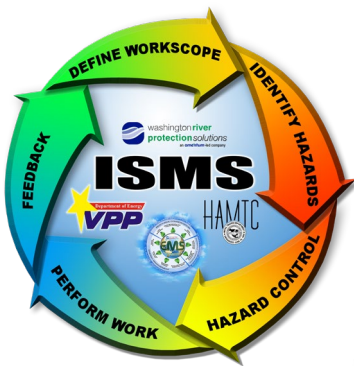




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# Integrated Safety Management System Handbook

DOE G 450.4-1C, Integrated Safety Management  
System Guide



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# Integrated Safety Management System Handbook

The intent of the Integrated Safety Management System (ISMS) Handbook is to provide convenient access to WRPS and DOE ISMS, Safety Culture, and other related materials. The contents of the ISMS Handbook are from the following source documents:

- ISMS – TFC-POL-16, DOE G 450.4-1C, ISMS Guide
- Safety Culture – TFC-PLN-12, DOE G 450.4-1C, Attach. 10
- VPP – TFC-PLN-59
- EMS – TFC-POL-30
- Ladder of Accountability – DOE TLP-200 Training

The ISMS Handbook was developed based on industry best practices and by benchmarking similar handbooks with DOE and other local contractors. For more information about contents, or to request additional copies, contact the Organizational Performance Improvement (OPI) ISMS POCs.

*“We encourage everyone to use the material in this handbook for safety topics at meetings and as a reference on improving our workplace. These are tried and true behaviors we should be familiar with. By frequently referring to them in meetings and other settings, we build awareness for good behaviors that help provide a work environment with high morale, high productivity, good safety performance, low event rate, and improved efficiency.”*

- Rob Gregory, Chief Operating Officer



# Integrated Safety Management Objective

The objective of ISM is to integrate safety into management and work practices at all levels, while addressing all types of work and hazards to ensure safety for workers, the public, and the environment. To achieve this objective, the U.S. Department of Energy (DOE) has established guiding principles and core safety management functions. An effective ISM system addresses these DOE-wide principles and core functions while also considering site-specific factors, conditions, analyses, and processes, including:

- The types of potentially hazardous work at the site, including, but not limited to, operations, maintenance, construction, decontamination and decommissioning, laboratory activities, and research and development.
- Results of design and conceptual studies, environmental analyses, safety analyses, hazard reduction analyses, pollution prevention/waste minimization, and risk analyses.
- All types of hazards at the site, including chemical, physical, biological, ergonomic, environmental, nuclear, and transportation.

Management and workers should understand that safety is an integral part of each work activity. Accordingly, safety should be a prime consideration in the work practices of all personnel from the DOE Secretary and contractor senior official, through all management levels, to the worker performing the activity.

The WRPS ISMS description is documented in TFC-PLN-41, *Integrated Safety Management System Description*.

## Safety Culture Attributes

DOE defines safety culture as “an organization’s values and behaviors modeled by its leaders and internalized by its members, which serve to make safe performance of work the overriding priority to protect the workers, public, and the environment.”

DOE’s commitment to a positive safety culture is expressed in DOE O 450.4A, the Department expects all organizations to embrace a strong safety culture where safe performance of work and involvement of workers in all aspects of work performance are core values that are deeply, strongly, and consistently held by managers and workers. The Department encourages a questioning attitude by all employees and a work environment that fosters such attitude.” A positive safety culture is an integral part of an effective Integrated Safety Management System.

DOE and the Energy Facility Contractors Group (EFCOG) have collaborated to develop guidance for achieving strong safety culture focus areas that have several attributes associated with each one. They felt these focus areas and attributes offered the greatest potential for achieving excellence in both safety and production performance. These focus areas and attributes are included in Attachment 10 of DOE G 450.4-1C, Integrated Safety Management (ISM) System Guide. The following focus areas and associated attributes promote a shift from mere compliance toward excellence. They emphasize continuous improvement and long-term performance and are entirely consistent with the intent of ISM.

The Safety Culture Focus Areas and Attributes implemented by WRPS can be found in TFC-PLN-12, *Safety Culture Sustainment Plan*.

# Safety Culture Focus Areas

## Leadership

- Demonstrated safety leadership
- Risk-informed, conservative decision making
- Management engagement and time in field
- Staff recruitment, selection, retention, and development
- Open communication and fostering an environment free from retribution
- Clear expectations and accountability

## Employee/Worker Engagement

- Personal commitment to everyone's safety
- Teamwork and mutual respect
- Participation in work planning and improvement
- Mindful of hazards and controls

## Organizational Learning

- Credibility, trust, and reporting errors and problems
- Effective resolution of reported problems
- Performance monitoring through multiple means
- Use of operations experience
- Questioning attitude

## Leadership

### Demonstrated safety leadership

- Line managers (from the Secretary to the DOE Cognizant Secretarial Officer to the DOE Field Office Manager, and from the contractor senior manager, to the front-line employee) understand and accept their safety responsibilities as integral to mission accomplishment.
- Line managers enhance work activities, procedures and process with safety practices and policies.

