WIPP maintenance philosophy. Benchmarking and tracking systems are implemented to achieve this philosophy. Management efficiency is a concept used at WIPP to minimize the amount of non-maintenance time due to unavailability of craft personnel.

## **1.8 Structures, Systems, and Components**

### **1.8.1 Vital Safety Systems**

Vital Safety Systems (VSSs) perform important functions that fall below the threshold for classification as safety-class or safety-significant, but perform an active function that within the context of the Authorization Basis, and in the judgment of senior management, perform an important role to protect the public, worker, and the environment. The systems are identified in WP 09-CN3025, Annual System Walkdown/Requalification, and the WIPP Cognizant Engineer/Alternate Cognizant Engineer System Assignment List.

A cognizant engineer, alternate cognizant engineer, and/or manager has been assigned to each system. WP 09, Engineering Conduct of Operations, identifies required training for system engineers and assigns their duties and responsibilities for safety basis, configuration management and operating limits.

Inspections of VSSs and equipment are conducted per WP 09, WP 09-CN3025, and WP 09-CN3005, Graded Approach to Application of QA Controls, to determine whether degradation or technical obsolescence threatens the performance and/or safety of the systems. The VSS subsystems include CF02, CM01, FP01, FP02, FP03, HV01, HV-02, RM01, UH06, VU01, WD-2, WH02, WH03, and WH05.

### **1.8.2 Safety Class SSCs**

Safety Class SSCs are those whose preventive or mitigative function is necessary to keep radiological material exposure to the public below the off-site evaluation guideline, which is 25 rem (roentgen equivalent man) total effective dose equivalent. The dose estimates to be compared to it are those received by a hypothetical maximally exposed off-site individual at the site boundary.

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### **1.8.3 Safety Significant SSCs**

SSCs not designated as Safety Class, but whose preventive or mitigative function is a major contributor to worker safety as determined from hazards analysis. Safety Significant SSC designations based on worker safety are limited to those whose failure is estimated to result in a prompt worker fatality or serious injuries or significant radiological or chemical exposure to workers.

### **1.8.4 Mode SSCs**

Specific SSCs identified by WIPP Operations are required for the Waste Handling Mode, Waste Storage and Standby Mode of operation. These are referred to as Mode SSCs and are defined as the SSCs that fulfill a specific function important to the accident scenarios evaluated in the WIPP DSAs (DOE/WIPP-96-2065, *Waste Isolation Pilot Plant Contact Handled [CH] Documented Safety Analysis*; and DOE/WIPP-06-3174, *Waste Isolation Pilot Plant Remote Handled [RH] Documented Safety Analysis*). As such, they are designed to either prevent accidents or to mitigate the release of radiological material following an accident. The individual System Design Descriptions (SDDs) currently specify the design requirements and provide guidance for operation, maintenance, testing, and calibration of Mode SSCs.

### **1.8.5 Balance of Plant SSCs**

Balance of Plant (BOP) SSCs are not functionally classified by the WIPP DSAs and are considered low-impact concern equipment. This category includes all SSCs not identified as Safety Class (SC) or Safety Significant (SS). SSCs required by OSHA and MSHA regulations are considered BOP equipment.

## **1.9 Control of Maintenance Activities**

The work control process is conducted per WP 10-WC3011, Maintenance Process, and WP 10-2. Post-maintenance testing is accomplished per WP 10-2. Material procurement and handling is performed per WP 15-PC3609, Preparation of Purchase Requisitions and Purchase Requisition Change Notices, and WP 15-PM3517, Stores Inventory Control. The control and calibration of test equipment is maintained by WP 10-AD3028, Calibration and Control of Measurement and Test Equipment; WP 10-AD3029, Calibration and Control of Monitoring and Data Collection Equipment; and WP 10-AD.01, Metrology Program.

## **1.10 Roles and Responsibilities**

Maintenance personnel roles and responsibilities are delineated in WP 10-2.

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## **1.11 Maintenance Interfaces**

Maintenance interfaces with other organizations are established by work order preplanning meetings and the review process in WP 09; WP 10-2; WP 10-WC3011; WP 02-AR3001, Unreviewed Safety Question Determination; WP 13-1, Washington TRU Solutions LLC Quality Assurance Program Description; and WP 12-IS.01, Industrial Safety Program - Structure and Management.

## **1.12 Graded Approach Strategy**

This section describes the application of the "graded approach" to WIPP maintenance activities. The development of the Master Equipment List (MEL) and a priority system guides the assignment of resources to maintenance activities.

### **1.12.1 Master Equipment List**

SSCs required for operation in the Waste Handling, Waste Storage, or Standby Modes shall be in compliance with the Technical Safety Requirements (TSRs). Mode compliance equipment is designated by "M" in the MEL.

Installed instrumentation and calibrated devices on mode compliance equipment that initiate automatic plant configuration changes at specific set points and installed alarms/indications that operators rely upon to take emergency response actions or demonstrate operability of a system, instruments loop, or group of associated equipment are identified as mode compliance equipment by a "C" in the MEL.

- SC SSCs are annotated as "SC" in the MEL.
- SS SSCs are annotated as "SS" in the MEL.
- Balance of Plant SSCs are annotated as "BOP" in the MEL.
- Vital Safety System SSCs are annotated as "VSS" in the MEL.

The DOE philosophy of "Graded Approach" has been incorporated into the WIPP maintenance philosophy. A graded approach to maintenance is being used at WIPP to ensure the proper use of DOE resources by the maintenance program. Three basic categories of equipment have been identified at WIPP: SC, SS, and BOP. Maintenance of equipment in these categories receives the level of detail and attention based on their importance to safety and the plant mission. The MEL has been developed to aid in the application of the graded approach. The graded approach is applied by using the MEL to define facility-related maintenance at WIPP.

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Nuclear facility maintenance at WIPP is conducted in accordance with DOE O 433.1A. Exceptions may be taken for requirements that clearly do not apply to WIPP and its mission or when other requirements or regulations apply.

### **1.12.2 Priority System**

The WIPP facility is classified as a Hazard Category 2 facility per the WIPP DSAs and DOE-STD-1027-92, *Hazard Categorization and Accident Analysis Techniques for Compliance with DOE Order 5480.23, Nuclear Safety Analysis Reports*. A maintenance priority system has been instituted in the WIPP maintenance program. The priority system is outlined in WP 10-WC3011. For any maintenance activities where hazards to personnel or the environment are involved, an appropriate priority is assigned to the work order to ensure a timely completion.

### **1.12.3 Overall Strategy**

A maintenance priority system has been instituted in the WIPP maintenance program as outlined in WP 10-WC3011. All work orders are prioritized using this system.

WTS has developed and established metrics to measure maintenance performance at WIPP. Monthly maintenance reports are submitted to each Zone Maintenance manager and Senior Operations management to review and make necessary adjustments to meet or improve established metrics/goals.

MP 1.41, Issues Management (WIPP Form); and MC 9.20, Lessons Learned Working Group, have been established at WIPP. These programs are used to identify any site issues, including maintenance, that require corrective actions and provide a lessons learned program to avoid future issues.

Craft feedback is used to improve the quality of corrective work orders in accordance with WP 10-WC3011. The management of personnel and site assets during scheduled outage work is critiqued per WP 10-2.

### **1.12.4 Strategy for Safety Related Items**

Safety related and VSS maintenance activities are conducted in accordance with WP 10-WC3011. Any work order placed in category H, health and safety of the priority system, with a score of 4 or higher, will take precedence over all other maintenance activities. Safety work will take precedence until the issue is abated and the package is downgraded below a score of 4.

Safety packages below a score of 4 will continue to be tracked by Computerized History and Maintenance Planning System (CHAMPS) in category H. This will allow management to monitor the final resolution of the issue.

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WP 10-2 and WP 10-WC3011 incorporate the principles and core functions of Integrated Safety Management System (ISMS) into the work process.

### **1.13 Operations Assessment**

Requirements for this section are covered by MP 1.20, Management Assessment Policy.

### **1.14 Configuration Management**

WP 09 defines the processes that establish and maintain consistency among design requirements, physical configuration, and facility documentation throughout the life of WIPP. The use of configuration management includes increased facility safety and reliability, improved environmental protection and reduced potential for facility shutdown. The basic five elements of WTS's configuration plan are program management, document control, change control, design requirements, and assessments. It further meets the following DOE requirements:

- DOE-STD-1073-2003, *Configuration Management Program*
- DOE O 430.1B, *Real Property Asset Management*
- DOE O 433.1A, *Maintenance Management Program for DOE Nuclear Facilities*
- DOE O 5480.19, *Conduct of Operations Requirements for DOE Facilities*

All permanent facility SSCs are under configuration management. Temporary structures such as trailers, connexes, surface and underground mobile equipment are under configuration management, but require less rigor. In accordance with the graded approach, criteria for SSC inclusion in or exclusion from configuration management processes are delineated in WP 09-CN3034, Configuration Management.

