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Office of Environmental Management – Grand Junction

MOAB UTAH
UMTRA Project

Moab UMTRA Project
Integrated Safety Management System Description

Revision 8

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Moab UMTRA Project Integrated Safety Management System Description

Revision 8

Review and Approval

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Revision History

Revision	Date	Reason for Revision
0	December 2007	Initial issue.
1	August 2008	Updated Attachment 1 crosswalk of ISMS program mechanisms.
2	March 2009	Updated text to reflect ISMS Phase I and II Assessment corrective actions.
3	June 2013	Revision includes updates to Attachment 1, RAC and TAC Crosswalk of ISMS Program Mechanisms, and addition of new sections to address issues identified in the annual 2012 ISMS Assessment including: sections 6.0, Worker and Management Expectations, 8.0 Contractor Assurance System Description, 9.0 Performance Objectives, Measures, and Commitments, 10.0 ISMS Effectiveness Review, and 11.0 Annual Declaration Process.
4	October 2014	Complete rewrite to improve overall clarity, minimize redundancy, and incorporate updates.
5	January 2016	Annual review.
6	July 2017	Revision includes new RAC contract number, new RAC management signatures, and minor changes that do not significantly change content or emphasis.
7	August 2018	Revision includes correction of the Federal Cleanup Director's title, document title changes, and minor document edits.
8	March 2019	Revision to include discussion, approach, and methodology for conducting a CAS Self-Assessment.

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Acronyms and Abbreviations

ALARA	as low as reasonably achievable
CA	corrective action
CAS	contractor assurance system
CO	Contracting Officer
DEAR	Department of Energy Acquisition Regulation
DOE	U.S. Department of Energy
DOE G	DOE Guide
DOE O	DOE Order
ECP	Employee Concerns Program
EMCBC	DOE Office of Environmental Management Consolidated Business Center
EMS	Environmental Management System
ESA	Employee Safety Advisory
ES&H	Environmental, Safety, and Health
ESH&QA	Environmental, Safety, Health, and Quality Assurance
ISM	Integrated Safety Management
ISMS	Integrated Safety Management System
IT	Information Technology
IWP/JSA	Integrated Work Plan/Job Safety Analysis
LL	lessons learned
OE	operating experience
OEC	Operating Experience Coordinator
POC	point-of-contact
POD	Plan-of-the-day
POMC	performance objective, measure, and commitment
PPE	personal protective equipment
QA	Quality Assurance
RAC	Remedial Action Contractor
SCWE	Safety Conscious Work Environment
SH&Q	Safety, Health, and Quality
SME	subject matter expert
TAC	Technical Assistance Contractor
UMTRA	Uranium Mill Tailings Remedial Action

Integrated Safety Management System Policy

The U.S. Department of Energy (DOE), the Remedial Action Contractor (RAC), and the Technical Assistance Contractor (TAC) are committed to fully implementing an Integrated Safety Management System (ISMS) for the Moab Uranium Mill Tailings Remedial Action (UMTRA) Project and shall systematically integrate safety into management and work practices at all levels. The objective of this policy is to ensure the mission is accomplished while protecting the workers, the public, and the environment. The term "safety" is considered synonymous with environmental protection, waste minimization, fire protection, occupational safety, industrial hygiene, and radiological control. In other words, do work safely.

The implementation and management of safety functions and activities shall become an integral part of each Project phase including design, construction, operation, and decontamination and decommissioning. The insight and expertise of the RAC and TAC, including their subcontractor workforce, are valued resources, and their direct involvement in the implementation of an ISMS is considered essential to the success of the Project mission.

1.0 Introduction

1.1 Purpose

The purpose of this document is to describe implementation of the ISMS by the RAC and TAC on the Moab UMTRA Project.

The purpose of the ISMS is to integrate the requirements from the Worker Safety and Health, Quality Assurance (QA), Radiation Protection, and Environmental Management Programs into every aspect of the Moab Project. This will ensure safety is integrated into management and work practices at all levels of work performed by the RAC and TAC.

1.2 Scope

The ISMS is applicable to RAC and TAC employees and subcontractors at Project-controlled facilities conducting work activities subject to DOE Acquisition Regulation (DEAR) 970.5223-1, "Integration of Environment, Safety, and Health into Work Planning and Execution."

2.0 Overview of Integrated Safety and Management System

Integrated Safety Management (ISM) must be consistent with and appropriate for the hazards and complexity of the facilities and work performed. This document clearly describes how ISMS Guiding Principles and Core Functions are applied and how relevant safety goals and objectives are established, documented, and implemented on the Project.

3.0 Definitions

Administrative controls – Provisions relating to organization and management, procedures, recordkeeping, assessment, and reporting necessary to ensure safe operation of a facility (e.g., procedures, training, postings).

Assessment – A disciplined, systematic, documented, performance-based examination of facilities, equipment, personnel, programs, processes, procedures, and management control systems to ensure a facility is operated safely.

Benchmarking – A test or series of tests designed to compare the qualities or performance of different programs or systems of the same type.

Core Functions – The five fundamental functions used to ensure safety requirements are established, implemented, and measured for work activities. The Core Functions principles are described in DEAR Clause 970.5223-1.

Engineered controls – Safety mechanisms designed to control hazards at their source, such as set points, filters, enclosures, and operating limits, that can be built into equipment or added on to eliminate or reduce exposure to certain hazards.

Guiding Principles – Eleven attributes that, when incorporated into work planning and execution, will ensure work will be managed and performed in a manner that is protective of the workers, the public, and the environment as described within DEAR Clause 970.5223-1.

Hazard – A source of danger (e.g., material, energy source, operation) with the potential to cause illness, injury, or death to personnel or damage to a facility or to the environment (regardless of the likelihood or credibility of accident scenarios or consequence mitigation).

Hazard analysis – The determination of material, system, process, and plant characteristics that can produce undesirable consequences followed by the assessment of hazardous situations associated with a process or activity.

Hazard controls – Design features, operating limits, engineered controls, administrative, personal protective equipment (PPE), or safety practices, processes, or procedures to prevent, control, or mitigate hazards.

Implementation – The implementation of ISMS for specific work activities. The implementation of ISMS through the use of Guiding Principles and Core Functions applies to all work activities. Mechanisms, responsibilities, and methods of implementation must be established for all work and will vary according to the nature and hazard of the work performed. Depending on the nature of the activity, ISMS shall be implemented at the Project and task levels in an integrated manner as shown in Figure 1.

Incident report – A report used by both RAC and TAC to report incidents and occurrences.

Independent assessment – An independent assessment may be an audit, "for cause" review, or inspection conducted by individuals within the organization or company who are independent of the work or process being evaluated; these individuals may also come from an external organization or company.

Integrated Work Plan/Job Safety Analysis (IWP/JSA) – The process used to identify, plan, approve, document, control, and execute work. The key elements of integrated work planning are line management ownership, a graded approach to work management based on risk and complexity, worker involvement beginning at the earliest phases of work management, organizationally diverse teams, and organized, institutionalized communications.

Level 1 Manager – Level 1 managers are the RAC Project Manager and the TAC Senior Program Manager.

Level 2 Manager – Level 2 managers are the RAC and TAC managers who directly report to their respective Level 1 managers.

Line management/supervisor – Any management level within the line organization (i.e., that level of supervision responsible for implementing work), including contractor management, that is responsible and accountable for directing and conducting work.

Mechanisms – A system or process used for achieving a result (i.e., the utilization of "Post-Job Briefings") to ensure feedback is captured, documented, and used for the benefit of continuous improvement throughout the Project.

Oversight – Assessment of the adequacy of DOE, RAC, and TAC performance.

Performance indicator – Operational information indicative of the performance or condition of an operation, process, or site.

Personal protective equipment (PPE) – A supplemental hazard control used when engineered and/or administrative controls are insufficient to eliminate hazard exposure.

Plan-of-the-day (POD) – A meeting held daily to discuss work activities, activity status, allocation of resources, authorization of work, and to ensure coordination between various organizations.

Pollution prevention – The use of materials, processes, and practices that reduce or eliminate the generation and release of pollutants, contaminants, hazardous substances, and waste into land, water, and air. For DOE, this includes recycling activities.

Safety – Used synonymously with Environmental, Safety, and Health (ES&H) to encompass protection of workers, the public, and the environment. It covers the full range of individual ES&H activities (e.g., environmental protection, waste minimization, fire protection, occupational safety, industrial hygiene, heavy equipment operations, transportation safety, radiological control).

Safety analysis – A documented process to provide systematic identification of hazards within a given DOE operation; to describe and analyze the adequacy of the measures taken to eliminate, control, or mitigate identified hazards; and to analyze and evaluate potential accidents and their associated risks through hazard control and mitigation.

Safety Conscious Work Environment (SCWE) – A SCWE is a work environment in which employees feel free to raise safety concerns to management (and/or a regulator) without fear of retaliation.

Safety controls – Engineered or administrative controls that eliminate or mitigate identified/analyzed hazards as determined by safety analysis to ensure protection of the workers, the public, or the environment.

Senior management – Senior management RAC and TAC Levels 1 and 2 managers who are directly involved in the day-to-day operations of the Project.

Subject matter expert (SME) – Individual who provides support to the Moab Project as a recognized and designated expert in a particular technical area.

Surveillance – Any periodic monitoring to ensure operability or adequacy of performance.

Tailgate safety meeting – Daily meeting led by supervision with their work crews that discusses work activities that will be conducted during the upcoming shift.

Waste minimization – A practice that reduces the quantity of environmental or health hazards associated with wastes, pollutants, or contaminants. Examples may include substitution, re-use, recycling, neutralization, and minimizing the generation of mixed waste.

Work – Process of performing a defined task or activity (e.g., maintenance and repair, administration, software development and use, inspection, data collection and analysis).

Work authorization – The process used by line management to permit a task or activity to be initiated as planned when it has been determined that it can be performed safely.

Work planning – The process of planning a defined task or activity as identified within an IWP/JSA. An IWP/JSA is a process followed for addressing safety as an integral part of work planning and includes execution of the safety-related functions in preparation for performance of work.

4.0 Management Expectations

Management is expected to provide a safe work environment that ensures employee health is unimpaired due to employment with the Project. 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. Contractor employees will not accept shortcuts that circumvent safety or yield poor-quality work results. Employees are expected to perform work in accordance with this ISMS Description at all times.

5.0 Roles and Responsibilities

Everyone is personally responsible for safety.

5.1 Federal Responsibilities

- All federal staff set an example to contractor staff by understanding and complying with site safety and health guidance.
- Any federal staff may be called upon to lead or participate as team members in the performance of scheduled assessments and surveillances.
- All federal staff provide information about safety observations during Project oversight for incorporation into safety indicator reports.
- All federal staff provide technical assistance as needed.
- All federal staff have the authority to Stop Work performed by the contractor in accordance with the *Moab UMTRA Project Stop Work Procedure* (DOE-EM/GJ1548).

