Best Practice #181

Best Practice Title: Safety Culture Monitoring Process/Panel

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Brief Description of Best Practice:

The purpose of this document is to provide a framework for an organization to monitor their safety* culture on a continuous and real-time basis. This best practice is intended to provide one means of accomplishing periodic safety culture monitoring, but should not be viewed as the only way. This framework is described in NEI 09-07 (Fostering a Strong Nuclear Safety Culture), and in the results of a special EFCOG and DOE sponsored working group meeting, which occurred in Washington, DC, in June of 2015.

A healthy safety culture is an integral aspect of an effective ISM system. DOE's commitment to a healthy safety culture is expressed in DOE P 450.4A. Because an organization's safety culture evolves over time, it is important to review various culture indicators on a periodic basis, identify improvement opportunities, and take action to strengthen the culture. Personnel and organizational changes, budget challenges, handling of emergent issues, and day-to-day organizational dynamics can have an impact on what is viewed as important and can influence the behaviors of employees and the collective culture of an organization.

There are many data sources available that may provide insight into an organizations' safety culture which can be characterized as the collective response of the organization to its work environment. Examples include performance indicators, culture assessments, culture surveys, DOE inspection reports, corrective action program, employee concerns program, quality assurance audits and quality control inspections, self-assessments, benchmarking, and workforce issues.

*For the purposes of this document, the term "safety" is intended to meet the broad ISMS definition of safety, including but not limited to chemical, physical, biological, ergonomic, environmental, nuclear, electrical, and transportation.

Why the best practice was used:

A significant, complex-wide effort to improve safety culture has been underway for years. As a result of benchmarking and sharing of lessons learned around the DOE complex, a best practice was identified to monitor safety culture on an ongoing basis.

What are the benefits of the best practice?

There is a significant amount of research which identifies a correlation between safety culture and events. The ability to proactively identify cultural issues before they become a factor in a significant organizational event would have great benefit to an organization. Although culture cannot be measured directly, there are organizational aspects, attributes, behaviors, and conditions which can be used to provide indicators of safety cultural issues. These are made evident in process weaknesses, discovered through audits, self-assessments, or inspections. Similarly, the attitudes and behaviors of personnel, which are indicators of culture, can be assessed through surveys, interviews and behavioral observations. Because of the key role of leadership in forming an organization's culture, it is essential that the senior leadership team employ tools and take effective action if opportunities for improvement are evident.

What problems/issues were associated with the best practice?

There are common misunderstandings about the meaning of safety culture and how leadership should respond to negative safety culture traits. If an organization's safety culture is a function of the collective response of the organization to its work environment, then any undesirable indicators

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of the safety culture indicate areas of the work environment that need improving. It is important for an organizations' review panel to have a common understanding of safety culture, key safety culture attributes and how it can be assessed, and how the culture can be strengthened.

How the success of the Best Practice was measured:

The primary sources of success associated with this best practice are the experiences communicated by multiple participants in the EFCOG June 2015 workshop, and positive input received on use of NEI 09-07 relative to using a knowledgeable safety culture monitoring process to evaluate organizational data and surmise the state of the organization's culture. In general, identification of cultural issues allows management to proactively address the issues.

Description of process experience using the Best Practice:

This Best Practice makes a significant contribution to ISMS because it provides a proactive approach to identify organizational behavioral issues which could become culture factors leading to potential future events. By providing an opportunity to identify and correct those deficiencies, future unwanted events could be avoided.

The following are some example experiences shared by June 2015 meeting participants on monitoring culture on an ongoing basis:

- Safety Culture Monitoring Panels are commonly used.

- Metrics are used as an input, but not to measure culture since it is not an exact science.

- Although there is one ISMS model, there were numerous cultural models in use around the complex, i.e. Performance culture, INPO, NRC, DOE, OSHA, WANO, IAEA, HSE, high reliability organizations, organizational culture, nuclear safety culture, etc. While this may not be an issue at a particular facility, the numerous cultural models makes it difficult for organizations to work together in this area.