Design documents such as System Design Descriptions, Engineering drawings, Design Specifications, and Equipment Specifications establish the required and approved physical configuration and detailed performance criteria for an SSC.

Compliance with the TSRs for CH and RH waste handling and associated safety management programs ensures that the WIPP facility can be operated safely and at minimum risk to employees and the public. The CH and RH DSAs document the operational safety bases for the WIPP facility. Every proposed new design or design change to WIPP SSCs is reviewed in accordance with WP 02-AR3001 for impact to the safety analyses to determine if an unreviewed safety question exists. Changes to the DSAs are incorporated annually and approved by the DOE. Any changes to the CH or RH TSRs also require DOE approval prior to implementation.

WTS departments perform assessments in order to evaluate programmatic strengths and weaknesses. Each department is responsible for assessing their portion of the

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configuration management process. Configuration Management specifically assesses various aspects of the procedures which control design and design change and may include additional items such as as-built, drafting, component numbering, controlled drawing distribution, design change impact on the DSA, and transmittal of records. Periodic assessments of WTS programs and procedures are required by the WTS Quality Assurance (QA) program.

### **1.15 Maintenance History**

Maintenance history is maintained in Computerized History and Maintenance Planning System (CHAMPS). This program provides history of all maintenance performed on each SSC including the resources, equipment history, failure rates, and cost data. Required-maintenance cost and actual maintenance costs are input to the DOE Facilities Information Management System (FIMS). The DOE FIMS program does not have ability to input availability data and failure rates for mission critical and safety SSCs.

### **1.16 Program Elements**

The Program Elements section of this MIP provides a commentary on the status of implementation of the 18 Maintenance Management Program Elements specified by DOE O 433.1A and DOE G 433.1-1.

Each section in the following part of this document is organized into three subsections:

1. The Introduction subsection briefly describes the objective to be achieved. Addressing each of the objectives is a requirement for an adequate maintenance program.
2. The Discussion subsection describes the actions needed to accomplish the objective and includes a brief explanation of why these actions are necessary or important.
3. The final subsection, Performance Objective, provides specific guidance for meeting the section objective. Included are the governing documents for each objective, implementing WTS documents, and status of WTS implementation for each objective.

WIPP Operations assessed the eighteen elements of DOE O 433.1A requirements using the Maintenance Compliance Matrix.

As of July 1, 2008, WIPP is in 100 percent compliance in with DOE O 433.1A requirements.

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## **2.0 MAINTENANCE ORGANIZATION AND ADMINISTRATION**

### **2.1 Introduction**

The organization and administration of the maintenance function ensures a high level of performance in maintenance is achieved through effective implementation and control of maintenance activities.

### **2.2 Discussion**

A maintenance policy and organizational structure is established, and responsibilities and authority for each management, supervisory, professional, and craft position are clearly defined and understood. Maintenance activities involving support groups are effectively coordinated. Staffing and other resources are sufficient to accomplish assigned tasks, and maintenance performance is improved through assessment and the review and use of performance indicators. Administrative controls are employed in the conduct of maintenance activities that affect safe and reliable plant operation. When major maintenance projects are identified, they are incorporated into the *Waste Isolation Pilot Plant Site Ten-Year Plan* (DOE/WIPP-04-3327).

All maintenance personnel use the same or equivalent plant approved policies, procedures, and control and workmanship standards. They are encouraged to develop methods which improve safety, reliability, quality, and productivity.

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<b>2.3 Performance Objective</b>	
<i>Performance Objective: The organization and administration of the maintenance function ensures a high level of performance in maintenance is achieved through effective implementation and control of maintenance activities.</i>	
<b>GOVERNING DOCUMENTS</b>	<b>IMPLEMENTING DOCUMENTS</b>
DOE O 433.1A, <i>Maintenance Management Program for DOE Nuclear Facilities</i> DOE G 433.1-1, <i>Nuclear Facility Maintenance Management Program Guide</i> DOE G 450.4, <i>Safety Management System Policies</i> (ISMS Principles 1, 2, and 7) DOE/CBFO 98-2276, <i>Integrated Safety Management System Description</i> 10 CFR §830.121, "Quality Assurance Program" 10 CFR §830.122, "Quality Assurance Criteria"	<ul style="list-style-type: none"> <li>▶ MC 5.1, Human Resources Policy</li> <li>▶ MC 6.1, Operations Department Policy</li> <li>▶ MP 1.21, Management Responsibility and Accountability Policy</li> <li>▶ WP 10-2, Maintenance Operations Instruction Manual</li> <li>▶ WP 04-CO, Conduct of Operations</li> <li>▶ WP 10-AD, Maintenance Administrative Procedure Series</li> <li>▶ WP 10-WC3011, Maintenance Process</li> <li>▶ WP 09-CN3022, Engineering File Room Operations</li> <li>▶ WP 09-CN3005, Graded Approach to Application of QA Controls</li> <li>▶ WP 13-1, WTS Quality Assurance Program Description</li> </ul>
<b>ACTION PLAN/COMMENTS</b>	
Maintenance organization and administration section is in full compliance with this objective.  Enhancements for FY 2008 and FY 2009  None	

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### **3.0 TRAINING AND QUALIFICATION OF MAINTENANCE PERSONNEL**

#### **3.1 Introduction**

A maintenance training and qualification program consistent with DOE O 5480.20A, *Personnel Selection, Qualification, and Training Requirements for DOE Nuclear Facilities*, and DOE O 414.1C, *Quality Assurance*, is implemented to develop and maintain the knowledge and skills needed by maintenance personnel to effectively perform maintenance activities.

The maintenance manager and supervisors are directly involved in training maintenance personnel. This involvement includes close coordination with the training organization to establish and maintain course content and emphasis, determine and support training schedules, accomplish on-the-job training (OJT), and provide feedback to adjust course content and emphasis, as necessary.

#### **3.2 Discussion**

The WTS Technical Training Organization has implemented the Systematic Approach to Training (SAT) process at WIPP. The SAT process addresses training issues associated with facility readiness and compliance issues related to DOE O 5480.20A.

The WIPP training program is administered through the centralized training organization and involves the Maintenance Manager and Zone Maintenance Managers in approving and periodically monitoring the Maintenance training program. Training implementation is coordinated between WTS Maintenance and Training to prepare schedules, determine who should attend, and ensure qualified instructors are available. This support and guidance normally includes all or a portion of the following tasks:

- Defining jobs, tasks, skill levels, and responsibilities of individuals in these positions, and training programs for each position
- Determining the content and emphasis of training needed and supporting training schedules
- Determining training needs of each individual based on previous education, training, experience, and skill level
- Providing instructors, trainers, and training facilities
- Establishing qualification criteria with emphasis on successful performance in the field
- Coordinating the conduct of and instruction during OJT
- Certifying individuals as they complete their training program

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- Providing training-effectiveness feedback to the training organization to enhance and, where necessary, adjust course teaching methods, content, and emphasis.
- Providing training in Root Cause Analysis
- Providing Management and Supervisory Training

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<b>3.3 Performance Objective</b>	
<p><u>Performance Objective:</u> <i>The maintenance training and qualification program consistent with DOE Order 5480.20A, Personnel Selection, Qualification and Training Requirements for DOE Nuclear Facilities, will be implemented to develop and maintain the knowledge and skills needed by maintenance personnel to effectively perform maintenance activities.</i></p>	
<b>GOVERNING DOCUMENTS</b>	<b>IMPLEMENTING DOCUMENTS</b>
<p>DOE G 450.4, <i>Safety Management System Policies</i> (ISMS Principle 3)                  DOE-HDBK-1206-98, <i>Guide to Good Practices for On-the-Job Training</i>                  DOE-HDBK-1003-96, <i>Guide to Good Practices for Training and Qualification of Maintenance Personnel</i>                  DOE 5480.20A, <i>Personnel Selection, Qualification and Training Requirements for DOE Nuclear Facilities</i>                  DOE 414.1C, <i>Quality Assurance</i>                  DOE G 433.1-1, <i>Nuclear Facility Maintenance Management Program Guide</i>                  DOE/CBFO 98-2276, <i>Integrated Safety Management System Description</i>                  10 CFR §830.121, "Quality Assurance Program"                  10 CFR §830.122, "Quality Assurance Criteria"</p>	<ul style="list-style-type: none"> <li>▶ WP 14-TR.01, WIPP Training Program</li> <li>▶ WP 15-MD3102, Event Investigation and Root Cause Analysis</li> <li>▶ MAST Training Program</li> <li>▶ SAT Program</li> <li>▶ WP 13-1, Washington TRU Solutions LLC Quality Assurance Program Description</li> </ul>
<b>ACTION PLAN/COMMENTS</b>	
<p>The training and qualification of maintenance personnel is in full compliance with this objective.</p> <p>Enhancements for FY 2008 and FY 2009</p> <p>None</p>	

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## **4.0 MAINTENANCE FACILITIES, EQUIPMENT, AND TOOLS**

### **4.1 Introduction**

Maintenance facilities, equipment, and tools efficiently support nuclear facility maintenance and maintenance training. Maintenance facilities directly affect maintenance personnel training and the ability to maintain the facility in an optimum state of readiness. Maintenance facilities include storage for equipment, tools, supplies, and parts.