5.2 Expectations of Workers

- Take safety personally. Develop a questioning attitude and participate in the identification and resolution of safety and health issues.
- Assume responsibility and authority to take Stop Work actions for any unsafe acts or conditions or when there is procedural uncertainty or lack of clarity for any task.
- Communicate to create shared understanding.
- Anticipate error-likely situations.
- Confirm the integrity of defenses.
- Improve personal capabilities.
- As applicable, participate on the Employee Safety Advisory (ESA) and/or interface with coworkers who serve on the advisory.
- Report to work fit for duty and prepared to work. Have the proper tools, PPE, and attitude, and minimize distractions that could serve as error precursors.
- Participate in the preparation and review of technical procedures, hazards analyses, and IWP/JSA walkdowns.
- Follow procedures, directives, and other ISMS work control requirements, and report any that are in error or lack clarity.
- Identify and recognize coworkers for safe behavior.
- Provide feedback for improvement, ideas for innovative approaches, and suggestions to streamline processes and eliminate non-value-added activities.
- Support Environmental Management System (EMS) policy and objectives.

5.3 Expectations of Line Management/Supervisors

- Ensure work is performed in a safe, secure, and compliant manner. Establish, maintain, and provide oversight of compliant systems and processes on the Project.
- Use the incident tracking system in the Project's SharePoint website to report and track applicable issues.
- Ensure effective integration of ES&H, security, QA, business management, and compliance policies into all work activities. Execute assigned plans while meeting performance objectives.
- Support the ESA and ISMS.
- Assume responsibility and authority to take Stop Work actions for any unsafe acts or conditions or when there is procedural uncertainty or lack of clarity for any task.
- Ensure organizational systems and processes are aligned with other management systems and are consistently deployed across the Project.
- Develop and maintain policies, standards, and procedures.
- Manage and continuously improve systems, processes, and resources to enhance capabilities to meet Project and DOE needs.
- Establish a work culture aligned with Project initiatives, mission, visions, and values.
- Perform benchmarking.
- Execute all responsibilities effectively and in a professional manner as a representative of management.
- Promote a positive and collaborative work environment.
- Effectively deploy assigned resources to fulfill the Project mission.
- Maintain communication and job responsibilities while performing assigned oversight duties.
- Promote a strong safety culture through effective implementation of SCWE attributes.

5.4 Expectations of Levels 1 and 2 Managers

- Support workers and line management to meet expectations through leadership and by providing the necessary resources.
- Actively emphasize that safety and compliance are prerequisites to performing work.
- Cultivate an atmosphere of open, honest communication.
- Communicate individual roles, responsibilities, expected behaviors, results, and standards in clear, unmistakable terms.
- Reinforce desired individual behavior.
- Mentor and coach workers through firsthand observation, active listening, and questioning.
- Actively participate in the resolution of safety and compliance issues and ensure safety practices are applied consistently.
- Provide meaningful and consistent support of employee safety programs and positive reinforcement when employees utilize the Stop Work process. Ensure active support for employees who report safety concerns.
- Assume responsibility and authority to apply Stop Work for any unsafe acts or conditions or when there is procedural uncertainty or lack of clarity for any task.
- Be a champion for EMS and ISMS programs.
- Invest in employees' futures through mentoring and workforce training.
- Trust employees to make the right decisions and verify the right decision has been made.
- Follow through on commitments.
- Establish clear roles and responsibilities commensurate with accountability and authority.

- Actively recognize and reward employees for innovations that improve safety and performance.
- Promote a strong safety culture through effective implementation of SCWE attributes.

6.0 Integrated Safety Management Implementation

ISM is a process to proactively approach safety objectives and issues by putting ISMS elements and controls in place. The ISMS described in this document reflects the programs and common practices used by the RAC and TAC on the Moab Project.

6.1 Integrated Safety Management Guiding Principles Implementation

ISM implementation is achieved by using the principles of ISMS to integrate pollution prevention, environmental protection practices, and environmental regulatory requirements into planning and performance of Project work. Specific implementing procedures are developed at the Project or contractor levels. The RAC and TAC use the following principles to guide implementation of ISM.

Line Management Responsibility for Safety
Line management is directly responsible for the protection of workers, the public, and the environment.

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

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

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

Safety Standards and Requirements Identification
Before work is performed, the associated hazards shall be evaluated, and an agreed-on set of safety standards and requirements shall be established which, if properly implemented, will adequately ensure the workers, the public, and the environment are protected from adverse consequences.

Hazard Controls Tailored to Work Being Performed
Administrative and engineering controls to prevent and mitigate hazards shall be tailored to the work being performed and associated hazards.

Operations Authorization
Conditions and requirements for operations to be initiated and conducted shall be clearly established and agreed upon.

Attitude and Responsibility for Safety
Every individual accepts responsibility for safe mission performance and demonstrates a questioning attitude by challenging assumptions, investigating anomalies, and considering potential adverse consequences of planned actions. All employees are mindful of work conditions that may impact safety and assist each other with preventing unsafe acts or behaviors.

Operational Excellence
Organizations achieve sustained, high levels of operational performance, encompassing activities to meet mission, safety, productivity, quality, environmental, and other objectives. High reliability is achieved through a focus on safe operations, appropriate decision-making, open communications, deference to expertise, and systematic approaches to eliminate or mitigate error-likely situations.

Performance Assurance Oversight
Competent, robust, periodic, and independent oversight provides an essential source of feedback that verifies expectations are being met and identifies opportunities for improvement. Performance assurance activities verify whether standards and requirements are met. Performance assurance through conscious, directed, independent reviews at all levels brings fresh insights and observations to be considered for safety and performance improvement.

Organizational Learning for Performance Improvement
The organization demonstrates excellence in performance monitoring, problem analysis, solution planning, and solution implementation. The organization encourages openness and trust and cultivates a continuous learning environment.

6.2 Five Core Functions Implementation

The five core safety management functions provide the necessary structure for any RAC or TAC work activity that could potentially affect the workers, the public, or the environment. The functions are applied as a continuous cycle, with the degree of rigor appropriate to address the type of work activity, whether it is at the Project level or activity level, and the hazards involved (see Figure 1).

This section describes RAC and TAC implementation of the ISMS Five Core Functions. Appendix A provides a crosswalk of RAC and TAC policies, programs, and procedures used as implementing mechanisms for the Core Functions.

6.2.1 Define Scope of Work
The ISMS relies on a well-defined, understood scope of work so that the appropriate levels of resources are applied to ensure the work is planned and performed safely while fulfilling all applicable laws, DOE orders and policies, and standard industrial practices. Mechanisms exist for planning, estimating, and budgeting for the required resources.

This integrated planning process incorporates work scope for subcontractors. The functional and support organizations participate on integrated planning teams. In addition, line management identifies expected levels of maintenance support (based on the maintenance needs) as well as the capital equipment and upgrades that must be funded. This process includes identification of requirements for safety management in each organization, such as upgrades to equipment (e.g., cranes) via contract modifications.

The RAC and TAC contracts establish performance milestones and contain requirements for the execution of DEAR Clause 970.5223-1, including flowdown of these requirements to subcontractors. Each contract's scope of work incorporates the agreed-on safety requirements for the Project. Any scope changes will be reviewed to ensure adherence to all ES&H requirements.

The *Moab UMTRA Project Integrated Work Planning and Control Procedure* (DOE-EM/GJ1550) is used to develop an IWP/JSA that details the step-by-step actions to be performed during execution of each type of work activity. Project policies, procedures, and IWPs/JSAs are used to effectively manage and control work and ensure it is performed in a safe manner. Any proposed revisions to these documents undergo a rigorous review and approval process.

The POD serves as an important part of the work planning process by providing a clear definition of the scope of the work to be performed.

6.2.2 Analyze Hazards

DOE has approved several Project-level programs, including the Worker Safety and Health and Radiation Protection Programs, that direct the RAC and TAC efforts to analyze hazards. These programs were developed with worker involvement and have been reviewed through Project walkdowns to ensure the procedures are useable, technically correct, and contain the appropriate ES&H requirements.

The hazard identification and hazard analysis processes are tailored to the type of hazard, the type of work, and the magnitude of the hazard's risk. Identification and analysis of hazards may involve tabletop reviews, task walkdowns, or other methods to ensure complete understanding of the work scope.

Hazard analysis is an integral part of the IWP/JSA process to determine the hazards associated with work scope identified and the bounding conditions for safe work performance. Identification of hazards associated with a work activity is discussed in PODs.

6.2.3 Develop and Implement Hazard Controls

At the Project level, the development and implementation of controls involves the identification of the relevant standards for the scope of work, the selection of appropriate requirements from those standards, and the implementation of the requirements through work controls, such as Project policies, programs, procedures, work instructions, and documented practices.

Implementation of controls tailored to the work/activity and the type and level of hazards present will ensure an adequate level of protection is provided to workers, the public, and the environment.

The IWP/JSA will be used to develop the hazard controls for the activity. Workers assigned to the tasks will be briefed on the requirements of the IWP/JSA and will read and document that they understand the requirements. The following hierarchy of controls will be used.

1. Hazard elimination, engineering controls, or mitigation
2. Work practices and administrative controls that limit worker exposures
3. PPE

Hazard elimination is the Project's first choice for eliminating, mitigating, or controlling hazards. Engineering controls, including design, construction, and testing of engineered systems for processing or controlling hazardous material, are based upon industry, DOE, and regulatory standards. Passive engineered barriers are preferred whenever possible as they are more reliable than active systems.

To ensure the engineered controls are reliable, administrative controls are needed to maintain system configuration and operability. Reliability of the engineered systems depends on adequate operating, surveillance, and maintenance procedures, configuration management, and current safety documentation.

Administrative controls are used to maintain the integrity and operability of the engineered systems (e.g., configuration management), add additional margin through the implementation of a QA Program, and provide the administrative structure for operations, maintenance, and ES&H programs. Technical procedures provide additional administrative controls.

Procedures provide directions to ensure Project activities are conducted within their design and are used to support safe operations of those activities. It is the Project's policy that any time work cannot be performed consistently with the applicable IWP/JSA, the work shall be stopped, supervision notified, and the work shall remain stopped until the discrepancy is resolved.

PPE is utilized when engineered barriers and administrative controls are either unavailable or insufficient to mitigate the hazards.

The qualified worker provides the link between the engineered and administrative controls and PPE and also provides the ability to recognize and analyze off-normal situations that are not covered by the first three categories of controls.

Implementation of hazard controls will also be accomplished using work permits specific to the activity (e.g., Radiological Work Permits, Electrical Work Permits, Confined Space Entry Permits).

6.2.4 Perform Work within Controls

Operations/Site Managers and line managers are assigned to coordinate and authorize work activities in accordance with the Project schedule and the POD and to ensure execution is in accordance with IWPs/JSAs. Work is performed by personnel who are trained and, as necessary, qualified or certified to perform their assigned task as identified in the approved IWP/JSA and by line management.

Pre-job briefs are conducted, and the required permits and controls necessary to perform the job are reviewed with the worker. Work is performed in a disciplined manner with strict adherence to safe work practices and policies, procedures, and the IWPs/JSAs.