- Leaders acknowledge and address external influences that may impose changes that could result in safety concerns.
- Line managers clearly understand their work activities and performance objectives, and how to safely conduct their work activities to accomplish their performance objectives.
- Line managers demonstrate their commitment to safety through their actions and behaviors, and support the organization in successfully implementing safety culture attributes, by conducting walk-throughs, personal visits, and verifying that their expectations are met.
- The organizational mission and operational goals clearly identify that production and safety goals are intertwined, demonstrating commitments consistent with highly reliable organizations.

### **Risk-informed, conservative decision making**

- Line managers support and reinforce conservative decisions based on available information and risks. Managers and employees are systematic and rigorous in making informed decisions that support safe, reliable operations. Employees are expected, authorized and supported by managers to take conservative actions when faced with unexpected or uncertain conditions.
- Managers and employees are intolerant of conditions or behaviors that have the potential to reduce operating or design margin. Anomalies are thoroughly investigated, promptly mitigated, and periodically analyzed. The bias is set on proving that work activities are safe before proceeding, rather than proving them unsafe before halting. Personnel do not proceed, and do not allow others to proceed, when safety is uncertain and management is supportive of these decisions.

### **Management engagement and time in field**

- Maintaining operational awareness is a priority. Line managers are in close contact with the front-line employees. Line managers listen and act on real-time operational information.

Line managers identify critical performance elements and monitor them closely.

- Line managers spend time on the floor and in employee work areas. Line managers practice visible leadership by placing – eyes on the work, asking questions, coaching, mentoring, and reinforcing standards and positive behaviors. Deviations from expectations are corrected promptly and, when appropriate, collectively analyzed to understand why the behaviors occurred.
- Managers set an example for safety through their personal commitment to continuous learning and by direct involvement in high-quality training that consistently reinforces expected employee behaviors.

## **Staff recruitment, selection, retention, and development**

- People and their professional capabilities, experiences, and values are regarded as the organization's most valuable assets. Organizational leaders place a high personal priority and time commitment on recruiting, selecting, and retaining an excellent technical staff.
- The organization maintains a highly knowledgeable workforce to support a broad spectrum of operational and technical decisions. Technical and safety expertise is embedded in the organization. Outside expertise is employed when necessary.
- The organization is able to build and sustain a flexible, resilient, robust technical staff and staffing capacity. Staffing is sufficient to ensure adequate resources exist to ensure redundancy in coverage as well as cope with and respond to unexpected changes in a timely manner.
- The organization values and practices continuous learning. Professional and technical growth is formally supported and tracked to build organizational capability. Employees are required to improve knowledge, skills, and abilities by participating in recurrent and relevant training and strongly encouraged to pursue educational opportunities.



- Line managers encourage and make training available to broaden individual skills and improve organizational performance. Training should include the ability to appreciate the potential for unexpected conditions; to recognize and respond to a variety of problems and anomalies; to understand complex technologies and capabilities to respond to complex events; to develop flexibility at applying existing knowledge and skills in new situations; to improve communications; and to learn from significant industry and DOE events.

## **Open communication and fostering an environment free from retribution**

- A high level of trust is established in the organization.
- Reporting individual errors is encouraged and valued. Individuals feel safe from reprisal when reporting errors and incidents.
- Individuals at all levels of the organization promptly report errors and incidents, offering suggestions for improvements.
- A variety of methods are available for personnel to raise safety issues. Line managers promptly and effectively respond to personnel who raise safety issues.
- Leaders proactively detect situations that could result in retaliation and take effective action to prevent a chilling effect.
- The organization addresses disciplinary actions in a consistent manner; disciplinary actions are reviewed to ensure fair and consistent treatment of employees at all levels of the organization.

## **Clear expectations and accountability**

- Line managers provide ongoing performance reviews of assigned roles and responsibilities reinforcing expectations and ensuring key safety responsibilities and expectations are being met.
- Personnel at all organizational levels are held accountable for standards and expectations.