- Not all safety culture traits are created equal; the big two are leadership behavior and communications.

- There is a need for clarification regarding the role of DOE site offices with respect to safety culture.

- Change management is a common attribute not included in ISMS model, but has been seen as a cultural issue at some facilities.

- An outward focus is important to strengthening culture.

- Don't automatically assume that everyone shares the same definition.

- It is important to align everyone (particularly managers) to a single definition of "safety culture" through communication and training.

- Communication is the tide that raises all boats.

- There must be an execution plan to go with the vision.

Additional Information:

EFCOG Safety Culture June 2015 Workshop Summary

General

It is difficult to measure culture because values, assumptions, and beliefs are not directly observable. However, multiple data sources can be collectively monitored to provide a more accurate picture of the current state of culture. A safety culture monitoring process similar to the model described in NEI 09-07 has been useful at many sites serving as a focal point in driving

organizational culture improvements. An organizations' focus should be on strengthening culture using a continuous improvement approach. Complacency is a dangerous mindset when culture improvement is the desired result.

Safety Culture Monitoring Panel (SCMP)

A significant factor in successfully monitoring an organization's safety culture is the establishment of a knowledgeable panel (Safety Culture Monitoring Panel (SCMP)) to collect and interpret the various sources of information noted earlier (Figure 1).
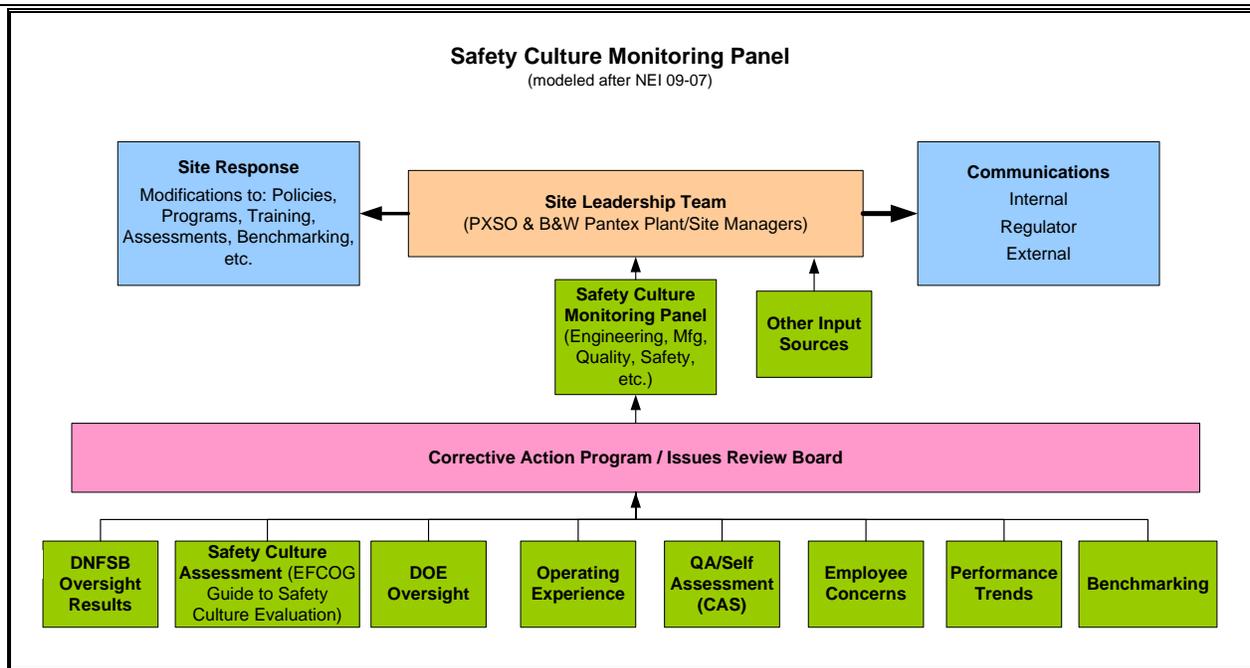
Safety Culture Monitoring Panel
(modeled after NEI 09-07)

Site Response
Modifications to: Policies, Programs, Training, Assessments, Benchmarking, etc.