Line managers and the work team are responsible for ensuring controls remain in place during work execution, and all employees are responsible for working safely. Line managers shall conduct work site inspections to monitor work performance for compliance with applicable requirements. Safety personnel routinely support line managers and provide ES&H oversight.

When abnormal conditions arise or whenever there is a perceived threat to the safety of the worker, the public, or the environment, all workers are empowered and responsible to execute Stop Work authority. Line management shall promptly evaluate and resolve any noncompliance with applicable ES&H requirements and the ISMS.

6.2.5 Provide Feedback and Continuous Improvement

Feedback mechanisms are used to evaluate work execution or lessons learned (LL) from similar work. Section 8.0 describes mechanisms used by the TAC and RAC to address the core functions of feedback and continuous improvement.

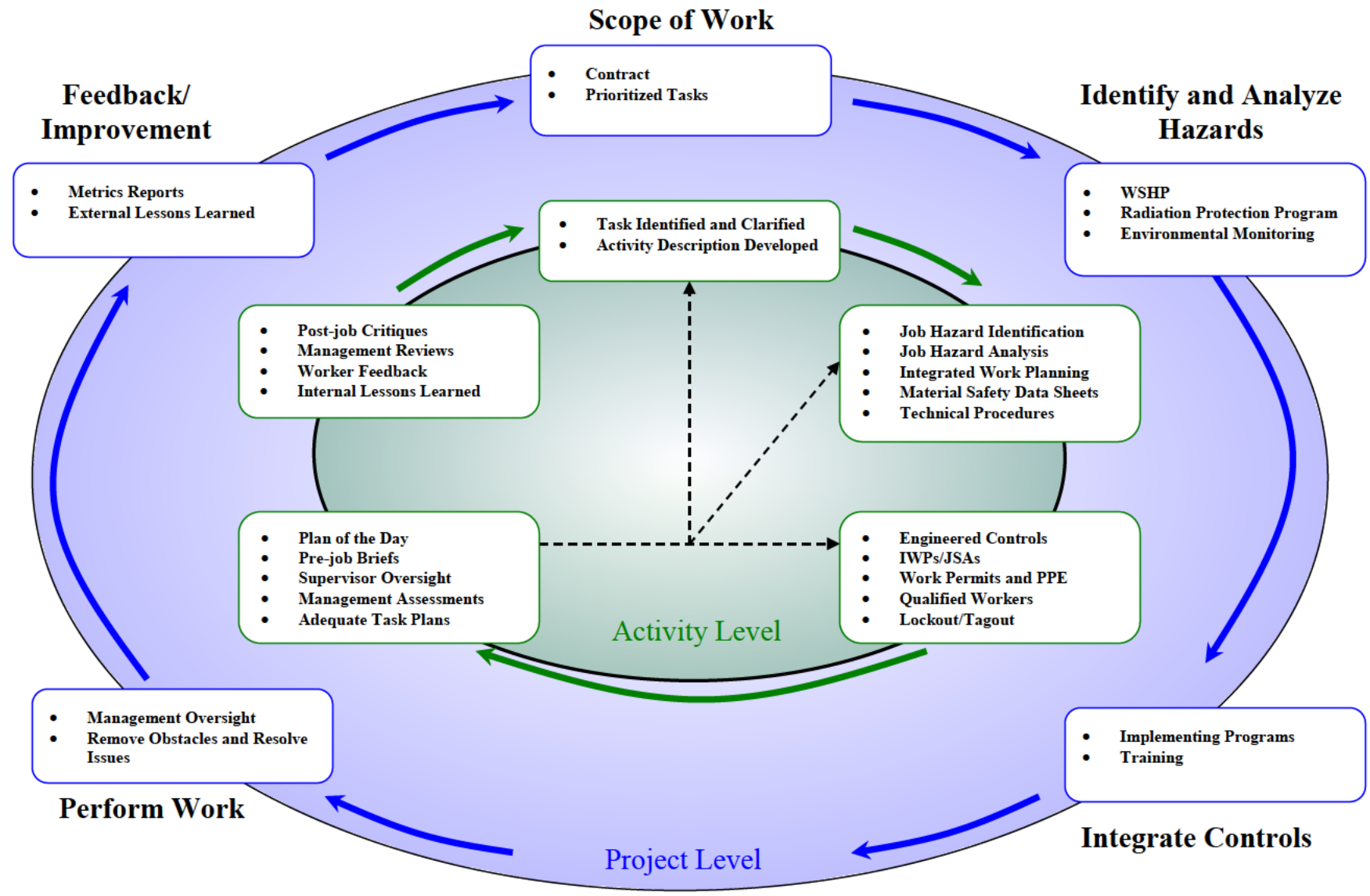
All deficiencies that enter the Project corrective action (CA) tracking system or that may be identified by other means are screened for potential reportability using a Price-Anderson Amendments Act (Public Law 100-148) noncompliance identification, evaluation, and reporting process.

This reporting process allows determination of whether a failure in an item, system, or process represents a noncompliance with DOE regulations and should, therefore, be reported to DOE through the Noncompliance Tracking System. This process provides a top-level screening of issues that require timely management attention.

6.3 Integration with Quality Assurance and Environmental Management System

The RAC and TAC implement QA programs and plans that define the implementation of QA requirements and DOE Order (O) 414.1D Chg 1 (Admin Chg), “Quality Assurance.” These QA programs and plans consist of systems used to manage, perform, and assess work, including activities assigned to external organizations utilizing a graded basis for application.

The *Moab UMTRA Project Environmental Management System Manual* (DOE-EM/GJ1630) provides requirements and responsibilities for managing environmental aspects of the Project and achieving sustainability goals within DOE as required by DOE O 436.1, “Departmental Sustainability.” This Description incorporates all facets of the environment affected by RAC and TAC work conducted on the Project.



WSHP = Worker Safety and Health Program

Figure 1. Moab UMTRA Project Activity Level ISMS Program

6.4 Communications and Training Plan

Using a robust training and qualification program, supporting work execution is an essential element of ISMS as discussed in RAC and TAC QA Programs. Training and qualification programs are established to ensure employees are trained to safely, competently, and effectively perform their job functions while protecting themselves, the public, and the environment. Contractor hiring practices and procedures ensure prospective employees meet the requirements of the position and have competence commensurate with the responsibilities for that position.

All employees receive an ISMS indoctrination course as part of their initial training. Continuous learning is encouraged and tracked within the organization to improve knowledge, skills, and abilities for professional and technical growth. Line managers also ensure worker competence is commensurate with responsibilities during IWP/JSA development through the review of qualifications or the training database.

7.0 Safety Culture and Safety Conscious Work Environment

The Project will pursue a safety culture built on an environment of trust and mutual respect, worker engagement, open communication, and an atmosphere that promotes a questioning attitude with effective resolution of reported problems and continuous improvement.

The Project will foster a SCWE, ensuring all workers have the right to identify and raise issues that affect their safety and health and that of their coworkers openly without fear of reprisal.

8.0 Contractor Assurance System

Consistent with DOE O 226.1B, “Implementation of Department of Energy Oversight Policy,” and DOE O 414.1D, the RAC and TAC established contractor assurance systems (CASs) that provide an integrated approach to contractor assurance. The CASs include assignment of management responsibilities and accountabilities and provide evidence to assure both the DOE and the contractor’s management that work is being performed safely, securely, and in compliance with all requirements, risks are being identified and managed, and control systems are effective and efficient.

The CASs were developed to monitor and evaluate all work performed by the RAC and TAC, including the work of subcontractors, to ensure work performance meets the applicable requirements for environment, safety, and health. These requirements include QA and ISM, safeguards and security, cyber security, and emergency management and were designed to identify deficiencies and areas for improvement, report deficiencies to the responsible managers and DOE, and implement effective CAs.

The CASs include:

- A method for validating the effectiveness of assurance system processes. Third-party audits, peer reviews, independent assessments, and external certification may be used and integrated into the CAS to complement, but not replace, internal assurance systems.
- Rigorous, risk-informed, and credible self-assessment and feedback and improvement activities. Assessment programs must be risk-informed, formally described and documented, and must appropriately cover potentially high-consequence activities.
- Issues management, including causal analysis, identification of CAs and recurrence controls, CA tracking and monitoring, closure of CAs and verification of effectiveness, trend analysis, and identification of improvement opportunities.
- Timely and appropriate communication to the Contracting Officer (CO), including electronic access of assurance-related information.
- Continuous feedback and improvement.
- Metrics and targets to assess the effectiveness of assurance system processes.
- Performance, including benchmarking of key functional areas with other DOE contractors, industry, and research institutions.

Results of implementation of the RAC and TAC CASs are formally provided to DOE via the Quarterly CAS Report and informally and periodically during Project Integration Meetings and Safety, Health, and Quality (SH&Q) Meetings. In addition, implementation is assessed through the performance objectives, measures, and commitments (POMCs) established annually by the RAC, TAC, and DOE.

The effectiveness of the RAC and TAC CASs is periodically confirmed through trend analysis, performance indicators/measures, self-assessment, independent assessment, management assessment, and DOE oversight. The CASs monitor and evaluate all work performed under the RAC and TAC contracts, including the work of subcontractors. Data collected through monitoring RAC and TAC CASs are reported quarterly to senior management and DOE.

The overall elements of the separate but parallel RAC and TAC CASs are described below and are implemented through processes and mechanisms detailed throughout this document.

8.1 Assessments

Assessment includes third-party audits, independent assessments, external certification, and self-assessments. The RAC and TAC develop, implement, and perform evaluations of their own facilities, systems, and organizational elements, including subcontractors, on a recurring basis.

In addition, third parties, such as DOE Headquarters, DOE Office of Environmental Management (EM) Consolidated Business Center (CBC) and DOE Laboratory Accreditation Program, may be used periodically to evaluate the RAC and TAC to complement, but not replace, internal assurance systems.

To determine the scope and frequency of assessments, an integrated assessment schedule is developed each fiscal year based on input and participation from a QA Core Team.

The Team consists of DOE, RAC, and TAC members in accordance with the separate, but parallel, *Moab UMTRA Project Quality Assurance Plan for Remedial Action Contractor* (DOE-EM/GJRAC1766) and the *Moab UMTRA Project Quality Assurance Plan for the Technical Assistance Contractor* (DOE-EM/GJTAC1525).

The schedule ensures mandatory assessments are performed and that appropriate oversight is conducted based on the hazards, risk, and complexity of upcoming work scope. Specifically, the integrated assessment schedule ensures all DOE and/or regulatory-required assessments are scheduled and performed, the effectiveness of safety management programs are evaluated at an appropriate depth and frequency, and additional assessments are performed based on the results of trend analysis and performance indicators/measures, including the POMCs described in Section 9.0.

Self-assessments and independent assessments are conducted using the following documents: RAC and TAC management assessments using the *Moab UMTRA Project Remedial Action Contractor Management Assessments* (DOE-EM/GJRAC1702) and the *Moab UMTRA Project Technical Assistance Contractor Management Assessment Procedure* (DOE-EM/GJTAC1959).

