ISSUED
26322-OTC-00137

Waste Isolation Pilot Plant (WIPP)

Integrated Safety Management System Description

WP 15-GM.03

Revision 14

Contract # 89303322DEM000077

February 4, 2023

SIGNATURE ON FILE	**12/26/2022**
Ken Harrawood, Program Manager	**Date**

Table of Contents

List of Figures

LIST OF ACRONYMS

AA	Authorization Agreement
ALARA	As Low as Reasonably Achievable
CAS	Contractor Assurance System
CBFO	Carlsbad Field Office
CCE	Continuing Core Expectation
CCP	Central Characterization Project
CERCLA	*Comprehensive Environmental Response, Compensation and Liability Act of 1980*
CFR	Code of Federal Regulations
CH	Contact-Handled
CHP	Certified Health Physicist
CIH	Certified Industrial Hygienist
CSP	Certified Safety Professional
DEAR	Department of Energy Acquisition Regulation
DOE	U.S. Department of Energy
DOE-EM	DOE Office of Environmental Management
DSA	Documented Safety Analysis
EDMS	Electronic document management system
EMS	Environmental Management System
EPA	Environmental Protection Agency
ES&H	Environmental, Safety and Health
ESS	Evaluation of the Safety of the Situation
FSM	Facility Shift Manager
GET	General Employee Training
GHA	General Hazard Analysis

HRO	High Reliability Organization
HWFP	Hazardous Waste Facility Permit
ISM	Integrated Safety Management
ISMS	Integrated Safety Management System
ISMSD	Integrated Safety Management System Description
JHA	Job Hazard Analysis
KPI	Key Performance Indicator
MC	Management Charter
MP	Management Policy
MSHA	Mine Safety and Health Administration
NEPA	*National Environmental Policy Act*
ORPS	Occurrence Reporting and Processing System
OSHA	Occupational Safety and Health Administration
PE	Professional Engineer
POD	Plan of the Day
POMCs	Performance Objectives, Measures, and Commitments
POW	Plan of the Week
PPE	Personal protective equipment
PAAA	Price Anderson Amendments Act
QA	Quality Assurance
QAPD	Quality Assurance Program Description
RCRA	*Resource Conservation and Recovery Act of 1976*
RH	Remote-Handled
SCWE	Safety-Conscious Work Environment
SIMCO	Salado Isolation Mining Contractors, LLC
S/RID	Standards/Requirements Identification Document

SSM	Safeguards and Security Management
STS	Safety Trained Supervisors
SULU	Speak Up Listen Up
TRU	Transuranic
TSR	Technical Safety Requirements
USQ	Unreviewed safety question
VPP	Voluntary Protection Program
WCD	Work Control Document
WIPP	Waste Isolation Pilot Plant
WSHPD	Worker Safety and Health Program Description
ZSC	Zone Safety Committee

EXECUTIVE SUMMARY

This Integrated Safety Management System Description (ISMSD) defines how Salado Isolation Mining Contractors, LLC (SIMCO) systematically integrates safety into management and work practices at all levels so missions are accomplished while protecting the public, the worker, and the environment. Continuous improvement of Integrated Safety Management (ISM) is achieved by establishing Performance Objectives, Measures, and Commitments (POMC) interactively with the U.S. Department of Energy (DOE) Carlsbad Field Office (CBFO). These improvements ensure effective integration of environment, safety, and health management into all facets of work planning and execution described in the appropriate sections of this ISMSD. This ISMSD serves as an integral part of the company's business processes and includes all work conducted by SIMCO employees at any location including other covered workplaces per WP 15-GM.02, *Worker Safety and Health Program Description* (WSHPD). In addition, this ISMSD flows down directly to subcontractors in conjunction with WP 15-GM.02 and WP 12-IS.01-6, *Industrial Safety Program – Visitor, Vendor, User, Tenant, and Subcontractor Safety Controls*.

This ISMSD explains SIMCO safety values, objectives, and approaches for ensuring protection of the public, worker, and environment, consistent with DOE Policy (P) 450.4A, Integrated Safety Management Policy, and the DOE Acquisition Regulations (DEAR) Clause at 48 *Code of Federal Regulations* (CFR) 970.5223-1, Integration of Environmental, Safety, and Health (ES&H) into work planning and execution. The ISMSD describes how SIMCO conducts work following the seven ISM Guiding Principles, the five ISM Core Functions, and the three Safety Culture Focus Areas. Finally, this document describes how SIMCO is improving compliance with the expectations of the DOE/CBFO for establishing and maintaining an open and collaborative Safety-Conscious Work Environment (SCWE) throughout the organization.

CBFO safety expectations for work performed by SIMCO include the following:

- The ability to perform a job safely will not be compromised by production, budget, or schedule priorities. If a job cannot be performed safely, it will not be performed until the proper hazard and risk controls are put in place.
- Safety drives how we do business. The DOE Integrated Safety Management System (ISMS) is a systematic approach for selecting and incorporating the appropriate safety standards, necessary work controls, and expectation of continuous feedback/improvement. SIMCO will not accept shortcuts that circumvent safety or yield less than quality results. This systematic approach motivates a culture of personal responsibility by and for each employee.

The WIPP mission is to provide safe, compliant, and efficient characterization, transportation, and disposal of defense-generated TRU waste. The mission focus is on the operation of the WIPP. SIMCO is under contract 89303322DEM000077with the CBFO for management and operation of the WIPP, and related characterization and transportation activities at several generator sites. SIMCO systematically integrates safety and environmental stewardship into management and work practices at all levels of the organization to accomplish the WIPP mission while protecting the public, worker, and environment.

The management of SIMCO is committed to ensuring all employees go home as healthy as they arrived, by providing exemplary safety and health programs, demanding and maintaining the highest safety performance, and promoting employee involvement in the successful continuation of these programs.

SIMCO expects all departments to embrace a strong safety culture, where safe performance of work and involvement of workers in all aspects of work performance are core values that are consistently held and demonstrated by managers and workers.

SIMCO Safety Culture is founded on the ISM Safety Culture Focus Areas of Leadership, Employee/Worker Engagement, and Organizational Learning, and additional principles and values incorporated into the SIMCO Safety Culture Sustainment Plan updated as part of Deliverable 62, Integrated Safety Management Review. It is also referred to as the ISMS Annual Management Review and Declaration.

SIMCO offers a work environment that fosters and encourages an open exchange of ideas. This includes raising safety concerns of differing opinions without fear of retaliation. It is fully expected that each SIMCO employee will raise safety issues and provide feedback for improving work processes.

SIMCO employees are expected to protect themselves and others against accidents. All accidents and incidents are considered preventable with an appropriate level of pre-planning. It is recognized that an accident/event-free workplace is achieved through careful planning, close attention to hazard controls, worker involvement in task planning, and stopping work in the face of uncertainty. SIMCO management is expected to demonstrate continued improvement by promoting and enforcing safety expectations throughout the work environment.

1.0 INTRODUCTION

SIMCO is under contract with CBFO for the management and operation of WIPP. The scope includes coordinating waste characterization activities at generator sites to ensure consistent delivery of waste for disposal to meet the nation's clean-up goals. The scope for the generator site characterization activities are defined in Prime Contract 89303322DEM000077, in generator site memorandums of understanding and interface agreements, and, in some cases, subcontracts. Robust worker protection programs have been established at the host sites to implement an effective worker safety and health program that will reduce or prevent injuries, illnesses, and accidental losses by providing workers and subcontractors with a safe and healthful workplace.

SIMCO has developed safety and health programs and processes to ensure hazards are abated, controlled, or otherwise mitigated in a manner that provides assurance that workers are adequately protected from identified hazards. The coordination of worker protection functions with the host sites is addressed in WP 15-GM.02, *Worker Safety and Health Program Description*, which is specific to defining the processes to achieve safe and healthful workplaces per 10 CFR 851, “Worker Safety and Health Program.” This ISMSD focuses on the management systems that ensure that safety is integrated in all aspects of work from planning to field activities in compliance with the statutes enacted by Congress for the protection of workers, the public, and the environment. This document describes the SIMCO processes to fulfill this commitment in accordance with five ISM Core Functions, seven ISM Guiding Principles, and the three Safety Culture Focus Areas that have been deemed vital for ensuring the safe conduct of work. SIMCO has developed a 10 CFR 851, Worker Safety and Health Assessment matrix that demonstrates the flowdown of requirements to SIMCO procedures and processes.

This ISMSD has four areas of focus: (1) define the SIMCO management systems to identify ISM execution, (2) identify safety culture focus areas, (3) describe how relevant safety goals and objectives are established, documented, and implemented, and (4) describe how SIMCO measures ISM effectiveness and ensures continuous improvement.

2.0 PURPOSE AND OBJECTIVES

SIMCO views this ISMSD as the primary, over-arching document for accomplishing work in a safe and environmentally sound manner. This ISMSD defines the integral role of safety in SIMCO management control systems. SIMCO integrated Quality Assurance (QA) and the Environmental Management System (EMS) into the ISMS, as delineated in DOE O 414.1D, Quality Assurance. (Note: in ISMS, the term safety encompasses environment, safety and health, including pollution prevention and waste minimization, and the term employee includes subcontractor employees.) This ISMSD also describes SIMCO responsibilities for, and the approach to, implementing the ISMS Core Functions, and Guiding Principles established in DOE P 450.4A, *Integrated Safety Management Policy*, in all aspects of work. These implementing mechanisms encompass the system of policies, plans, and procedures that establish the SIMCO responsibilities and methods for implementing each ISMS Guiding Principle and Core Function.

The objective of the SIMCO ISMS is to systematically integrate safety into management and work practices at all levels, so the mission is accomplished while protecting the worker, public, and environment. SIMCO accomplishes this objective through effective integration of safety management into all facets of work planning and execution. Effective management of safety functions and activities is an integral SIMCO expectation of mission accomplishment.

3.0 ISMS OVERVIEW

The objective of ISM is to integrate safety into management and work practices at all levels, addressing all types of work and all types of hazards to ensure safety for workers, the public, and the environment. To achieve this objective, DOE P 450.4A, *Integrated Safety Management Policy*, established DOE's expectations for ISM implementation through guiding principles, core functions, and safety culture focus areas. These key expectations are consistent with those used in implementing safety management throughout the DOE complex and are described in the following sections.

3.1 Safety Management Guiding Principles

The following Guiding Principles are fundamental policies that guide SIMCO actions, from development of plans and procedures to the conduct of work:

Line Management Responsibility for Safety: Line Management is directly responsible for protection of the worker, the public, and the environment. Line management includes those SIMCO and subcontractors managing or supervising employees performing work.

Clear Roles and Responsibilities: Clear and unambiguous lines of authority and responsibility for ensuring safety is established and maintained at all organizational levels.

Competence Commensurate with Responsibilities: Personnel possess the experience, knowledge, skills, and abilities necessary to discharge their responsibilities.

Balanced Priorities: Resources are effectively allocated to address safety, programmatic, and operational considerations. Protecting the workers, public, and environment is a priority whenever activities are planned and performed.

Identification of Safety Standards and Requirements: Before work is performed, the associated hazards are evaluated, and an agreed-upon set of safety standards and requirements is established and properly implemented to provide adequate assurance that the workers, public, and environment are protected from adverse consequences.

Hazard Controls Tailored to Work Being Performed: Administrative and engineering controls to prevent and mitigate hazards are tailored to the work being performed and associated hazards. Emphasis is placed on designing the work or controls to reduce or eliminate the hazards and to prevent accidents and unplanned releases and exposures.

Operations Authorization: The conditions and requirements to be satisfied for operations to be initiated and conducted are clearly established and agreed upon. The extent of documentation and level of authority for agreement are tailored to the complexity and hazards associated with the work and at the contract level are included in the CBFO ISMSD. For SIMCO internal operations authorization, the Facility Shift Manager (FSM) is the authority that releases (authorizes) Work Control Documents (WCDs) for work to be conducted. Recurring work is authorized through the approved document control process and approvals.

3.2 Safety Management Core Functions

The five ISM Core Functions established in DOE P 450.4A provide the necessary structure for any work activity that could potentially affect the workers, public, and environment. The functions are applied as a continual cycle, with the degree of rigor appropriate to address the type of work

activity and the hazards involved (graded approach). The five Core Functions upon which the SIMCO ISMS is developed are:

1. Define the Scope of Activity Level Work: Missions are translated into work; expectations are set; tasks are identified and prioritized; and resources are allocated.

2. Analyze the Hazards: Hazards associated with the work are identified, analyzed, and categorized.

3. Develop and Implement Hazard Controls: Applicable standards and requirements are identified and agreed upon; controls to prevent or mitigate hazards are identified; the safety envelope is established; and controls are implemented. The Hierarchy of Controls is utilized during this process.

4. Perform Work within Controls: Readiness is confirmed, and work is performed safely.

5. Provide Feedback and Continuous Improvement: Feedback information on the adequacy of controls is gathered; opportunities for improving the definition and planning of work are identified and implemented.

3.3 Safety Culture

A positive safety culture is an integral aspect of an effective ISMS program. The expectation expressed in DOE P 450.4A states that DOE "expects all organizations to embrace a strong safety culture where safe performance of work and involvement of workers in all aspects of work performance are core values of managers and workers, encouraging a questioning attitude by all employees and a work environment that fosters such attitude". The DOE guidance includes the definition of safety culture used by SIMCO. Safety culture is an organization's values and behaviors modeled by its leaders and internalized by its members, which serve to make safe performance of work the overriding priority to protect the workers, public, and the environment. The DOE has established the following three Safety Culture Focus Areas to be used in parallel with ISM Guiding Principles to enhance the effective implementation of ISMS. SIMCO continues to implement extensive improvements related to the attributes of these Safety Culture Focus Areas accordingly.

1. Leadership
2. Employee/Worker Engagement
3. Organizational Learning

Further discussion on implementing attributes is located in Section 6.0 , Implementation of ISM.

4.0 SIMCO MANAGEMENT COMMITMENTS AND EXPECTATIONS

SIMCO management is committed to safety, as well as focusing on continuous improvement to safety and health programs, while promoting employee involvement in the successful improvement of these programs. Continuing assessment of the safety significance of events and issues is part of the SIMCO expectations in this area. SIMCO recognizes that the success in meeting this commitment is contingent upon a strong safety culture.

4.1 Management Commitments

Management commitment includes the commitment to provide exemplary safety and health programs. Management commitment also includes improving and requiring a high level of safety performance by all participants, including subcontractors and sub-tier subcontractors. In conjunction with the commitment, SIMCO management focuses on controlling hazards accordingly by:

Leading by example, placing safety first at all times to achieve an open and collaborative SCWE and incident-free workplace.

Recognizing that safety is a collective responsibility, and each manager must create an atmosphere where each worker has a personal responsibility for improving work processes.

Establishing written policies, goals, and performance objectives for the worker safety and health program.

Monitoring performance measures to meet objectives and goals.

Using qualified worker safety and health staff to direct and manage the safety programs. This same staff provides subcontractor safety oversight and interfaces with host site worker safety and health staff to ensure appropriate safety oversight of characterization activities at the host sites.