- Accountability is demonstrated both by recognizing excellent performance as well as identifying less-than-adequate performance. Accountability considers intent and organizational factors that may contribute to undesirable outcomes.
- Willful violations of requirements and performance norms are rare. Individuals and organizations are held accountable in the context of a just culture. Unintended failures to follow requirements are promptly reported, and personnel and organizations are acknowledged for self-identification and reporting errors.

## **Employee/Worker Engagement**

### **Personal commitment to everyone's safety**

- Responsibility and authority for safety are well defined and clearly understood as an integral part of performing work.
- The line of authority and responsibility for safety is defined from the Secretary and contractor senior manager to the individual contributor. Roles and responsibilities, authorities and accountabilities are clearly defined in writing and are understood by each individual.
- Individuals understand and demonstrate responsibility for safety. Safety and its ownership are apparent in everyone's actions and deeds.
- Individuals outside of the organization (including subcontractors, temporary employees, visiting researchers, vendor representatives, etc.) understand their safety responsibilities.
- The organization knows the expertise of its personnel. Line managers defer to qualified individuals with relevant expertise during operational upset conditions. Qualified and capable people closest to operational upsets are empowered to make important decisions, and are held accountable justly.

## Teamwork and mutual respect

- Open communications and teamwork are the norm.
- Individuals at all levels of the organization listen to each other and effectively engage in crucial conversations to ensure meaning, intent and viewpoints are understood; and that differing points of view are acknowledged.
- Discussion on issues focus on problem solving rather than on individuals.
- Good news and bad news are both valued and shared.

## Participating in workplanning and improvement

- Individuals are actively involved in identification, planning, and improvement of work and work practices.
- Individuals follow approved work practices and procedures.
- Individuals at all levels can stop unsafe work or work during unexpected conditions.
- Design, analysis, and continuous improvement of work practices and processes are valued as core organizational competencies; expertise in these competencies is evaluated and rewarded.

## Mindful of hazards and controls

- Organizational safety responsibilities are sufficiently comprehensive to address the work activities and hazards involved.
- Work hazards are identified and controlled to prevent or mitigate accidents, with particular attention to high consequence events with unacceptable consequences.
- Individuals understand and proactively identify hazards and controls before beginning work activities.
- Individuals are mindful of the potential impact of equipment and process failures, demonstrate constructive skepticism, and are sensitive to the potential of faulty assumptions and errors. They appreciate that mindfulness requires effort.

# Organizational Learning

## Credibility, trust and reporting errors and problems

- Credibility and trust are present and continuously nurtured so that a high level of trust is established in the organization.
- Organizations, managers, and line supervisors provide accurate, relevant, and timely information to employees. Line managers are skilled in responding to employee questions in an open, honest manner.
- Reporting individual errors is encouraged and valued. Individuals are recognized and rewarded for self-identification of errors.
- Line managers encourage and appreciate safety issue and error reporting.
- Managers and line supervisors demonstrate integrity and adhere to ethical values and practices to foster trust.
- Managers and line supervisors demonstrate consistency in approach and a commitment to the vision, mission, values and success of the organization as well as the individuals (people).
- Mistakes are used for opportunities to learn rather than blame.
- Individuals are recognized and rewarded for demonstrating behaviors consistent with the safety culture principles.

## Effective resolution of reported problems

- Vigorous corrective and improvement action programs are established and effectively implemented, providing both transparency and traceability of all corrective actions. Corrective action programs effectively prioritize issues, enabling rapid response to imminent problems while closing minor issues in a timely manner to prevent them from escalating into major issues.
- Results from performance assurance activities are effectively integrated into the performance improvement processes, such that they receive adequate and timely attention. Linkages with other performance monitoring inputs are examined, high-quality causal analyses are conducted, as needed, and

corrective actions are tracked to closure with effectiveness verified to prevent future occurrences.

- Processes identify, examine, and communicate latent organizational weaknesses that can aggravate relatively minor events if not corrected. Organizational trends are examined and communicated.
- Organizational systems and processes are designed to provide layers of defenses, recognizing that people are fallible. Lessons learned are shared frequently; preventions and mitigation measures are used to preclude errors from occurring or propagating. Error-likely situations are sought out and corrected, and recurrent errors are carefully examined as indicators of latent organizational weaknesses.
- Incident reviews are conducted promptly after an incident to ensure data quality and to identify improvement opportunities. Casual analysis expertise is applied effectively to examine events and improve safe work performance. High-quality causal analysis using multi-discipline analytical perspectives is the norm. Causal analysis is performed on a graded approach for major and minor incidents, and near-misses, to identify causes and follow-up actions. Even small failures are viewed as windows into the system that can spur learning.
- Performance improvement processes require direct worker participation. Individuals are encouraged, recognized and rewarded for offering innovative ideas to improve performance and to solve problems.