RAC and TAC QA staff also conduct audits implemented by the *Moab UMTRA Project Remedial Action Contractor Audits Procedure* (DOE-EM/GJRAC1717), the *Moab UMTRA Project Technical Assistance Contractor Audits Procedure* (DOE-EM/GJTAC1565), surveillances using the *Moab UMTRA Project Surveillances and Walkthroughs Procedure* (DOE-EM/GJRAC1706), and the *Moab UMTRA Project Technical Assistance Contractor Surveillance Procedure* (DOE-EM/GJTAC1964) to continually evaluate Project performance, manage risk, and evaluate the effectiveness of the CASs.

The CAS will be considered successful when line managers effectively use CAS processes and tools so that:

- Issues are anticipated and mitigated before problems arise.
- Assessment, learning, and improvement are used throughout the Project.
- There is improved performance in the safe and secure delivery of the Project's mission.
- Assurance information is accurate and readily available for use in DOE line oversight activities.
- All CAS processes are sustainable and robust.

Following initial CAS approval, an initial CAS effectiveness review shall be performed to identify and communicate issues and performance trends or analyses, including operational aspects of environment, safety and health, safeguards and security, cyber security, and emergency management. Following the initial review, self-assessment of the RAC and TAC performance levels and trends for their CASs shall be conducted annually.

These assessments may be conducted periodically throughout the year or comprehensively in one assessment that covers all elements of the respective CAS (i.e., using data and information from performance feedback and improvement, measures, assessments processes, system, and performance data).

These assessments identify issues, deficiencies, and opportunities for improvement integral to CAS implementation and effective results. The issues, deficiencies, and opportunities for improvement are managed and tracked using the RAC and TAC CA tracking processes described in Section 8.2.

8.2 Issues Management

The RAC and TAC contractors provide comprehensive, structured, issues-management systems capable of categorizing the significance of deficiencies based on risk and priority and other appropriate factors that enable management to ensure problems are evaluated and corrected on a timely basis. These systems provide effective analysis, resolution, tracking, and reporting of all incidents, occurrences, and conditions adverse to Environmental, Safety, Health, and Quality Assurance (ESH&QA).

The *Moab UMTRA Project Incident and Occurrence Reporting Procedure* (DOE-EM/GJ2265) establishes the requirements for identifying, reporting, evaluating, and tracking incidents and occurrences. In accordance with the DOE O 232.2A, "Occurrence Reporting and Processing of Operations Information," a quarterly analysis of both reportable and non-reportable events is prepared by both contractors and submitted to DOE quarterly (Quarterly Performance Analysis Report).

Negative trends identified in the report warrant immediate attention. In addition, in accordance with DOE O 231.1B, "Environment, Safety and Health Reporting," each contractor conducts and documents quality checks of injury and illness information reported to DOE through the Computerized Accident/Incident Reporting System to ensure information is thorough, accurate, and consistent with information contained in local records.

CAs associated with incidents and occurrences are tracked to closure using the Incident Tracking System within SharePoint. TAC Information Technology (IT) manages this system, but contractors are responsible for inputting, tracking, trending, and reporting their own contractor-specific data.

The RAC *Moab UMTRA Project Condition Reports Procedure* (DOE-EM/GJRAC1671) and the TAC *Moab UMTRA Project Technical Assistance Contractor Corrective Action Procedure* (DOE-EM/GJTAC1562) establish the requirements for identification, control, CA determination, tracking, and closure of conditions adverse to ESH&QA. All deficiencies, regardless of their sources, are captured in a shared Corrective Action Tracking System within SharePoint. TAC IT manages the system, but contractors are responsible for inputting their own contractor-specific data.

All deficiencies, incidents, and occurrences require an analysis of the underlying causal factors performed using a graded approach in accordance with the *Moab UMTRA Project Cause Analysis Procedure* (DOE-EM/GJ1663). This procedure establishes the process for determining the cause(s) of events, issues, and conditions adverse to quality and determining CAs that, if implemented, will prevent or minimize the likelihood of recurrence of the event, issue, or condition.

After completion of a CA or set of CAs, an effectiveness review may be conducted using trained and qualified personnel who can validate the effectiveness of CA/plan implementation.

These effectiveness reviews are captured on the integrated assessment schedule and generally target CAs resulting from higher significance deficiencies, incidents, occurrences, or CAs associated with higher risk activities or processes.

Contractors communicate issues and performance trends or analysis results up the contractor management chain to senior management using a graded approach that considers hazards and risks and provides sufficient technical basis to allow managers to make informed decisions and correct negative performance/compliance trends before they become significant issues. The status of deficiencies, incidents, occurrences, and their CA completion is periodically provided during individual RAC and TAC contractor managers' meetings and biweekly during DOE SH&Q Meetings.

8.3 Continuous Feedback and Improvement

In addition to assessments, the Project has processes for continuous feedback and improvement, including worker feedback, improvements in work planning, and hazard identification activities as described below. The RAC and TAC issued the *Moab UMTRA Project Operating Experience/Lessons Learned Procedure* (DOE-EM/GJ1568) to implement and manage an operating experience (OE)/LL Program in accordance with the requirements of DOE O 210.2A, "DOE Corporate Operating Experience Program."

This procedure establishes formal processes to communicate LL during daily work activities, work planning development/review, event analyses, assessments, emergency drills/events, occurrence and trending reports, and from the DOE corporate LL database. LL are derived from work activities and events, both positive and negative, that can be used to enhance or improve all aspects of Project operations.

The TAC and RAC are individually responsible for developing and utilizing LL to help prevent adverse operating incidents and to expand the sharing of good work practices as outlined in this procedure. The TAC has a designated Operating Experience Coordinator (OEC), and the RAC has designated an OE/LL point-of-contact (POC) who can fulfill the responsibilities defined within the joint procedure.

The RAC LL POC submits OE/LL information to the TAC's OEC for OE/LL management. The TAC OEC is responsible for facilitating the local implementation of the OE/LL process, serving as a Moab Project POC for the DOE Corporate OE/LL Program. Combined RAC and TAC LL data are summarized quarterly and reported to RAC and TAC contractor management and DOE.

Lessons are shared internally and frequently with management and workers and have contributed to continuous improvement and a SCWE. Although the TAC is responsible for overall management of the LL Program, each contractor is individually responsible for ensuring communication of LL to their respective employees. LL are shared in All Hands Meetings, Daily Tailgate Safety Meetings, periodic SH&Q Meetings, monthly Integration Meetings, and managers' meetings.

The *Integrated Work Planning and Control Procedure* provides a mechanism to solicit worker feedback for activities through pre-job, daily, and post-job briefings in which all aspects of the work are discussed.

These briefings generally include work sequencing, adequacy of work scope definition, adequacy and ease of use of controls, and worker training. Each contractor conducts and documents its own briefings and modifies work planning and control documents as necessary.

Although the primary path for resolving employee concerns continues to be through supervisors and line management, the freedom of an individual to express a concern without fear of reprisal or to someone other than his or her superior is considered a necessary element of a SCWE. The Project maintains a joint RAC and TAC *Moab UMTRA Project Employee Concerns Program* (ECP) (DOE-EM/GJ2067) and employee concerns hotline for this purpose.

The ECP provides a way to ensure appropriate attention and timely response to any concerns related to ES&H, security, quality, environmental protection, business ethics, compliance with laws and regulations, fraud, abuse, mismanagement, or physical working conditions. The ECP is intended to supplement, not replace, open, honest, and effective communication between workers and their supervisors or managers to resolve employee concerns.
The RAC and TAC support the EMCBC value and philosophy that investigating, understanding, and responding to employee concerns provide valuable tools to improve safety, the work environment, and productivity.

The *Moab UMTRA Project RAC Employee Safety Advisory Charter* (DOE-EM/GJRAC2253) describes a joint RAC and TAC forum designed to enhance and support worker involvement in safety, production, radiological, and quality-related Project concerns, issues, and resolutions. ISMS serves as the basis of the ESA's operation.

The *Moab UMTRA Project Heads Up Reporting Procedure* (DOE-EM/GJ2122) is applicable to minor safety occurrences that are not currently required to be reported in any other format and describes how these Heads Up are defined, encourages reporting by rewarding Heads Up submittals without repercussion, categorizes and trends Heads Up situations, and describes how Heads Up trends should be reported (i.e., safety action item versus condition report) based on the risk potential. Heads Up data are reviewed, tracked, and analyzed for trending by the contractor Health and Safety managers, and feedback is provided as appropriate to employees.

In addition, the Project implements a safety suggestion process. The ESA has the responsibility to review completed Safety Suggestion Cards. After review, the ESA works with appropriate managers or supervisors to address or discuss solutions. The ESA tracks these suggestions/concerns and reports data to management periodically and to DOE quarterly.

In the event a situation provides an immediate hazard to the work area, all employees have Stop Work authority as defined in the joint *Stop Work Procedure*. This may be a temporary safety pause to review the situation and determine the safe, compliant path forward, or a formal Stop Work that halts all activities until the situation is resolved.

The joint RAC and TAC *Moab UMTRA Project Site Safety Walkdown Procedure* (DOE-EM/GJ1548) establishes the process and requirements for conducting the site safety walkdowns.

These walkdowns promote hazard recognition and mitigation as well as open communication with employees concerning safety issues in their work areas and provide an effective method to improve safety, production performance, and capturing employee feedback or ideas.

Documentation for site safety walkdowns includes identifying the areas of improvement discovered or discussed and recording these observations in sufficient content and detail to ensure end-users understand information with minimal clarification.

8.4 Metrics and Targets

Metrics associated with assessment performance are individually maintained by the RAC and TAC, but are combined quarterly and reported to both contractors' management and DOE. The RAC and TAC utilize performance measures to identify, monitor, and analyze the performance of their programs and organizations. These measures are identified in the annual ISM POMCs described in Section 9.0.

In addition to the POMCs, the RAC and TAC closely monitor any issues or deficiencies in a joint CAS Report. The quarterly reports include all RAC and TAC issue documentation, including data from Incident Reports, Occurrence Reports, Assessment Reports, and DOE issues and concerns. Negative trends, indicated by trend analyses, are documented on condition reports and are managed in a CA tracking system by the responsible contractor.

Annual contractor performance self-assessments are performed individually by the RAC and TAC using the performance evaluation criteria identified in Performance Evaluation Measurement Plans. The assessments discuss major accomplishments or progress and discuss the contractor's assessment of its strengths, weaknesses, and areas requiring improvement. Individual contractor performance is evaluated against the performance standards set forth in the contract, other applicable documents, applicable standards, DOE orders and directives, and applicable laws and regulations.

The RAC As Low As Reasonably Achievable (ALARA) Committee establishes annual individual and collective dose goals for the facility and the major departments and/or buildings. These goals are specific, measurable, and challenging. The committee develops ALARA goals with the respective Radiological Control Supervisor based on operational history and the expected operation, production, maintenance, research, and characterization surveys. The Radiological Control Supervisor reports on the status and progress towards achieving these goals quarterly to the ALARA Program coordinator. These data are also reported quarterly to RAC and TAC management and DOE.

