

# MICEDD

## DEEPWATER DEVELOPMENT

28 - 30 March 2023 | Millennium Gloucester Hotel | London, UK

ORGANIZED BY



Quest Offshore

World Oil®

# Center for Offshore Safety (COS)

**Focus – Safety and Environmental Management Systems**

**Mission: Promote the highest level of safety for the U.S. offshore oil and gas industry.**

**COS will achieve operational excellence by:**

- **Enhancing and continually improving industry's safety and environmental performance**
- **Improving public confidence and trust in the oil and gas industry**
- **Increasing public awareness of industry's safety and environmental performance**
- **Fostering collaboration between industry, the government, and other stakeholders to develop and share good practices and learnings.**



# History



1988 – Piper Alpha

1997 – Step Change in Safety (UK)

- 1990 – National Resource Council’s Marine Board report
- 1993 – API RP 75, 1<sup>st</sup> edition
- 2000 – 30 CFR 250, Subpart O

2004 – API RP, 3<sup>rd</sup> edition published

- 2006 – Initial regulatory consideration of SEMS
- 2009 – MMS publishes NPRM

April 2010 – Deepwater Horizon/Macondo incident

Fall 2010 – BSEE published SEMS Final Rule

2011 – Formation of Center for Offshore Safety (U.S.)

- 2013 – BSEE publishes SEMS 2 rule
- 2013 – First round of SEMS audits

2015 – COS MOU with BSEE

- 2016 – Second round of SEMS audits
- 2016-2019 – 3<sup>rd</sup> round of SEMS audits

# BSEE, COS and API RP 75

## Bureau of Safety and Environmental Enforcement



- Incorporates API RP 75 3<sup>rd</sup> edition, 4 additional elements

*“You must develop, implement, and maintain a safety and environmental management system (SEMS) program. Your SEMS program must address the elements described in §250.1902, American Petroleum Institute’s Recommended Practice for Development of a Safety and Environmental Management Program for Offshore Operations and Facilities (API RP 75) (as incorporated by reference in §250.198), and other requirements as identified in this subpart.”*

- Includes references to COS documents:
  - COS-2-01, Auditor Qualification and Competence Requirements
  - COS-2-03, SEMS Auditing Requirements
  - CSO-2-04, Accreditation Requirements

# Safety and Environmental Management Systems (SEMS)

API Recommended Practice 75 3<sup>rd</sup> Edition, SEMS Elements

- General
- Safety and Environmental Information
- Hazards Analysis
- Management of Change
- Operating Procedures
- Safe Work Practices
- Training
- Mechanical Integrity
- Pre-Start Up Review
- Emergency Response and Control
- Incident Investigation
- Audit
- Records and Documentation



Reference BSEE 30 CFR 250,  
Subpart S (2010 & 2013)

SEMS II - 4 New Elements

- Stop Work Authority
- Ultimate Work Authority
- Employee Participation Program
- Reporting Unsafe Conditions



# Safety and Environmental Management System (SEMS)



SEMS provides a **systematic methodology** for companies to **identify and manage risks**