## **Performance monitoring through multiple means**

- Line managers maintain a strong focus on the safe conduct of work activities. Line managers maintain awareness of key performance indicators related to safe work accomplishment, watch carefully for adverse trends or indications, and take prompt action to understand adverse trends and anomalies. Management employs processes and special expertise to be vigilant for organizational drift.

- Performance assurance consists of robust, frequent, and independent oversight conducted at all levels of the organization. Performance assurance includes independent evaluation of performance indicators and trend analysis.
- Line managers throughout the organization set an example for safety through their direct involvement in oversight activities and associated performance improvement.
- The organization actively and systematically monitors performance through multiple means, including leader walk-arounds, issue reporting performance indicators, trend analysis, benchmarking, industry experience reviews, self-assessments, peer reviews, and performance assessments.
- The organization demonstrates continuous improvement by integrating the information obtained from performance monitoring to improve systems, structures, processes, and procedures.
- Line managers are actively involved in all phases of performance monitoring, problem analysis, solution planning, and solution implementation to resolve safety issues.
- The organization maintains an awareness of its safety culture maturity. It actively and formally monitors and assesses its safety culture on a periodic basis.

## Use of industry experience

- Operating experience is highly valued and the capacity to learn from experience is well developed. The organization regularly examines and learns from operating experiences, both internal and in related industries.
- Organization members convene to swiftly uncover lessons and learn from mistakes and successes.
- The organization embraces feedback from peer reviews, independent oversight, and other external sources.
- The organization documents and shares industry experiences (lessons learned and best practices) within the organization and with industry.

## Questioning attitude

- Line managers encourage a vigorous questioning attitude toward safety, and foster constructive dialogue and discussions on safety matters.
- Individuals cultivate a constructive, questioning attitude and healthy skepticism when it comes to safety. Individuals question deviations and avoid complacency or arrogance based on past successes. Team members support one another through both awareness of each other's actions and constructive feedback when necessary.
- Individuals pay keen attention to current operations and focus on identifying situations where conditions and/or actions are diverging from what was assumed, expected, or planned. Individuals and leaders act to resolve these deviations early before issues escalate and consequences become large.

# Expectations for Implementation of the Integrated Safety Management System

## Expectations for all employees

### **E1 Perform all work safely using the five core functions of the Integrated Safety Management System; and**

- Watch out for each other; intervene if you see unsafe conditions or behaviors
- Apply ALARA<sup>1</sup> principles to any potential hazardous task
- If you aren't sure, pause and get the right answer
- Issue a Stop Work for imminent safety hazards
- Learn from both your successes and mistakes
- Report to work fit for duty; go home as healthy and safe as you were when you came to work

### **E2 Earn each other's trust by treating each other with dignity and respect; be open and honest**

- View participation in event critiques as an opportunity to truthfully and openly discuss the event and capture Lessons Learned
- Be open to giving and receiving feedback; engage in active listening to understand concerns expressed by others

### **E3 Comply with our procedures and any written instructions that define how to do a task**

- If a procedure or written instructions can't be followed, pause and get clarification or correction before proceeding on that specific activity
- If you think it can be done safer or more efficiently, provide that recommendation to the procedure owner

### **E4 Demonstrate a questioning attitude**

- If something doesn't seem right, it probably isn't. Bring it to the attention of supervision (or the appropriate person)
- If appropriate, write a Problem Evaluation Request to document the problem

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<sup>1</sup> As Low As Reasonably Achievable.



## **Expectations for all employees (cont.)**

- E5 Participate and complete required training; only perform tasks that you are qualified and authorized to do**
- E6 Maintain a safe and well-kept work environment**
- E7 Comply with the requirements of the Labor Contract agreements**
- E8 Exempt and Non-exempt personnel fully participate in employee performance review and improvement processes (supervisors and direct reports)**
- E9 Support Voluntary Protection Program approaches to safety**
- E10 Never engage in or tolerate harassment, intimidation, retaliation, discrimination**
- E11 Adhere to Conduct of Operations requirements**
- E12 Work with your customer to set expectations, then meet or exceed those expectations**
- E13 Be a good steward of employee/owner assets**
- E14 Professional staff members develop well thought-out, technically defensible, high-quality products**
- E15 Give your best effort every day; take pride in your work; help us find better, more efficient ways to do our work; challenge the status quo**