8.5 Contractor Assurance System Review, Approval, and Reporting

The contractor must submit an initial CAS description to the CO for DOE review and approval. That description must clearly define processes, key activities, and accountabilities. Once the description is approved, timely notification must be made to the CO of significant assurance system changes before they are made. Significance of changes will be determined by the contractor with the concurrence of the Federal Cleanup Director.

To facilitate appropriate oversight, CAS data must be documented and readily available to DOE, including electronic access to assurance-related information. Results of assurance processes must be analyzed, compiled, and reported to DOE as requested by the CO (i.e., in support of contractor evaluation or to support review/approval of CA plans).

8.6 Contractor Assurance System Self-Assessment

Once the initial design and management approach are verified, CAS assessments shift to evaluating the level of ***Implementation*** and ***Effectiveness*** of the individual elements of the system and the system as a whole. Assessing these parameters together enables the project to continuously improve how it approaches assurance while also improving performance, rather than tackling these dimensions sequentially.

The approach and methodology outlined in Appendix B, "*A Model for CAS Self- Assessment*", prepared for the Contractor Assurance Working Group of the Energy Facility Contractors Group, has been adopted by the project to evaluate CAS implementation and effectiveness.

9.0 Integrated Safety Management and Performance Objectives, Measures, and Commitment Process

Each year, the RAC and TAC must develop POMCs for tracking and reporting. The purpose of POMCs is to establish specific objectives/goals and commitments for key improvement initiatives and safety performance metrics, provide performance benchmarks, provide quantitative feedback and comparative analysis, establish leading indicators to provide insights into areas that may challenge safety, and ultimately drive improvement in safety performance and ISM system effectiveness.

DOE Policy 450.4A Chg 1 (Min Chg), "Integrated Safety Management Policy," DOE O 450.2 Chg 1 (Min Chg), "Integrated Safety Management," and DEAR Clause 970.5223-1 establish expectations for DOE ES&H goals that are fully integrated with ISM POMCs. DOE's ultimate safety goal is zero accidents, work-related injuries and illnesses, regulatory enforcement actions, and reportable environmental releases. This goal is to be pursued through a systematic process of continuous performance improvements using performance measurement. Safety goals and metrics established in accordance with DOE O 450.2 should be fully integrated with the ISM safety POMCs.

RAC and TAC site-specific ESH&QA performance measures are established annually to drive performance improvement or maintain excellent performance. These ESH&QA goals are expected to drive performance excellence, thereby reducing or precluding other work-related injuries and illnesses and adverse impacts to the public and environment.

The following process is utilized for developing the contractor POMCs.

- Field offices provide DOE EM Headquarters guidance, supplemented by field element guidance and direction, to the RAC and TAC and solicit their site-specific POMCs.
- Field offices provide direction to the RAC and TAC on contract-specific ISMS and QA POMCs. In this direction, field element managers may establish a minimum set of site-wide objectives to flow down to contractors and supplemented by contractor-specific commitments and measures.
- Contractors submit their contract-specific ISMS and QA POMCs to the DOE field office for approval.

- Field element managers will ensure contractor-developed POMCs are clear, specific, and measurable. Commitments need to have clarifying expectations for the deliverable, due date, and expected outcome from the commitment before approval.
- Field elements submit their DOE-approved, federal- and contractor-developed POMCs as part of their fiscal year DOE EM ISMS/QA declaration submittal.

NOTE: Additional guidance in developing POMCs is available in DOE Guide (G) 450.4-1C, "Integrated Safety Management System Guide."

10.0 Integrated Safety Management Effectiveness Review and Declaration Process

An ISM effectiveness review is conducted by an organization to determine whether its ISM system is in full conformance with the requirements and expectations for effective implementation. ISM effectiveness reviews are an important tool of ISM implementation that allow evaluating effectiveness of implementation and taking appropriate actions for continuous improvement.

The annual ISM effectiveness review encompasses several elements, including review of third-party assessments, self-assessments, independent assessments, management assessments, performance against established POMCs, and other feedback and performance information. Elements of this review may be completed either together as one major annual assessment or could be ongoing throughout the year.

Elements of this review are documented through use of an integrated assessment schedule, and results are summarized in the contractor's annual ISMS/QA declaration along with any objective evidence that supports the field manager's declaration for each contractor.

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

Using DOE G 450.4-1C, the following steps have been identified for performing ISMS effectiveness reviews on the Moab Project.
1. Review ISM third-party assessments, self-assessments, independent assessments, and management assessments performed throughout the year.
2. Review the safety performance of the contractor(s) against safety POMCs.
3. Review the overall safety performance of the RAC and TAC, including various feedback and improvement information. Reference DOE G 450.4-1C, which provides safety POMCs useful for reviewing safety performance.
4. Review the completeness and accuracy of the ISMS description for the contractor(s) and the flowdown of the site ISMS description to the site and facility procedures.

5. Determine whether a full ISM verification is needed and perform accordingly when needed.
6. If a full ISM verification is not needed, document the review and conclusions regarding the effectiveness of the ISMS implementation by the contractor(s), basis for conclusions, strengths and weaknesses, and areas for improvement.
7. Look at the ISMS performance across both the RAC and TAC to identify and document any generic or broad-based strengths or weaknesses or areas for improvement.

11.0 Annual Declaration Process

An ISM declaration is a determination by an organization regarding whether it is in full conformance with the requirements and expectations for an effective ISMS and its bases for this determination. An ISM declaration should be based on the ISM effectiveness review.

Moab Project annual declarations are developed via a shared review effort by the RAC and TAC SH&Q management with guidance from DOE. This development is organized by RAC and TAC SH&Q management with input from DOE. This integrated effort supports effective description of the status of Project operations as they are managed under ISMS.

Based on all the reviews and assessments conducted throughout the year, including the annual effectiveness review, the Project should determine the state of ISM effectiveness. The declaration should include a declarative statement such as "ISMS has [not] been implemented and is [not] effective at ensuring safety and quality performance [or effective but needs improvement]."

Include an Executive Summary of the effectiveness review results along with any objective evidence that supports the field manager's declaration for the field element and each contractor.

The basis for this summary evaluation is to be included in the Declaration Report for the Moab Project. The declaration should include any immediate CAs that shall be or have been taken. The declaration should also include a response to any specific guidance for the annual declaration received from EMCBC. Guidance regarding the declaration process is available within DOE G 450.4-1C.

12.0 References

DEAR (U.S. Department of Energy Acquisition Request) Clause 970.5223-1, "Integration of Environment, Safety, and Health into Work Planning and Execution."

DOE (U.S. Department of Energy) Guide 450.4-1C, "Integrated Safety Management System Guide."

DOE (U.S. Department of Energy), *Moab UMTRA Project Cause Analysis Procedure* (DOE-EM/GJ1663).

DOE (U.S. Department of Energy), *Moab UMTRA Project Cold Stress Procedure* (DOE-EM/GJ2180).

DOE (U.S. Department of Energy), *Moab UMTRA Project Condition Reports Procedure* (DOE-EM/GJRAC1671).

DOE (U.S. Department of Energy), *Moab UMTRA Project Employee Concerns Program* (DOE-EM/GJ2067).

DOE (U.S. Department of Energy), *Moab UMTRA Project Environmental Management System Manual* (DOE-EM/GJ1630).

DOE (U.S. Department of Energy), *Moab UMTRA Project Heads Up Reporting Procedure* (DOE-EM/GJ2122).

DOE (U.S. Department of Energy), *Moab UMTRA Project Heat Stress Procedure* (DOE-EM/GJ2179).

DOE (U.S. Department of Energy), *Moab UMTRA Project Incident and Occurrence Reporting Procedure* (DOE-EM/GJ2265).

DOE (U.S. Department of Energy), *Moab UMTRA Project Incident Investigation Procedure* (DOE-EM/GJ1882).

DOE (U.S. Department of Energy), *Moab UMTRA Project Integrated Work Planning and Control Procedure* (DOE-EM/GJ1550).

DOE (U.S. Department of Energy), *Moab UMTRA Project Operating Experience/Lessons Learned Procedure* (DOE-EM/GJ1568).

DOE (U.S. Department of Energy), *Moab UMTRA Project Quality Assurance Plan for the Remedial Action Contractor* (DOE-EM/GJTAC1766).

DOE (U.S. Department of Energy), *Moab UMTRA Project Quality Assurance Plan for the Technical Assistance Contractor* (DOE-EM/GJTAC1525).

DOE (U.S. Department of Energy), *Moab UMTRA Project RAC Employee Safety Advisory Charter* (DOE-EM/GJRAC2253).

DOE (U.S. Department of Energy), *Moab UMTRA Project Remedial Action Contractor Audits Procedure* (DOE-EM/GJRAC1717).

DOE (U.S. Department of Energy), *Moab UMTRA Project Remedial Action Contractor Condition Reports Procedure* (DOE-EM/GJRAC1671).

DOE (U.S. Department of Energy), *Moab UMTRA Project Remedial Action Contractor Management Assessments* (DOE-EM/GJRAC1702).

DOE (U.S. Department of Energy), *Moab UMTRA Project Surveillances and Walkthroughs Procedure* (DOE-EM/GJRAC1706).

DOE (U.S. Department of Energy), *Moab UMTRA Project Site Safety Walkdown Procedure* (DOE-EM/GJ1884).

DOE (U.S. Department of Energy), *Moab UMTRA Project Stop Work Procedure* (DOE-EM/GJ1548).

DOE (U.S. Department of Energy), *Moab UMTRA Project Technical Assistance Contractor Audits Procedure* (DOE-EM/GJTAC1565).

DOE (U.S. Department of Energy), *Moab UMTRA Project Technical Assistance Contractor Corrective Action Procedure* (DOE-EM/GJTAC1562).

DOE (U.S. Department of Energy), *Moab UMTRA Project Technical Assistance Contractor Management Assessment Procedure* (DOE-EM/GJTAC1959).

DOE (U.S. Department of Energy), *Moab UMTRA Project Technical Assistance Contractor Surveillance Procedure* (DOE-EM/GJTAC1964).

DOE (U.S. Department of Energy), *Moab UMTRA Project Worker Safety and Health Program Description* (DOE-EM/GJ3002).

DOE (U.S. Department of Energy) Order 210.2A, "DOE Corporate Operating Experience Program."

DOE (U.S. Department of Energy) Order 226.1B, "Implementation of Department of Energy Oversight Policy."

DOE (U.S. Department of Energy) Order 231.1B, "Environment, Safety and Health Reporting."

DOE (U.S. Department of Energy) Order 232.2A, "Occurrence Reporting and Processing of Operations Information."

DOE (U.S. Department of Energy) Order 414.1D Chg 1 (Admin Chg), "Quality Assurance."

DOE (U.S. Department of Energy) Order 436.1, "Departmental Sustainability."

DOE (U.S. Department of Energy) Order 450.2 Chg 1 (Min Chg), "Integrated Safety Management."