Assigning worker safety and health program responsibilities, evaluating personnel performance, and holding personnel accountable for worker safety and health performance.

Establishing procedures and processes for workers to report without retribution job-related safety issues, as well as providing support for the Stop Work Process, documented in WP 15-GM1003, Graded Approach to Stop Work. This procedure established that all workers, including subcontractors, have the right and responsibility to take a time-out or stop work to get clarification of requirements or because of a reasonable belief that the task poses an imminent risk to safety of personnel.

Maintaining an ISMS that ensures compliance with 10 CFR 851 and establishes a safety culture strong enough to maintain VPP STAR status.

Supporting key attributes as demonstrated by a highly reliable organization.

Monitoring and assessing safety performance and requiring the completion of corrective actions in a timely manner.

Maintaining excellence in the Operating Experience Program, (lessons learned) to ensure that the program provides appropriate lessons learned and input for continuous improvement as a learning organization.

Supporting employee rights per 10 CFR 851.

4.2 Management Expectations

SIMCO Core Values and Expectations are implemented and recognized in many ways, including goal setting, performance reviews and recognition programs. The Core Values and Expectations are updated based on employee feedback, to ensure all workers understand the applicability to all personnel. The following are the SIMCO Core Values and Expectations for each employee:

Safety

- Take your safety and the safety of others personally
- Speak up and listen up
- Conduct all activities in a deliberate manner
- Stop and question when uncertain
- Actively participate in safety initiatives and improvements

Integrity

- Tell the truth, all the time
- Follow through with your intentions and commitments
- Do the right thing
- Set the example

Ownership

- Own our legacy and successes
- Own your work and learn from your experiences
- Hold yourself and others accountable
- Self-check to ensure quality of your work

Respect

- Actively listen; value others' opinions
- Do not blame or speak poorly of organizations or individuals
- Seek to understand – rather than to be understood
- Recognize the impact your works and actions have on others
- Treat others the way they want to be treated

Teamwork

- Work together to achieve the mission
- Actively recognize each other for our contributions
- Think out loud and openly share ideas
- Communicate "Why"

Continuous Improvement

- Never stop learning; improve every day
- Be curious; do not just question
- Actively identify efficiencies and implement solutions
- Have a bias for action to find and fix problems

Programs, policies and processes at SIMCO further describe expectations as follows:

- To demonstrate SIMCO values through exemplifying behaviors consistent with a strong Safety Culture

- To maintain a questioning and inquisitive attitude
- To have a willingness to pause, ask questions, gather additional data, and obtain answers, rather than proceed in the face of uncertainty
- To raise concerns and issues directly to management and/or the safety department or submit a written description of the issue in the appropriate issues management process
- To assist in achieving excellence by following procedures and not be complacent with meeting minimally compliant standards
- To implement the worker right and responsibility for a time-out to stop work when the worker discovers potential exposures to imminently dangerous conditions
- To know worker rights, which include:

– The right to participate in activities described in this section on official time.

– Have access to:

  - DOE safety and health publications
  - Applicable worker safety and health programs
  - Applicable standards, controls, and procedures
  - Limited information on any recordkeeping log (OSHA Form 300), subject to Freedom of Information Act and DOE O 231.1B, Environment, Safety, and Health Reporting, requirements and restrictions
  - Limited information from DOE Form 5484.3 (DOE equivalent to OSHA Form 301)

– Observe monitoring or measuring of hazardous agents

– Workers receive results of their own hazardous agent exposure monitoring

– Request and receive results of inspections and accident investigations

– Express concerns related to worker safety and health

– Decline to perform an assigned task because of a reasonable belief that, under the circumstances, the task poses an imminent risk of death or serious physical harm to the worker, coupled with a reasonable belief that there is insufficient time to seek effective redress through normal hazard reporting and abatement procedures

– Stop work when the worker discovers employee exposure to imminently dangerous conditions or other serious hazards; provided that any stop work authority must be exercised in a justifiable and responsible manner in accordance with procedures established in the approved worker safety and health program

– Be aware of VPP Rights as a worker at a DOE VPP STAR site, including:

  - To file a notice of hazardous condition with management without fear of retribution
  - To receive a timely response to any notice of hazard filed
  - To exercise duties in the Safety and Health program with protection from any form of discrimination including harassment
  - To have access to results of self-audits, appraisals, and accident investigations (in no way diminishes the worker's right to file a complaint with DOE at any time, over any unresolved issues or unsafe conditions)

5.0 ROLES AND RESPONSIBILITIES

As the management and operating contractor for the WIPP, SIMCO is responsible for the safe disposal of transuranic waste, while also ensuring protection of the environment, the public, and the safety and health of employees. Annually, goals are set for continuous improvement in areas including (but not limited to) Key Performance Indicators (KPIs), the POMC in the ISMSD, VPP

and Safety Culture goals, and Performance Evaluation and Measurement Plan incentive goals. These improvements are beyond the requirements of the DOE, Occupational Safety and Health Administration (OSHA), the Mine Safety and Health Administration (MSHA), the U.S. Environmental Protection Agency (EPA), and the New Mexico Environment Department.

SIMCO safety programs protect the worker, the public, and the environment while providing flexibility to meet business needs. SIMCO emphasizes, through policy and training, the individual responsibility of all employees to perform work in a safe, efficient, and environmentally responsible manner.

SIMCO is committed to the safety and health of their workforce. The SIMCO safety management responsibilities are clearly defined in SIMCO Management Policy (MP) 1.28, Integrated Safety Management; and Section 5.0 , Roles and Responsibilities, of this ISMSD. Additional safety management responsibilities, including responsibilities shared with host sites for SIMCO characterization activities, are further defined in WP 15 GM.02, Worker Safety and Health Program Description, in accordance with 10 CFR 851. These safety management responsibilities include, but are not limited to, the following:

5.1 President and Program Manager

The President and Program Manager is responsible for the following:

- Ensuring that managers are responsible for SIMCO implementation of ISMS
- Ensuring that department managers understand their roles and responsibilities for implementation of safety standards within their cognizant organizations.
- Communicating routinely with department managers to identify barriers and taking corrective actions to remove barriers.
- Driving focus on achieving excellence in the WIPP safety culture.
- Instilling a continuous improvement mindset to meet ISMS core functions and Guiding Principles.
- Meeting the commitments for an effective Safety Culture implementation, including corrective actions from related surveys.
- Meeting and demonstrating SIMCO Core Values and Expectations.

5.2 Department Managers/Deputy Managers

Department Managers/Deputy Managers are responsible for the following:

- Ensuring that line managers understand their roles and responsibilities for implementation of safety standards within their cognizant organizations
- Communicating routinely with line managers to identify barriers to achieving safety standards and requirements and taking corrective actions to remove barriers
- Performing field observations and communicating directly with employees to assess the effectiveness of the line managers in applying safety standards and requirements
- Supporting employee involvement in safety committees and activities

5.3 Environmental, Safety and Health Manager

The Environmental Safety and Health Manager is responsible for the following:

- Overseeing the ES&H integration into all aspects of work planning and execution through the ISMS

- Determining annually the effectiveness of the WIPP ISMS
- Maintaining the ISMSD
- Developing, implementing, and maintaining the WIPP Safety Culture Sustainment Plan to ensure long-term continuous improvement in safety culture
- Measuring and monitoring safety in work results to assess the effectiveness of safety procedures and their implementation in achieving anticipated results

5.4 Line Managers

Line managers are responsible for the following:

- Ensuring employees possess the experience, knowledge, skills, and abilities to perform the work
- Ensuring employees and procedures are compliant with applicable safety standards and requirements
- Providing employees with opportunities to participate in safety committees and activities
- Communicating routinely with employees, providing them with the opportunity to identify barriers to implementing safety standards and requirements, and taking corrective actions to remove these barriers
- Performing management/field observations to assess the adequacy of safety-related actions in approved procedures
- Providing appropriate acknowledgement, recognition, and reward as appropriate for demonstrated safe, responsible behavior

5.5 Subcontract Technical Representatives

- Ensuring that ES&H requirements pertinent to the work scope in the requests for proposal are clearly specified, including the 10 CFR Part 851 implementation requirements in WP 15-GM.02, this ISMSD, and WP 12-IS.01-6, *ISP – Visitor, Vendor, User, Tenant, and Subcontractor Safety Controls*
- Ensuring that safety and environmental professionals review and approve all safety aspects before the start of any project
- Ensuring that the subcontractors providing work on the WIPP site and covered workplaces are conducting work in accordance with SIMCO-specific safety procedures and their subcontract's scope of work
- Providing oversight of the subcontractor or vendor performance of work, as delineated in WP 15-PC3608, *Subcontract Technical Representative Manual*

5.6 Site Advisor, Point of Contact

The Site Advisor serves as the SIMCO interface and oversight for users and tenants in accordance with WP 02-EC.12, *Site Users and Tenants Guide for Organizations, Personnel, or Companies That Perform Work on U.S. Department of Energy Property or Rights-of-Way on or Around the Waste Isolation Pilot Plant Site*, and WP 12-IS.01-9, *Industrial Safety Program - Responsibilities for the Oversight of Visitors, Vendors, Users, Tenants, and Subcontractors*.

5.7 Each SIMCO Employee

Each SIMCO Employee is responsible for the following:

- Understanding and complying with approved procedures that implement safety standards and requirements for nuclear, industrial, and occupational health and safety, environmental protection, and emergency management
- Identifying conditions that may impede implementing safety aspects of approved procedures
- Initiating actions to correct these conditions, including pausing or stopping work, if necessary
- Possessing the experience, knowledge, skills, and abilities to discharge responsibilities
- Meeting additional safety program expectations, including the following cultural controls that are each employee's responsibility:
  - Ensure that they, as well as their coworkers, go home as healthy as they arrived
  - Arrive ready for work and fit for duty
  - Review work area for hazards
  - Conduct appropriate pre-use equipment inspections
  - Know the hazards and controls for assigned tasks
  - Exercise authority to take a time-out or stop work when the situation arises
  - Use a questioning attitude as the error-prevention tool; it is the employee that is the first line of defense
  - Expect to work safety
  - Follow safety rules
  - Do not commit unsafe acts (e.g., take shortcuts)
  - Report concerns/issues by contacting the responsible manager or the Central Monitoring Room, reporting to the Safety Hotline, or using the Issues Management Reporting or employee concerns process (including reporting first aids, incidents, close calls, etc.). This can prevent negative occurrences from happening again with worse consequences
  - Follow administrative controls (procedures, processes, etc.) and ensure WCDs being used
  - Use disciplined operations, adhering to Conduct of Operations requirements
  - Keep training current
  - Check Personal Protective Equipment (PPE) before use
  - Watch out for others
  - Identify potential hazards of work, before you act

6.0 IMPLEMENTATION OF ISM

This ISMSD provides the mechanisms SIMCO employs to manage and oversee the systematic integration of safety into management and work practices in all facets of work planning and execution so that missions are accomplished while protecting the worker, public, and environment. This results in the overall management of safety functions and activities becoming an integral part of mission accomplishment.

6.1 ISM Guiding Principles

The benefits of the ISM Guiding Principles, the Core Functions, and the Safety Culture Focus Areas are improved safety awareness and corporate operations. The Guiding Principles establish an expected set of behaviors and disciplines for eliminating unsafe practices and accidents. This section describes the SIMCO implementation, the management systems used to execute the desired safety integration, the expected organizational attributes and outcomes, and the implementing policies and procedures.

The SIMCO implementation of the management systems are the primary instruments for incorporating the Guiding Principles at the facility and work activity levels. The management systems (also referred to as programs, policies and plans) define the practices, techniques, and tools used by SIMCO to meet the project requirements. The SIMCO management systems are progressive. The systems are adjusted over time to accommodate new requirements, lessons learned, and feedback for improvement. As such, the systems discussed in this section are being continuously enhanced.

6.1.1 Guiding Principle 1: Line Management Responsibility for Safety

Line management is directly responsible for the protection of the public, the workers, and the environment. SIMCO develops and implements effective management systems to assure line management is held directly accountable and understand and accept safety responsibilities for the protection of the public, the workers, and the environment. Safety performance elements are incorporated into performance plans and evaluations for managers, safety professionals and others. Overall safety performance is monitored, assessed, and reported to senior management in monthly reviews.

Attributes

- Line management personnel (from the contractor senior manager to the front-line worker) understand and accept their safety responsibilities inherent in mission accomplishment. Line managers do not depend on supporting organizations to build safety into line management work activities.
- Line managers have a clear understanding of their work activities and their performance objectives, and how they will conduct their work activities safely to accomplish their performance objectives.
- Line managers demonstrate their commitment to safety. Line managers are the leading advocates of safety and demonstrate their commitment in both word and action. Line managers periodically take steps to reinforce safety, including personal visits and walkthroughs to verify that their expectations are being met.
- Line managers spend time on the floor. Line managers practice visible leadership in the field by placing "eyes on the problem," coaching, mentoring, and reinforcing standards and positive behaviors. Deviations from expectations are corrected promptly and, when appropriate, analyzed to understand why the behaviors occurred.
- Line managers maintain a strong focus on the safe conduct of work activities. Line managers maintain awareness of KPIs related to safe work accomplishment, watch carefully for adverse trends or indications, and take prompt action to understand adverse trends and anomalies.
- Line managers throughout the organization set an example for safety through their direct involvement in continuous learning by themselves and their staffs on topics related to technical understanding and safety improvement.
- Line managers are skilled in responding to employee questions in an open, honest manner. They encourage and appreciate the reporting of safety issues and errors. They do not discipline employees for reporting errors. They encourage a vigorous questioning attitude toward safety, as well as constructive dialogues and discussions on safety matters.
- Line managers reinforce values of trust, credibility, and attentiveness. The organization is just the line managers strive to create an organization that learns from mistakes and supports continuous improvement. demonstrate an understanding that humans are fallible and when mistakes are made, the organization seeks to learn rather than to blame. The system of recognition or corrective actions is aligned with strong safety policies and reinforcement of desired behaviors and outcomes.