## Manager and Supervisor Expectations

- M1 Set, demonstrate, and enforce high standards of Integrated Safety Management System performance with emphasis on safety, quality, mission progress, procedure compliance, and personal conduct**
- M2 Maintain a safe work environment where employees feel free to raise issues without fear of reprisal**
- M3 Be present in the field/work place with your employees. Earn the trust of your employees. (senior management refer to SM5)**
- M4 Own the plan; join the team; seek out win-win solutions**
- M5 Challenge the status quo**
  - Resolve issues or escalate quickly to the next level of management
- M6 Recognize and reward individual and team performance for safe and productive work**
- M7 Treat your employees as your most important resource**
  - Actively listen
  - Ensure that employees are actively engaged in work planning
  - Support their needs and keep them informed; treat them as if they were your customer
  - Recognize the benefits of diversity; seek out differing perspectives
  - Help them develop to the best of their abilities
- M8 Treat employees fairly, consistently, and with respect**
- M9 Take immediate action to stop inappropriate behaviors (e.g., harassment, intimidation, retaliation, discrimination) and address any potential chilling effect impact on your employees**
- M10 Learn from both mistakes and successes; use them as teaching opportunities**
  - Demonstrate that we are a learning organization
- M11 Honor the Labor Contract including support of its safety agreements and HAMTC Safety Representatives**
- M12 Manage and supervise contractors and contract personnel in accordance with WRPS safety and performance standards**

## **Manager and Supervisor Expectations (cont.)**

**M13** Demonstrate your commitment to a free flow of information, including signing up to the “Commitment to Free Flow of Information”

**M14** Integrate sustainable practices into planning, procurement, and execution of work

## Senior Management Expectations

**SM1 Use the Guiding Principles of the Integrated Safety Management System and Voluntary Protection Program to lead your team**

**SM2 Establish and communicate an achievable vision for the future**

**SM3 “Set the example” every day by your words and actions**

**SM4 Foster an environment where people can get work done safely and productively**

**SM5 Be visible in the field/work place with your employees-**

- Dedicate your time to face-to-face contact with your people
- Schedule time on your calendar to “walk the farms,” meet directly with employees in their work area, or attend “all employees” type informational update sessions
- Be open with the work force; no hidden agendas; people must know what you are thinking

**SM6 Challenge the status quo; actively seek ways to remove barriers and question “why”**

**SM7 Set and hold your employees and yourself accountable to expectations, achievable but challenging goals and our corporate values**

**SM8 Establish reward and recognition systems**

**SM9 Develop your managers and employees**

**SM10 Demonstrate a positive attitude, support your peers, as well as your employees**

**SM11 Support the right of any member of the workforce to raise any concern and to have that concern addressed in a timely, effective and respectful manner without fear of retaliation. Be available to resolve any issue or concern**

**SM12 Contribute to the wellbeing of our communities**

**SM13 Demonstrate good stewardship of client’s (government’s) money; assure only appropriate expenditures of authorized funding**

**SM14 Protect workers, the public, and the environment**

## ISMS Core Functions and Guiding Principles

The ISMS Core Functions provide the necessary structure for any work activity that could potentially affect the worker, the public, and the environment. These core functions are applied as a continuous cycle to the degree of rigor appropriate to the type of work activity and hazards involved:

- Define the Scope of Work
- Analyze the Hazards
- Develop and Implement Hazard Controls
- Perform Quality Work Within Controls
- Provide Feedback and Continuous Improvement

The ISMS Guiding Principles describe the environment or context for work activities since most principles apply to each ISMS Core Function (and work together with the safety culture focus areas and attributes). The Guiding Principles are:

- Line Management Responsibility for Safety
- Clear Roles and Responsibilities
- Competence Commensurate with Responsibilities
- Balanced Priorities
- Identification of Safety Standards and Requirements
- Hazard Control Tailored to Work Being Performed
- Operations Authorization
- Worker Involvement

**Safety Depends on Implementing all Core Functions and Guiding Principles. If just one core function or guiding principle is not implemented or understood, the circle of safety is at risk.**

## VPP Elements

The DOE Voluntary Protection Program (VPP) is a program designed to promote safety and health excellence through cooperative efforts among labor, management, and government at the DOE contractor sites. The VPP Elements are:

1. Management Leadership
2. Employee Involvement
3. Worksite Analysis
4. Hazard Prevention and Control
5. Safety and Health Training

## ISMS + VPP = Strong Safety Culture



## EMS Core Functions

The WRPS Environmental Management System (EMS) is fully integrated with our ISMS and designed to improve environmental performance, provide compliance with legal regulations, improve efficiency and effectiveness, reduce costs, and earn and retain regulator and community trust. In addition to the cycle of “Plan, Do, Check, Act,” the EMS Core Elements include:



# LADDER OF ACCOUNTABILITY

