
PSM 1910, API RP 75, SEMS, USCG SMS and the Next Generation Workforce

In the US, the high risk Oil & Gas industry often uses “Training” as the all-purpose tool to help ensure the capability of the operations front line. Unfortunately, the assessment of those who complete this training has been inconsistent, insufficient, and sometimes incomplete. If these methods have been acceptable for so many years, what has changed?

One of the primary incentives for change is the “retiring” workforce that continues to create a growing gap within the knowledge and experience levels from the operations front lines all the way through supervision and management. Baby boomers are leaving the industry and are taking their knowledge and capability with them. The larger companies have realized this, and over the last decade, have worked to implement several processes and systems, most notably, competency management systems (CMS). These systems help ensure the capability of their front lines and support the capture and retention of the critical knowledge and skills of their retiring workforce. Several “Major” operators have also established “Academies” and “Universities” within their organizations in an effort to maintain the necessary level of capability within their engineering and drilling ranks.

34.4M
Total job vacancies this decade related to Baby Boomers leaving the workforce without enough skilled replacements.
(The U.S. Bureau of Labor Statistics)
– Rigzone, March 2014

In the high risk environment of oil and gas operations, the operations front line is often the last layer of protection to prevent an incident. Think for a moment what can happen (and has happened) when someone “gets it wrong” in the operation of a facility or asset.

In this day of “social media”, tragic events are reported in real time and companies come under almost immediate scrutiny, criticism, speculation, and condemnation. Few would choose for their company to undergo this trial-by-media that follows a tragic event, in which recovery can threaten the survival of even the largest organizations.

65%

Percentage of 18-29 year olds citing the Internet as their main news source.

–Pew Research Center

Given such dire prospects, why would any company risk not taking action? Why is there still resistance within the industry to proactively apply proven systems and tools and wait until an incident occurs? Unlike a company facing media and public scrutiny for an incident, companies that take action can reap the benefits of a strengthened brand image. Recognition for organizing and implementing proven systems and for having the forethought to lead with innovation is a much better position for any competitive company.

A New Era Post-Macondo

In April 2010, the Macondo oil spill began a new chapter in governmental oversight of offshore operations in the Gulf of Mexico (GoM). As a result of the investigation findings, the U.S. issued its first “Safety Case” regulation, the Safety and Environmental Management System (SEMS). The SEMS regulation was issued under the management and control of the Bureau of Safety & Environmental Enforcement (BSEE), which has regulatory oversight for the GoM region. BSEE regulators spent considerable time with operators in the UK North Sea and with the UK Health & Safety Executives group to learn about the changes in their regulatory requirements following the 1988 Piper Alpha Incident in the North Sea, which killed 167 men.

As a result of the Lord Cullen Report on the Piper Alpha Incident, the UK adopted the “Safety Case” requirements for their occupational workers that have been in place over the last 25+ yrs. The results of these changes speak for themselves.

In 2012/2013, the UK Fatal Injury rate was 0.44 per 100,000 workers where the comparable US Fatal Injury rate during the same period was 3.40 per 100,000 workers; a difference of 4478 more workers still alive and working in the UK. (UK HSE 2012/13 report / US Dept of Labor)

In contrast to the approach taken in the UK following Piper Alpha, the Minerals Management Services (MMS), now BSEE, implemented the API RP75 recommended practice for offshore operations in 1994. This guideline was based on the OSHA PSM regulation (10CFR 1910.119) issued in 1992 for shore-based facilities. However, only 7% of the GoM operators reportedly tried to implement the guideline since adoption offshore was voluntary.



After Macondo, BSEE added two additional elements to the 11 main elements of API RP75 for operations and included these in the SEMS I revision. Under the latest SEMS II revision, four other requirements have been added regarding “control of work.” BSEE requires that the “Leasee” or “Operator” implement SEMS. While contractors are currently not required to maintain an independent SEMS program, the regulation allows for a “bridging” document between the operator and contractor working in the GoM. BSEE is currently considering making SEMS mandatory for all Contractors in the GoM.

+4478

Estimated Number of UK workers lives saved compared to Fatal Injury Rates in the US.

-UK HSE 2012/13 report ,
US Dept of Labor

Just as BSEE is looking to expand the applicability of SEMS to contractors, the United States Coast Guard is moving to adopt the API RP75 guideline as a Safety Management System (SMS) for all vessels under 200 gross tons in the Outer Continental Shelf (OCS). The Coast Guard recently held public forums for the Marine industry working in the Oil & Gas sector in the OCS, and the SMS rule is now being written in Washington, DC. It is expected that Marine vessels in this class will be required to implement this new SMS for their operations.

Understanding the Implications of PSM 1910, API RP75, SEMS, and the New USCG SMS

These regulations and guidelines require organizations to develop a program or system that incorporates all the elements required by the respective regulation. They also state that the governing oversight groups will then audit the companies according to the system they have developed in compliance with the elements of the regulation.

These regulations and guidelines share the common purpose to help remove risk from the operational front line. It is the responsibility of senior Oil & Gas executives to ensure that personnel in leadership roles have the tools and support required to safely maintain the integrity of the operations.