### **4.2 Discussion**

A program for evaluating the adequacy of maintenance facilities is provided to help ensure that maintenance activities can be effectively accomplished. Industrial safety, location, access, communication, environmental controls, radiological controls, power sources, and the type of activity to be performed are examples of items to be considered in providing adequate maintenance facilities. Maintenance training facilities, shops, satellite work areas, lay-down and staging areas, storage facilities, mockups, temporary facilities, decontamination facilities, shower and toilet facilities, lunch areas, conference areas, and offices are examples of maintenance facilities that need evaluation. In addition, adequate office equipment is being provided to support efficient and effective work. The objective is to create and maintain a safe and productive work place where high quality work can be performed.

The types and quantities of tools and equipment needed to effectively accomplish maintenance depend on such variables as facility purpose, design and layout, installed equipment, and work force composition. The process of providing and developing tools and equipment includes considerations of cost, control, and storage. Although the development of new or special tools is controlled for safety, cost-effectiveness, and future use, control of the development of new or special tools is not so strict that employee innovation is discouraged.

Maintenance facilities, tools, and equipment use is periodically reviewed and adjustments made to support effective maintenance. Varying staff size, special equipment needs resulting from facility modifications, and the increasing sophistication of maintenance activities can overload existing maintenance facilities. Managers are responsible for optimizing use of existing maintenance facilities and for recognizing areas where performance can be enhanced by additional or improved facilities. Planning for new or expanded facilities is a long-range project and is not done to address an immediate need.

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<b>4.3 Performance Objective</b>	
<i>Performance Objective: Maintenance facilities, equipment, and tools should efficiently support nuclear facility maintenance and training.</i>	
<b>GOVERNING DOCUMENTS</b>	<b>IMPLEMENTING DOCUMENTS</b>
DOE O 433.1A, <i>Maintenance Management Program for DOE Nuclear Facilities</i> DOE G 433.1-1, <i>Nuclear Facility Maintenance Management Program Guide</i>	<ul style="list-style-type: none"> <li>▶ WP 09, Engineering Conduct of Operations</li> <li>▶ WP 10-AD3015, Tool Crib Administration</li> <li>▶ WP 12-IS.01, WIPP Industrial Safety Program – Structure and Management</li> <li>▶ WP 12-5, WIPP Radiation Safety Program</li> <li>▶ WP 10-2, Maintenance Operation Instruction Manual</li> <li>▶ WP 15-PM3517, Stores Inventory Control</li> <li>▶ SDD CFOO-GC00, Plant Buildings, Facilities, and Miscellaneous Equipment</li> </ul>
<b>ACTION PLAN/COMMENTS</b>	
The Maintenance Facilities, Equipment, and Tools section is in full compliance with this objective.  Enhancements for FY 2008 and FY 2009  None	

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## **5.0 TYPES OF MAINTENANCE**

### **5.1 Introduction**

A proper balance of corrective and preventive maintenance is employed to provide a high degree of confidence that CH, RH, and site nuclear facility equipment degradation is identified and corrected, equipment life is optimized, and the maintenance program is cost effective. The maintenance program includes preventive, modification, predictive, and corrective maintenance.

### **5.2 Discussion**

A major factor in establishing an effective and efficient balance of the types of maintenance is utilization of a graded approach which determines the depth of detail required and magnitude of resources expended for each maintenance program element. The MEL contains systems, structures and components included in the maintenance program is developed, maintained current, and prioritized using this approach. Therefore, equipment whose failure can limit safe and reliable operation is given appropriate, and often extensive, preventive maintenance while unnecessary or excessive preventive maintenance can be avoided on equipment whose failure does not adversely impact facility operation.

A corrective maintenance program is implemented to repair and restore equipment or components that have either failed or malfunctioned and do not perform their intended function. To minimize or avoid corrective maintenance, preventive maintenance including predictive maintenance activities are performed at appropriate intervals to maximize equipment availability. Preventive maintenance tasks and their frequency are based on considerations such as operating experience, vendor recommendations, engineering and cost/benefit analysis. Once selected and scheduled, preventive maintenance is waived or deferred only by management approval.

The effectiveness of the maintenance program is periodically evaluated by appropriate levels of management. Appropriate changes are considered during this review to optimize the maintenance program.

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<b>5.3 Performance Objective</b>	
<p><u>Performance Objective:</u> <i>A proper balance of corrective and preventive maintenance is employed to provide a high degree of confidence that nuclear facility equipment degeneration is identified and corrected, that equipment life is optimized and that the maintenance program is cost effective.</i></p>	
<b>GOVERNING DOCUMENTS</b>	<b>IMPLEMENTING DOCUMENTS</b>
<p>DOE O 433.1A, <i>Maintenance Management Program for DOE Nuclear Facilities</i>                  DOE G 433.1-1, <i>Nuclear Facility Maintenance Management Program Guide</i>                  DOE G 450.4, <i>Safety Management System Policies</i> (ISMS Principle 4 and Function 1)                  DOE/CBFO 98-2276, <i>Integrated Safety Management System Description</i>                  10 CFR §830.122, "Quality Assurance Criteria"</p>	<ul style="list-style-type: none"> <li>▶ WP 10-2, Maintenance Operations Instruction Manual</li> <li>▶ PR000002, Predictive Maintenance Process</li> <li>▶ WP 10-WC.02, Predictive Maintenance Program</li> <li>▶ WP 10-WC3010, Maintenance PM/MWIR controlled Document Processing</li> <li>▶ WP 10-WC3011, Maintenance Process</li> </ul>
<b>ACTION PLAN/COMMENTS</b>	
<p>The Types of Maintenance section is in full compliance with this objective</p> <p>Enhancements for FY 2008 and FY 2009</p> <p>None</p>	

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## **6.0 MAINTENANCE PROCEDURES**

### **6.1 Introduction**

Maintenance procedures and other work-related documents (e.g., drawings and instructions) are prepared and used to provide appropriate work direction and to ensure maintenance is performed safely and efficiently.

### **6.2 Discussion**

The maintenance program is established to develop and maintain current maintenance procedures and other work related documents to provide appropriate work direction and to ensure maintenance is performed safely and efficiently. A graded approach is used to determine depth of detail required in the procedure. Procedures and other work-related documents are not only technically accurate and current; they are clear, concise, and contain sufficient information to promote safe and efficient work performance. The preparation, review, approval, and revision of procedures and any document used in lieu of procedures are properly controlled through application of the implementing documents. The use of the implementing documents ensures the five Integrated Safety Management System (ISMS) core functions are included in the Maintenance Program.

Maintenance procedures are reviewed by each maintenance zone. Conduct of Operations principles are applied regarding procedures. The evaluation of WTS procedures ensures that redundant and obsolete procedures are identified and ensures that the craft are provided the best tool possible for performing work.

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<b>6.3 Performance Objective</b>	
<i>Performance Objective: Maintenance procedures and other work-related documents (e.g., drawings and instructions) are prepared and used to provide appropriate work direction and to ensure that maintenance is performed safely and efficiently.</i>	
<b>GOVERNING DOCUMENTS</b>	<b>IMPLEMENTING DOCUMENTS</b>
DOE O 433.1A, <i>Maintenance Management Program for DOE Nuclear Facilities</i> DOE G 433.1-1, <i>Nuclear Facility Maintenance Management Program Guide</i> DOE G 450.4, <i>ISMS Guide for use with Safety Management System Policies (ISMS Principles 5 and 6 and ISMS Functions 4 and 5)</i> DOE-STD-1029-92, <i>Writer's Guide for Technical Procedures</i> 10 CFR §830.122, "Quality Assurance Criteria" DOE/CBFO-98-2276, <i>Integrated Safety Management System Description</i>	<ul style="list-style-type: none"> <li>▶ WP 10-WC3010, Maintenance PM/MAI Controlled Document Processing</li> <li>▶ WP 10-WC3011, Maintenance Process</li> <li>▶ WP 10-2, Maintenance Operations Instruction Manual</li> <li>▶ WP 13-1, WTS Quality Assurance Program Description</li> <li>▶ WP 15-PS3002, WTS Controlled Document Processing</li> <li>▶ MP 1.28, Integrated Safety Management</li> </ul>
<b>ACTION PLAN/COMMENTS</b>	
The Maintenance Procedures section is in full compliance with this objective.  Enhancements for FY 2008 and FY 2009  None	

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## **7.0 PLANNING, SCHEDULING, AND COORDINATION OF MAINTENANCE**

### **7.1 Introduction**

An effective system for planning, scheduling, and coordinating maintenance activities is implemented to (a) ensure that maintenance and surveillance associated with TSRs are accomplished in a timely manner, (b) improve efficiency, (c) reduce chemical and physical hazard and radiation exposures to as-low-as-reasonably-achievable (ALARA), (d) increase equipment availability, (e) ensure worker safety through training and proper use of personal protective equipment, (f) ensure that hazardous waste is properly segregated, treated or disposed of, and (g) ensure that hazards are appropriately identified, assessed, and controlled prior to commencing work.

