

Integrated Safety Management System Safety Culture Improvement Initiative

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INTRODUCTION

In 2007, the Department of Energy (DOE) identified safety culture as one of their top Integrated Safety Management System (ISMS) related priorities. A team was formed to address this issue. The team identified a consensus set of safety culture principles, along with implementation practices that could be used by DOE, NNSA, and their contractors. Documented improvement tools were identified and communicated to contractors participating in a year long pilot project. After a year, lessons learned will be collected and a path forward determined.

ISMS SAFETY CULTURE IMPROVEMENT PROCESS

Improvement Team

The goal of this effort was to achieve improved safety and mission performance through ISMS continuous improvement. The focus of ISMS improvement was safety culture improvement building on operating experience from similar industries such as the domestic and international commercial nuclear and chemical industry.

The Energy Facility Contractors Group (EFCOG) ISMS Working Group voluntarily formed a joint DOE/EFCOG sponsored ISMS Safety Culture Task Team (The Team) to address this issue. The Team consisted of a diverse group of senior leaders and subject matter experts representing major DOE contractors, and DOE representatives, including participants from NASA and the Institute of Nuclear Power Operations.

The Team vision was for DOE and its contractors to be leaders in achieving ISM excellence including safe, reliable performance and a strong safety culture. Through ISMS, the principles and attributes of a strong safety culture are communicated, understood, embraced, and continually reinforced. As a result, mission critical parameters show continuous improvement.

In order to better characterize safety culture in terms of its relationship to DOE activities, the Team developed the following definition: "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."

Case for Improvement

Industry experience is the primary driver that has identified safety culture as an important element in overall performance improvement. The main points of the case for change are:

- ISMS has been an effective process for improving overall performance
- Weaknesses in safety culture have led to major industry events
- Some major events occurred following a prolonged period of "improved" safety performance similar to what has been experienced across the DOE complex
- There is a correlation between cultural maturity and organizational performance
- There is a strong positive correlation between mission and safety performance
- DOE data identifies culture elements as significant aspects of recent operational incidents

Proactive response by contractors provides opportunity for stronger ownership of improvement and less need for regulation. EFCOG provides a forum for contractors to collaborate and take action to strengthen safety culture. The team believes that voluntary, proactive pursuit of excellence is preferable to regulatory approaches to address safety culture. However, the team noted that based on the current stage of regulatory attention on safety culture, in the absence of action by contractors, DOE may have no alternative but to proceed to add requirements to regulate this area.

RESULTS

Safety Culture Focus Areas and Associated Attributes

The following focus areas and attributes were identified by The Team. The DOE ISMS Manual (reference 1) contained most of the attributes so no changes to the program were pursued by The Team. The Team attributes attempt to define clear behaviors and visible actions as opposed to attitudes or philosophies that would be difficult to observe and assess. These attributes were tied to existing DOE ISMS guiding principles and safety culture elements. The Team did not attempt to define precise wording for these attributes, instead using

what already existed in Reference 1. Safety Culture Focus Areas and Associated Attributes identified are:

- 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

Safety Culture Focused Improvement Activities

Contractors and DOE management are responsible for establishing and maintaining an effective ISMS. A safety culture will not improve without additional efforts by management. Therefore, management has responsibility and discretion in the way they manage a safety culture at a particular facility. As with processes for problem identification and resolution, the choice of tools and their usefulness will depend on several factors, including the size of the contractor and the complexity and hazards of work activities.

The following process is suggested by The Team for each organization to assess their safety culture:

1. Review the Safety Culture Focus Areas and Attributes.
2. Review the ISM Guiding Principles and Supplemental Safety Culture Elements identified in Reference 2.
3. Assess the Safety Culture Focus Areas and Attributes.

REFERENCES

1. Department of Energy, "Integrated Safety Management System Manual," DOE M 450.4-1 (2006).