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Assuring an Adequate Safety Culture

Kenneth Arnold
Senior Technical Advisor
WorleyParsons

EcoNomics

Outline

- ▶ What do we mean by "Culture of Safety"
- ▶ Why do we need an improved Culture of Safety
- ▶ How do we accomplish a Culture of Safety
- ▶ How do we assess that we have an adequate Culture of Safety
- ▶ What are the roles of the Operator and the Regulator
- ▶ Conclusions and References

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What is a Culture of Safety?

► A culture is a set of "shared values and beliefs that interact with an organization's structures and control systems to produce behavioral norms." B. Uttal

► In a Culture of Safety the norms promote safety

► Traits of a Good Culture of Safety (see National Academies Report):
  - Leadership communication
  - Problem identification and resolution
  - Acceptance of personal accountability
  - Planning and control of work processes
  - Continuous learning
  - Freedom to raise concerns

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Why Do We Need an Improved Culture of Safety?

► Heinrich's Theory of Accident Prevention(1931):

- Safety in industry is depicted as a triangle
- Direct relationship between low consequence incidents (e.g. LTI, doctor cases, small spills) and fatalities
- Reducing low consequence incidents reduces the number of fatalities
- Addressing the root cause of low consequence incidents will reduce fatalities

► Industry data shows this may be true for certain types of accidents but not for others (see SPE 156847):

- Although KPIs for low consequence incidents have declined in recent years, fatality rates have more or less stabilized
- There is no correlation between MMS Safety Awards and future fatality rates or very, very rare/very high consequence events (e.g. Macondo)

► Both the President's Commission on Offshore Drilling and the NAE Macondo Blowout Reports

- Sweeping reforms required for fundamental transformation of industry's safety culture

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Accomplishing a Culture of Safety

► From an organizational perspective there must be:

- Mechanisms Establishing Structure and Control - specify what is needed and check that it is being done

- Actions Establishing Safety Norms - encourage the application of Safety Culture traits

► From an individual perspective there must be:

- Mechanisms Establishing Competency – knowledge of the structure, control and norms, and ability to perform

- Actions Establishing Motivation - showing that individuals actually act in accordance with behavioral norms

Does Implementing a Safety and Environmental Management System (SEMS) Accomplish a Safety Culture

▶ A properly functioning SEMS addresses the "mechanism" elements necessary to create a culture of safety

- Organization – a structure and system of controls
- Individual – training and competency

▶ SEMS does not address the "action" elements

- Organization – actions establishing behavioral norms
- Individual – actions proving motivation

▶ SEMS is a "necessary" but not "sufficient" element in creating a culture of safety

Setting Company Behavioral Norms and Encouraging Individual Motivation

▶ The job of the leadership of the company
- Not just Board, CEO, Asset Manager, etc.
- Leadership is every supervisor

▶ Does not happen by:
- Statements from the CEO and Human Resources
- Postings in company internal and external communications
- Punishing or rewarding individuals for KPIs or INCs
- Safety minutes prior to meetings

▶ Does happen by:
- Thousands of individual actions by leadership at all levels

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Assessing the Mechanism Aspects (SEMS Compliance)

► Assessing mechanism aspects is possible with a pass-fail inspection

- Does it exist on paper
- Does it cover all required elements
- Does it cover the elements in sufficient detail
- Is there proper documentation

► SEMS compliance assesses the mechanisms aspects but not the action aspects (norms and motivation) necessary for a culture of safety

Assessing the Action Aspects

▶ Assessing Action Aspects requires an analysis of:

- Is SEMS understood by all
- Is it utilized as designed
- Do the norms and motivations actually exist

▶ Requires onsite observations, knowledgeable evaluators and subjective judgment

- It cannot be pass-fail
- There will always be room for improvement

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Role of the Operator

▶ Establish cultural norms and promote behaviors
- SPE Technical Section on Human Factors, Summit Paper, "The Human Factor, Process Safety and Culture", 2012

▶ Independent internal audits to assess where improvements can be made:
- Risk based
- Trained and certified auditors
- Team with required expertise and knowledge of operations
- Management engagement with closeout

▶ An audit which does not find something which can be improved concerning action aspects is not a good audit
- Implementation of numerous and complex human actions over time is never perfect.
- When it comes to human implementation of a safety system, no news is not good news.

Role of BSEE - Objectives

► Issuing INCs for lack of procedures and documentation leads to attitude of "compliance equals safety" and does NOT influence behavior

- The goal becomes, "What do I have to do to pass an inspection?"
- Fear of punishment does not normally affect basic attitudes

► Help industry move from a "compliance attitude" toward a culture of safety

- Utilize a pass-fail compliance and punishment mode (PINC Lists) for inspection of specific regulations (e.g. set pressures of safety devices, timing and results of specified tests)
- Utilize a more collaborative approach in auditing SEMS to assess the level of safety culture and encourage improvements

Role of BSEE – Holistic Approach (TRB 309)

► Inspections:
- Presence on OCS
- INCs for those items which lend themselves to pass-fail
- Observations on how SEMS is being utilized

► Audits:
- Review operators SEMS audit plans
  - Risk based
  - Qualifications of teams
  - Close out reports
- Perform BSEE initiated audits

► Whistleblower System

► Disseminate information

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Conclusions

▶ Lord Cullen: "The operating staff had no commitment to working to the written procedure; and … the procedure was knowingly and flagrantly disregarded".

▶ If we are going to make a step change in safety it is NOT through increased documentation, testing and punishment

▶ A change in safety requires a change in attitudes and actions on the part of both management and worker

▶ Both the Operator and BSEE have a role to play in making this happen.

References

- ▶ National Academy of Engineering and National Research Council, "Macondo Well Deepwater Horizon Blowout", 2012:
  - Need for Safety Culture: Recommendation 5.5

- ▶ "National Commission on the BP Deepwater Horizon Oil Spill and Offshore Drilling, Report to the President", 2011:
  - Need for Safety Culture: Chapter 8

- ▶ Transportation Research Board of the National Academies, Report 309, "Evaluating the Effectiveness of Offshore Safety and Environmental Management Systems", 2012
  - Definition of Safety Culture and Role of SEMS: Chapter 2
  - Role of BSEE: Chapter 5

- ▶ SPE 156847, "Stepping Out of the Triangle and Into the Field", 2012
  - Limitations of Heinrich Triangle

- ▶ SPE Technical Section on Human Factors, Summit Paper, "The Human Factor, Process Safety and Culture", 2012
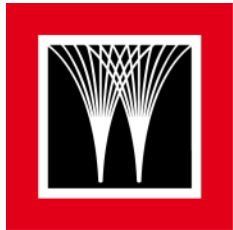 - Establishing a Culture of Safety

Contact Information

Kenneth E. (Ken) Arnold

WorleyParsons

ken.arnold@worleyparsons.com

+1-713-332-3205