DOE (U.S. Department of Energy) Policy 450.4A Chg 1 (Min Chg), "Safety Management System Policy."

Public Law 100-148, Price-Anderson Amendments Act.

Appendix A.
RAC and TAC Crosswalk of ISMS Program Mechanisms

Appendix A. RAC and TAC Crosswalk of ISMS Program Mechanisms

Mechanism	RAC Procedures	TAC Procedures
6.1 ISM Core Function		
6.1.1 Requirements Management Program	RAC Contract, Section J, Attachments A and B	TAC Contract, Section J, Attachment 5
6.1.2 Worker Safety and Health Program	DOE-EM/GJ3002, 851 Worker Safety and Health Program Description	DOE-EM/GJ3002, 851 Worker Safety and Health Program Description
6.1.2.1 Industrial Safety	DOE-EM/GJ1038, Health and Safety Plan DOE-EM/GJ1552, Lockout/Tagout Hazardous Energy Control DOE-EM/GJ1551, Electrical Safety DOE-EM/GJ1553, Confined Space Entry DOE-EM/GJ1554, Motor Vehicle Safety DOE-EM/GJ1555, Fire Safety DOE-EM/GJ1573, Pressure Safety DOE-EM/GJ1608, Aerial Work Platforms DOE-EM/GJ1609, Excavation and Trenching DOE-EM/GJ1610, Fall Protection DOE-EM/GJ1611, Power and Hand Tools DOE-EM/GJ1612, Ladder Inspection and Use DOE-EM/GJ1613, Lifting and Rigging DOE-EM/GJ1614, Scaffolding Safety DOE-EM/GJ1619, Personal Protective Equipment DOE-EM/GJ1620, Respiratory Protection DOE-EM/GJ2179, Heat Stress Procedure DOE-EM/GJ2180, Cold Stress Procedure	DOE-EM/GJ1038, Health and Safety Plan DOE-EM/GJ1552, Lockout/Tagout Hazardous Energy Control DOE-EM/GJ1551, Electrical Safety DOE-EM/GJ1553, Confined Space Entry DOE-EM/GJ1554, Motor Vehicle Safety DOE-EM/GJ1555, Fire Safety DOE-EM/GJ1573, Pressure Safety DOE-EM/GJ1608, Aerial Work Platforms DOE-EM/GJ1609, Excavation and Trenching DOE-EM/GJ1610, Fall Protection DOE-EM/GJ1611, Power and Hand Tools DOE-EM/GJ1612, Ladder Inspection and Use DOE-EM/GJ1613, Lifting and Rigging DOE-EM/GJ1614, Scaffolding Safety DOE-EM/GJ1619, Personal Protective Equipment DOE-EM/GJ1620, Respiratory Protection DOE-EM/GJ2179, Heat Stress Procedure DOE-EM/GJ2180, Cold Stress Procedure
6.1.2.2 Industrial Hygiene	DOE-EM/GJRAC2126, Industrial Hygiene Air Monitoring Procedure DOE-EM/GJRAC2125, Industrial Hygiene Airborne Contaminant Sampling Procedure DOE-EM/GJRAC2162, Robovent Portable Fume Collector for Welding Operation Procedure DOE-EM/GJ1615, Industrial Hygiene Program	DOE-EM/GJ1615, Industrial Hygiene Program
6.1.2.3 Occupational Medical Surveillance	DOE-EM/GJ1606, Occupational Medical Program for the Remedial Action Contractor	DOE-EM/GJ1570, Technical Assistance Contractor Occupational Medical Program Procedure
6.1.2.4 Fire Protection	DOE-EM/GJ1038, Health and Safety Plan DOE-EM/GJ1555, Fire Safety	DOE-EM/GJ1038, Health and Safety Plan DOE-EM/GJ1555, Fire Safety
6.1.3 Radiological Protection Program	DOE-EM/GJ610, Radiation Protection Program	DOE EM/GJ610, Radiation Protection Program
6.1.4 Environmental Management	DOE-EM/GJ1630, Environmental Management System Manual	DOE-EM/GJ1630, Environmental Management System Manual
6.1.5 Chemical Safety	DOE-EM/GJ1038, Health and Safety Plan DOE-EM/GJ1605, Hazard Communication Program DOE-EM/GJ1615, Industrial Hygiene Program DOE-EM/GJRAC2160, Suspected Hazardous RRM Response Procedure	DOE-EM/GJ1038, Health and Safety Plan DOE-EM/GJ1605, Hazard Communication Program DOE-EM/GJ1615, Industrial Hygiene Program

Appendix A. RAC and TAC Crosswalk Of ISMS Program Mechanisms (*continued*)

Mechanism	RAC Procedures	TAC Procedures
6.1.6 Quality Assurance	DOE-EM/GJRAC1766, Quality Assurance Plan for the Remedial Action Contractor	DOE-EM/GJ1525, Quality Assurance Plan for the Technical Assistance Contractor
6.1.7 Training and Qualification	DOE-EM/GJ1533, Training Manual DOE-EM/GJRAC1766, Quality Assurance Plan for the Remedial Action Contractor DOE-EM/GJ1038, Health and Safety Plan	DOE-EM/GJ1525, Quality Assurance Plan for the Technical Assistance Contractor DOE-EM/GJ1533, Training Manual DOE-EM/GJ1038, Health and Safety Plan
6.1.8 Issue Management, Occurrence Reporting, and Action Tracking	DOE-EM/GJRAC1766, Quality Assurance Plan for the Remedial Action Contractor DOE-EM/GJ2265, Incident and Occurrence Reporting Procedure DOE-EM/GJRAC1671, Condition Reports	DOE-EM/GJ1525, Quality Assurance Plan for the Technical Assistance Contractor DOE-EM/GJ2265, Incident and Occurrence Reporting Procedure DOE-EM/GJ1663, Cause Analysis Procedure DOE-EM/GJTAC1562, Corrective Action
6.1.9 Emergency Management	DOE-EM/GJ1520, Emergency/Incident Response Plan DOE-EM/GJ 2071, Emergency Medical Response Program DOE-EM/GJ1757, Emergency Contact Information	DOE-EM/GJ1520, Emergency/Incident Response Plan DOE -EM/GJ 2071, Emergency Medical Response Program DOE-EM/GJ1757, Emergency Contact Information
6.1.10 Employee Concerns Program	DOE-EM/GJ2067 Employee Concerns Program DOE-EM/GJ1548, Stop Work Procedure DOE-EM/GJ2265, Incident and Occurrence Reporting Procedure	DOE-EM/GJ2067 Employee Concerns Program DOE-EM/GJ1548, Stop Work Procedure DOE-EM/GJ2265, Incident and Occurrence Reporting Procedure
6.1.11 Work Planning and Control	DOE-EM/GJ1550, Integrated Work Planning and Control	DOE-EM/GJ1550, Integrated Work Planning and Control
6.2. Contractor Assurance System		
6.2.1 Define Scope of Work	Contract DE-DT0011049	Contract DE-EM0002067
6.2.1.2 Project Change Control and Project Technical, Cost, and Schedule Change Control	DOE–EM/GJ1626, Integrated Execution Plan MOAB-RAC-2008-P177 PC1, Project Controls System Description	DOE -EM/GJ1626, Integrated Execution Plan DOE-EM/GJTAC1514, Project Management and Control System Manual DOE-EM/GJ1550, Integrated Work Planning and Control
6.2.2 Analyze Hazards	DOE-EM/GJ1550, Integrated Work Planning and Control DOE-EM/GJ1038, Health and Safety Plan	DOE-EM/GJ1550, Integrated Work Planning and Control DOE-EM/GJ1038, Health and Safety Plan
6.2.2.1 Health and Safety Program	DOE EM/GJ1038, Health and Safety Plan	DOE EM/GJ1038, Health and Safety Plan
6.2.2.2 Radiation Protection Program	DOE-EM/GJ610, Radiation Protection Program	DOE-EM/GJ610, Radiation Protection Program
6.2.2.3 Environmental Monitoring	DOE-EM/GJ1630, Environmental Management System Manual	DOE-EM/GJ1630, Environmental Management System Manual

Appendix A. RAC and TAC Crosswalk Of ISMS Program Mechanisms (*continued*)

Mechanism	RAC Procedures	TAC Procedures
6.2.3 Develop and Implement Controls		
6.2.3.1 Standard/Requirement Information Documents (Requirements Management)	RAC Contract, Section J, Attachments A and B	TAC Contract, Section J, Attachment 5
6.2.3.2 Requirement Implementation	DOE-EM/GJ1550, Integrated Work Planning and Control DOE-EM/GJ1038, Health and Safety Plan	DOE-EM/GJ1550, Integrated Work Planning and Control DOE-EM/GJ1038, Health and Safety Plan
6.2.4 Perform Work	DOE-EM/GJ1550, Integrated Work Planning and Control DOE-EM/GJ1038, Health and Safety Plan	DOE-EM/GJ1550, Integrated Work Planning and Control DOE-EM/GJ1038, Health and Safety Plan
6.2.5 Feedback and Improvement	DOE-EM/GJ1550, Integrated Work Planning and Control DOE-EM/GJ1038, Health and Safety Plan DOE EM/GJ 2122, Heads Up Reporting Procedure DOE-EM/GJ1548, Stop Work Procedure DOE-EM/GJ1884, Site Safety Wa kdown Procedure DOE-EM/GJ1568, Operating Experience/Lessons Learned Procedure DOE-EM/GJRAC2253, RAC Employee Safety Advisory Charter	DOE-EM/GJ1550, Integrated Work Planning and Control DOE-EM/GJ1038, Health and Safety Plan DOE EM/GJ1568, Operating Experience/Lessons Learned DOE-EM/GJRAC2253, RAC Employee Safety Advisory Charter DOE-EM/GJ1548, Stop Work Procedure DOE-EM/GJ1884, Site Safety Walkdown Procedure
6.2.5.1 DOE Oversight		
6.2.5.2 Management and Independent Assessments	DOE-EM/GJRAC1766, Quality Assurance Plan for the Remedial Action Contractor DOE-EM/GJRAC1702, Management Assessments DOE-EM/GJRAC1717, Audits DOE-EM/GJRAC1706, Surveillance Walkthroughs	DOE-EM/GJ1525, Quality Assurance Plan DOE-EM/GJ1959, Technical Assistance Contractor Management Assessment Procedure DOE-EM-GJTAC1565, Moab UMTRA Project Technical Assistance Contractor Audit Procedure DOE-EM-GJTAC1964, Moab UMTRA Project Technical Assistance Contractor Surveillance Procedure
6.2.5.3 Issue Management	DOE-EM/GJRAC1766, Quality Assurance Plan for the Remedial Action Contractor DOE-EM/GJRAC1671, Condition Reports DOE-EM/GJRAC1714, Price-Anderson Reporting DOE-EM/GJ2265, Incident and Occurrence Reporting Procedure DOE-EM/GJ1663, Cause Analysis Procedure DOE-EM/GJRAC2049, Identification and Control of Nonconforming Items	DOE-EM/GJ1525, Quality Assurance Plan for the Technical Assistance Contractor DOE-EM/GJTAC1562, Technical Assistance Contractor Corrective Action Procedure DOE-EM/GJTAC1560, Technical Assistance Contractor Control of Nonconforming Items Procedure DOE-EM/GJ2265, Incident and Occurrence Reporting Procedure DOE-EM/GJ1663, Cause Analysis Procedure
6.2.5.4 Occurrence Reporting	DOE-EM/GJRAC1766, Quality Assurance Plan for the Remedial Action Contractor DOE-EM/GJ2265, Incident and Occurrence Reporting Procedure	DOE-EM/GJ2265, Incident and Occurrence Reporting Procedure