- DOE/WIPP-06-3335, *WIPP Nuclear Maintenance Management Program*
- DOE/WIPP-07-3372, *Waste Isolation Pilot Plant Documented Safety Analysis*
- DOE/WIPP-07-3373, *WIPP Technical Safety Requirements*
- DOE/WIPP 17-3573, *WIPP Emergency Management Plan*
- CCP-HSP-014*, CCP Health and Safety Program Implementation*
- CCP-PO-005, *CCP Conduct of Operations*
- CCP-QP-018, *CCP Management Assessments*
- MP 1.12, *Worker Protection Policy*
- MP 1.21, *Management Responsibility and Accountability*
- MP 1.28, *Integrated Safety Management*
- MP 1.52, *Just Culture Management Policy*
- WP 02-EC.12, *Site Users and Tenants Guide for Organizations, Personnel, or Companies That Perform Work on U.S. Department of Energy Property or Rights-of-Way on or Around the Waste Isolation Pilot Plant Site*
- WP 02-EC.14, *WIPP Environmental Management System*
- WP 04-CO.01, *Conduct of Operations*
- WP 10-WC3011*, Work Control Process*
- WP 12-2, *WIPP ALARA Program Manual*
- WP 12-5, *WIPP Radiation Safety Manual*
- WP 12-FP.01, *WIPP Fire Protection Program*
- WP 12-IH.02, *WIPP Industrial Hygiene Program Manual*
- WP 12-IS.01, I*ndustrial Safety Program - Structure and Management*
- WP 12-IS.01-8, *Industrial Safety Program – Vehicle Safety*
- WP 12-IS3002, *Job Hazard Analysis and Electrical Risk Assessment Development and Performance*
- WP 13-1, *Salado Isolation Mining Contractors, LLC Quality Assurance Program Description*
- WP 15-GM.02, *Worker Safety and Health Program Description*
- WP 15-GM.08, *Project Management Plan*
- WP 15-HS.02, *Occupational Health Program*
- EA02EC14-1-0, *WIPP Environmental Policy Statement*

6.1.2 Guiding Principle 2: Clear Roles and Responsibilities

Clear and unambiguous lines of authority and responsibility for ensuring safety are established and maintained at all organizational levels within the company. requirements to establish clear roles and responsibilities are flowed down to subcontractors. Clearly defined roles and responsibilities are required components for all procedures, processes, and management systems in SIMCO.

Attributes

- The lines of authority and responsibility for safety are defined and clearly understood as an integral part of performing work.
- Organizational safety responsibilities are sufficiently comprehensive to address the work activities and hazards involved.
- Ownership boundaries and authorities are clearly defined at the institutional, facility, activity, and individual contributor levels. Each position is designated in writing and understood by the incumbent. Interface issues are actively managed.
- Reporting relationships, positional authority, staffing levels and capability, organizational processes and infrastructure, and financial resources are commensurate with and support fulfillment of assigned or delegated safety responsibilities.
- Employees understand the importance of adhering to standards.
- Line managers provide ongoing reviews of performance of assigned roles and responsibilities to reinforce expectations and ensure that key safety responsibilities and expectations are being met for their staff. For matrixed Safety Staff, feedback is given to Safety Staff Management.
- Personnel at all levels of the organization are held accountable for shortfalls in meeting standards and expectations related to fulfilling safety responsibilities. Accountability is demonstrated both by recognition of excellent safety performance and by identification of less-than-adequate performance. In holding people accountable, in the context of a just culture, managers consider individual intentions and the organizational factors that may have contributed.

System Policies, Procedures, and Other Implementing Documents

- DOE/WIPP-06-3335, *WIPP Nuclear Maintenance Management Program*
- DOE/WIPP-07-3372, *Waste Isolation Pilot Plant Documented Safety Analysis*
- DOE/WIPP-07-3373, *Waste Isolation Pilot Plant Technical Safety Requirements*
- DOE/WIPP 17-3573, *WIPP Emergency Management Plan*
- DOE/WIPP 95-2054, *Waste Isolation Pilot Plant Radiation Protection Program*
- Prime Contract No. DE-EM0001971 for Management and Operation of the Waste Isolation Pilot Plant
- Work authorization documents and statements of work
- CCP-HSP-014, *CCP Health and Safety Program Implementation*
- CCP-PO-005, *CCP Conduct of Operations*
- MP 1.12, *Worker Protection Policy*
- MP 1.21, *Management Responsibility and Accountability*
- MP 1.28, *Integrated Safety Management*
- MP 1.29, *Establishment of Annual Goals*
- WP 02-EC.12, *Site Users and Tenants Guide for Organizations, Personnel, or Companies That Perform Work on U.S. Department of Energy Property or Rights-of-Way on or Around the Waste Isolation Pilot Plant Site*
- WP 02-EC.14, *WIPP Environmental Management System*
- WP 04-CO.01, *Conduct of Operations*

- WP 10-WC3011, *Work Control Process*
- WP 12-5, *WIPP Radiation Safety Manual*
- WP 12-FP.01, *WIPP Fire Protection Program*
- WP 12-HP3600, *Radiological Work Permits*
- WP 12-IH.02, *WIPP Industrial Hygiene Program Manual*
- WP 12-IS.01, *Industrial Safety Program - Structure and Management*
- WP 12-IS.01-6, Industrial Safety Program - Visitor, Vendor, User, Tenant, and Subcontractor Safety Controls
- WP 12-IS3002, *Job Hazard Analysis Performance and Development*
- WP 13-1, *Salado Isolation Mining Contractors, LLC Quality Assurance Program Description*
- WP 14-TR.01, *WIPP Training Program*
- WP 15-GM1002, *Integrated Issues Management*
- WP 15-GM1003, *Graded Approach to Stop Work*
- WP 15-HS.01, *OSHA Bloodborne Pathogens Exposure Control Plan*
- EA02EC14-1-0, *WIPP Environmental Policy Statement*

6.1.3 Guiding Principle 3: Competence Commensurate with Responsibilities

Personnel possess the experience, knowledge, skill, and abilities necessary to discharge their responsibilities.

SIMCO employs professionals in industrial safety, industrial hygiene, and nuclear safety on the staff, including Certified Safety Professionals (CSPs), Certified Industrial Hygienists (CIHs), Certified Health Physicists (CHPs), and Professional Engineers (PEs). These professionals ensure that work processes, policies, and procedures are built on a defensible foundation. They prepare policy, determine requirements, review and approve work plans and packages, and perform oversight inspections.

SIMCO provides resources for staff development. SIMCO has processes to ensure that personnel are qualified in their areas of responsibilities. SIMCO managers delegate authority based on competence. To ensure that personnel possess the experience, knowledge, skills, and abilities necessary to discharge their responsibilities, SIMCO has implemented effective human resource management systems, which identify needed skills, evaluate employees' skills, identify skill gaps, and arrange for training to eliminate the gaps. SIMCO encourages professional certification and supports education and certification fees that include, but are not limited to, CSPs, CIHs, CHPs, and PEs.

Training for all personnel is recognized as a vital requirement to incorporate safety into all aspects of work. Formal training qualification programs, including on-the-job training tasks overseen by a subject matter expert per and job-specific qualification cards. These are conducted under the auspices of the SIMCO Technical Training Program meeting DOE O 426.2, Personnel Selection, Training, Qualification, and Certification Requirements for DOE Nuclear Facilities, requirements to ensure the safety of the workers, public, and the environment for critical technical mission positions. Accordingly, managers are required to ensure that employees' training and qualifications are maintained at all times in accordance with the Training Implementation Matrix and the Hazardous Waste Facility Permit (HWFP). Safety is an integral part of that training and qualification.

Attributes

- SIMCO recognizes that employees' professional capabilities, experiences, and values are the organization's most valuable assets. Accordingly, leaders place a high personal priority and time commitment on recruiting, selecting, and retaining an excellent technical staff.
- SIMCO maintains a highly knowledgeable workforce to support a broad spectrum of operational and technical decisions. Technical and safety expertise is embedded in the organization. Outside expertise is employed when necessary.
- Individuals have an in-depth understanding of the safety and technical aspects of their jobs. Technical qualifications standards are defined, and personnel are trained accordingly. Technical support personnel have expert-level technical understanding. Managers have strong technical backgrounds in their area of responsibility.
- Assignments of safety responsibilities and delegations of associated authorities are made to individuals with the necessary technical experience and expertise. In rare cases, if this is not possible, corrective and compensatory actions are taken.
- The organization values and practices continuous learning, requires employees to participate in recurrent and relevant training, and encourages educational experiences to improve knowledge, skills, and abilities. Professional and technical growth is formally supported and tracked to build organizational capability.
- Training to broaden individual capabilities and to support organizational learning is available and encouraged in order to appreciate the potential for unexpected conditions, to recognize and respond to a variety of problems and anomalies, to understand complex technologies and develop capabilities to respond to complex events, to develop flexibility in applying existing knowledge and skills in new situations, to improve communications, and to learn from significant industry and DOE events.
- Models, practices, and procedures are updated and refreshed based on new information and new understanding. Training effectively upholds management's standards and expectations. Beyond teaching knowledge and skills, trainers are adept at reinforcing requisite safety values and beliefs.
- Managers set an example for safety by their personal commitment to continuous learning and by their direct involvement in high-quality training that consistently reinforces expected worker behaviors.

System Policies, Procedures, and Other Implementing Documents

- DOE/WIPP 17-3573, *WIPP Emergency Management Plan*
- CCP-QP-002, *CCP Training and Qualification Plan*
- MP 1.40, *Training and Qualification of TIM Designated Managers and Supervisors*
- WP 12-5, *WIPP Radiation Safety Manual*
- WP 12-IS.01-9, Industrial Safety Program - Responsibilities for the Oversight of Visitors, Vendors, Users, Tenants, and Subcontractors
- WP 13-1, *Salado Isolation Mining Contractors, LLC Quality Assurance Program Description*
- WP 14-TR.01, *WIPP Training Program*
- WP 14-TR3008, *Analysis and Design*
- WP 14-TR3301, *Administrative Review Board*
- WP 14-TR3307, *Development of Qualification Products*
- WP 14-TR3308, *On-the-Job Training*

6.1.4 Guiding Principle 4: Balanced Priorities

Resources are appropriately allocated to address safety, programmatic, and operational considerations. Protecting the public, workers, and the environment shall be a priority when work activities are planned and performed.

SIMCO follows the priorities set in contract negotiations and is directly involved in the annual budget preparation to acquire and allocate the necessary funds to implement its mission and ensure safety. The top priority is the conduct of compliant and safe operations. Consistent with the process, CBFO both sets priorities and communicates them to SIMCO senior management for implementation. The CBFO annually reviews WIPP mission needs and adjusts to the budget management concerns and safety priorities affecting the program. SIMCO works with the CBFO counterparts to ensure appropriate allocation of resources to address safety, programmatic, and operational considerations. SIMCO participates in CBFO monthly and quarterly project and program reviews to assess technical, cost, schedule, and safety performances. Safety and quality requirements are incorporated into acquisitions. SIMCO management ensures that the technical reviews of Capital Asset Projects with the CBFO consider safety requirements and conditions. SIMCO annually reviews WIPP program needs and requests adjustments to the budget as necessary to address concerns and safety priorities affecting the program. Activities needed to protect the public, workers, and the environment are funded as top priorities.

Attributes

- SIMCO managers frequently and consistently communicate the safety message, both as an integral part of the mission and as a stand-alone theme.
- SIMCO managers recognize aggressive mission and production goals can appear to send mixed signals on the importance of safety. Managers attempt to detect and avoid these misunderstandings, or to deal with them effectively if they arise.
- SIMCO demonstrates a strong sense of mission and operational goals, including a commitment to reliable operations, both in safety and production. Safety and productivity are both highly valued.
- Safety, productivity, and quality concerns receive balanced consideration in funding allocations and schedule decisions. Resource allocations are adequate to address safety. If funding is not adequate to ensure safety, operations are discontinued.
- Staffing levels and capabilities are consistent with the expectation of maintaining safe and reliable operations.
- Staffing provides sufficient depth and redundancy to ensure that necessary safety functions are adequately performed.
- The organization strives to build and sustain a flexible, robust technical staff and staffing capacity. Pockets of resilience are established through redundant resources so that resources remain adequate to address emergent issues. The organization develops sufficient resources to cope with and respond to unexpected changes.
- Organizational knowledge is valued, and efforts are made to preserve it when key players move on.
- Systems of checks and balances are in place and effective at all levels of the organization to make sure that safety considerations are adequately weighed and prioritized.
- Safety and QA positions have adequate organizational influence.
- Adequate resources are allocated for safety upgrades and repairs to aging infrastructure. Modern infrastructure and new facility construction are pursued to improve safety and performance over the long term.

- DOE/WIPP-06-3335, *WIPP Nuclear Maintenance Management Program*
- DOE/WIPP-07-3373, *Waste Isolation Pilot Plant Technical Safety Requirements*
- CCP-QP-001, *CCP Graded Approach*
- MC 3.1, *Environmental, Safety and Health Department*
- MP 1.29, *Establishment of Annual Goals*
- WP 02-EC.14, *WIPP Environmental Management System*
- WP 04-CO.01, *Conduct of Operations*
- WP 09-CN3005*, Graded Approach to Application of QA Controls*
- *WP 09-CN3023, Functional Classification Determination for Design*
- *WP 10 WC3011, Work Control Process*
- *WP 12-IS.01-12, Industrial Safety Program - Hoisting and Rigging*
- WP 13-1, *Salado Isolation Mining Contractors, LLC Quality Assurance Program Description*
- WP 15-3, *SIMCO Program Execution Plan*
- WP 15-FC.01, *Salado Isolation Mining Contractors, LLC Programmatic Change Control Process*
- WP 15-GM1002, *Integrated Issues Management*

6.1.5 Guiding Principle 5: Identification of Safety Standards and Requirements

An effective safety management system requires that prior to work performance, associated hazards are evaluated, and safety standards and requirements are established. Safety standards and requirements shall provide adequate assurance that if they are properly implemented, the public, workers, and environment will be protected from adverse consequences.

CBFO communicates to SIMCO applicable DOE directives, including the DOE-EM supplements as needed, through the contract process. This includes the identification of safety standards and requirements as contained in the DOE directives contained as List B. The SIMCO contract does not include a specific "List A" of other regulatory drivers. SIMCO is expected to comply with applicable laws and regulations. SIMCO meets 10 CFR Part 851 by incorporated and referenced safety standards and requirements. in addition, SIMCO maintains a Requirements Management process for the additional identification and implementation of safety requirements.

SIMCO performs safety reviews/self-assessments and gap analyses to ensure compliance with the requirements of 10 CFR Part 851, the MSHA safety standards, the U.S. EPA regulations, and the OSHA standards, as well as other regulatory compliance assessments, including the DOE directives related to safety. SIMCO maintains metrics to monitor safety and other performance and to provide feedback for continuous feedback.

SIMCO responds to additional safety requirements to manage critical safety functions as identified and works with the CBFO to establish the safety basis. Appropriate safety standards and requirements are incorporated in subcontractor statements of work, specifically 10 CFR 851 safety requirements for subcontractor work performed in covered workplaces.

Attributes

- Facilities are designed, constructed, operated, maintained, and decommissioned using consensus industry codes and standards, where available and applicable, to protect workers, the public, and the environment.
- Applicable requirements from laws, statutes, rules and regulations are identified and captured so that compliance can be planned, expected, demonstrated, and verified.
- A clearly defined set of safety requirements and standards is invoked in the contract, and in the interface agreements for Central Characterization Program (CCP) scope of work. An accepted process is used for identification of the appropriate set of requirements and standards. This set of requirements is comprehensive and includes robust QA, safety, and radiological and environmental protection requirements.
- Implementing plans, procedures, and protocols are in place to translate requirements into action.
- Technical and operational safety requirements control the safe operating envelope. The safety envelope is clearly specified and communicated to individuals performing operational activities.
- Exemptions from applicable safety requirements are both rare and specific, provide an equivalent level of safety, have a compelling technical basis, and are approved at an appropriate organizational level.
- Compliance with applicable safety and technical requirements is expected and verified.
- Willful violations of requirements are rare, and personnel and organizations are held accountable in the context of a just culture. Unintended failures to follow requirements are promptly reported, and personnel and organizations are given credit for self-identification and reporting of errors.
- SIMCO actively seeks continuous improvement to safety standards and requirements through identification and sharing of effective practices, lessons learned, and applicable safety research. SIMCO is committed to continuously rising standards of excellence.