### **7.2 Discussion**

A program is developed for the planning and scheduling of maintenance activities that reflects the relative importance to safe and reliable facility operation, identification of logistics, personnel support, and interfaces with operations. Planning involves defining the work to be performed, providing appropriate procedures or instructions, proper use of personal protective equipment, and assigning work priorities that reflect the relative importance of each job to facility operation. Effective planning also reduces delays in accomplishing work by ensuring support items such as special tools, other equipment, repair parts and materials required to accomplish the work are available when needed. Advanced planning includes the properly segregated, treatment or disposal of hazardous waste.

Scheduling corrective/preventive maintenance and planned/forced outage work is necessary to ensure maintenance is conducted efficiently and within prescribed time limits. Scheduling daily activities based on accurate planning estimates improves the use of time on the job and reduces radiological exposure. Scheduling planned outages is important to support the return of the facility to service on schedule and results in improved availability and capacity factors. Coordinating maintenance activities is necessary to help ensure work can be effectively accomplished while meeting the core functions of ISMS.

Corrective maintenance backlog is periodically reviewed and controlled. The maintenance backlog is managed on a monthly basis by the maintenance manager to ensure each zone properly monitors their backlog and strives to achieve or exceed their target backlog.

WTS's computerized Maintenance Management System at the WIPP facility is the Computerized History and Maintenance Planning System (CHAMPS). CHAMPS allows for the planning, scheduling, and coordinating of modifications, corrective, preventive, and predictive maintenance activities. Groups that use CHAMPS in addition to Surface Maintenance are Facility Operations, Environment, Safety & Health, Health Physics, Underground Operations, Underground Maintenance, and Configuration Management.

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Work Control uses CHAMPS to generate the Plan of the Day (POD) and supplies information to support other programs through the maintenance organization. As the maintenance program continues to improve, enhancements to CHAMPS systems will be ongoing.

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<b>7.3 Performance Objective</b>	
<p><u>Performance Objective:</u> <i>An effective system for planning, scheduling, and coordinating maintenance activities will be implemented to ensure that all maintenance activities are timely, follow ALARA requirements, increase equipment availability, increase worker safety, meet hazardous waste requirements and identify, control and assess hazards prior to commencing work.</i></p>	
<b>GOVERNING DOCUMENTS</b>	<b>IMPLEMENTING DOCUMENTS</b>
<p>DOE O 433.1A, <i>Maintenance Management Program for DOE Nuclear Facilities</i>                      DOE G 433.1-1, <i>Nuclear Facility Maintenance Management Program Guide</i>                      DOE G 450.4, <i>ISMS Guide for use with Safety Management System Policies</i> (ISMS Principles 1 and 4, ISMS Function 1)                      DOE/CBFO 98-2276, <i>Integrated Safety Management System Description</i>                      DOE/WIPP-95-2125, <i>WIPP Contact Handled (CH) Technical Safety Requirements (TSR)</i>                      DOE/WIPP-06-3178, <i>WIPP Remote Handled (RH) Technical Safety Requirements (TSR)</i>                      10 CFR §830.122, "Quality Assurance Criteria"</p>	<ul style="list-style-type: none"> <li>▶ WP 10-2, Maintenance Operations Instruction Manual</li> <li>▶ WP 10-WC3010, Maintenance PM/MAI Controlled Document Processing</li> <li>▶ WP 10-WC3011, Maintenance Process</li> <li>▶ WP 12-2, WIPP ALARA Program Manual</li> <li>▶ WP 04-CO, Conduct of Operations</li> <li>▶ WP 15-PC3609, Preparation of Purchase Requisition and Purchase Requisition Change Order</li> <li>▶ WP 15-PC3042, Credit Card Purchases</li> <li>▶ WP 09-CN3005, Graded Approach to Application of QA Controls</li> <li>▶ WP 14-TR.01, WIPP Training Program</li> <li>▶ WP 12-HP3600, Radiological Work Permits</li> </ul>
<b>ACTION PLAN/COMMENTS</b>	
<p>The Planning, Scheduling, and Coordinating of Maintenance section is in full compliance with this objective.</p> <p>Enhancements for FY 2008 and FY 2009</p> <p>None</p>	

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## **8.0 CONTROL OF MAINTENANCE ACTIVITIES**

### **8.1 Introduction**

Management involvement in control of maintenance activities ensures that safe, reliable facility operations are integrated with work authorization and control requirements for conduct of operations. This control extends to all facilities, other contractor, and subcontractor personnel involved in maintenance activities.

The work control program is based on administrative procedures that address identification of needed work, planning and preparation for work, establishment of conditions to perform work, conduct of work activities, documentation of completed work, post-maintenance acceptance of work, return-to-service procedures, review of completed work records, control of temporary repairs, and controls placed on non-facility contractor and subcontractor personnel working in the facility. The program also makes provisions for collecting and storing equipment maintenance data.

### **8.2 Discussion**

WP 10-WC3011 provides the guidance to ensure the core function and guiding principles of ISMS program are utilized in controlling maintenance activities.

A work control program determines which maintenance activities are identified, initiated, planned, approved, scheduled, coordinated, performed, and reviewed for adequacy and completeness. This program is based on administrative procedures that define responsibilities for various types of work, and control preventive and corrective maintenance activities from identification and planning through completion, review, and filing of historical data. Work packages are prepared and used to direct and document maintenance activities. The safety of personnel is ensured through use of lockout/tagout systems and through the performance of hazard analysis for maintenance activities. Each maintenance activity is reviewed for potential hazards and these hazards are mitigated prior to performance of work. A graded approach is used in determining whether the hazard can be mitigated in the work instructions or a formal Job Hazard Analysis is required. Additionally, maintenance activities are reviewed for impact to the site safety basis through the unreviewed safety question (USQ) determination process.

Restoration of systems and equipment to original condition following maintenance is ensured through configuration control. Additionally, each work group supervisor is required to review work packages prior to being released to the craft for work. This review is to ensure that the work instructions are adequate and that any potential safety issues have been properly addressed. Pre-job briefings are given by work group supervisors for complex tasks or tasks which have potential safety implications. A graded approach is used to determine which tasks require a pre-job briefing and its level of detail.

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The work control process stresses the need for craft review of work instructions. This review is performed during the initial writing of work instructions and when the work instructions are complete. This review ensures that any potential safety concerns of the craft performing the work are addressed and minimizes the potential for work package suspensions. All necessary data are collected for the work package and are available for failure analysis and maintenance history.

Post-job reviews are performed with the craft personnel performing the work. The post-job review can be a brief discussion or an involved critique. The purpose of the review is to determine whether any unexpected problems occurred and/or how the activity can be accomplished more efficiently in the future. This ensures feedback to planning, scheduling, and maintenance personnel to highlight areas that were exemplary or areas that need improvement.

Additional subjects addressed by the work control program include:

- Review of requested work to ensure no unauthorized modifications are performed.
- Emphasis on high-quality workmanship, safe work practices, and radiological protection is communicated to personnel.
- Complete and accurate documentation of all work is accomplished.
- Review of work packages to verify satisfactory completion of maintenance.
- Engineering review of adequacy of temporary repairs.
- Non-facility contractor personnel and subcontractors conducting maintenance are controlled and held accountable to the same policies and procedures as facility personnel.
- Feedback on modification to Configuration Management.
- Maintenance or restoration of approved configuration and operating conditions.
- Integration with safety basis, nuclear safety, fire protection, and natural hazard phenomena mitigation, suspect and counterfeit item control, and control of equipment and system status.