Appendix A. RAC and TAC Crosswalk Of ISMS Program Mechanisms (*continued*)

Mechanism	RAC Procedures	TAC Procedures
6.2.5.5 Price-Anderson Amendments Act Noncompliance Identification, Evaluation, and Reporting	DOE-EM/GJRAC1766, Quality Assurance Plan for the Remedial Action Contractor DOE-EM/GJRAC1714, Price-Anderson Reporting DOE-EM/GJ2136, Incident Reporting Procedure DOE-EM/GJ2135, Occurrence Reporting Procedure DOE-EM/GJRAC1671, Condition Reports	DOE-EM/GJ3002, 851 Worker Safety and Health Program Description DOE-EM/GJ2136, Incident Reporting Procedure DOE-EM/GJ2135, Occurrence Reporting Procedure DOE-EM/GJTAC1562, Corrective Action
6.2.5.6 Project Metrics	Performance Objectives Measures and Commitments, Moab Project Remedial Action Contractor Contractor Assurance System	Performance Objectives, Measures and Commitments, Moab Project Technical Assistance Contractor Performance Evaluation Measurement Plan for the Technical Assistance Contractor Contractor Assurance System
6.3 Task Level Program		
6.3.1 Define Scope of Work	DOE-EM/GJ1550, Integrated Work Planning and Control Approved IWP/JSA with work scope defined DOE-EM/GJ1038, Health and Safety Plan	DOE-EM/GJ1550, Integrated Work Planning and Control DOE-EM/GJ1038, Health and Safety Plan
6.3.2 Analyze Hazards	DOE-EM/GJ1550, Integrated Work Planning and Control Approved IWP/JSA with SME Hazards Analysis completed DOE-EM/GJ1038, Health and Safety Plan	DOE-EM/GJ1550, Integrated Work Planning and Control DOE-EM/GJ1038, Health and Safety Plan
6.3.3 Develop and Implement Controls	DOE-EM/GJ1550, Integrated Work Planning and Control Approved IWP/JSA with SME Hazard Controls Requirements Established DOE-EM/GJ1038, Health and Safety Plan	DOE-EM/GJ1550, Integrated Work Planning and Control DOE-EM/GJ1038, Health and Safety Plan
6.3.4 Perform Work	DOE-EM/GJ1550, Integrated Work Planning and Control Approved IWP/JSA Conduct POD, POW DOE-EM/GJ1038, Health and Safety Plan	DOE-EM/GJ1550, Integrated Work Planning and Control Conduct POD, POW DOE-EM/GJ1038, Health and Safety Plan
6.3.5 Feedback and Improvement	DOE-EM/GJ1550, Integrated Work Planning and Control Conduct Post-Job Briefing and Review DOE-EM/GJ1038, Health and Safety Plan	DOE-EM/GJ1550, Integrated Work Planning and Control DOE-EM/GJ1038, Health and Safety Plan
6.3.5.1 Workplace Presence	DOE-EM/GJ1038, Health and Safety Plan DOE-EM/GJ3002, 851 Worker Safety and Health Program Description	DOE-EM/GJ3002, 851 Worker Safety and Health Program Description DOE-EM/GJ1038, Health and Safety Plan
6.3.5.2 Management Assessments	DOE-EM/GJRAC1671, Management Assessments DOE-EM/GJRAC1766, Quality Assurance Plan for the Remedial Action Contractor	DOE-EM/GJ1525, Quality Assurance Plan for the Technical Assistance Contractor DOE-EM/GJ1959, Technical Assistance Contractor Management Assessment Procedure
6.3.5.3 Accident Investigations	DOE-EM/GJRAC1671, Condition Reports DOE-EM/GJ1038, Health and Safety Plan DOE-EM/GJ2136, Incident Reporting Procedure DOE-EM/GJ2135, Occurrence Reporting Procedure DOE-EM/GJ1882, Incident Investigation Procedure	DOE-EM/GJ1038, Health and Safety Plan DOE-EM/GJ2136, Incident Reporting Procedure DOE-EM/GJ2135, Occurrence Reporting Procedure DOE-EM/GJ1882, Incident Investigation Procedure

Appendix A. RAC and TAC Crosswalk Of ISMS Program Mechanisms (*continued*)

Mechanism	RAC Procedures	TAC Procedures
6.3.5.4 Safety Suggestion/Concern Program	DOE-EM/GJ1548, Stop Work Procedure DOE-EM/GJ2067, Employee Concerns Program DOE-EM/GJ1884, Site Safety Wa kdown Procedure	DOE-EM-GJ1548, Stop Work Procedure DOE-EM/GJ2067, Employee Concerns Program DOE-EM/GJ1884, Site Safety Walkdown Procedure
6.3.5.5 Lessons Learned	DOE-EM/GJ1038, Health and Safety Plan DOE-EM/GJ1550, Integrated Work Planning and Control DOE EM/GJ1568, Operating Experience/Lessons Learned	DOE-EM/GJ1038, Health and Safety Plan DOE-EM/GJ1550, Integrated Work Planning and Control DOE EM/GJ1568, Operating Experience/Lessons Learned

Appendix B.
Appendix B. A Model for CAS Self-Assessment

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A Model for CAS Self-Assessment

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Introduction

An effective Contractor Assurance System integrates contractor management, supports corporate parent governance and facilitates government oversight systems. The purpose of a CAS is threefold:

- A CAS is a primary tool used by contractor management to reasonably ensure that mission objectives and contract requirements are met; ensures that workers, the public, and the environment are protected; and ensures that operations, facilities, and business systems are effectively run and continuously improved.
- A CAS integrates the contractor's governance and management system to manage acceptable performance outcomes, to provide oversight of contract performance, and to hold contractor management accountable for these outcomes and provide assurance to NNSA.
- A robust and effectively functioning CAS provides transparency and builds trust between NNSA and its contractor, helps to ensure alignment across the NNSA enterprise in accomplishing and addressing mission needs, and allows NNSA to optimize its oversight functions by leveraging the processes and outcomes of its contractors.

Multiple methods have been used in recent years to assess Contractor Assurance Systems across the DOE. Much has been learned from these efforts. This paper aggregates this learning into an assessment model that can be applied to a Contractor Assurance System (CAS). It can also be applied to management and assurance systems in general.

Assessment Model

A CAS takes several years to implement and reach maturity. Throughout maturation, CAS assessments play a vital role in continuously improving the system to ensure that it fulfills its intended purpose.

The lines of inquiry for an initial CAS assessment should focus on whether the design has the potential to fulfill the requirements as specified in a contractor's prime contract and achieve the purpose of a CAS. This assessment should also evaluate if a contractor's CAS has the needed elements and whether the contractor's management of its CAS supports successful implementation and continuous improvement of the system. Finding design and management system errors at this stage of maturity can prevent expensive rework at later stages.

Once the initial design and management approach are verified, CAS assessments should shift to evaluating the level of ***Implementation*** and ***Effectiveness*** of the individual elements of the system and the system as a whole. Assessing these parameters together enables an organization to continuously improve how it approaches assurance while also improving performance, rather than tackling these dimensions sequentially.

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Prepared for the Contractor Assurance Working Group of the Energy Facility Contractors Group

Implemented: The processes used to implement the elements described in a contractor's CAS description document are sufficiently defined that they can be executed in a repeatable and predictable manner. The processes are being used in the specified manner by the contractor's functional and organizational segments.

Effective: The processes used to implement the elements described in a contractor's CAS description document are demonstrating the desired outcomes, with sustained good performance levels and /or favorable trends in evidence. Significant implementation gaps would preclude a CAS from being deemed effective.

After a CAS has been determined to be Implemented and Effective, the CAS assessment can be streamlined to focus on sustainability. Such an assessment would evaluate whether system and element implementation is being maintained and whether effectiveness is being sustained and continuously improved. Independent parent organization assessments of a contractor's CAS can be used effectively to augment and validate CAS self-assessments, especially if these independent assessments focus on aspects of implementation and effectiveness assessment where conflict-of-interest may be a concern in the contractor's self-assessment.

Basic Assessment Methodology

1. Using the contractor's CAS description document, select the CAS elements to be assessed. If not already defined as part of the CAS description, establish overall success factors for the CAS, keeping the purpose of the CAS in mind.

2. Using the definitions of Implemented and Effective and specific knowledge of the organization and its CAS, define the Implementation and Effectiveness criteria to be assessed for each element:

   a. Select the critical few 3-5 ***Characteristics*** defining the desired end state for implementation and effectiveness for each element, aligning the characteristics with overall CAS success.

      - Brainstorm Implementation and Effectiveness characteristics for each element based upon the CAS success factors.
      - Combine or reduce the characteristics until the most important 3-5 remain for Implementation and most important 3-5 remain for Effectiveness.

   b. Define the most relevant ***Observable*** for each ***Characteristic*** for each element.

      - Observables specify what is visible, measurable, or analyzable about the Characteristic.
      - Implementation observables should focus on objective information that can be used to determine that elements are sufficiently well-defined so as to be repeatable and

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predictable and are in use across relevant organizational and functional parts of the contractor's organization.

- Effectiveness observables should focus on quantitative performance information that can be used to determine if a CAS element is achieving desired results. These observables can also include objective information that would be a contra-indication of effectiveness.
- Observables should strive to create a balanced set of information about the implementation and effectiveness status for the element.

c. Define evidence-based thresholds for each ***Observable*** for the following:

- ***Implemented***: The quantitative level of objective evidence for the observable that is sufficient to specify the element as Implemented. Degree of existence and usage of specified processes across functions and organizational sub-units can be useful as implementation thresholds. Evidence of fact-based continuous improvement can also be useful.
- ***Not Implemented***: The quantitative level of objective evidence for the observable that would indicate that the element is clearly not implemented.
- ***Effective***: The quantitative level of objective evidence for the observable that is sufficient to specify the element as basically effective. CAS-related measures provide useful sources of evidence for this type of threshold.
- **Not Effective:** The quantitative level of objective evidence, such as measures, for the observable that would indicate that the element is clearly not effective. These thresholds can also include contra-indications, that if exist, would be evidence that the CAS element is not effective.

