EFCOG/DOE
Safety Culture Task Team
Abstract

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ISMS has had a significant positive impact on overall improvement within the DOE complex since its introduction in the mid 1990's. However, just as each organization is expected to live up to the ISMS principles of continuous improvement, periodic ISMS revitalization is necessary to account for new industry information and lessons learned; it is a never ending journey.

The EFCOG ISMS/QA Working Group is responsible for ISMS as a functional area. In 2007, the Working Group identified an ISMS improvement opportunity that would involve increased emphasis on ISMS safety culture aspects. The Department of Energy (DOE) had also identified safety culture improvement as an ISMS priority in this same time frame. As a result, a joint EFCOG/DOE sponsored ISMS Safety Culture Task Team (The Team) was formed to address this issue. Based on review of external operating experience and internal DOE complex performance data, a compelling case exists for applying safety culture characteristics across the complex in order to provide a significant positive impact to overall mission performance and safety. The Team identified three safety culture focus areas and corresponding ISMS related attributes, assessment methods, and improvement tools that could be used by DOE, NNSA, and their contractors.

The Team consists of a diverse group of senior leaders representing major DOE and NNSA contractors, subject matter experts, external industry experts, and DOE and NNSA personnel. (Further reference to DOE and NNSA will be identified as DOE) The goal of this effort is to achieve an improved complex wide ISMS by focusing on specific ISMS related safety culture attributes which would have the most impact on improved mission performance. This effort builds on operating experience from similar industries such as the domestic and international commercial nuclear industry, OSHA, the oil and gas industry, chemical industry, and high reliability organizations.

Based on extensive operating experience, certain culture elements have been shown to have a significant influence on overall operational and safety performance in various industries. Formal reviews of every recent major event have identified safety culture elements as significant factors in the events. Example events with major cultural dimensions include the TMI accident, Chernobyl accident, Davis Besse head corrosion, Challenger and Columbia space shuttle events, and the British Petroleum Texas City explosion. These and other events prompted the development of various safety culture models reviewed by the Task Team.

The International Atomic Energy Agency (IAEA) developed a safety culture maturity model that illustrates the stages that an organization goes though in striving to achieve a mature and healthy safety culture. This model is also discussed in the DOE ISM Manual. The model is relevant because a given organization will likely be at various stages of culture development. It is important to have some recognition of where the organization is in the process and where additional emphasis would add the most benefit. An organization with a healthy and mature safety culture will have adopted the principle of continuous improvement and applied the concept to safety performance. There would be a strong emphasis on communications, training, management style, and improving

efficiency and effectiveness. At this stage, strong safety leadership is evident along with a personal commitment and engagement in safety by each individual in the organization. At this stage, the organization seeks full participation of managers and workers in pursuit of continuous improvement in both safety and reliability; it is a learning organization.

The Team identified three ISMS Safety Culture Focus Areas and Associated Attributes that would have the most impact on improving ISMS, safety performance, and production performance within the DOE complex. ISMS Safety Culture Focus Areas and Associated Attributes identified by The Team were:

- 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

Using these Focus Areas and Attributes, the following process is suggested by The Team for an organization to assess and improve their safety culture:

1. Review the Safety Culture Focus Areas and Attributes.
2. Assess their organization against these Safety Culture Focus Areas and Attributes to identify specific improvement targets and associated behavior expectations.
3. Apply a variety of tools to address improvement targets identified through assessments and develop competence in desired behaviors through training, coaching, and practicing.
4. Reinforce the new behaviors and underlying values by achieving improved performance and recognition.

The Team developed documents for use by EFCOG members that addresses safety culture assessment and tools to improve safety culture and facilitate this process:

- ISMS Improvement Process Overview
- Assessing Safety Culture
- Tools to Improve Safety Culture
- References

The material prepared by The Team is intended for elective use by DOE contractors over a one-year evaluation period. The one-year evaluation period will provide an opportunity to collect field experience, share information and collect success stories and lessons learned, All comments and feedback collected over the evaluation period will be evaluated for inclusion in the final set of recommendations.