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<b>8.3 Performance Objective</b>	
<i>Performance Objective: Managerial involvement in the control of maintenance activities is implemented to ensure that safe, reliable nuclear facility operations are integrated with work authorization and control requirements consistent with good conduct of operations practices.</i>	
<b>GOVERNING DOCUMENTS</b>	<b>IMPLEMENTING DOCUMENTS</b>
DOE 5480.19, <i>Conduct of Operations Requirements for DOE Facilities</i> DOE O 433.1A, <i>Maintenance Management Program for DOE Nuclear Facilities</i> DOE G 433.1-1, <i>Nuclear Facility Maintenance Management Program Guide</i> DOE G 450.4, <i>ISMS Guide for use with Safety Management System Policies</i> (ISMS Principles 1, 2, and 7; ISMS Function 4) DOE/CBFO 98-2276 <i>Integrated Safety Management System Description</i> DOE-STD-1039-93, <i>Guide to Good Practices for Control of Equipment and System Status</i> 10 CFR §830.122, "Quality Assurance Criteria"	<ul style="list-style-type: none"> <li>▶ WP 10-2, Maintenance Operations Instruction Manual</li> <li>▶ WP 10-WC3011, Maintenance Process</li> <li>▶ WP 12-IS series, Industrial Safety Program</li> <li>▶ WP 04-AD3011, Equipment Lockout/Tagout</li> <li>▶ WP 04-AD3012, Temporary Plant Modification Control</li> </ul>
<b>ACTION PLAN/COMMENTS</b>	
The Control of Maintenance Activities section is in full compliance with this objective.  Enhancements for FY 2008 and FY 2009  None	

## **9.0 POST-MAINTENANCE TESTING**

### **9.1 Introduction**

A post-maintenance testing program is developed to ensure that systems are functioning in a safe manner and acceptable to operations by verifying components will fulfill their design function when returned to service after maintenance. An effective post-maintenance testing program applies to all maintenance activities, addresses each organization's responsibilities, and includes degree and type of testing, procedure needs, acceptance requirements, testing control, and results documentation.

### **9.2 Discussion**

Post-maintenance testing verifies maintenance was performed correctly and the equipment operates correctly and within its desired function. Coordination and interfaces with other organizations required for testing and approval is defined and understood. Testing performed is commensurate with the maintenance work performed and the importance of the equipment to safety and reliability. Post-maintenance testing program includes the following:

Responsibility is clearly defined for determining post-maintenance test requirements in relation to scope, conduct of testing, certification of results, and acceptance.

Determining the scope of the post-maintenance testing program to ensure that appropriate levels of testing are applied to facility equipment and redundant testing is minimized.

The status of equipment that has undergone maintenance is tracked to ensure that all testing is completed prior to work closeout. Conducting proper post-maintenance tests, documenting results, and verifying that the resulting data meet acceptance criteria ensure that equipment and/or systems are restored to design specifications and operating parameters.

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<b>9.3 Performance Objective</b>	
<i>Performance Objective: Post-maintenance testing is performed to verify that components will fulfill their designed function when returned to service after maintenance.</i>	
<b>GOVERNING DOCUMENTS</b>	<b>IMPLEMENTING DOCUMENTS</b>
DOE 5480.19, <i>Conduct of Operations Requirements for DOE Facilities</i> DOE O 433.1A, <i>Maintenance Management Program for DOE Nuclear Facilities</i> DOE G 433.1-1, <i>Nuclear Facility Maintenance Management Program Guide</i> DOE-STD-1039-93, <i>Guide to Good Practices for Control of Equipment and System Status</i> 10 CFR §830.122, "Quality Assurance Criteria"	<ul style="list-style-type: none"> <li>▶ WP 10-2, Maintenance Operations Instruction Manual</li> <li>▶ WP 10-WC3011, Maintenance Process</li> <li>▶ WP 09-CN3034, Configuration Management Determination</li> <li>▶ WP 04-CO, Conduct of Operations</li> <li>▶ WP AD3012, Temporary Plant Modification Control</li> </ul>
<b>ACTION PLAN/COMMENTS</b>	
The Post-Maintenance Testing section is in full compliance with this objective.  Enhancements for FY 2008 and FY 2009  None	

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## **10.0 PROCUREMENT OF PARTS, MATERIALS, AND SERVICES**

### **10.1 Introduction**

A program is established for the timely procurement of parts, materials, and services needed to complete maintenance activities. Clearly defined policies, responsibilities, and interfaces support this program.

### **10.2 Discussion**

Controls on and assessments of procurement activities are used to help ensure proper parts, materials, and services are purchased, received, inspected and stored to support maintenance activities and to meet the requirements for safe and reliable facility operation. Proper plans and materials in good condition are necessary to maintain design requirements for maintenance activities during normal facility operation periods and to support both forced and planned outages.

The procurement and industrial safety process employed by the WTS ensures that the safety and quality of subcontracted services meet the same expectations as applied to the in-house work force.

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<b>10.3 Performance Objective</b>	
<i>Performance Objective: Parts, materials, and services required for maintenance activities are available when needed.</i>	
<b>GOVERNING DOCUMENTS</b>	<b>IMPLEMENTING DOCUMENTS</b>
DOE O 433.1A, <i>Maintenance Management Program for DOE Nuclear Facilities</i> DOE G 433.1-1, <i>Nuclear Facility Maintenance Management Program Guide</i> 10 CFR §830.122, "Quality Assurance Criteria"	<ul style="list-style-type: none"> <li>▶ WP 10-2, Maintenance Operations Instruction Manual</li> <li>▶ WP 15-PC3609, Preparation of Purchase Requisitions</li> <li>▶ WP 15-PM3517, Stores Inventory Control</li> <li>▶ WP 15-PC3042, Credit Card Purchases</li> <li>▶ WP 13-QA3012, Supplier Evaluation/Qualification</li> </ul>
<b>ACTION PLAN/COMMENTS</b>	
The Procurement of Parts, Materials, and Services section is in full compliance with this objective.  Enhancements for FY 2008 and FY 2009  None	

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## **11.0 RECEIPT, INSPECTION, HANDLING, STORAGE, RETRIEVAL, ISSUANCE, AND DISPOSAL/TURN-IN OF PERSONAL PROPERTY**

### **11.1 Introduction**

A process is developed to receive, inspect, handle, store, retrieve, and control personal property used for maintenance. This process includes 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. Policies that address these functions are clearly defined and are understood by stores personnel and each functional organization supports the process.

All phases of receiving, inspecting, handling, storing, retrieving, and issuing equipment, parts, and materials for maintenance are covered by effectively implemented policies and procedures consistent with the QA requirements of DOE Order 414.1C from the time an item is received until it is installed in the facility.

### **11.2 Discussion**

Procedures specifically describe the responsibilities and techniques for receiving, inspecting, handling, storing, retrieving, and issuing material from stores. Incorporated into these procedures are QA and quality control (QC) elements of the stores function. The process operates on a graded approach taking into account the type, importance, and intended use of individual items.

Material staging areas exist for staging of parts for scheduled maintenance activities. The materials are identified by work order number to ensure they are used for the correct maintenance activity. Materials stored in material staging areas are reviewed for compatibility. Material staging areas are environmentally controlled and access is limited to designated personnel.

High-risk personal property is managed and controlled through employee checkout and property management procedures. Examples of personal property used at WIPP are maintenance locks, radios, pagers, portable monitoring devices, hoisting/rigging equipment, personal protective equipment (PPE), etc.

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<b>11.3 Performance Objective</b>	
<p><u>Performance Objective:</u> <i>All phases of receiving, inspection, handling, storing, retrieving, issuing and disposal/turn-in of personal property, equipment, parts, and materials for maintenance shall be covered by effectively implementing policies and procedures consistent with Quality Assurance requirements in DOE O 414.1C from the time an item is received until it is installed in the facility.</i></p>	
<b>GOVERNING DOCUMENTS</b>	<b>IMPLEMENTING DOCUMENTS</b>
<p>DOE O 414.1C, <i>Quality Assurance</i> DOE O 433.1A, <i>Maintenance Management Program for DOE Nuclear Facilities</i> DOE G 433.1-1, <i>Nuclear Facility Maintenance Management Program Guide</i> DOE G 440.1A, <i>Worker Protection Management for DOE Facilities</i> 10 CFR §830.122, "Quality Assurance Criteria"</p>	<ul style="list-style-type: none"> <li>▶ WP 13-QA.05, Suspect/Counterfeit Items Program</li> <li>▶ WP 15-PM3509, Utilization and Disposal of Excess/Surplus Government Personal Property</li> <li>▶ WP 10-2, Maintenance Operations Instruction Manual</li> <li>▶ WP 13-1, WTS Quality Assurance Program Description</li> <li>▶ WP 15-PM.01, WIPP Property Management Manual</li> <li>▶ WP 15-PM3517, Stores Inventory Control</li> <li>▶ WP 10-AD3007, Use and Control of Rigging Components</li> <li>▶ WP 15-PM3525, Preparation and Processing of Shipping Authorization and Express Mail</li> <li>▶ WP 10-AD3029, Calibration and Control of Monitoring and Data Collection Equipment</li> <li>▶ WP 02-EC.04, Special Waste Management Plan</li> <li>▶ WP 09-CN3005, Graded Approach to Application of QA Controls</li> </ul>
<b>ACTION PLAN/COMMENTS</b>	
<p>The Materials Receipt, Inspection, Handling, Storage, Retrieval, and Issuance section is in full compliance with this objective.</p> <p>Enhancements for FY 2008 and FY 2009</p> <p>None</p>	

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## **12.0 CONTROL AND CALIBRATION OF MEASURING AND TEST EQUIPMENT**

### **12.1 Introduction**

The program for control and calibration of Measuring and Test Equipment (M&TE) is consistent with QA requirements to ensure the acceptable accuracy and precision of nuclear instrumentation and equipment. M&TE includes all tools, gauges, instruments, devices, or systems used to inspect, test, calibrate, measure, or troubleshoot in order to control or acquire data for verifying the conformance of an instrument or piece of equipment to specified requirements. M&TE does not include permanently installed facility process or control instrumentation nor does it include test equipment used for preliminary checks where data obtained will not be used to determine acceptability or verify conformance to established criteria.