System Policies, Procedures, and Other Implementing Documents

- Waste Isolation Pilot Plant Hazardous Waste Facility Permit NM4890139088-TSDF
- DOE/WIPP-02-3122, *Transuranic Waste Acceptance Criteria for the WIPP*
- DOE/WIPP-07-3372, *Waste Isolation Pilot Plant Documented Safety Analysis*
- DOE/WIPP-07-3373, *Waste Isolation Pilot Plant Technical Safety Requirements*
- CCP-HSP-014, *CCP Health and Safety Program Implementation*
- WP 02-EC.08, *National Environmental Policy Act Compliance Plan*
- WP 02-EC.14, *WIPP Environmental Management System*
- WP 09-11, *SIMCO Configuration Management Plan*
- WP 09-CN3007, *Engineering and Design Document Preparation and Change Control*
- WP 09-CN3018, *Design Verification*
- WP 09-CN3035, *CMS Software Configuration*
- WP 10-WC3011, *Work Control Process*
- WP 12-5, *WIPP Radiation Safety Manual*
- WP 12-IH.02, *WIPP Industrial Hygiene Program Manual*

- WP 12-IS.01, *Industrial Safety Program - Structure and Management*
- WP 12-IS.01-6, *Industrial Safety Program - Visitor, Vendor, User, Tenant, and Subcontractor Safety Controls*
- WP 12-IS.03, *Electrical Safety Program Manual*
- WP 13-1, *Salado Isolation Mining Contractors, LLC Quality Assurance Program Description*
- WP 15-GM.02, *Worker Safety and Health Program Description*
- WP 15-PA1002, *Requirements Management*

6.1.6 Guiding Principle 6: Hazard Controls Tailored to Work Being Performed

Administrative and engineering controls designed and utilized to prevent and mitigate hazards for the work being performed and the associated hazards.

SIMCO has a rigorous hazard identification program led by Industrial Safety and Health that starts with training as early as General Employee Training (GET) in areas of hazard identification and use of controls and is continued in safety culture. These expectations are flowed down formally in programs such as the Job Hazard Analysis (JHA) Program, and programs to address specific hazards such as the Electrical Safety Program. Hazard Identification and Control includes the industrial hygiene baseline monitoring and continuing surveys. The focus on hazard identification and controls is heavily integrated. Examples include:

- Nuclear Safety, which includes providing a basis for hazard surveys used for safety analysis, emergency planning, and work planning. This principle was evident in all aspects of evaluation and work performed for the Safety Basis, which includes the Documented Safety Analysis (DSA).
- The hierarchy of defense-in-depth is also part of the SIMCO VPP program, which is strictly maintained in all safety program policies and procedures.
- The environmental management program at WIPP includes a pollution prevention program focused on minimizing and reducing possible exposure to toxic or hazardous substances and works closely with the industrial hygiene program accordingly.

Hazard controls are embedded in all aspects of SIMCO operations.

The CCP activities at the host sites include not only the hazard controls for that specific site, and also additional controls such as engineering, administrative work controls, and PPE specific to the TRU waste handling process. These management systems are based on ISM principles starting with a clear work scope, defining responsibilities for host sites and for SIMCO, engineering designs meeting applicable standards, such as the Nuclear Regulatory Commission standards for packaging, and a certified process for administrative controls.

At the WIPP site, engineering controls are designed into equipment and processes. Administrative controls include WCDs, training, oversight, and safety rules. Focus is also placed on PPE and on employees recognizing hazards and knowing when to take a time-out or stop work if controls are not adequately in place. In working with the human error attribute of this principle, SIMCO included identifying error-likely situations, precursors, and barriers in job planning accordingly to ensure continuous improvement in implementing this principle.

<u>Attributes</u>

- Work hazards are identified and controlled to prevent or mitigate accidents, with particular attention to high-consequence events with unacceptable consequences. Workers understand hazards and controls before beginning work activities.

- The selection of hazard controls considers the type of hazard, the magnitude of the hazard, the type of work being performed, and the life cycle of the facility. Controls are designed and implemented commensurate with the inherent level and type of hazard.
- Safety analyses identifying work hazards are comprehensive and based on sound engineering judgment and data.
- Defense-in-depth is designed into high-hazard operations and activities, and includes independent, redundant, and diverse safety systems, where possible.
- Emphasis is placed on designing the work and/or controls to reduce or eliminate the hazards and to prevent accidents and unplanned releases and exposures.
- The following hierarchy of defense-in-depth is recognized and applied: (1) elimination of the hazard, (2) engineering controls, (3) work practices and administrative controls, and (4) PPE. Inherently safe designs are preferred over requiring engineering controls. Prevention is emphasized in design and operations to minimize the use of, and thereby possible exposure to, toxic or hazardous substances.
- Equipment is consistently maintained so that it meets design requirements.
- Safety margins are rigorously maintained. Design and operating margins are carefully guarded and changed only with great thought and care. Special attention is placed on maintaining defense-in-depth.
- SIMCO implements hazard controls in a consistent and reliable manner. Safety is embedded in processes and procedures through a functioning formal ISMS. Facility activities are governed by comprehensive, efficient, high-quality processes and procedures.
- Hazard controls are designed with an understanding of the potential for human error. Error-likely situations are identified, eliminated, or mitigated. Existence of known error-likely situations is communicated to workers prior to commencing work, along with planned mechanisms to ensure their safety.

<u>System Policies, Procedures, and Other Implementing Documents</u>

- Waste Isolation Pilot Plant Hazardous Waste Facility Permit NM4890139088-TSDF
- DOE/WIPP-06-3335, *WIPP Nuclear Maintenance Management Program*
- DOE/WIPP-02-3212, *Ground Control Annual Plan for the WIPP*
- DOE/WIPP-07-3372, *Waste Isolation Pilot Plant Documented Safety Analysis*
- DOE/WIPP-07-3373, *Waste Isolation Pilot Plant Technical Safety Requirements*
- DOE/WIPP-08-3378, *Waste Isolation Pilot Plant Emergency Planning Hazards Assessment*
- DOE/WIPP 17-3573, *WIPP Emergency Management Plan*
- DOE/WIPP 01-3181, *Authorization Agreement for the Waste Isolation Pilot Plant*
- MC 1.12, *Hazard Review Team*
- MP 1.12, *Worker Protection Policy*
- MP 1.28, *Integrated Safety Management*
- WP 02-EC.05, *QAPP for WIPP Site-Generated Waste Characterization Sampling*
- WP 02-EC.14, *WIPP Environmental Management System*
- WP 02-RP.02, *Hazard Analysis Results Report for Remote Handled Waste*
- WP 04-AD3005, *Administrative Control of System Lineups*

- WP 04-AD3011, *Equipment Lockout/Tagout*
- WP 04-AD3013, *Underground Access Control*
- WP 04-AD3015, *Operating Practices for Control of Equipment and System Status*
- WP 04-AD3032, *Senior Management Review Board*
- WP 04-GC3005, *Performance of System Lineup*
- WP 04 series, WIPP Mining Operations Normal Operations documents
- WP 04-HO series, WIPP Hoisting Operations Normal Operations documents
- WP 05-WH series, WIPP Waste Handling Operations Normal Operations documents
- WP 07-1, *WIPP Geotechnical Engineering Program Plan*
- WP 08-PT3007, *Design Control Under 10 CFR 71 Subpart H*
- WP 10-WC3011, *Work Control Process*
- WP 10-AD3007, *Use and Control of Rigging Components*
- WP 12-2, *WIPP ALARA Program Manual*
- WP 12-3, *Dosimetry Program*
- WP 12-5, *WIPP Radiation Safety Manual*
- WP 12-FP.01, *WIPP Fire Protection Program*
- WP 12-FP3002, *Hot Work Permit*
- WP 12-HP3000, *Radiological Control Administration*
- WP 12-HP3300, *Radiation Exposure Control*
- WP 12-HP3400, *Contamination Control*
- WP 12-HP3600, *Radiological Work Permits*
- WP 12-IH.01, *WIPP Chemical Hygiene Plan*
- WP 12-IH.02, *WIPP Industrial Hygiene Program Manual*
- WP 12-IH.02-1, *WIPP Industrial Hygiene Program - Health Hazard Assessment*
- WP 12-IH.02-2, *WIPP Industrial Hygiene Program - Confined Spaces*
- WP 12-IH.02-3, *WIPP Industrial Hygiene Program- Hazardous Waste Operations and Emergency Response*
- WP 12-IH.02-4, *WIPP Industrial Hygiene Program - Hazard Communication and Hazardous Materials Management Plan*
- WP 12-IH.02-5, *WIPP Industrial Hygiene Program - Hearing Conservation*
- WP 12-IH.02-6, *WIPP Industrial Hygiene Program - Respiratory Protection*
- WP 12-IH.02-7, *WIPP Industrial Hygiene Program - Lasers, Lighting, and Pest Control, and Sanitation*
- WP 12-IH.02-8, *WIPP Industrial Hygiene Program - Office and Industrial Ergonomics*
- WP 12-IH.02-9, *WIPP Industrial Hygiene Program - Beryllium Exposure Prevention Program*
- WP 12-IH.02-11, *WIPP Industrial Hygiene Program - Polychlorinated Biphenyls (PCBs)*
- WP 12-IH.02-12, *WIPP Industrial Hygiene Program - Cryogenics, Refrigerants, and Process Gases*

- WP 12-IH.02-13, WIPP Industrial Hygiene Program - Approved Plastic Suit, Airline Respirator
- WP 12-IS.01, *Industrial Safety Program - Structure and Management*
- WP 12-IS.01-1, *Industrial Safety Program - Barricades and Barriers*
- WP 12-IS.01-3, *Industrial Safety Program - Power and Hand Tools*
- WP 12-IS.01-4, *Industrial Safety Program - Personal Protective Equipment*
- WP 12-IS.01-5, *Industrial Safety Program - Walking and Working Surfaces and Ladders*
- WP 12-IS.01-6, *Industrial Safety Program - Visitor, Vendor, User, Tenant, and Subcontractor Safety Controls*
- WP 12-IS.01-7HV, *Industrial Safety Program - Craft Manual - Electrical Safety*
- WP 12-IS.01-8, *Industrial Safety Program - Vehicle Safety*
- WP 12-IS.01-9, *Industrial Safety Program - Responsibilities for the Oversight of Visitors, Vendors, Users, Tenants, and Subcontractors*
- WP 12-IS.01-10, *Industrial Safety Program – Fall Protection*
- WP 12-IS.01-11, *Industrial Safety Program – Compressed Gases*
- WP 12-IS.01-12, *Industrial Safety Program - Hoisting and Rigging*
- WP 12-IS.01-13, *Industrial Safety Program - Excavations*
- WP 12-IS.03, *Electrical Safety Program Manual*
- WP 12-IS3002, *Job Hazard Analysis Performance and Development*
- WP 12-NS.02, *Fire Hazard Analysis Updates*
- WP 12-NS.03, *Hazard Analysis Guidance*
- WP 13-1, *Salado Isolation Mining Contractors, LLC Quality Assurance Program Description*
- 15-CA1002, *Integrated Assessment Scheduling and Processing*
- WP 15-GM1002, *Integrated Issues Management*
- WP 15-HS.01, *OSHA Bloodborne Pathogens Exposure Control Plan*
- WP 15-HS.02, *Occupational Health Program*
- WP 15-PA1002, *Requirements Management*

6.1.7 Guiding Principle 7: Operations Authorization

the conditions and requirements that must be satisfied for operations to begin and continue are clearly established and agreed on.

The ISMS is a process to confirm adequate preparation (including adequacy of controls), prior to authorizing work (including nuclear and non-nuclear), to begin at the facility, project, or activity level. DEAR 970.5223-1(b) (7) requires that the DOE and the contractor establish and agree upon the conditions and requirements to be satisfied for operations to be initiated and conducted. These conditions and requirements are included in the contract. The formality and rigor of the review process and the extent of documentation and level of authority for agreement is based on the hazards and complexity of the work being performed. The process ensures that programs addressing all applicable functional areas are adequately implemented to support safe performance of the work.

Current SIMCO activities involving the handling, storage, and disposal of radioactive materials at WIPP are conducted in accordance with the terms and conditions of a signed Authorization Agreement (AA), based on the authorization basis. New processes are included in the AA scope before work begins as part of the authorization process, or in separate specific plans approved by CBFO. The AA summarizes, in one concise document, the terms and conditions binding on SIMCO for safe operation of the facility. This includes compliance with the requirements and conditions imposed by the certification and recertification, as well as the HWFP. The AA is a supplement to the CBFO-SIMCO contract and is amended when the scope of work or the authorization basis changes. Responsibilities, inputs, terms and conditions, and the generation, review, approval, and control of the AA are controlled in accordance with MP 1.31, Authorization Agreement. The Operations Authorization for characterization activities at the generator sites is authorized per joint agreements and related certification reviews for readiness.

Attributes

- Formal facility AAs are in place and maintained between the DOE and SIMCO.
- Readiness at the facility level is verified before hazardous operations commence. Preoperational reviews confirm that controls are in place for known hazards.
- Facility operations personnel maintain awareness of all facility activities to ensure compliance with the established safety envelope.
- Work authorization is defined at the activity level. The work authorization process verifies that adequate preparations have been completed so that work can be performed safely. These preparations include verifying that work methods and requirements are understood; verifying that work conditions will be as expected and not introduce unexpected hazards, and verifying that necessary controls are implemented.
- The extent of documentation and level of authority for work authorization is based on the complexity and hazards associated with the work.

System Policies, Procedures, and Other Implementing Documents

- Prime Contract No. DE-EM0001971
- Waste Isolation Pilot Plant Hazardous Waste Facility Permit NM4890139088-TSDF
- DOE/WIPP-01-3181, *Authorization Agreement for the Waste Isolation Pilot Plant*
- DOE/WIPP-02-3122, *Transuranic Waste Acceptance Criteria for the WIPP*
- DOE/WIPP-06-3335, *WIPP Nuclear Maintenance Management Program*
- DOE/WIPP-07-3372, *Waste Isolation Pilot Plant Documented Safety Analysis*
- DOE/WIPP-07-3373, *Waste Isolation Pilot Plant Technical Safety Requirements*
- DOE/WIPP-11-3466, *TRUPACT III Disposal Operations Contractor Readiness Assessment Plan of Action*
- MP 1.31, *Authorization Agreement*
- CCP-PO-005, *CCP Conduct of Operations*
- WP 04-AD3015, *Operating Practices for Control of Equipment and System Status*
- WP 04-AD3031, *Senior Supervisory Watch*
- WP 09-SU.01, *WIPP Start-Up Test Program*
- WP 10-WC3011, *Work Control Process*

- WP 13-1, *Salado Isolation Mining Contractors, LLC Quality Assurance Program Description*
- WP 15-IF series, Integrated Facility Check-out Plans
- WP 15-GM1003, *Graded Approach to Stop Work*
- WP 15-MD3101, *Verification of Readiness to Startup or Restart WIPP*
- WP 15-PC.02, *SIMCO Work Authorization Process*
- Work authorization documents and statements of work

6.2 Implementation of the Five Core Functions

DOE P 450.4A lists the five core safety management functions that provide the necessary structure for any work activity that could potentially affect the public, the workers, and the environment. The functions are applied as a continuous cycle with the degree of rigor appropriate to address the type of work activity and the hazards involved.

