EFCOG/DOE
Safety Culture Task Team
Process Overview

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1. ASSESSING ISMS AND SAFETY CULTURE

It is important to periodically assess organizations to identify enhancements or adjustments that could improve the ISMS and the safety culture. Various activities can be used to assess an organization's safety culture. These include assessments, interviews, surveys, and performance indicators. These assessment methods can be used together or individually.

The EFCOG/DOE Safety Culture Task Team identified three safety culture focus areas that should have the most impact on improving safety and production performance within the DOE complex: Leadership, Employee/Worker Engagement, and Organizational Learning. For each of these three focus areas, The Team identified a number of related attributes which are depicted in Table 1 below. The general approach of assessing safety culture and deploying various tools to improve that safety culture is shown in Figure 1 below.

Table 1 - Safety Culture Focus Areas Identified by the Task Team

Leadership	○ Clear expectations and accountability ○ Management engagement and time in field ○ Risk-informed, conservative decision making ○ Open communication and fostering an environment free from retribution ○ Demonstrated safety leadership ○ Staff recruitment, selection, retention, & development
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	○ Performance monitoring through multiple means ○ Use of operational experience ○ Trust ○ Questioning attitude ○ Reporting errors and problems ○ Effective resolution of reported problems

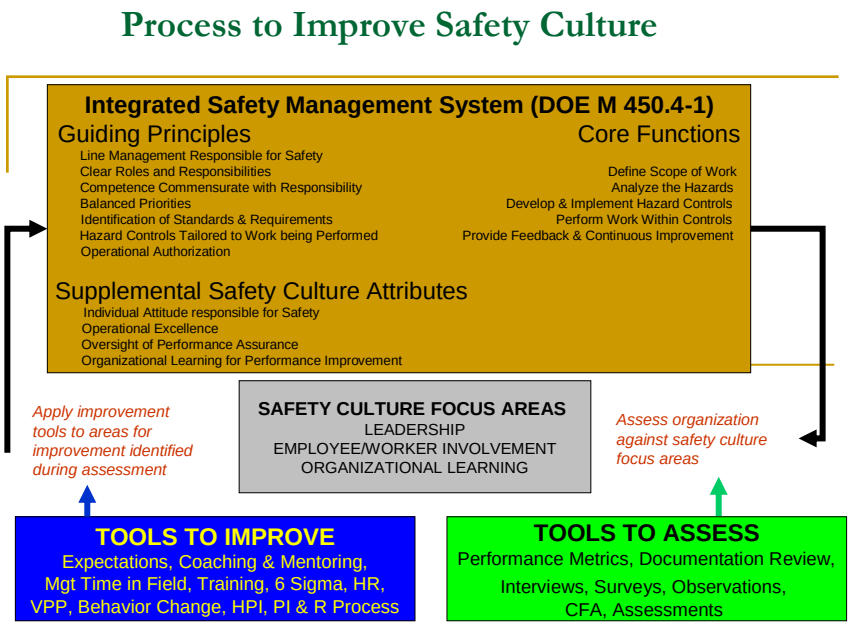

Figure 1 – Process to Assess and Strengthen Safety Culture to Improve the Effectiveness of ISM

Improvement Process Overview (See Figure 1):

- The light blue box represents an organization's ISMS including the ISM Guiding Principles and Supplementary Safety Culture Elements. (ISM is the safety system chosen by DOE to provide safety to people, facilities and the environment at all DOE sites.)
- The gray box indicates the three safety culture focus areas identified by The Team. These are not meant to be a new representation or definition of ISMS, but rather three areas to focus additional attention on safety culture within ISMS.
- The green box shows examples of how safety culture can be assessed. The assessment of safety culture is not consistently established throughout the DOE complex. To address this, The Team provides recommended techniques to assess safety culture (see Section 3). In general, multiple methods to assess safety culture are recommended because of the complex nature of safety culture.
- Once an organization assesses their safety and identifies areas for improvement, the dark blue box shows examples of tools to improve safety culture. The Team provides recommended tools to improve safety culture. Many of these tools are commonly used throughout the DOE complex, and ample guidance, references, and best practices are available for implementing these tools.
- The cycle should be periodically repeated such that routine safety culture assessments (green box), followed by corresponding safety culture improvements (dark blue box) will result in a stronger safety culture with improved effectiveness of the ISMS.

Relative to the three Safety Culture Focus areas (Leadership, Employee/Worker Engagement and Organizational Learning) identified by The Team, the following process is suggested for each organization to assess their safety culture:

1. Review the Task Team Focus Areas and Attributes to include performance indicators and assessment criteria identified by the Task Team for use in performing an assessment of the three safety culture focus areas.
2. Review the ISM Guiding Principles and Supplemental Safety Culture Elements (identified in Attachment 1) of the ISM Manual (DOE M 450.4-1).
3. Review the EFCOG reference document on assessing safety culture. Assess your organization's safety culture relative to the Safety Culture Focus Areas and Attributes using a combination of: direct observations, assessments, Causal Factors or Root Cause Analysis, surveys, interviews, review of key safety culture related processes, performance indicator monitoring and trending, Six Sigma, and VPP type assessments.
4. Once an organization assesses their safety and identifies areas for improvement, refer to the EFCOG reference document on tools to improve safety culture.

2. OVERVIEW OF ASSESSING SAFETY CULTURE

A. Direct observations of work place behavior may provide objective information regarding the effectiveness of training, management effectiveness, accountability, and behavior expectations. Management behaviors observed may indicate whether a supervisor is receptive to concerns and supports and rewards employees for raising concerns. Direct observation of employees in the work environment can provide valuable insights into the employees' questioning attitude and willingness to challenge perceived unsafe behavior.