The M&TE selected for use has the precision necessary to ensure facility instrumentation and equipment will operate within design accuracy requirements and be durable enough for their intended application. Control and calibration requirements for M&TE apply to offsite calibration facilities and non-facility contractor or subcontractor groups that are engaged in maintenance activities.

### **12.2 Discussion**

Operators depend on installed facility instrumentation for accurate indications, process control actions, and trip functions to operate the facility safely and reliably. The accuracy of the installed instrumentation is established and maintained through the M&TE control and calibration program.

The WIPP site does not perform these necessary calibrations, but contracts the work to vendors who have demonstrated their ability to meet the requirements of ANSI/NCSL (American National Standards Institute/National Conference of Standards Laboratories) Z540-1, *Calibration Laboratories and Measuring and Test Equipment General Requirements*, or other appropriate standards applicable to the item being calibrated. All such vendors are approved by the WTS QA Department. This approval is based on audits performed at the vendor's facilities, QA programs and periodic follow-up evaluations of vendor performance.

Calibrated equipment at WIPP is controlled and documented using WP 10-AD.01, Metrology Program, and various procedures in the WP 10-AD3000 series. This program implements applicable requirements of ANSI/NCSL Z540.1. A master equipment list of M&TE equipment is maintained by metrology. This list contains recall dates to ensure that the equipment is maintained within its required calibration periodicity. Traceability of the M&TE used in the performance of work by the craft is controlled by WP 10-AD3028, Calibration and Control of Measurement and Test Equipment. This procedure requires the recording of the M&TE number in the work package. This history of M&TE usage is maintained by the metrology office and used to

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evaluate the impact on plant operation in the event that the M&TE is found out of tolerance or damaged during calibration.

Equipment certification results for M&TE are reviewed and approved by authorized personnel and records are maintained by the metrology office. Certification records for Monitoring and Data Collection equipment (M&DC) are maintained by the equipment owner.

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<b>12.3 Performance Objective</b>	
<p><u>Performance Objective:</u> <i>The program for control and calibration of M&amp;TE is consistent with Quality Assurance requirements to ensure the acceptable accuracy and precision of nuclear instrumentation and equipment.</i></p>	
<b>GOVERNING DOCUMENTS</b>	<b>IMPLEMENTING DOCUMENTS</b>
<p>DOE Order 414.1C, <i>Quality Assurance ANSI/NCSL Z540-1, Calibration Laboratories and Measuring and Test Equipment General Requirements</i>                  DOE O 433.1A, <i>Maintenance Management Program for DOE Nuclear Facilities</i>                  DOE G 433.1-1, <i>Nuclear Facility Maintenance Management Program Guide</i>                  10 CFR §830.122, "Quality Assurance Criteria"</p>	<ul style="list-style-type: none"> <li>▶ WP 10-AD.01, Metrology Program</li> <li>▶ WP 10-AD3028, Calibration and Control of Measuring and Test Equipment</li> <li>▶ WP 10-AD3029, Calibration and Control of Monitoring and Data Collection Equipment</li> <li>▶ WP 10-AD3030, Calibration Label Application and Control Manual</li> <li>▶ WP 10-AD3031, M&amp;TE/M&amp;DC Inspections</li> <li>▶ WP 13-1, WTS Quality Assurance Program Description</li> </ul>
<b>ACTION PLAN/COMMENTS</b>	
<p>The Control and Calibration of Measuring and Test Equipment (M&amp;TE) section is in full compliance with this objective.</p> <p>Enhancements for FY 2008 and FY 2009</p> <p>None</p>	

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## **13.0 MAINTENANCE TOOLS AND EQUIPMENT CONTROL**

### **13.1 Introduction**

Methods are established in WP 10-AD3015, Tool Crib Administration, to provide for storage, issuance, and maintenance of an adequate and readily available supply of tools and equipment and also for the development of special tools and equipment needed in the maintenance program.

### **13.2 Discussion**

A program for storing, issuing, and maintaining tools and equipment is established to accomplish maintenance activities effectively and efficiently. Craft personnel are issued tools and equipment needed to perform daily maintenance based on need and provided special tools from controlled storage to perform specific maintenance activities. Tools and equipment are kept in a high state of readiness, some by inclusion in the preventive maintenance program. Proper preventive maintenance can also result in improved personnel safety and extended life of tools and equipment. Examples are WP 10-AD3007, Use and Control of Rigging Components; and WP 10-WC3016, Ladder Control.

The process for the development of new or special tools and equipment includes a safety review, identification, availability for future use, and cost-effectiveness. Employee innovation is encouraged. Supervisors have an active role in identifying and approving tool and equipment improvements making maintenance more effective and efficient.

A training program for maintenance personnel exists for special tools and test equipment. Examples of these courses are RIG-001, Incidental Rigger, and SAF-641, Fall Prevention Elevated Work Surfaces and Ladder Safety. This program consists of classroom training, On-the-Job Training (OJT), and self-paced modules and is included in the Systematic Approach to Training (SAT) for maintenance personnel.

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<b>13.3 Performance Objective</b>	
<p><u>Performance Objective:</u> <i>Methods are established to provide for storage, issuance, and maintenance of an adequate and readily available supply of tools and equipment and also for the development of special tools and equipment needed in the maintenance program.</i></p>	
<b>GOVERNING DOCUMENTS</b>	<b>IMPLEMENTING DOCUMENTS</b>
<p>DOE O 433.1A, <i>Maintenance Management Program for DOE Nuclear Facilities</i>                  DOE G 433.1-1, <i>Nuclear Facility Maintenance Management Program Guide</i>                  10 CFR §830.122, "Quality Assurance Criteria"</p>	<ul style="list-style-type: none"> <li>▶ WP 13-1, Washington TRU Solutions LLC Quality Assurance Program Description</li> <li>▶ WP 10-AD.01, Metrology Program</li> <li>▶ WP 10-AD3015, Tool Crib Administration</li> <li>▶ WP 10-AD3007, Use and Control of Rigging Components</li> <li>▶ WP 15-PM3509, Utilization and Disposal of Excess/Surplus Government Personal Property</li> <li>▶ WP 15-PC3609, Preparation of Purchase Requisitions</li> <li>▶ WP 12-HP3600, Radiological Work Permits</li> <li>▶ WP 10-AD3018, Use and Control of Personal Fall Arrest Systems</li> <li>▶ WP 12-IS.series, Industrial Safety Program</li> </ul>
<b>ACTION PLAN/COMMENTS</b>	
<p>The Maintenance Tools and Equipment Control section is in full compliance with this objective.</p> <p>Enhancements for FY 2008 and FY 2009</p> <p>None</p>	

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## **14.0 FACILITY CONDITION INSPECTION**

### **14.1 Introduction**

Management conducts periodic condition inspections of equipment and facilities to ensure safe nuclear facility conditions and housekeeping and to meet fire protection and natural hazard phenomena mitigation requirements. The condition of a facility is dependent on many factors including design, fabrication, modifications, ongoing maintenance, facility work control programs, and day-to-day operation. After initial facility construction, maintenance and control of modifications are prime contributors to keeping systems and equipment in optimum condition to support safe and reliable operation.

System engineers are required to perform annual system walkdowns to ascertain the system operability, availability and reliability, for all site systems, including vital safety systems, fire protection, and natural hazard phenomena mitigation. These system walkdowns also serve as a means of verifying that field conditions coincide with SDDs and requirements in the CH and RH DSAs and TSRs.

The involvement of facility managers and supervisors in periodic facility walkdowns and inspections clearly displays management standards to all personnel and can significantly improve the condition of the facility. A program for identification and disposition of facility condition deficiencies and housekeeping discrepancies is an important step in maintaining facilities and equipment in a condition of maximum safety, reliability, and availability.