The following sections summarize the SIMCO management approach for each core function.

6.2.1 Core Function 1: Define Scope of Work

Missions are translated into work, expectations are set, tasks are identified and prioritized, and resources are allocated.

In accordance with 130.1A, Budget Planning, Formulation, Execution and Departmental Performance Management (the Guidance Document) is transmitted by the CBFO Contracting Officer to SIMCO Contracting Officer before the start of each fiscal year with the projected budget for each fiscal year and a list of program drivers, guidance, and planning assumptions to develop an annual budget baseline. In response, SIMCO provides the baseline consisting of scope of work, funding, and schedule information for CBFO review/approval.

To develop this baseline, based on the program drivers, guidance, and planning assumptions stated in the Guidance Document, SIMCO control account managers, in consultation with line managers, define detailed activities. Control account managers prepare cost estimates and schedules for accomplishing the scope of work. Detailed information, including work scope, technical requirements/assumptions, limitations/exclusions, costs and metrics/milestones, is presented in Bases of Estimates or Cost Estimate Detail sheets. As evidenced by a notation on the final budget worksheets, environmental issues are specifically considered during the development of budget worksheets. Once approved, SIMCO executes work in accordance with the approved baseline. Changes to the baseline are made through a programmatic change control process.

SIMCO and CBFO management use a prioritization process to identify which activities will be completed with available funding. Mechanisms for setting expectations for upcoming fiscal year work are the budget validation and contract definition processes. These iterative processes result in a document that contractually establishes scope of work and resources for the upcoming budget year. In addition, CBFO establishes a Performance Evaluation and Measurement Plan (PEMP) each year that provides incentive fee for both subjective evaluation and objective evaluation. The subjective evaluations are made within five main criteria: Quality, Schedule, Cost, Management, and Regulatory Compliance. Within these criteria, there are sub-criteria that contain a number of expectations, including those in the area of safety performance. For each of these criteria, CBFO provides a rating of performance (Excellent, Very Good, Good, Satisfactory, and Unsatisfactory). The higher the rating received, the higher the fee awarded for each criterion. The objective evaluations are made by the establishment of performance-based incentives, which contain specific metrics/milestones for SIMCO to achieve and earn fee during the fiscal year to

drive mission accomplishments (e.g., TRU waste emplaced, mining completed, projects completed, etc.).

Authorization to execute the scope of work is obtained through the DOE execution and issuance of a Fiscal Year Contract Modification. Following contract execution, all changes are controlled through WP 15-FC.01, *Salado Isolation Mining Contractors, LLC Programmatic Change Control Process*.

The concepts and procedures used for preparing the detailed information (schedules, budgets, and methods of performance measurement) to support upcoming fiscal year budget validation and the long-term budget formulation are contained in WP 15-2, *Salado Isolation Mining Contractors, LLC Project Controls System Description*. WP 15-2 provides a systematic, risk-based graded approach for determining the level of control necessary to ensure that projects are completed as planned and within the approved budget and schedule. Proper implementation of the concepts discussed in the ISMSD, and use of the budget change control process described in WP 15-FC.01, ensures that a clear understanding of the resource requirements achieve safe performance of authorized activities. Where applicable, SIMCO implemented Earned Value Management Systems processes in 2011.

The description above describes work scope development at the programmatic level. The enhanced implementation expectations for defining the scope of work require an accurately defined scope of work at the work activity/task level to be written in one or combination of the following documents:

- JHA
- Program plan document for the whole process or function, or
- WCD to define the scope at the task level.

In this manner, the safety envelope for the scope of work can be appropriately identified based on an accurately defined scope of work.

Attributes

- Scopes of programs, projects, and work activities are defined with sufficient specificity to enable the identification of hazards and implementation of hazard controls.
- Expectations flow to subcontractors, the individual facility, the process, or the work task as appropriate.
- ISM is applied to all types of work and addresses all types of hazards.
- The approved task identification, prioritization, and funding are subject to configuration management processes to ensure formal change control.
- Task prioritization and funding allocation clearly address both ES&H and programmatic needs.
- Line management provides input and approval of task prioritization and funding allocation.
- Task prioritization and funding allocation clearly address commitments to and agreements with DOE and stakeholders.
- Funding allocation provides resources to adequately analyze hazards associated with the work.
- Funding allocation provides resources for implementation of hazard controls for activities being funded.

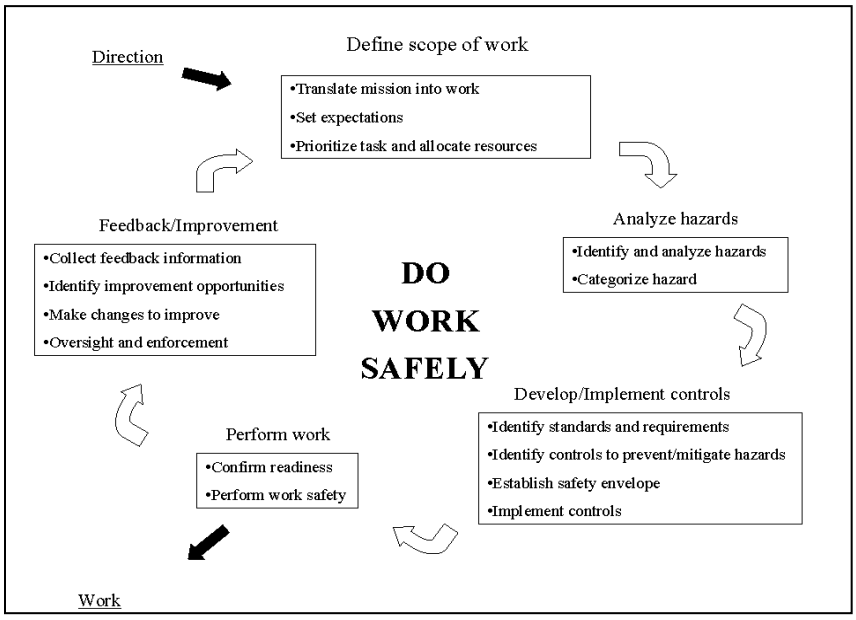

Figure 1. Safety Management Functions

6.2.2 Core Function 2: Analysis of Hazards

Hazards associated with work are identified, analyzed, and categorized.

The objective of hazard analysis is to develop an understanding of the potential for the hazard to affect the health and safety of the worker, the public, and the environment. Hazard controls are then established based on this understanding and other factors related to the work. In identifying hazards at the task/activity level, workers are a valuable resource for their knowledge of the process and its hazards.

The development of hazards analyses reflected in the DSA results from evaluation of facility changes, new proposed processes, or waste form additions proposed for the repository. The processes for evaluating and documenting major scope and design changes are described in WP 02-EC3801, *Environmental Compliance Review and National Environmental Policy Act (NEPA) Screening*; and WP 10-2, *Maintenance Instruction Manual*.

In accordance with the requirements of 10 CFR §830.204, “Documented Safety Analysis,” the DSA documents the safety analyses that develop and evaluate the adequacy of the safety bases. The safety bases are defined by 10 CFR §830.3, “Definitions,” as "The documented safety analysis and hazard controls that provide reasonable assurance that a DOE nuclear facility can be operated safely in a manner that protects workers, the public, and the environment."

The DSA establishes and evaluates the adequacy of the WIPP safety bases in response to plant normal and abnormal operations, and postulated accident conditions. The WIPP safety bases analyzed include:

1. Adequacy of the design basis of WIPP structures, systems, or components, and the application of appropriate engineering codes, standards, and QA requirements.
2. Selection of principal design and safety criteria.
3. Assignment of Technical Safety Requirements (TSRs).
4. Management, conduct of operations, and institutional dimensions of safety assurance.

Under provisions of WP 10-WC3011, Work Control Process, work planning is an iterative function that includes Work Scope Development, Job Hazard Identification and Analysis, and WCD preparation and approval as major processes. It is expected that portions of all three processes will be performed simultaneously in preparing a WCD. An initial categorization of the type of work is conducted during the screening process to determine the need for planning and development of a Type 1, Type 2 or Type 3 WCD. That categorization is refined based on the completion of the scoping and JHA processes.

All work performed will be analyzed for hazards. WP 12-IS3002, *Job Hazard Analysis Performance and Development*, provides instructions for performing a JHA and developing the JHA documentation.

WP 12-IS3002 is applicable to activities of SIMCO personnel and embedded SIMCO subcontractor personnel for work to be performed at the WIPP and other WIPP-related workplaces covered by Title 10 CFR 851 and over which SIMCO has contractual responsibility. Subcontractors without access to JHA tools or processes, and those, whose activities are managed through the Approval Request/Verification Request process, will provide their own JHAs to the Safety and Health Department for approval, as required by SIMCO procurement procedures. Scientific experimentation or other groups operating under WP 02-EC.12 also will provide their own JHAs for SIMCO ES&H approval.

The WIPP has defined the process for identifying general hazard analysis (GHA) and job-specific work hazard analysis and the associated controls to protect personnel. GHAs cover a wide variety of routine and repetitive tasks where the hazards have been well defined, and the general safety training and general PPE are adequate controls to protect the worker. JHAs are documented, specific to a task with hazards identified and controls specified and developed by a work planning team in accordance with WP 12-IS3002 and WP 10-WC3011.

Attributes

- All types of hazards (e.g., nuclear, chemical, industrial, fire, external events, construction, and environmental impact) are addressed.
- The identification process is tailored to the type of hazard (e.g., walkthroughs for industrial hazards), the type of work (e.g., design, construction, operation, maintenance, decontamination, and decommissioning), and the magnitude of the hazard's risk.
- DOE and other regulatory requirements are implemented as appropriate to the work, the type of hazard identified, and the magnitude of its risk.
- Hazard analysis methods are applied to all types and stages of work (e.g., design, construction, normal operations, surveillance, deactivation, maintenance, facility modification).
- The hazard analysis method, level of detail, and resultant controls are appropriate to the hazard category.

6.2.3 Core Function 3: Develop and Implement Hazard Controls

Applicable standards and requirements are identified and agreed on, controls to prevent or mitigate hazards are identified; the safety envelope is established; and controls are implemented.

An integrated hazard assessment that is verified and reviewed is fundamental to the SIMCO approach to develop and implement hazard controls. Before work is performed, the associated hazards are evaluated and a set of environment, safety and health requirements are agreed upon. These requirements, if properly implemented, provide adequate assurance that the public, the workers, and the environment are protected for all nuclear and non-nuclear work activities are agreed upon.

The AA contains key terms and conditions (controls and commitments) under which SIMCO is authorized to perform work. Any changes to these terms and conditions require CBFO approval. The authorization basis (or safety basis) consists of the facility design basis and operational requirements that the CBFO relies on to authorize operation, and is described in documents such as the DSA, TSR, temporary safety basis documents (i.e., ESS and Interim Safety Basis documents), hazard classification documents, other safety analyses, and other facility-specific commitments made to ensure compliance with the DOE Orders, rules, or policies.

The TSR is an important authorization basis document that defines the conditions, safe boundaries, and the management or administrative controls necessary to ensure the safe operation of the WIPP, which is a Hazard Category 2 nuclear facility. TSR controls are also designed to reduce potential risk to workers and the public from uncontrolled releases of radioactive materials or from radiation exposures due to inadvertent criticality. The TSR includes safety limits, operating limits, surveillance requirements, administrative controls, use and application instructions, and their bases, in support of the DSA.

Un-reviewed Safety Question (USQ) evaluations are important in maintaining the integrity of safety basis documents. A USQ exists if one or a combination of the following conditions applies:

1. Probability of occurrence or the consequences of an accident or malfunction of equipment important to safety as previously evaluated in the DSA could be increased;
2. Possibility for an accident or malfunction of a different type than any previously evaluated in the DSA could be created; or
3. Any margin of safety as defined in the basis of the TSR could be reduced.

The SIMCO USQ program ensures that the authorization basis approved by the DOE remains current and provides an adequate level of protection to workers, the public, and the environment.

SIMCO has programs and procedures that define how operational, safety, radiological, and environmental controls are implemented at the WIPP. This includes controls to avoid hazards and enhance prevention such as pollution prevention strategies. The controls also include immediate protective actions in WP 15-GM1003, *Graded Approach to Stop Work*, as well as overall programmatic controls in MP 1.12, *Worker Protection Policy*.

Whether by procedure or work package, work is performed after hazards are identified and controls are agreed upon, as described in the WIPP ISMSD. Using the JHA documentation, hazards are identified, and controls are established for disposition into a WCD used by maintenance personnel or subcontractors, or through procedures used by other WIPP sections and organizations.

<u>Attributes</u>

- SIMCO identifies, selects, and approves ES&H standards and requirements by means of a process that ensures adequate protection to the public, the workers, and the environment.
- SIMCO obtains DOE concurrence with the identified ES&H standards and requirements, or the work scope is verified to fall within previous approval, before operations commence or work is authorized.
- The identified ES&H standards conform to applicable laws, statutes, Federal rules, and DOE directives.
- DOE reviews, verifies, and approves the SIMCO ISMSD.
- Controls are tailored to the hazards associated with the specific work or operations to be authorized.

- Hazard prevention programs appropriate to the facility's life cycle are implemented.
- Controls are addressed for the hazards of all activities (e.g., construction, normal operations, surveillance, maintenance work, facility modifications).
- Controls are addressed for all aspects of the work (e.g., initiation, review, authorization, and execution).
- Controls are addressed for all applicable hazards and requirements (e.g., radiation protection, pollution prevention, Resource Conservation and Recovery Act of 1976 (RCRA), and Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA)).
- Identified controls are agreed upon and approved before operations commence or work is authorized.
- Hazard controls are reviewed and approved by DOE as appropriate to the work.
- Safety boundaries for the work are established and maintained.
- Appropriate controls, conditions, and requirements (e.g., TSRs, operational safety requirements, OSHA, MSHA, and EPA regulations) that constitute the safety boundaries are identified.
- Procedures define the processes for development, approval, and maintenance of work authorization documentation.
- Safety controls are established using the Hierarchy of Controls (elimination, substitution, engineering controls, administrative controls, PPE) that are applicative to the work to be performed.
- Personnel are trained on the purpose and use of the controls and are qualified (e.g., by means of a personnel training and qualification program) to discharge their responsibilities satisfactorily.

6.2.4 Core Function 4: Perform Work within Controls

Readiness is confirmed and work is performed safely.

The basis for performing work in the WIPP program is formed on expectations of strict compliance with procedures, which flow from the AA and the HWFP. Personnel are held responsible and accountable for performance of work in accordance with the procedures.