B. Causal Factors Analyses or Root Cause Analyses are useful tools to evaluate an organization's safety culture because they start with façade of a strong safety culture being stripped away because obviously a serious incident or accident is being investigated as a result of a significant organizational failure. This type of analysis will not identify root cause, but can provide information that can be used to assess the

organizational safety culture.

C. Surveys can be useful tools and complement other tools used to assess safety culture. The extent of such surveys will vary depending on the size and organizational structure of the contractor. Survey results can indicate employee beliefs, attitudes, and satisfaction with key attributes and suggests ways to strengthen the safety culture.

D. Face-to-face interviews have a significant role to play in assessment of culture. They are commonly used as a means of providing data that will assist survey design or to explore qualitatively the issues emerging from the written survey. Interviews allow the respondent to use his or her own words and expressions and also allows for a greater flexibility in questioning, with the possibility for follow-up questions, making it easier to get to the deeper meanings and to clarify ambiguities in meaning.

E. Review of key safety culture related processes such as:
- Those used for fixing problems (e.g., the corrective action program)
- Alternative processes for raising concerns (e.g., employee concerns program, ombudsman, DPO)
- Human resources for work environment concerns, disciplinary action, etc.
- Legal cases for Department of Labor cases, etc.
- Lessons learned processes including use of both internal and external operating experience
- Whether or not employees feel free to identify issues using the various processes available to them, whether or not these processes are viewed as effective, and why or why not
- Effectiveness of the root cause analyses for significant issues and the effectiveness of associated corrective actions
- Use of self-assessments
- Worker participation in work planning and feedback

F. Performance indicators can be used to obtain regular feedback on artifacts of your organization's safety culture. Monitoring trends in performance indicators as a function of time may provide insights into safety culture strengths and weaknesses. The complexity and number of useful performance indicators depends on the size and organizational structure of the organization. Attachment 1 contains examples of performance indicators that can be used to gain insight into safety culture.

G. VPP assessments generally include a high level of worker participation which can provide a different perspective than typical assessments. VPP assessment criteria include certain cultural aspects related to The Team Focus Areas such as employee involvement which could provide valuable insights into organizational safety culture.

H. Stream analysis is a tool used by the commercial nuclear industry and some DOE contractors as a means of understanding the organizational drivers related to safety culture. For complex organizations, the tool is useful in helping the management team understand the three to five organizational factors related to events within their organizations.

3. POST ASSESSMENT CONSIDERATIONS

Safety culture improvement takes years. It is important to recognize this and have appropriate methods in place to ensure worker involvement, communication of results, actions are completed as expected, and follow-up assessments are conducted to ensure continued workforce support and involvement. Communication of results and follow-up with the workforce is an important part of the assessment process that must be performed.

Attachment 1
Potential Set of Performance Indicators and Assessment Criteria Identified For Assessing Safety Culture

Leadership Focus Area
- (pm) Number of deferred capital improvements
- (pm) Number of PM/CM backlog
- (pm) Average age and number of temporary modifications
- (pm) Average age and number of instruments out of service
- (pm) Average overtime hours per person by department
- (ac) SRB evaluates safety impact of organizational changes
- (ac) Effectiveness of change is monitored so as not to erode trust nor safety
- (ac) Management plant walk-through results in safety improvements
- (ac) Reviews performed by corporate and external industrial & nuclear oversight groups are of appropriate depth and breath
- (ac) Personnel/Teams are rewarded for safety behaviors and achievements
- (ac) Senior management incentive programs reward actions which promote long term plant safety and performance

Employee/Worker Engagement Focus Area
- (ac) Concerns are documented, tracked and trended in the Condition Report System, and resolved in a timely and effectively manner
- (ac) DPO process is effectively utilized
- (pm) Percentage of Alternate Process resolutions that meet timeliness goals
- (pm) Percentage of personnel who have received initial & refresher SCWE training
- (ac) SCWE assessments/surveys are conducted regularly
- (pm) Number of contractor & DOE allegations of chilling effect
- (ac) Motive is never ascribed to an employee raising an issue
- (pm) Number and type of concerns raised to Alternate Processes and DOE
- (pm) Number of Harassment, Intimidation, Retaliation, and Discrimination (HIRD) allegations
- (pm) Annual number of substantiated HIRD allegations
- (ac) Effectiveness of corrective actions to HIRD concerns

Organizational Learning Focus Area
- (pm) Average age and number of open simulator discrepancies
- (pm) Number of engineering backlogs
- (pm) Percentage of important to safety systems that contain temporary modifications
- (pm) Number unplanned LCO entries
- (pm) Number of repeat equipment failures in maintenance important to safety systems
- (pm) Ratio of corrective maintenance versus preventive maintenance
- (pm) Percentage of risk significant equipment that is assessed periodically (e.g., system health reports)
- (pm) Percentage of operating experience reports completed on time by department
- (pm) Percentage of Operational Experience evaluations that result in safety improvements or corrective actions
- (pm) Number of condition reports written to review systems and procedures against Operational Experience
- (pm) Number of departmental/cross functional self-assessments performed each year
- (pm) Number of repeat findings in self-assessments
- (pm) Percentage of recommendations implemented as result of self-assessments
- (pm) Number of corrective action program backlog (by significance level) both evaluations and corrective actions
- (pm) Number and significance of repeat events
- (pm) Number of good practices and lessons learned identified from benchmarking activities that are internally communicated or selected for further action
- (pm) Number of work planning deficiencies entered into the CAP
- (pm) Percentage of pre-job reviews found unacceptable from quality assurance field observations
- (pm) Percentage of post job reviews which identify good practices and improvements for the job
- (pm) Number of root causes due to non conservative decision making
- (pm) Percentage of self identified SCAQs and CAQs versus those that are self-revealing or identified by external organization
- (pm) Percentage of events that are the result of violations (including administrative violations)