### **14.2 Discussion**

Responsibilities of periodic inspections on equipment, condition, cleanliness, and housekeeping of site facilities are clearly defined.

WP 10-WC3008, Facility Inspections, provides for periodic inspections by personnel trained in inspection techniques of facility systems and equipment to determine condition status, to identify deficiencies and take prompt corrective action, and to monitor effectiveness of the inspection program.

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<b>14.3 Performance Objective</b>	
<i>Performance Objective: Management conducts periodic inspections of equipment and facilities to assure excellent facility condition and housekeeping.</i>	
<b>GOVERNING DOCUMENTS</b>	<b>IMPLEMENTING DOCUMENTS</b>
DOE O 433.1A, <i>Maintenance Management Program for DOE Nuclear Facilities</i> DOE G 433.1-1, <i>Nuclear Facility Maintenance Management Program Guide</i> DOE O 420.1B, <i>Facility Safety</i> DOE O 430.1B, <i>Real Property Asset Management</i> DOE O 5400.5, <i>Radiation Protection of the Public and the Environment</i> 10 CFR §830.122, "Quality Assurance Criteria"	<ul style="list-style-type: none"> <li>▶ WP 13-1, Washington TRU Solutions LLC Quality Assurance Program Description</li> <li>▶ MP 5.16, Landlord Program</li> <li>▶ WP 04-CO, Conduct of Operations</li> <li>▶ WP 09-CN3034, Configuration Management Determination</li> <li>▶ WP 14-TR.01, WIPP Training Program</li> <li>▶ WP 12-2, WIPP ALARA Program</li> <li>▶ WP 10-WC3008, Facility Inspections Procedure</li> <li>▶ WP 09, Engineering Conduct of Operations</li> <li>▶ WP 09-CN3025, Annual system Walkdown/Requalification</li> </ul>
<b>ACTION PLAN/COMMENTS</b>	
The Facility Condition Inspections is in full compliance with this objective.  Enhancements for FY 2008 and FY 2009  None	

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## **15.0 MANAGEMENT INVOLVEMENT**

### **15.1 Introduction**

To ensure the safety of DOE nuclear facility operations, facility managers are sufficiently involved with the site facility operations to be technically informed and personally familiar with conditions at the WIPP facility. Responsible managers visit the facility, assess selected activities and portions of the facility, and leave a written record of their observations. Additionally, the DOE and responsible facility managers periodically review the maintenance program to verify they are effectively accomplishing the intended objectives and are upgraded as needed.

### **15.2 Discussion**

To ensure excellence in maintenance, a program is established to promote DOE and responsible contractor management involvement with facility operations. They are technically informed and personally familiar with conditions at the facility.

Goals and objectives for the WTS maintenance program are set for every year. This is done through management policies, maintenance performance indicators and maintenance plans. Results of performance indicators, goals and objectives, and other related information are developed, trended, and reported to provide feedback. Maintenance performance indicators are routinely reviewed by management.

Personnel perform at a higher level when their activities are observed, appropriately recognized, and supported. Motivating first-line maintenance supervisors to observe the activities of craft personnel in the field requires managers to take the lead and set an example. Pride in the craft person's work may be bolstered by direct observation and immediate feedback, especially when given by managers several levels above first-line supervisors.

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<b>15.3 Performance Objective</b>	
<p><u>Performance Objective:</u> <i>To ensure safety of DOE nuclear facility operations, DOE and contractor corporate and facility managers are sufficiently involved with facility operations to be technically informed and personally familiar with conditions at the operating facility.</i></p>	
<b>GOVERNING DOCUMENTS</b>	<b>IMPLEMENTING DOCUMENTS</b>
<p>DOE O 433.1A, <i>Maintenance Management Program for DOE Nuclear Facilities</i>                  DOE G 433.1-1, <i>Nuclear Facility Maintenance Management Program Guide</i>                  10 CFR §830.122, "Quality Assurance Criteria"</p>	<ul style="list-style-type: none"> <li>▶ WP 13-1, Washington TRU Solutions LLC Quality Assurance Program Description</li> <li>▶ WP 04-IM1000, Issues Management Processing of WIPP Forms</li> <li>▶ WP 10-2, Maintenance Operations Instruction Manual</li> <li>▶ WP 13-1, WTS Quality Assurance Program Description</li> <li>▶ WP 15-GM1000, Management Assessments</li> </ul>
<b>ACTION PLAN/COMMENTS</b>	
<p>The Management Involvement section is in full compliance with this objective.</p> <p>Enhancements for FY 2008 and FY 2009</p> <p>None</p>	

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## **16.0 MAINTENANCE HISTORY**

### **16.1 Introduction**

A maintenance history and trending program is maintained to document data, provide historical information for aging studies, maintenance planning, and support maintenance and performance trending of nuclear facility systems and components. All records and documentation are maintained in accordance with an approved site-specific records retention and disposition schedule.

### **16.2 Discussion**

A maintenance history program is developed and implemented to document data and provide historical information for maintenance planning and support. Documentation of complete, detailed, and usable history is available in CHAMPS database and easily accessible for aging consideration and life extension purposes. To provide a basis for implementing improvements to the maintenance program, a process for trend analysis of historical data is established.

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<b>16.3 Performance Objective</b>	
<p><u>Performance Objective:</u> <i>A maintenance history and trending program are maintained to document data, provide historical information for maintenance planning, and support maintenance and performance trending of nuclear facility systems and components. All records and documentation are maintained according to an approved site-specific records retention and disposition schedule.</i></p>	
<b>GOVERNING DOCUMENTS</b>	<b>IMPLEMENTING DOCUMENTS</b>
<p>DOE O 433.1A, <i>Maintenance Management Program for DOE Nuclear Facilities</i>                  DOE G 433.1-1, <i>Nuclear Facility Maintenance Management Program Guide</i>                  DOE O 430.1B, <i>Real Property Asset Management</i>                  DOE O 200.1, <i>Information Management Program</i>                  10 CFR §830.122, "Quality Assurance Criteria"</p>	<ul style="list-style-type: none"> <li>▶ WP 13-1, Washington TRU Solutions LLC Quality Assurance Program Description</li> <li>▶ WP 15-PR3006, Records Inventory and Disposition Schedule Review and Approval</li> <li>▶ WP 10-2, Maintenance Operations Instruction Manual</li> <li>▶ WP 10-WC3011, Maintenance Process</li> </ul>
<b>ACTION PLAN/COMMENTS</b>	
<p>The Maintenance History section is in full compliance with this objective.</p> <p>Enhancements for FY 2008 and FY 2009</p> <p>None</p>	

## **17.0 ANALYSIS OF MAINTENANCE PROBLEMS**

### **17.1 Introduction**

Systematic analysis is used to determine and correct root causes of unplanned occurrences related to maintenance. Operating experience and review methods supplement the maintenance history program and provide data including human error data which is reviewed by the analysis program.

### **17.2 Discussion**

An analysis program is established to determine and correct root causes of unplanned occurrences related to maintenance. In addition, a process is developed and implemented for collecting and trending maintenance history for persistent or recurring equipment failures and deficiencies. Corrective action follow-up is performed to verify the problem is solved.

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<b>17.3 Performance Objective</b>	
<i>Performance Objective: Systematic analysis should be used to determine and correct root causes of unplanned occurrences related to maintenance.</i>	
<b>GOVERNING DOCUMENTS</b>	<b>IMPLEMENTING DOCUMENTS</b>
DOE O 433.1A, <i>Maintenance Management Program for DOE Nuclear Facilities</i> DOE G 433.1-1, <i>Nuclear Facility Maintenance Management Program Guide</i> DOE O 5480.19, <i>Conduct of Operations Requirements for DOE Facilities</i> 10 CFR §830.122, "Quality Assurance Criteria"	<ul style="list-style-type: none"> <li>▶ WP 10-2, Maintenance Operations Instruction Manual</li> <li>▶ WP 10-WC3011, Maintenance Process</li> <li>▶ WP 15-MD3102, Event Investigation and Root Cause Analysis</li> </ul>
<b>ACTION PLAN/COMMENTS</b>	
The Analysis of Maintenance Problems section is in full compliance with this objective.  Enhancements for FY 2008 and FY 2009  None	

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## **18.0 MODIFICATION WORK**

### **18.1 Introduction**

Facility modification work, including temporary modifications, is accomplished under the same basic administrative controls as those applied to facility maintenance activities so there are no increases in risk to facility, equipment, environment, or personnel because of modifications. Controls are integrated with the site safety basis, nuclear safety, fire protection, and natural phenomena mitigation; pressure safety; suspect and counterfeit item control; and control of equipment and system status. Cost effectiveness is considered.