Site Leadership Team
(PXSO & B&W Pantex Plant/Site Managers)

Communications
Internal
Regulator
External

Safety Culture Monitoring Panel
(Engineering, Mfg, Quality, Safety, etc.)

Other Input Sources

Corrective Action Program / Issues Review Board

| **DNFSB Oversight Results** | **Safety Culture Assessment** (EFCOG Guide to Safety Culture Evaluation) | **DOE Oversight** | **Operating Experience** | **QA/Self Assessment (CAS)** | **Employee Concerns** | **Performance Trends** | **Benchmarking** |

Figure 1 Safety Culture Monitoring Process (as adopted for DOE from NEI 09-07)

The SCMP is responsible for monitoring process inputs for potential trends, deteriorating conditions, and project issues which may be early indicators of latent weaknesses, performance gaps, or error precursors in the Safety Culture; and for reporting results to the organization's leadership. Key inputs collectively demonstrate the capability of the organization to self-identify, self-report, and resolve problems project wide. The SCMP identifies organizational behaviors and practices, inhibiting as well as fostering a strong Safety Culture. It reviews progress in the institution and the use of issues management processes and contractor assurance system program elements, feedback identified in external reports, including U.S. Department of Energy (DOE) assessments, corporate, and industry evaluations. The SCMP monitors and makes recommendations related to issues identified through cultural surveys and external assessments, appropriately capturing and effectively addressing them. The SCMP tracks progress of these actions for timeliness and effectiveness.

A model used to monitor culture, derived from Nuclear Energy Institute NEI 09-07, was introduced by multiple presenters. The objective of the model was to identify types and sources of quantitative and qualitative information to be reviewed collectively as an indication of the health of a facility's Safety Culture. This includes metrics and data to be used, with emphasis on Safety Culture related issues and those documented conditions identified in the issues management program. Added emphasis is placed on periodic assessments or evaluations conducted by internal or external groups, along with feedback from the customer and contractor corporate reviews, to

ensure compliance with the Safety Culture policy, procedures, and management expectations. Example inputs to the SCMP (Figure 1) are:

- Safety culture survey

- Safety culture assessment

- Quality assurance/self-assessment/benchmarking/behavioral

- Observation programs

- External evaluations

- Industry evaluations

- Operating experience

- Corrective action program/issues management

- Employee concerns program

- Performance trends

Surveys

Surveys are just one of many inputs to determining an organizations overall cultural health. Internal surveys provide value, but broader independent organizational surveys are needed at some frequency. Some participants used rolling surveys. This survey would evaluate a percentage of the workforce each month, so that a timely sampling of employee perceptions could occur rather than waiting for an annual or biennial survey to occur.

Assessments

Both internal and external assessments can be used to identify cultural issues, regardless of the subject of the assessment. Specific cultural assessments would have direct input to this process. The newly revised EFCOG guidance on safety culture self-assessment provides a useful technique for conducting a discreet, one point-in-time cultural self-assessment.

External Evaluations

Seeking external feedback is essential to making lasting improvements and guarding against complacency. Any organization has "blind spots"; no organization should "go it alone" when evaluating culture. Complacency can result in the normalization of deviance from documented performance standards. For example, an organization which prioritizes production at the expense of safety can lead to an erosion of following established safety practices which, in time, then becomes acceptable practice. Benchmarking and use of external experts from outside the organization are necessary steps to help organizations more accurately determine cultural health and associated actions.

Benchmarking

Benchmarking is a useful process to compare organizational attributes to a recognized external industry leader. The purpose for benchmarking should be clearly identified rather than benchmarking for the sake of benchmarking.