WP 02-EC.14, *Waste Isolation Pilot Plant Environmental Management System*, provides a narrative of how this ISMS function is implemented for environmental protection. Environmental Management is integrated with the ISM, including all SIMCO processes as work activities, which are done by procedures. Sampling is a repetitive process with hazards analyzed and procedures reviewed and approved in accordance with the document control process. Work activities are coordinated in the Work Control process including plan of the day (POD) and plan of the week (POW) integration and integrated work schedule. Environmental Management performance targets and objectives are often included in the PEMP agreements with CBFO. These are a few examples of the many integrated activities.

WP 12-IS.01-6, *Industrial Safety Program — Visitor, Vendor, User, Tenant, and Subcontractor Safety Controls* is included in contracts and implemented by ES&H.

WP 13-1, *Salado Isolation Mining Contractors, LLC Quality Assurance Program Description* (QAPD), supports accuracy and repeatability in the conduct of work that helps ensure protection of workers, the public, and environment, taking into account the work to be performed and the associated hazards.

Work is performed by SIMCO with procedures, maintained in the site EDMS. Additional work instructions are prepared as needed. Subcontractor work is performed according to contractual agreements that require compliance with applicable SIMCO procedures and approved JHA, per WP 12-IS.01-6. Operations personnel are responsible for surface, underground, and waste handling operations. Surface, underground, and waste handling personnel use the administrative and technical procedures in the WP 04 and WP 05 series, available in the EDMS.

expectations for this core function require work to be performed in accordance with a written procedure, a work package, or a formally controlled approach that includes a program-level document defining scope of work controls, and a related JHA.

Operations personnel are also responsible for maintenance operations. During pre-job briefings, maintenance craft are provided with approved WCDs. WCDs, procedures, and standing orders that have been approved by cognizant engineers take into account the results of hazard analyses and recommended mitigating actions.

Oversight of the preparation of WCDs and coordination with plant operations is conducted in accordance with the work control process. Stop Work authority is the right and responsibility of every SIMCO and subcontractor employee to use time outs or stop work, without the fear of retribution, when a situation exists that places them, their coworkers, or the environment in danger. Time outs are used for clarifications. "Stop Work" means stopping the specific task or activity that poses danger to human health and/or the environment.

Attributes

- Readiness is assured by verifying that controls are adequate to mitigate the identified hazards and that the controls are implemented prior to commencement of work.
- Personnel qualifications and training are verified prior to performing work.
- Implementation of controls is verified adequate to ensure safe work performance and to prevent accidents, uncontrolled releases, or unacceptable exposures to hazardous materials.
- The necessary safety support functions and interfaces (e.g., training, maintenance, and radiological protection) are established.
- The operability of the necessary facility or process systems required for safe operation is verified in accordance with the basis established in appropriate authorization agreements.
- Operations at the individual facility or process level are authorized by means of a conduct of operations process appropriate to the work.
- Authorizations and WCDs are complete before work commences.
- Work control processes during the performance of work include continuous identification of hazards, stopping work to re-evaluate hazards and controls, and initializing WCD changes in the field.
- Personnel are responsible and accountable for performing work in accordance with the established controls.
- Performance measures and indicators are in place to evaluate how safely the work is being performed.
- Performance measures and indicators are clearly linked to performance objectives and expectations.

6.2.5 Core Function 5: Provide Feedback and Continuous Improvement

Feedback information on the adequacy of controls is gathered, opportunities for improving the definition and planning of work are identified and implemented, line and independent oversight is conducted, and, if necessary, regulatory and enforcement actions occur.

The ISMS at WIPP stresses pre-work analysis and planning to establish the safety controls that are to be integrated into work processes.

SIMCO uses the feedback function to collect information and make changes to improve its overall ISMS, including environmental protection. Significant improvements in the Contractor Assurance System have occurred and are in progress. This includes WP 15-CA1011, *Annual Contractor Assurance System Assessment Schedule*, which will identify areas for improving the Safety Management Programs that implement ISM. Metrics have been developed and are reviewed monthly by the Senior Management Assurance Council (MC 1.13).

Feedback and continuous improvement flow from many of the SIMCO procedures and other controlled documents. The following documents are a representative sample of administrative and technical methods for assessing and evaluating activities and developing corrective actions for issues identified as part of normal operations. WP 15-CA1002, *Management Self-Assessments*, WP 15-CA1003, *Observations*, and CCP-QP-018, *CCP Management Assessment*, require managers at every level to assess/observe the performance of their organizations to determine the effectiveness of the organizations' key functions to meet customer requirements and expectations.

WP 15-CA1002 and CCP-QP-018 implement the management assessment program. Self-assessments provide feedback to management through the evaluation of programs, processes, practices, behaviors, roles and responsibilities, products, and organizational expectations. Results contribute to improved performance of programs, systems, and work processes through timely identification of weaknesses, deficiencies, or the need for process improvements.

The scope of the MSA may be scaled to allow a single individual or small team to focus on a single program or project activities. Self-assessments may range from focusing on the adequacy, implementation and effectiveness of programs, programmatic elements, and evaluations, which are narrow in scope, performed against specific procedures, activities, processes, or program implementation requirements. All deficiencies identified in management and independent assessments are reported and tracked to closure via the appropriate site tracking system per 15-GM1002, *Integrated Issues Management*).

WP 15-CA1010, *Reporting Occurrences in Accordance with DOE O 232.2*, is the implementing document for DOE O 232.2, *Occurrence Reporting and Processing of Operations Information*. The procedure establishes a system for reporting events to the FSM or the Facility Manager designee for categorization and reporting. It applies to all departments and activities at WIPP and at all the DOE controlled facilities in Carlsbad. Similar procedures are implemented at generator host sites where SIMCO performs characterization work, with the host facility reporting occurrences coordinating with SIMCO. In addition, it applies to occurrences resulting from activities performed by subcontractors at these facilities. If an event falls within the Occurrence Reporting and Processing System (ORPS) thresholds, the FSM or designee initiates the collection of information pertaining to the event, with the assistance of the responsible manager. Feedback is derived from 15-CA1007, Event Learning Review. These procedures provide instructions for conducting investigations, generating root cause analysis reports, and developing corrective action plans.

Since feedback and improvement avenues for nuclear safety are provided through the *Price Anderson Amendments Act* (PAAA) provisions of WP 15-CA1009, the groundwork is in place for continued exercise of this function for industrial safety under the promulgated 10 CFR Part 851.

Results of the investigation are disseminated to others in the company, as applicable, through the WIPP Operating Experience/Lessons Learned Program (OPEX). In addition, the information is made available throughout the DOE complex by uploading investigation reports to the ORPS database. If an event falls below the ORPS reporting thresholds, the responsible manager reviews the event with Safety or other management and initiates an Event Learning Review or an internal investigation in accordance with WP 15-CA1007, *Event Learning Review*. The manager may still request a documented investigation. If the event was not a significant condition that warranted a documented investigation, the manager assesses the event to determine if personnel notification and/or training are needed to prevent future recurrence and takes the appropriate action.

WP 13-1, SIMCO QAPD, is the company-level document that describes how operational audits and assessments are accomplished. The associated procedures describe the mechanisms for completing operational system audits and developing and tracking corrective actions.

The requirements and guidance contained in the QAPD are based on the principle that work will be planned, documented, performed under controlled conditions, and periodically assessed to establish work item quality and process effectiveness and to promote improvement. Additional feedback and improvement details are collected when consistent with guidance in the QAPD; departments perform functional area assessments specified in applicable regulations and the DOE Orders.

As written and implemented at WIPP, WP 02-EC.14 provides a narrative of how this ISMS function is implemented under the EMS.

WP 02-EC.13, *Environmental Compliance Assessment Plan*, describes how environmental assessments are performed to ensure compliance with all environmental requirements. It is also designed to assess adherence to environmental stewardship practices as part of the ISMS. The plan supports the feedback and improvement function of the ISMS.

WP 15-GM1002, *Integrated Issues Management, establishes the WIPP Issues Management Program*. The Issues Management Program is a tool used to report, track, schedule, and resolve issues at WIPP. The scope may include issues of both high and low significance. This scope also includes conditions adverse to quality that require reporting by the QA program or other reporting entities, such as the DOE and the EPA.

All SIMCO personnel are responsible for the identification of issues that may require correction, improvement, or management attention and submitting them on a WIPP Form. A "no-fault" attitude is fostered by managers to encourage employees to report issues and allow management to prioritize and focus resources in a manner that addresses the issues that have the greatest potential for:

- Posing adverse risks to the environment and human health.
- Adversely impacting the quality, safety, and reliability of waste operations.
- Affecting the ability to meet quality requirements.

SIMCO has chartered groups to give employees chances to identify improvement opportunities, make improvements to SIMCO operations, and provide feedback.

Management Charters (MCs) describe each group's functions and activities. Examples of the groups are the Operational Safety Team, Electrical Safety Committee, the ALARA Committee, and the Zone Safety Committees.

The Work Control process outlines the WCD feedback and post-review process that ensures actions are taken on feedback received.

Attributes

- Feedback on the effectiveness of the ISM and the adequacy of controls is gathered in a biannual assessment and declaration.
- Extent of condition reviews are conducted using a graded approach.
- Opportunities for improving work execution and planning are identified and implemented.
- Line and independent oversight is conducted at all levels.
- Oversight and assessment activities verify that work is performed within adequate and agreed-upon controls.
- Performance measures or indicators and performance objectives are developed in coordination with DOE.
- Line managers use performance measures and indicators as part of the self-assessment process.
- Feedback (including worker input) and lessons learned are managed to improve safety and work performance.
- Oversight or assessment results are managed to ensure that lessons are learned and applied throughout the site.
- Issues are identified (including worker input) and managed to resolution.
- Apparent and Root Causes are determined, and effective corrective action plans are developed and implemented.
- Corrective action effectiveness reviews are conducted using a graded approach.
- Regulatory compliance and enforcement as required by rules, laws, and permits, such as the PAAA, National Environmental Policy Act (NEPA), RCRA, CERCLA, and 10 CFR 851, “Worker Safety and Health Program,” are ensured.

6.3 Safety Culture Focus Areas

DOE defines safety culture as “an organization’s values and behaviors modeled by its leaders and internalized by its members, which serve to make safe performance of work the overriding priority to protect the workers, public, and the environment.” An SCWE is “a work environment in which employees feel free to raise safety concerns to management (and/or a regulator) without fear of retaliation.” WIPP expects its personnel to adopt a broader safety culture that incorporates all attributes of the Safety Culture Focus Areas.

The open and collaborative Safety Culture at WIPP is characterized by “a Safety-Conscious Work Environment through a team approach, caring about each other and a focus on continuous improvement and excellence in establishing safety priorities.” This safety culture includes the same expectations for subcontractors in order to ensure that safe practices are applied through all work, protecting employees accordingly. To assist in strengthening SIMCO SCWE, SIMCO has implemented MP 1.27, *Resolution of Employee Safety Concerns*.

6.3.1 Safety Culture Focus Area: Leadership

Attributes

- Demonstrated Safety Leadership (SCWE Attribute)
  - Line managers understand and accept their safety responsibilities as integral to mission accomplishment.
  - Line managers enhance work activities, procedures, and processes with safety practices and policies.
  - Leaders acknowledge and address external influences that may impose changes that could result in safety concerns.
  - Line managers clearly understand their work activities and performance objectives, and how to safely conduct their work activities to accomplish their performance objectives.
  - Line managers demonstrate their commitment to safety through their actions and behaviors and support the organization in successfully implementing safety culture attributes, by conducting walk-throughs, personal visits, and verifying that their expectations are met.
  - The organizational mission and operational goals clearly identify that production and safety goals are intertwined, demonstrating commitments consistent with highly reliable organizations.
- Risk-informed, conservative decision-making
  - Line managers support and reinforce conservative decisions based on available information and risks. Managers and employees are systematic and rigorous in making informed decisions that support safe, reliable operations. Employees are expected, authorized and supported by managers to take conservative actions when faced with unexpected or uncertain conditions.
  - Managers and employees do not accept conditions or behaviors that have the potential to reduce operating or design margins. Anomalies are thoroughly investigated, promptly mitigated, and periodically analyzed. The bias is set on proving that work activities are safe before proceeding, rather than proving them unsafe before halting. Personnel do not proceed, and do not allow others to proceed, when safety is uncertain, and management is supportive of these decisions.
- Management engagement and time in field (SCWE Attribute)
  - Maintaining operational awareness is a priority. Line managers are in close contact with the front-line employees. Line managers listen and act on real-time operational information. Line managers identify critical performance elements and monitor them closely.
  - Line managers spend time on the floor and in employee work areas. Line managers practice visible leadership by placing "eyes on the work", asking questions, coaching, mentoring, and reinforcing standards and positive behaviors. Deviations from expectations are corrected promptly and, when appropriate, collectively analyzed to understand why the behaviors occurred.
  - Managers set an example for safety through their personal commitment to continuous learning and by direct involvement in high-quality training that consistently reinforces expected employee behaviors.
- Staff recruitment, selection, retention, and development
  - People and their professional capabilities, experiences, and values are regarded as the organization's most valuable assets. Organizational leaders place a high personal priority and time commitment on recruiting, selecting, and retaining an excellent technical staff.
  - The organization maintains a highly knowledgeable workforce to support a broad spectrum of operational and technical decisions. Safety staff are being matrixed to key company areas,

embedding them in day-to-day operations to assist in safety improvement. Outside expertise is employed when necessary.

- The organization strives to build and sustain a flexible, technical staff and staffing capacity. Staffing is sufficient to ensure adequate resources exist to ensure redundancy in coverage as well as cope with and respond to unexpected changes in a timely manner.
- The organization values and practices continuous learning. Professional and technical growth is formally supported and tracked to build organizational capability. Employees are required to improve knowledge, skills, and abilities by participating in recurrent and relevant training and strongly encouraged to pursue educational opportunities.
- Line managers encourage and make training available to broaden individual skills and improve organizational performance. Training should include the ability to appreciate the potential for unexpected conditions; to recognize and respond to a variety of problems and anomalies; to understand complex technologies and capabilities to respond to complex events; to develop flexibility at applying existing knowledge and skills in new situations; to improve communications; and to learn from significant industry and DOE events.

- Open communication and fostering an environment free from retribution (SCWE Attribute)
  - Managers work to achieve a high level of trust in the organization.
  - Reporting individual errors is encouraged and valued. Individuals feel safe from retaliation when reporting errors and incidents.
  - Individuals at all levels of the organization promptly report errors and incidents and offer suggestions for improvements.
  - Varieties of methods are available for personnel to raise safety issues and line managers promptly and effectively respond to personnel who raise safety issues.
  - Leaders are responsible for establishing systems for acknowledgement, prioritization, tracking and timely resolution of issues reported to them by their employees.
  - Leaders are trained on detecting situations that could result in retaliation and take effective action to prevent a chilling effect.
  - The organization addresses disciplinary actions in a consistent manner; disciplinary actions are reviewed to ensure fair and consistent treatment of employees at all levels of the organization.
- Clear expectations and accountability (SCWE Attribute)
  - Line managers provide ongoing performance reviews of assigned roles and responsibilities reinforcing expectations and ensuring key safety responsibilities and expectations are being met.
  - Personnel at all organizational levels are held accountable for standards and expectations. Accountability is demonstrated both by recognizing excellent performance as well as identifying less-than-adequate performance. Accountability considers intent and organizational factors that may contribute to undesirable outcomes.
  - Willful violations of requirements and performance norms are rare. Individuals and organizations are held accountable. Unintended failures to follow requirements are promptly reported, and personnel and organizations are acknowledged for self-identification and reporting errors.