Table 1, on the next page, compares the requirements of each regulation.

Table 1: Regulatory Comparison

PSM 1910 (Enforced 1992)	API RP75 (Enforced 1994)	SEMS II (Enforced 2011)	New USCG SMS (Expected end of 2015)
Process Safety Information	Safety and Environmental Information	Safety and Environmental Information	Safety and Environmental Information
Process Hazards Analysis	Hazards Analysis	Hazards Analysis	Hazards Analysis
Management of Change	Management of Change	Management of Change	Management of Change
Operating Procedures	Operating Procedures	Operating Procedures	Operating Procedures
Employee Participation		Document Employee Participation in SEMS Development	
	Safe Work Practices	Safe Work Practices	Safe Work Practices
Training	Training	Training	Training
Pre-start up Safety Review	Pre-Start up Review	Pre-Start up Review	Pre-start up Review
Mechanical Integrity	Quality and Mechanical Integrity of Critical Equipment	Quality Assurance and Mechanical Integrity	Quality and Mechanical Integrity of Critical Equipment
Incident Investigation	Investigation of Incidents	Incident Investigation	Investigation of Incidents
Compliance Audits	Audit of SEMP Elements	SEMS Element Audit Mandatory Third-Party Audits	Audit of SEMP Elements
Emergency Planning & Response	Emergency Response & Control	Emergency Response & Control	Emergency Response & Control
	Documentation and Record Keeping	Documentation and Record Keeping	Documentation and Record Keeping
Contractors Hot Work Permits Trade Secrets <i>(NOTE: Executive Order 13650 was issued on Aug.1, 2013 with proposed changes to PSM 1910)</i>		General Management Program Principles Provides all workers with stop work authority Formal Approval of all Job Safety Analyses (JSA) Designation of Individual Having “Ultimate Work Authority” Guidelines to Report Unsafe Working Conditions	

The Challenges Ahead for the Next Generation

Although there have been improvements over time, the industry is now facing a new set of challenges with an ever widening gap created by those retiring from the workforce. As the next generation enters the workforce, it is even more critical that there are tools and systems in place to support their learning, development, and performance on the job. Training on its own will no longer be enough. We will need to train, coach, and continually assess new workers to ensure that they understand the “how” and “why” of the tasks they are asked to do in their jobs each day. We will also need to assess them in the workplace to confirm that they can perform under different conditions and in a variety of situations. They will need to demonstrate their competence to the applicable standard, not to one individual’s subjective judgement.

Where will your company be in the next 25 years? How will you get there? Do you know? Companies that will remain competitive and safe over the next generation are those that support their people in a variety of ways – from development and coaching to reward and recognition. These are the organizations that recognize that people are the foundation for success, not just the Oil & Gas industry, but in all industries.



An even greater challenge than meeting the requirements of new regulations will be ensuring that industry operators and contractors work together to agree on a consistent and standardized approach to implement changes. Together, they need to standardize training, so that requirements are consistent from operator to operator. Contractors struggle to just keep up with the different training requirements, plans and processes necessary to move from one job site to the next. In addition, there is currently no standard benchmark for contractor groups to ensure that

the knowledge, skills, and competencies of their staff are consistently measured among providers or that re-training requirements were consistently maintained. Added to these challenges, the cost burden of compliance continues to grow because of the difficulty in meeting the varying plans for each operator.

Capability Solutions

The solution requires a collective industry agreement that more than traditional classroom or “on-the-job” training is needed. Effective training can and does result in the development of job-related knowledge and understanding. However, companies need to also implement competency management systems and assess their people in the operations front line. One method gaining popularity is to re-employ and train retired workers as qualified coaches and assessors, so they can pass on their knowledge and understanding to the next generation. Their contribution can then leave a legacy in a safer and more reliable workplace than when they first started some 30+ years ago.

Competence Management Systems (CMS) have been used throughout the Nuclear Industry, Space Industry, and the Oil & Gas industry for decades. A CMS is designed and built based on a company’s requirements to provide a practical and systematic approach to develop the knowledge and skills of their operations. The figure below shows the main components of an effective CMS.

Components of a CMS



The intent of a CMS is to help ensure that individuals can demonstrate their knowledge and understanding and the skills required to perform a specific job task to a recognized and agreed-to standard. A comprehensive CMS provides measurable, documented, and auditable information on the capability of the workforce and gives management insight into gaps or deficiencies so they can adjust the process or program to close these gaps.

While documentation and standard processes are critical elements of a CMS, the key to any CMS is the quality of the trained assessors used to assess and evaluate the operational workforce. Since they are the last line of assurance, Assessors must maintain the integrity of the CMS by strict adherence to the established standards used in the assessments.

Certainly Competence Management Systems support compliance with regulations and standards, but the ultimate goal of these processes is to ensure that:

- Employees are not put at risk of personal harm from the tasks they perform,
- Operators understand the “what and why” of their operations to avoid environmental mistakes, and
- Facility management operates with the highest level of safety and integrity.

If you don't already have a CMS, get one. You can't afford not to.

Daryl Brister is the President of Shea Capability & Compliance Solutions