### **18.2 Discussion**

WP 10-2 establishes control of facility modifications to ensure there are no increases in risk to the facility, equipment, environment, or personnel because of modification work and that these modifications are life-cycle cost-effective. Modifications are initiated through engineering design change control processes in WP 09-CN3007, Engineering and Design Document Preparation and Change Control. This process ensures that the site safety basis is maintained through the USQ determination process. Modifications that require changes to be incorporated into the maintenance program prior to actual maintenance work being initiated are identified and tracked until completed.

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<b>18.3 Performance Objective</b>	
<p><u>Performance Objective:</u> <i>Facility modification work at nuclear facilities, including temporary modifications, is accomplished under the same basic administrative controls as those applied to facility maintenance activities so that there are no increases in risk to facility equipment, environment, or personnel.</i></p>	
<b>GOVERNING DOCUMENTS</b>	<b>IMPLEMENTING DOCUMENTS</b>
<p>DOE O 433.1A, <i>Maintenance Management Program for DOE Nuclear Facilities</i>                  DOE G 433.1-1, <i>Nuclear Facility Maintenance Management Program Guide</i>                  DOE G 450.4, <i>ISMS Guide for use with Safety Management System Policies</i> (ISMS Principles 5 and 6; ISMS Functions 4 and 5)                  DOE/CBFO 98.2276, <i>Integrated Safety Management System Description</i>                  DOE-STD-1039-93, <i>Guide to Good Practices for Control of Equipment and System Status</i>                  DOE-STD-1073-2003, <i>Configuration Management Program</i>                  10 CFR Part 830, Subparts A and B, "Quality Assurance"</p>	<ul style="list-style-type: none"> <li>▶ WP 13-1, Washington TRU Solutions LLC Quality Assurance Program Description</li> <li>▶ DOE/WIPP-96-2065, <i>Waste Isolation Pilot Plant Contact Handled (CH) Documented Safety Analysis</i></li> <li>▶ DOE/WIPP-06-3174, <i>Waste Isolation Pilot Plant Remote Handled (RH) Waste Documented Safety Analysis</i></li> <li>▶ WP 13-QA.05, Suspect/Counterfeit Items Program</li> <li>▶ WP 10-AD, WIPP Maintenance Administrative Procedure Series</li> <li>▶ WP 10-WC3011, Maintenance Process</li> <li>▶ WP 10-2, Maintenance Operations Instruction Manual</li> <li>▶ WP 04-AD3012, Temporary Plant Modification Controls</li> <li>▶ WP 09-CN3007, Engineering and Design Document Preparation and Change Control</li> <li>▶ WP 09-CN3034, Configuration Management Determination</li> </ul>
<b>ACTION PLAN/COMMENTS</b>	
<p>The Modification Work section is in full compliance with this objective.</p> <p>Enhancements for FY 2008 and FY 2009</p> <p>None</p>	

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**19.0 SEASONAL FACILITY PRESERVATION**

**19.1 Introduction**

A program is in place to prevent equipment and building damage resulting from seasonal weather. The program is described in WP 10-2, Section 9.0.

**19.2 Discussion**

The program to prevent equipment and building damage due to cold weather is in place and includes the preparation of a freeze protection plan for each facility. This program contains details on inspections, preventive maintenance, and corrective maintenance. Inspections and self-assessments specified in freeze protection plans are appropriately scheduled to ensure correction of any deficiencies.

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<b>19.3 Performance Objective</b>	
<i>Performance Objective: A program is in place to prevent equipment and building damage resulting from weather conditions.</i>	
<b>GOVERNING DOCUMENTS</b>	<b>IMPLEMENTING DOCUMENTS</b>
DOE O 433.1A, <i>Maintenance Management Program for DOE Nuclear Facilities</i> DOE G 433.1-1, <i>Nuclear Facility Maintenance Management Program Guide</i>	<ul style="list-style-type: none"> <li>▶ WP 04-CO, Conduct of Operations</li> <li>▶ WP 10-2, Maintenance Operations Instruction Manual</li> </ul>
<b>ACTION PLAN/COMMENTS</b>	
<p>The seasonal/severe weather and adverse environmental maintenance section is in full compliance.</p> <p>Enhancements for FY 2008 and FY 2009</p> <p>None</p>	

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**20.0 REFERENCES**

Public Law 102-579, Waste Isolation Pilot Plant Land Withdrawal Act

10 CFR §830.121, "Quality Assurance Program"

10 CFR §830.122, "Quality Assurance Criteria"

DOE O 226.1, *Implementation of Department of Energy Oversight Policy*

DOE O 414.1C, *Quality Assurance*

DOE O 420.1B, *Facility Safety*

DOE O 430.1B, *Real Property Asset Management*

DOE O 433.1A, *Maintenance Management Program for DOE Nuclear Facilities*

DOE O 440.1A, *Worker Protection Management for DOE Facilities*

DOE O 5480.19, *Conduct of Operations Requirements for DOE Facilities*

DOE O 5480.20A, *Personnel Selection, Qualification and Training Requirements for DOE Nuclear Facilities*

DOE G 433.1-1, *Nuclear Facility Maintenance Management Program*

DOE G 450.4, *Integrated Safety Management System Guide for use with Safety Management System Policies*

DOE-STD-1027-92, *Hazard Categorization and Accident Analysis Techniques for Compliance with DOE Order 5480.23, Nuclear Safety Analysis Reports*

DOE-STD-1073-2003, *Configuration Management Program*

DOE-HDBK-1003-96, *Guide to Good Practices for Training and Qualification of Maintenance Personnel*

DOE-HDBK-1029-92, *Writer's Guide for Technical Procedures*

DOE-HDBK-1039-93, *Guide to Good Practices for Control of Equipment and System Status*

DOE-HDBK-1073-2003, *Configuration Management*

DOE-HDBK-1206-98, *Guide to Good Practices for On-the-Job Training*

ANSI/NCSL Z540, *Calibration Laboratories and Measuring and Test Equipment General Requirements*

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DOE/WIPP-95-2125, *WIPP Contact Handled (CH) Technical Safety Requirements (TSR)*

DOE/WIPP-96-2065, *Waste Isolation Pilot Plant Contact Handled (CH) Documented Safety Analysis*

DOE/CBFO-98-2276, *Integrated Safety Management System Description*

DOE/WIPP-04-3327, *Waste Isolation Pilot Plant Site Ten-Year Plan*

DOE/WIPP-06-3174, *Waste Isolation Pilot Plant Remote Handled (RH) Waste Documented Safety Analysis*

DOE/WIPP-06-3178, *WIPP Remote Handled (RH) Technical Safety Requirements (TSR)*

MC 5.1, Human Resources Policy

MC 6.1, Operations Department Policy

MC 9.29, Lessons Learned Working Group

MP 1.21, Management Responsibility Accountability Policy

MP 1.41, Issues Management (WIPP Form)

WP 02-AR3001, Unreviewed Safety Question Determination

WP 04-AD3012, Temporary Plant Modification Control

WP 04-CO, Conduct of Operations

WP 04-IM1000, Issues Management Processing of WIPP Forms

WP 09, Engineering Conduct of Operations

WP 09-CN3005, Graded Approach to Application of QA Controls

WP 09-CN3007, Engineering and Design Document Preparation and Change Control

WP 09-CN3022, Engineering File Room Operations

WP 09-CN3025, Annual System Walkdown/Requalification

WP 09-CN3034, Configuration Management Determination

WP 10-2, Maintenance Operations Instruction Manual

WP 10-AD.01, Metrology Program

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WP 10-AD3007, Use and Control of Rigging Components

WP 10-AD3015, Tool Crib Administration

WP 10-AD3018, Use and Control of Personal Fall Arrest Systems

WP 10-AD3028, Calibration and Control of Measurement and Test Equipment

WP 10-AD3029, Calibration and Control of Monitoring and Data Collection Equipment

WP 10-WC3008, Facility Inspections Procedure

WP 10-WC3010, Maintenance PM/MAI Controlled Document Processing

WP 10-WC3011, Maintenance Process

WP 10-WC3016, Ladder Control

WP 12-2, WIPP ALARA Program Manual

WP 13-1, Washington TRU Solutions LLC Quality Assurance Program Description

WP 13-QA.05, Suspect/Counterfeit Items Program

WP 12-HP3600, Radiological Work Permits

WP 12-IS.01, WIPP Industrial Safety Program – Structure and Management

WP 14-TR.01, WIPP Training Program

WP 15-GM1000, Management Assessments

WP 15-MD3102, Event Investigation

WP 15-PC3042, Credit Card Purchases

WP 15-PC3609, Preparation of Purchase Requisitions

WP 15-PM3509, Utilization and Disposal of Excess/Surplus Government Personal Property

WP 15-PM3517, Stores Inventory Control

WP 15-PS3002, WTS Controlled Document Processing

MAST Training Program

SAT Program