Issues Management Process

The issue management process may contain a wealth of data that can be reviewed to provide insights into cultural health. Causal analysis results may be sorted to identify prevalent cultural issues, for example, failure to hold employees accountable to performance standards. Issue

resolution timeliness data can indicate management ownership of the issues management system, effective corrective actions, number of issues identified, and worker involvement.

Additional Inputs for Monitoring Cultural Health

The following list identifies example activities which can be monitored to determine where an organization is on its journey to excellence:

- Time to resolve issues raised (regardless of the type of issue)
- Ratio of severe to minor issues that are being raised
- Tracking suggestions for improvements
- Schedule slip for performing internal self-assessments
- "Noteworthy" practices identified by assessments, compared to deficiencies or weaknesses
- Effective leading indicators look for missing or degraded barriers (negative) and evidence that people are demonstrating proactive thinking (positive)
- Leadership accountability
- Survey participation can be a leading indicator as it demonstrates willingness to engage
- Communications (the messages, the frequency, the effectiveness, etc.)
- A "demand" for external review and feedback
- Sustained conviction to the objective
- Wariness of complacency
- Count/celebrate successes
- Institutionalized organizational culture traits and desired behaviors into Oversight and Contractor Assurance System plans and activities
- Employee engagement and ownership of the objective(s)
- Predictive Actions (vice reactive actions)
- Common language/definitions/terms/understanding
- Management of change, including the impacts and affect to the workforce
- Start with the "why" (this is what we do…) – can't fix the what if you don't know the why
- "Appropriate" engagement and awareness by the DOE Field/Site/Operations Office – includes the Feds managing internally the "this is MY program/area of concern/interest" syndrome of a myopic point of view
- Address the interfaces (e.g., manager to worker, trainer to worker, facility to worker, Fed to M&O, etc.)
- Assure mission enablement demonstrated "intelligent compliance"
- Resilience and adaptability. It can be difficult to develop good leading indicators, where lagging indicators such as recordable injuries tend to be more standardized and can be compared across sites more easily.
- Some organizations recognize strong performance by making donations to a charitable organization in the recipient's name. The subject of reinforcing desired behavior is an area that could benefit from further review by EFCOG.

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Related Issues from the Workshop

Consistent Culture Model and Terminology

The need for agreement on one definition and model of "safety" culture for the DOE complex was evident in the workshop. Comments from the commercial industry representative noted that it was important for the commercial nuclear industry to have a common language and model for consistency, to allow efficient sharing of resources on assessments, and more effective discussions with peers at industry meetings as examples. There were differences noted in the workshop on the scope and definition of "safety" versus "organizational" culture. Other terms were introduced at the workshop including just culture, performance culture, high reliability organizations, safety conscious work environment, nuclear safety culture, and nuclear safety quality culture. More collaboration among contractors and DOE is needed to come to agreement on the ISMS model as a broad model more closely linked to organizational culture, or changes made to reach agreement.

ISMS and Safety Culture

Solutions need to be systemic on organizational culture and not narrowly focused on (industrial) safety. The intent of ISMS culture model is to address the larger organizational culture perspective rather than a narrow industrial safety perspective. While there was general agreement that organizational culture was where the focus on culture should be, discussion was not conclusive that ISMS offered an equivalent structure. Safety culture needs to be put into the context of ISMS and we should be talking about ISM versus a separate entity.

Integration of Safety Culture Attributes Into Existing Processes

Some organizations have embedded the safety culture aspects into their existing processes so another new program was not needed.

The Need for a Graded Approach to Improving Culture

Because of factors such as project size, budget, and mission, the need for a graded approach to improving culture is needed, although there is still a need to identify common cultural "threads" across the complex. It is important to remember that there is no "one size fits all" solution when addressing safety culture or any type of culture.

Impact of Local Culture

Local culture plays a big part in addressing how to make improvements. Leadership attributes will be prioritized based on the locale-specific characteristics, so leaders will likely model varying behaviors from site to site based on history.