<u>System Policies, Procedures, and Other Implementing Documents</u>

- CCP-QP-018, *CCP Management Assessment*
- MP 1.12, *Worker Protection Policy*
- MP 1.27, *Resolution of Employee Safety Concerns*
- MP 1.28, *Integrated Safety Management*

- MP 1.29, *Establishment of Annual Goals*
- MP 1.52, *Just Culture Management Policy*
- WP 14-TR.01, *WIPP Training Program*
- WP 15-CA1002, *Management Self-Assessments*
- WP 15-GM.02, *Worker Safety and Health Program Description*
- WP 15-GM1003, *Graded Approach to Stop Work*
- SIMCO Human Resources Employee Handbook

6.3.2 Safety Culture Focus Area: Employee/Worker Engagement

Attributes

- Personal commitment to everyone's safety
  - Responsibility and authority for safety are defined and understood as an integral part of performing work.
  - The line of authority and responsibility for safety is defined from the senior manager to the individual contributor. Roles and responsibilities, authorities and accountabilities are clearly defined in writing and are understood by each individual.
  - Individuals understand and demonstrate responsibility for safety. Safety and its ownership are apparent in everyone's actions and deeds.
  - Individuals outside of the organization (including subcontractors, temporary employees, visiting researchers, vendor representatives, etc.) understand their safety responsibilities.
  - The organization knows the expertise of its personnel. Line managers defer to qualified individuals with relevant expertise during operational upset conditions. Qualified and capable people closest to operational upsets are empowered to make important decisions and are held accountable justly.
- Teamwork and mutual respect (SCWE Attribute)
  - Open communications and teamwork are the norm.
  - Individuals at all levels of the organization listen to each other and engage in crucial conversations to ensure meaning, intent and viewpoints are understood; and that differing points of view are acknowledged.
  - Discussion on issues focus on problem solving rather than on individuals.
  - Good news and bad news are both valued and shared.
- Participation in work planning and improvement
  - Individuals are involved in identification, planning, and improvement of work and work practices.
  - Individuals follow approved work practices and procedures.
  - Individuals at all levels can take a time-out or stop unsafe work or work during unexpected conditions.
  - Design, analysis and continuous improvement of work practices and processes are valued as core organizational competencies; expertise in these competencies is evaluated and rewarded.
- Mindful of hazards and controls
  - Organizational safety responsibilities are sufficiently comprehensive to address the work activities and hazards involved.
  - Work hazards are identified and controlled to prevent or mitigate accidents, with particular

attention to high-consequence events with unacceptable consequences.

- Individuals understand and proactively identify hazards and controls before beginning work activities.
- Individuals are mindful of the potential impact of equipment and process failures, demonstrate constructive skepticism and are sensitive to the potential of faulty assumptions and errors. They appreciate that mindfulness requires effort.

System Policies, Procedures, and Other Implementing Documents

- General Employee Training
- MP 1.12, *Worker Protection Policy*
- MP 1.52, *Just Culture Management Policy*
- MP 1.53, *Differing Professional Opinions*
- WP 10-WC3011, *Work Control Process*
- WP 12-IS.01, *Industrial Safety Program, Structure and Management*
- WP 12-IS.01-6, *Industrial Safety Program - Visitor, Vendor, User, Tenant, and Subcontractor Safety Controls*
- WP 12-IS3002, *Job Hazard Analysis Performance & Development*
- WP 13-1, *Salado Isolation Mining Contractors, LLC Quality Assurance Program Description*
- WP 15-GM.07, *Resolution of Differing Professional Opinions*
- WP 15-GM1003, *Graded Approach to Stop Work*

6.3.3 Safety Culture Focus Area: Organizational Learning

SIMCO provides systems and processes to foster a culture and performance of safety excellence including continuous improvement through organizational learning. This includes:

- Training for management and workers including the Leadership Academy for managers and supervisors.
- All Managers Meetings with training topics.
- Leaders Forum for manager and supervisor graduates of the Leadership Academy.
- Speak Up Listen Up Training for all employees.
- performance is shared by using tracking and trending tools that help maintain safe operations and progress.
- Supervisor Training in Accountability and Recognition Techniques (START).
- Lessons Learned incorporation into daily activities.
- SIMCO holds its personnel to high standards of performance and uses their expertise to ensure appropriate levels of review, analysis, and decision-making.
- Encouraging Managers/Supervisors to become a Safety Trained Supervisor (STS) or OSHA certified.
- SIMCO provides performance assurance through the QA program, the contractor assurance system, inspections, management assessments, safety reviews, issues management, corrective action program, root cause analysis, and the many key components for assuring continuous improvement and effective performance.

- Sharing of information on the SIMCO use of the ORPS, OPEX, Computerized Accident/Incident Reporting System, and the Noncompliance Tracking System, which provides timely reporting of occurrences and ensures that appropriate action, is taken.
- Periodic reports detail progress and any problems in project performance. Independent oversight is carried out by qualified SIMCO personnel to review documentation and conduct field surveillances, assessments, and audits of operations. Problems are discovered early in the process so that interventions can be taken to prevent further damage and to apply lessons learned to other ongoing projects. SIMCO safety and engineering professionals provide expertise to field activities to assist in technical issues and to measure progress.
- The annual review of the ISMS identifies program strengths and weaknesses and tracks corrective actions to timely completion. Continued implementation of improvement programs and focus on safety culture will result in additional strengths in implementation of this focus area.

Attributes

- Credibility, trust and reporting errors and problems (SCWE Attribute)
  - Credibility and trust are continuously nurtured so that a level of trust is established in the organization.
  - Organizations, managers and line supervisors provide accurate, relevant and timely information to employees. Line managers are skilled in responding to employee questions in an open, honest manner.
  - Reporting individual errors is encouraged and valued. Individuals are recognized and rewarded for self-identification of errors.
  - Line managers encourage and appreciate safety issue and error reporting.
  - Managers and line supervisors demonstrate integrity and adhere to ethical values and practices to foster trust.
  - Managers and line supervisors demonstrate consistency in approach and a commitment to the vision, mission, values and success of the organization as well as the individuals (people).
  - Mistakes are used for opportunities to learn rather than blame.
  - Individuals are recognized and rewarded for demonstrating behaviors consistent with the safety culture principles.
- Effective resolution of reported problems (SCWE Attribute)
  - Corrective and improvement action programs are established and effectively implemented, providing both transparency and traceability of all corrective actions. Corrective action programs prioritize issues, enabling rapid response to imminent problems while closing minor issues in a timely manner to prevent them from escalating into major issues.
  - Results from performance assurance activities are integrated into the performance improvement processes, such that they receive adequate and timely attention. Linkages with other performance monitoring inputs are examined, high-quality causal analyses are conducted, as needed, and corrective actions are tracked to closure with effectiveness verified to prevent future occurrences.
  - Processes identify, examine, and communicate latent organizational weaknesses that can aggravate relatively minor events if not corrected. Organizational trends are examined and communicated.
  - Organizational systems and processes are designed to provide layers of defenses. Lessons learned are shared frequently; prevention and mitigation measures are used to preclude errors from occurring or propagating. Error-likely situations are sought out and corrected, and recurrent errors are carefully examined as indicators of latent organizational weaknesses.

- Incident reviews are conducted after an incident to ensure data quality and to identify improvement opportunities. Causal analysis expertise is applied effectively to examine events and improve safety work performance. Causal analysis is performed on a graded approach to identify causes and follow-up actions.
- SIMCO has initiated a new Management Essentials training for WIPP, Blocking and Tackling. This course is designed to provide new managers with information on basic WIPP processes and programs.
- Performance improvement processes require direct worker participation. Individuals are encouraged, recognized, and rewarded for offering innovative ideas to improve performance and to solve problems.

- Performance monitoring through multiple means (SCWE Attribute)
  - Line managers maintain a strong focus on the safe conduct of work activities. Line managers maintain awareness of KPIs related to safe work accomplishment, watch carefully for adverse trends or indications, and take prompt action to understand adverse trends and anomalies. Management employs processes and special expertise to be vigilant for organizational drift.
  - Performance assurance consists of frequent, oversight conducted at all levels of the organization. Performance assurance includes independent evaluation of performance indicators and trend analysis.
  - Line managers throughout the organization set an example for safety through their direct involvement in oversight activities and associated performance improvement.
  - The organization actively and systematically monitors performance through multiple means, including leader walkarounds, issue reporting, performance indicators, trend analysis, benchmarking, industry experience reviews, self-assessments, peer reviews, and performance assessments.
  - The organization demonstrates continuous improvement by integrating the information obtained from performance monitoring to improve systems, structures, processes, and procedures.
  - Line managers are actively involved in all phases of performance monitoring, problem analysis, solution planning, and solution implementation to resolve safety issues.
  - The organization maintains an awareness of its safety culture. It actively and formally monitors and assesses its safety culture on a periodic basis.
- Use of operational experience
  - Operating experience is highly valued and the capacity to learn from experience is well developed. The organization regularly examines and learns from operating experiences, both internal and in related industries.
  - Organization members convene to identify lessons and learn from mistakes and successes.
  - The organization embraces feedback from peer reviews, independent oversight, and other external sources.
  - The organization documents and shares operating experiences (lessons learned and best practices) within the organization and with industry.
- Questioning attitude (SCWE Attribute)
  - Line managers encourage a vigorous questioning attitude toward safety and foster constructive dialogues and discussions on safety matters.
  - Individuals cultivate a constructive, questioning attitude and healthy skepticism when it comes to safety. Individuals question deviations, and avoid complacency or arrogance based on past successes. Team members support one another through both awareness of each other's actions and constructive feedback when necessary.

- Individuals pay attention to current operations and focus on identifying situations where conditions and/or actions are diverging from what was assumed, expected, or planned. Individuals and leaders act to resolve these deviations early before issues escalate and consequences become large.

System Policies, Procedures, and Other Implementing Documents

- General Employee Training
- CCP-PO-005, *CCP Conduct of Operations*
- CCP-QP-014, *CCP Quality Assurance Trend Analysis and Reporting*
- CCP-QP-018, *CCP Management Assessment*
- MP 1.28, *Integrated Safety Management*
- MP 1.29, *Establishment of Annual Goals*
- MP 1.52, *Just Culture Management Policy*
- WP 02-EC.13, *Environmental Compliance Assessment Plan*
- WP 04-CO.01, Conduct of Operations series
- WP 10-WC3011, *Work Control Process*
- WP 12-IS.01, *Industrial Safety Program - Structure and Management*
- WP 13-1, *Salado Isolation Mining Contractors, LLC Quality Assurance Program Description*
- WP 13-QA.03, *Quality Assurance Independent Assessment Program*
- WP 15-CA1002, *Management Self-Assessments*
- WP 15-FC.03, *EVMS Surveillance* Plan
- WP 15-GM.01, *SIMCO Project Execution Plans*
- WP 15-GM.02, *Worker Safety and Health Program Description*
- WP 15-GM1002, *Integrated Issues Management*
- WP 15-GM1003, *Graded Approach to Stop Work*
- WP 15-CA1007, *Event Learning Review*
- WP 15-PA1002, *Requirements Management*
- WP 15-RA.01, *Nuclear Safety and Worker Safety and Health Compliance Program*

As part of the continuing focus on improving safety culture, SIMCO has provided TLP 150, which is the DOE course “Safety Culture Training”, to employees.

In addition, TLP 200, “Safety Culture Training for Leaders” has be delivered to the senior management team to provide a clear understanding of their roles, responsibilities, accountability, and authority in developing and sustaining an open and collaborative work environment.

7.0 INTEGRATING PROGRAMS

A number of mechanisms are incorporated into the SIMCO ISMS to facilitate integration. These include business procedures and practices that allocate resources and prioritize work, as well as WCDs intended to protect the public, worker, and environment. Integration includes regularly scheduled meetings, which include the POD, POW meetings, Zone Safety Committee meetings, safety topic meetings, and others on a more informal basis.

An example of formal mechanisms of integration is the implementation of DOE-STD-1120-2005, *Integration of ES&H into Facility Disposition Activities*, for integrating planning, hazard analysis, and controls. Operating, support, and business groups integrate activities to achieve mission goals. The development of procedures and practices for prioritization of both programmatic and site-wide work activities important to safety is an integration activity that has received recent improvement focus as part of the work control improvements. A change management procedure, WP 15-CA1005, is utilized to integrate changes into systems.

Some components are discussed in sections below, while others, though not discussed in this section (such as work planning, emergency management, budget process), are discussed in other sections in this ISMSD.

7.1 Environmental Management System

To implement sound stewardship practices that protect the air, water, and land, SIMCO maintains the responsibilities and requirements for the work performed per contract DE-EM0001971, which includes work performed by SIMCO subcontractors. The EMS is implemented to ensure that environmental protection actions and measures are integrated into all work planning and performance. This is accomplished effectively by integrating EMS requirements into the ISMS.

The EMS is part of the overall SIMCO ISMS approach for achieving workplace safety and environmental protection. The EMS provides a systematic management process for identifying and addressing environmental consequences of any SIMCO action. Processes within the EMS encompass a continuous cycle of planning, implementing, and evaluating to ensure the safety of the workers and public and protection of the environment. This has been proven effective with continued ISO 14001 certification.

Programmatic components of EMS include:

- Permit Management.
- Pollution Prevention.
- Environmental Compliance.
- Environmental Oversight.
- NEPA Analysis.
- Radiation Protection and Radioactive Waste Management.
- Watershed Management.
- Cultural Resource Management.

Through the implementation of the EMS, SIMCO joins with the CBFO to ensure environmental management considerations are fundamental and integral components of the WIPP Project. SIMCO works with CBFO to set PEMP goals for exceptional performance in this area.

7.2 Quality Assurance

SIMCO is committed to building the quality principles of accuracy and repeatability into all mission processes and results. The QAPD describes the method by which QA is implemented into the ISMS and the overall work processes.

SIMCO is committed to achieving quality in accordance with the "Quality Assurance Rule" (10 CFR Part 830, Subpart A, "Quality Assurance Requirements") and DOE O 414.1D by having a comprehensive QAPD in place. The QAPD identifies those requirements and actions that are implemented to achieve this result.

The QAPD is the company-level document that describes how operational audits and assessments are completed. The associated procedures describe the mechanisms for completing operational system audits and developing and tracking corrective actions.

The requirements and guidance contained in the QAPD are based on the principle that work will be planned, documented, performed under controlled conditions, and periodically assessed to establish work item quality process effectiveness and to promote improvement. Additional feedback and improvement details are collected when consistent with guidance in the QAPD; departments perform functional area assessments specified in applicable regulations and the DOE Orders.