3. Define information that needs to be collected and created to make the threshold determinations for each ***Observable***. Drawing from a diverse set of information that can be efficiently collected is likely to enable the most accurate determinations:

   a. Documents and Reports: useful as evidence of use, of repeatability and predictability, and of continuous improvement.

   b. Measure level and trends: activity measures can be used as evidence of usage, cycle time measures as evidence of repeatability and predictability, outcome measures as evidence of results.

   c. Interviews: useful as evidence of usage consistent with process specifications.

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d. Other assessments: useful to collect needed information where scope collaboration is possible. Otherwise, this information is primarily useful as sources of potential contra-indications or supporting information.

e. Special Analyses: may be useful to establish evidence for degree of usage for organizations that support CAS processes with information systems. Also useful as measurements of year-to-year changes that are not part of the contractor's regular measures.

4. Select and train the assessment team members to successfully collect the needed information and make the determinations.

5. Perform the assessment:

   a. The team collects and documents evidence.

   b. The team compares assessment results to the thresholds and determines a "Best Fit" for each ***Observable.***

   c. If evidence is between the two thresholds, a "Partially Implemented" or "Partially Effective" determination is used.

6. Analyze collective results and develop a CAS Assessment Report:

   - Document all information used to determine "Best Fit" for each ***Observable*** for each element
   - Summarize for each element:
     - Findings: Non-compliances.
     - Issues: major barriers to achieving implementation or effectiveness.
     - Opportunities for Improvement: areas that, if addressed, would significantly enhance implementation or effectiveness.
   - Combine individual determinations into overall implementation and effectiveness determinations for each element.
   - Combine element determinations into an integrated determination for the CAS overall. Document changes from the previous year's CAS Self-Assessment.

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Developing Implementation and Effectiveness Characteristics

The following questions may help translate the purpose of a CAS into a useful set of Implementation and Effectiveness Characteristics for CAS elements. The questions should be tailored as needed for site-specific considerations.

Element	Leading Questions that may help define Implementation Characteristics and Observables	Leading Questions that may help define Effectiveness Characteristics and Observables
Assessments	• How do you know that assessments will be planned and performed in a reliable and predictable manner across the organization? • How do you know that assessments will be planned and performed in a manner that is consistent with the risks and performance uncertainties related to the organization's mission objectives and contractual requirements? • How do you know that the assessment planning and performance processes are maintained consistent with changing organizational needs? • What defines which functions and parts of the organization should be performing assessments? • How would you know that the defined functions parts of the organization are performing assessments as expected? • How do you know that the assessment planning and performance processes are appropriately integrated with other CAS elements and management systems?	• Are assessments being planned as expected? How do you know? • Are there frequency, cycle time, or quality expectations that apply to assessment planning? If so, how do you know how well you are performing against them? • Are assessments are being performed as expected? • Are there frequency, cycle time, or quality expectations that apply to assessment planning? If so, how do you know how well you are performing against them? • Is assessment data reliably translated into actionable information? How do you know? • Is assessment data adequately transparent to DOE elements and corporate governance? How do you know? • Do assessments reliably lead to organizational improvement? How do you know? • Are assessments reliably finding issues before they are identified by external assessors and before they become problems? How do you know?

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Element	Leading Questions that may help define Implementation Characteristics and Observables	Leading Questions that may help define Effectiveness Characteristics and Observables
Measures	• How do you know that outcome measures and their performance targets are selected consistent with the organization's mission objectives and contractual requirements? • How do you know that outcome measures are selected in a reliable and predictable manner across the organization and its functions? • How do you know that leading indicators are selected in a reliable and predictable manner for outcome measures? • What defines which functions and parts of the organization should be selecting and using outcome measures and leading indicators? How do you know that they are doing so? • How do you know that measures are appropriately integrated with other CAS elements and management systems?	• Are measures being selected as expected? How do you know? • Are measures being used by managers to evaluate organizational and functional performance? How do you know? • Are there frequency, cycle time, or quality expectations that apply to measures planning? If so, how do you know how well you are performing against them? • Are unfavorable measure performance levels and trends reliably translated into actionable information? How do you know? • Are measures adequately transparent to DOE elements and corporate governance? How do you know? • Do measures reliably lead to organizational improvement? How do you know? • Are measures reliably finding issues before they are identified by external assessors and before they become problems? How do you know?
Issues and Corrective Action Management	• How do you know that issues are identified and translated into corrective actions in a reliable and predictable manner across the organization? • How do you know that corrective actions will reliably and predictably resolve the issues with which they are associated? • How do you know that issues and corrective actions are prioritized in a manner that is consistent with the organization's mission objectives and contractual requirements? • How do you know that the issues and corrective action management processes are maintained consistent with changing organizational needs? • What defines which functions and parts of the organization should be formally managing issues and corrective actions? • How do you know that the issue and corrective action management processes are appropriately integrated with other CAS elements and management systems?	• Are issues being identified as planned? How do you know? • Are issues being translated into corrective actions as planned? How do you know? • Are issues and corrective actions being managed across functions and sub-units of the organization as expected? • Are there frequency, cycle time, or quality expectations that apply to issue processing? If so, how do you know how well you are performing against them? • Are there frequency, cycle time, or quality expectations that apply to corrective action development and management? If so, how do you know how well you are performing against them? • Is issue and corrective action management data transparent to DOE and corporate governance? How do you know? • Are issues being effectively resolved? How do you know? • Are patterns and trends from issues being used to help identify performance uncertainties, risks, and emerging issues? How do you know?

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Element	Leading Questions that may help define Implementation Characteristics and Observables	Leading Questions that may help define Effectiveness Characteristics and Observables
Continuous Improvement	• How do you know that relevant lessons learned are collected and shared in a reliable and predictable manner across the organization and with the DOE? • What defines which functions and parts of the organization should be sharing and acting upon lessons learned? • How would you know that the defined functions parts of the organization are using lessons learned as expected? • How do you know that performance levels and trends are reliably translated into opportunities for risk reduction and performance improvement? • How do you know that opportunities for risk reduction and performance improvement are prioritized in a manner that is consistent with the organization's mission objectives and contractual requirements? • How do you know that the continuous Improvement processes are appropriately integrated with other CAS elements and management systems?	• Are lessons learned being collected and shared as planned? How do you know? • Are lessons learned being acted upon as planned? How do you know? • Are there frequency, cycle time, or quality expectations that apply to lessons learned processing? If so, how do you know how well you are performing against them? • Is feedback and information from accident, event, and incident reporting and worker feedback processes being used to help identify opportunities for risk reduction and performance improvement? How do you know? • Are identified opportunities for risk reduction and performance improvement translating reliably into changes to systems, processes, and capabilities? • Are the changes to systems, processes, and capabilities achieving the desired organizational results? How do you know? • How do you know that continuous improvement gains can be sustained into the future?

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Example of Implementation Characteristic, Observable, Thresholds

Implementation Characteristic	Institutional expectations are defined for selecting and performing Independent Assessments, Management Assessments, and Management Observations and Verifications
Observable: Whether the Institution has defined the processes to be used for selecting and performing Independent Assessments, Management Assessments, and Management Walkarounds	
Thresholds	**Best Fit**
"Implemented" Criteria: By the start of the next fiscal year assessment planning cycle, the Assessment Program Description and supporting procedures are up to date in the Institutional Requirements Center and senior leaders and their staff have been updated on any changes for the upcoming assessment planning cycle.	
"Partially Implemented" Criteria: Less than "Implemented" but more than "Not Implemented"	
"Not Implemented" Criteria: By the start of the next fiscal year assessment planning cycle, the Assessment Program Description and supporting procedures are not up to date in the Institutional Requirements Center or senior leaders and their staff have been not been updated on any changes for the upcoming assessment planning cycle.	

Example of Effectiveness Characteristic, Observable, Thresholds

Effectiveness Characteristic	Issues are being effectively resolved by the Issues and Corrective Action Management Process
Observable: Whether the Management Review Boards (MRBs)are evaluating resolution effectiveness as part of their processes and whether the results of effectiveness evaluations show favorable results	
Criteria	**Best Fit**
"Effective" Criteria: >90% of MRBs (organizational and functional) are evaluating issue resolution effectiveness as part of their management process. >90% of issues that are determined to require effectiveness evaluations by MRBs are effectively resolved	
"Partially Effective" Criteria: Less than "Effective" but more than "Not Effective"	
"Not Effective" Criteria: <75%% of MRBs (organizational and functional) are evaluating issue resolution effectiveness as part of their process. >70% of issues that are determined to require effectiveness evaluations by MRBs are effectively resolved	

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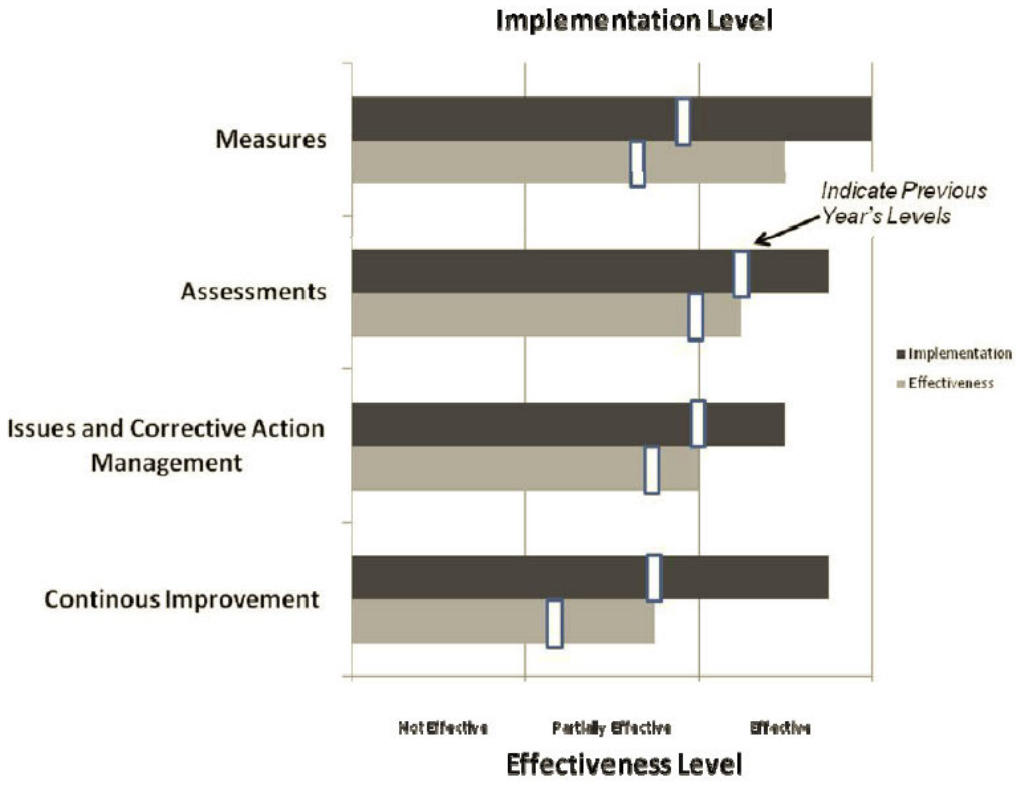
Example of Overall Implementation and Effectiveness Communication



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