7.3 Safeguards and Security Management

The SSM implements the sustained execution of security expectations at the WIPP. The ISM and SSM are complementary management systems based upon similar principles and core functions. When possible, infrastructures are shared, such as the processes for creating, issuing, and communicating requirements and expectations.

In managing and operating WIPP, SIMCO supports the program by ensuring that management of safeguards and security functions and activities become an integral and visible part of work planning and execution processes.

The purpose of DOE P 470.1B, *Safeguards and Security Program*, is to formalize a Safeguards and Security Management framework. Safeguards and security management systems provide a formal, organized process for planning, performing, assessing, and improving the secure conduct of work in accordance with risk-based protection strategies. These systems are institutionalized through the DOE directives and flowed down into contracts as appropriate.

The objective of the SSM Program at the WIPP is to systematically integrate safeguards and security into management and work practices at all levels so that missions are accomplished securely. This provides the necessary and appropriate protection for nuclear material, information, personnel, and property. Operational security at WIPP is managed under and evaluated for effectiveness in the following sub-programs:

- Program Management
- Information Security
- Materials Control and Accountability
- Personnel Security
- Cyber Security
- Assessment Programs

7.4 10 CFR Part 851

WP 15-GM.02, Worker Safety and Health Program (WSHP) was developed to demonstrate implementation of the requirements of 10 CFR Part 851. The SIMCO WSHPD, the VPP, MP 1.12, *Worker Protection Policy*, and the implementation of safety and health programs are integrated in the ISMS, forming the overall foundation for the SIMCO safety program. SIMCO maintains a 10 CFR Part 851 matrix that maps implementing procedures to requirements.

7.5 Communications and Training Plan

ISMS training is communicated to workers as an integral part of the required GET and the required annual GET refresher class for the CBFO and contractor employees. As DOE directives, rules and policies are amended, the GET material is updated and employees are notified of the changes. The WIPP Fundamentals Handbook is provided to new employees as part of their initial GET class. This provides an overview of the basic premise of ISMS, 10 CFR Part 851, VPP, and their rights, roles, and responsibilities related to safety and work.

8.0 OTHER SAFETY-RELATED INITIATIVES

SIMCO has implemented the principles and functions of a variety of processes and initiatives aimed at improving organizational and individual performance. A number of tools, processes, or approaches have been adapted to complement ISMS. They share many common principles that affect organizational and individual worker, supervisor, and management behavior and performance. Specific examples include MP 1.68, Safety Buck Recognition Program, Everyday Hero Awards, and Excellence Awards.

8.1 VPP STAR Status

In June of 2020 DOE VPP awarded the VPP STAR to SIMCO. This status is the highest safety honor a contractor can receive through DOE's VPP Program. The star recognizes SIMCO for its excellence in employee safety and health programs.

9.0 ANNUAL ISM MAINTENANCE AND CONTINUOUS IMPROVEMENT PROCESSES

9.1 ISMS Description Maintenance and Continuous Improvement

Annually, SIMCO submits a revision of the ISMSD, as necessary, for CBFO approval. This submittal includes annual POMCs. These POMCs are jointly determined by CBFO and SIMCO in accordance with DOE-EM Guidance.

SIMCO will continue to monitor the ISMS processes for adequacy, implementation, and effectiveness in line with both the CBFO and SIMCO expectations. SIMCO has established objective POMCs in effort to drive improvement in safety performance and ISM system effectiveness.

9.2 ISMS Effectiveness Review

The SIMCO ISMS effectiveness review aligns with the following directives and documents:

- DOE P 450.4A, *Integrated Safety Management Policy*
- DOE G 450.4-1C, *Integrated Safety Management System Guide*

The ISM effectiveness review process uses these documents and guidance from the DOE-EM and the CBFO is as essential element of ISM implementation that allows for evaluating implementation and making necessary adjustments. The ISM effectiveness review is a qualitative review that encompasses multiple elements, including review of self-assessments, oversight review results, integrated reviews, performance against established performance objectives, measures, and commitments, and other feedback and performance information. Elements of this review may either be completed together as one major annual audit or, as an ongoing audit, culminating in a review report that is based on the summary evaluation. The purpose of the ISM effectiveness review is to:

- Determine the effectiveness of the ISMS in:
  - complying with requirements
  - integrating safety into work performance
  - supporting the safe performance of work
  - improving safety performance
- Identify strengths of ISMS implementation for sharing with other DOE elements to aid improvements at other locations.
- Identify weaknesses of ISMS implementation to focus attention on corrective and improvement actions.
- Identify opportunities for improvement in efficiency or effectiveness of the ISMS, and identify actions for continuous improvement.

SIMCO ISM performs assessments in accordance with the directives listed above, with a view toward the effective interface and integration between the CBFO ISMS and the SIMCO ISMS. Assessments are executed throughout the year by a series of planned management assessments of the WIPP operational and administrative processes. In judging effectiveness, both process measures and outcome measures are considered. Examples of process measures include, but are not limited to:

- Implementation of each ISM function and each ISM Principle
- Integration of ISM with other management systems
- Completion of ISM commitments
- Safety Culture Sustainability Goals
- Identification of weaknesses and improvement activities
- Satisfactory performance on process-based performance measures
- Positive feedback from oversight reviews

Examples of outcome measures include satisfactory performance on outcome-based performance measures, including those related to safe identification of work activities. The actual criteria to be used to determine effectiveness will be based on the DOE directives that specify criteria review and approach documents, any guidance issued by the DOE, including the CBFO, and best practices established within the DOE complex. In addition, the following Continuing Core Expectations (CCEs) from the DOE ISM Directives are used to guide annual effectiveness reviews.

- CCE-1. The contractor updates the safety performance objectives, measures, and commitments, in response to the DOE direction and guidance, so that they reflect and promote

continual improvement and address major mission changes, as required. The ISMSD is updated and submitted for approval as scheduled by the contracting officer.

- CCE-2. System effectiveness evaluated as described in the SIMCO ISMSD is satisfactory. Safety performance objectives, measures, and commitments are met or exceeded, and they are revised as appropriate for the next year.

- CCE-3. Work activities reflect effective implementation of the functions of the ISMS. Work is defined. Hazards are identified. Actions to prevent or eliminate the hazards are taken. Controls are developed and effectively translated into work instructions or procedures and implemented. Work is properly authorized. Work is accomplished within controls. Appropriate worker involvement is a priority.

- CCE-4. SIMCO implementing mechanisms are established and implemented to provide an effective environment for ISM implementation, as embodied in the ISM Guiding Principles and safety culture Focus Areas, Roles and responsibilities are clear. Line management is responsible for safety. Required competence is commensurate with responsibilities and the technical and safety system knowledge of managers and staff continues to improve.

- CCE-5. SIMCO budget processes ensure that priorities are balanced. Budget development and change control processes ensure that safety is balanced with production. Facility procedures ensure that production is balanced with safety.

- CCE-6. An effective feedback and improvement process using progressively more demanding criteria is functioning at each level of the organization from the worker and individual activities through the facilities and the sites. Issues management is effective so that issues are identified, evaluated, and closed. Issues identified in the annual ISM effectiveness reviews and ISMS verifications are effectively addressed.

- CCE-7. List A/List B is reviewed and updated, as necessary, and concurrent with the budget cycle. The process for effecting changes to the standards and requirements identified in the Contract per DEAR List A and List B is being used and is effective. AAs and Authorization Basis documents are maintained current. Changes in agreed upon standards and requirements are included to reflect mission changes. An effective, dynamic process to keep standards and requirements current is apparent.

- CCE-8. Relevant performance records reflect an improving ISMS. Records include routine SIMCO assessment reports, independent and focused assessment reports, incident investigations, occurrence reports, DOE enforcement action reports, and reports from internal and external stakeholders and regulators, and other relevant documentation that provides evidence as to the status of implementation, integration, and effectiveness of the ISMS. Feedback, improvement and change control processes cited in the contractor ISMSD are in place and effective.

The ISM review report includes a summary of the overall review process, a conclusion regarding the effectiveness of the ISM, the basis for conclusions, the strength and weaknesses, identification of areas of improvement, and the corrective and improvement-focused planned actions as well as schedules for completion.

Improvements in the SIMCO Contractor Assurance System include independent assessments of Safety Management Programs to identify areas for improving the Safety Management Programs that implement ISM.

9.3 Annual Safety Performance Objectives, Measures, and Commitments Process

The annual safety POMCs are determined by the CBFO and SIMCO counterparts and are established to drive improvement in safety performance and ISMS effectiveness. This approach ensures that SIMCO remains responsible to the DOE program and budget execution guidance while maintaining the integrity of the ISMS.

The objectives are used to support the DOE expectation for (1) SIMCO personnel behaviors and attitudes in the conduct of their daily work activities, and (2) operational performance regarding worker injuries and illnesses, regulatory enforcement actions, and environmental releases.

SIMCO is committed to work such that:

- SIMCO processes and procedures have clear safety expectations and requirements consistent with a zero accident workplace.
- SIMCO flows down safety expectations and requirements (including 10 CFR Part 851, safety standards, procedures, etc.) to subcontractors at any tier. The flow down of safety expectations and requirements includes vendors, which also operate under a subcontract, though 10 CFR 851 requirements vary.
- Work being done at the WIPP site not under direct contract with SIMCO is controlled by a contractual vehicle or other written arrangement to meet the safety expectations set forth in WP 02-EC.12 and per the organization's own 10 CFR Part 851 plan as applicable (WP 15-GM.02). These are activities under contract with CBFO, or are site users or tenants based on various governmental agreements, such as scientific studies, international mentoring projects, and others.
- SIMCO safety personnel will provide effective safety oversight of SIMCO and SIMCO subcontractor work.
- The ISMSD will be maintained in accordance with requirements and best practices to afford a foundational level sufficient to ensure safety excellence.
- SIMCO is able to achieve the safety POMC agreed upon with the CBFO in the annual contract process.

DOE's ultimate safety goal is zero accidents, work-related injuries and illnesses, regulatory enforcement actions, and reportable environmental releases. This goal is pursued through a systematic and concerted process of continuous performance improvements using performance measurement, safety goals, and metrics established in accordance with DOE direction. New POMCs are determined based on guidance received from DOE as well as through the evaluation of prior-year performance with meeting objectives. Attachment 1 outlines the POMCs.

9.4 Annual Declaration Process

Per DOE O 450.2, *Integrated Safety Management*, an ISM declaration is a determination regarding whether the organization is in full conformance with the requirements and expectations for an effective ISMS.

The ISM declaration must be based on the results after the ISM effectiveness review. DOE O 450.2 also requires DOE line management to establish the need for frequency of ISM declarations. Until guidance is modified, SIMCO will continue with annual declarations per contract DE-EM0001971.

Based on all the reviews and assessments conducted during the year, including the annual effectiveness review, SIMCO determines the state of SIMCO ISM effectiveness: (1) "Effective Performance - ISM is being effectively implemented;" (2) "Needs Improvement - ISM is being effectively implemented, but noteworthy weaknesses need to be addressed;" or (3) "Significant Weakness - ISM is not being effectively implemented." The basis for this summary evaluation is to be included in the SIMCO "Declaration" Letter/Report to the CBFO. The declaration should include any immediate corrective or compensatory actions that must or have been taken. It should also include a response to any specific guidance for the declaration received from U.S. DOE Office of Independent Oversight, DOE-EM, or the CBFO.

The declaration report should include a summary of relevant activities and assessments that were completed during the report period and provide a determination of the overall effectiveness of implementation of ISM, the basis for the determination, a discussion of potential site vulnerabilities to provide an opportunity to develop and implement risk management options and strategies, a safety significant related directive, exemptions or changes in the contract during the report period, DOE regulatory enforcement activities history, and any additional information required based on guidance received from DOE.

10.0 COMPLIANCE REFERENCE LIST

These directives require specific integration of management systems with safety programs providing the overall direction for this ISMSD.

- DOE O 210.2A, *Corporate Operating Experience Program*
- DOE O 231.1B, *Environment, Safety, and Health Reporting*
- DOE O 232.2A, *Occurrence Reporting and Processing of Operations Information*
- DOE O 414.1D, *Quality Assurance*
- DOE O 450.2, *Integrated Safety Management*
- DOE P 450.4A, *Integrated Safety Management Policy*
- DOE G 450.4-1C, *Integrated Safety Management System Guide*
- DOE P 470.1B, *Safeguards and Security Program*
- DOE/CBFO-09-3442, *CBFO Integrated Safety Management System Description*

ATTACHMENT 1 – PERFORMANCE OBJECTIVES, MEASURES, AND COMMITMENTS (POMCS)

FY23 SIMCO Safety Performance Objectives, Measures, and Commitments

Objective 1 - Ensure Safe Mission Accomplishment While Maintaining a Balance of Priorities
Measure 1.1 – Illnesses and Injuries Rates
Commitment 1.1.1 – Maintain a Total Recordable Case rate of less than 0.8 based on a fiscal year
Commitment 1.1.2 – Maintain a Days Away, Restricted or Transferred Case rate of less than 0.4 based on a fiscal year
Measure 1.2 – Compliant Operations
Commitment 1.2.1 – Reduce MSHA S&S rate to < 10% in FY23 compared to 14% in FY22 (MINE-01 KPI)
Commitment 1.2.2 – Terminate all citations by the termination due date and time set by the issuing MSHA Inspector unless an extension is granted by MSHA setting a new due date and time. Compensatory actions to address identified hazards must be implemented pending elimination or adequate control of the hazard.
Commitment 1.2.3 – Less than 4 external regulatory inspection findings/non-compliances issued in FY23 (does not include findings from MSHA or DOE)
Measure 1.3 – Exposure to Critical Hazards
Commitment 1.3.1 – Reportable occurrences related to Electrical Safety not to exceed 2/quarter or 6/FY23 (CONOPS-01 KPI)
Commitment 1.3.2 – Maintain average LOTO collective significance value of less than 0.6 for FY23 (CONOPS-06 KPI)
Measure 1.4 – Facility Operations Safety
Commitment 1.4.1 – Reduce the instance of procedural non-compliance by 10% in FY23 compared to FY22 (CONOPS-05 KPI)
Commitment 1.4.2 – Reduce mobile equipment/vehicle accidents/incidents by 10% in FY23 from FY22 (CONOPS-02 KPI)
Objective 2 – Maintain Continuously Improve the Integrated Safety Management System
Measure 2.1 – Feedback and Improvement
Commitment 2.1.1 – Maintain an average Management Observation performance index greater than 80% during FY23 (CAS-04 KPI)
Commitment 2.1.2 – Maintain a FY average for Issue Timeliness (Significance Levels A, B, and C) Index below 130 days (CAS-01 KPI)
Commitment 2.1.3 – Maintain a cumulative average of 85% of self-identified issues during FY23 (CAS-05)
Objective 3 –Maintain and Improve the Safety Culture
Measure 3.1 – Leadership and Worker Involvement
Commitment 3.1.1 – Complete an external Safety Culture Survey during FY23 Commitment 3.1.2 – Facilitate at least one Safety Zone Team Workshop during FY23