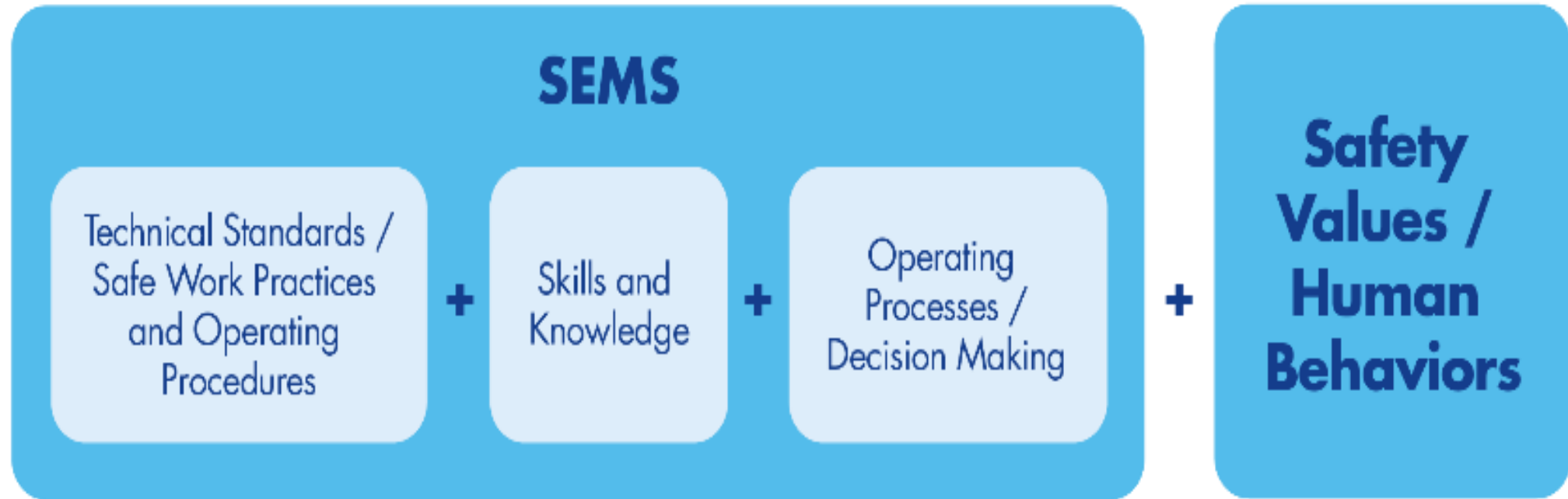


**Flexible** to account for evolutions in technology, operations, and knowledge to promote **continual improvement and proactive management** of risks



Performance based; **not intended to be prescriptive**. Allows flexibility for companies of varying facilities, operations and business models to achieve expectations in different, but effective ways.

# Safety and Environmental Management Systems (SEMS)



- The safety culture of an organization and its safety management system are closely related
- SEMS delivers Safe, Reliable Operations and Operational Integrity if Effectively Implemented

# COS Activities



**Accreditation Body (AB)**

- Audit Service Providers
- Recognized AB for BSEE
- SEMS Certificates



# Data Collection, Analysis, and Reporting

Safety Performance Indicators  
(SPI) Program

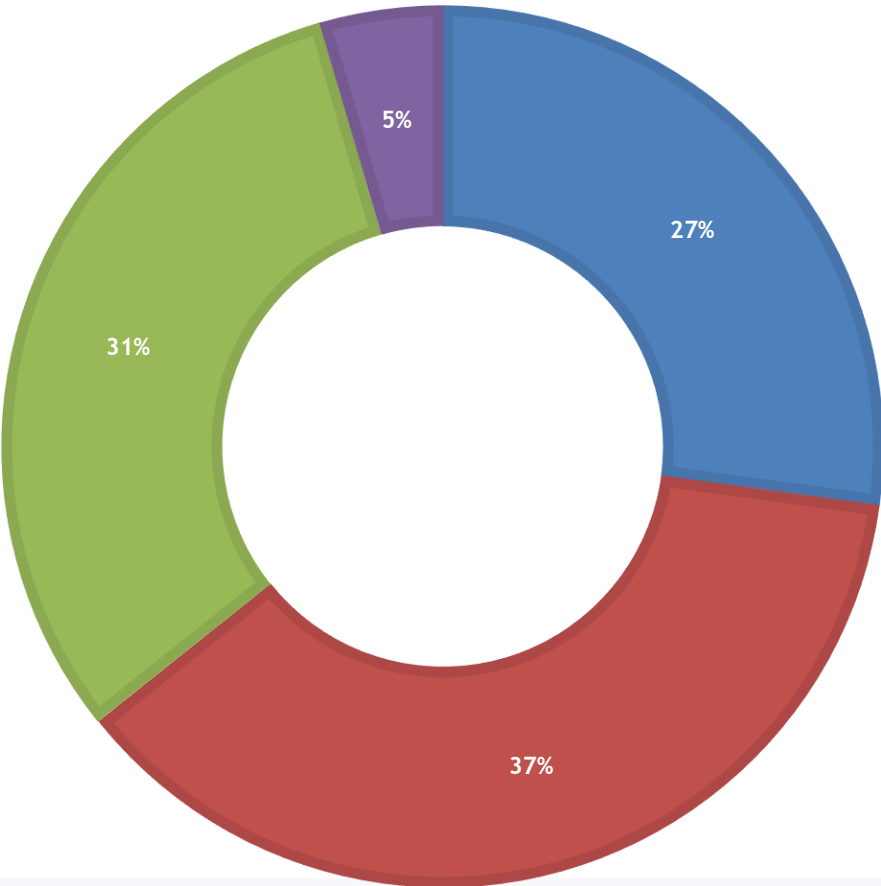
Learning from Incidents (LFI) and  
High Value Learning Events  
Program

# Areas for Improvement, 2017-2021

## *U.S. OCS based on Learning from Incidents (LFI)*

Top 5 AFI 2016-2020	2021	5-yr Avg
Operating Procedures or Safe Work Practices	37.2%	<b>50.1%</b>
Quality of Task Planning & Preparation	25.6%	<b>31.9%</b>
Process or Equipment Design or Layout	16.3%	<b>28.5%</b>
Quality of Task Execution	20.9	<b>28.1%</b>
Individual or Group Decision Making	11.6%	<b>24.4%</b>

# SEMS Audit Findings by SEMS Maturity Phase



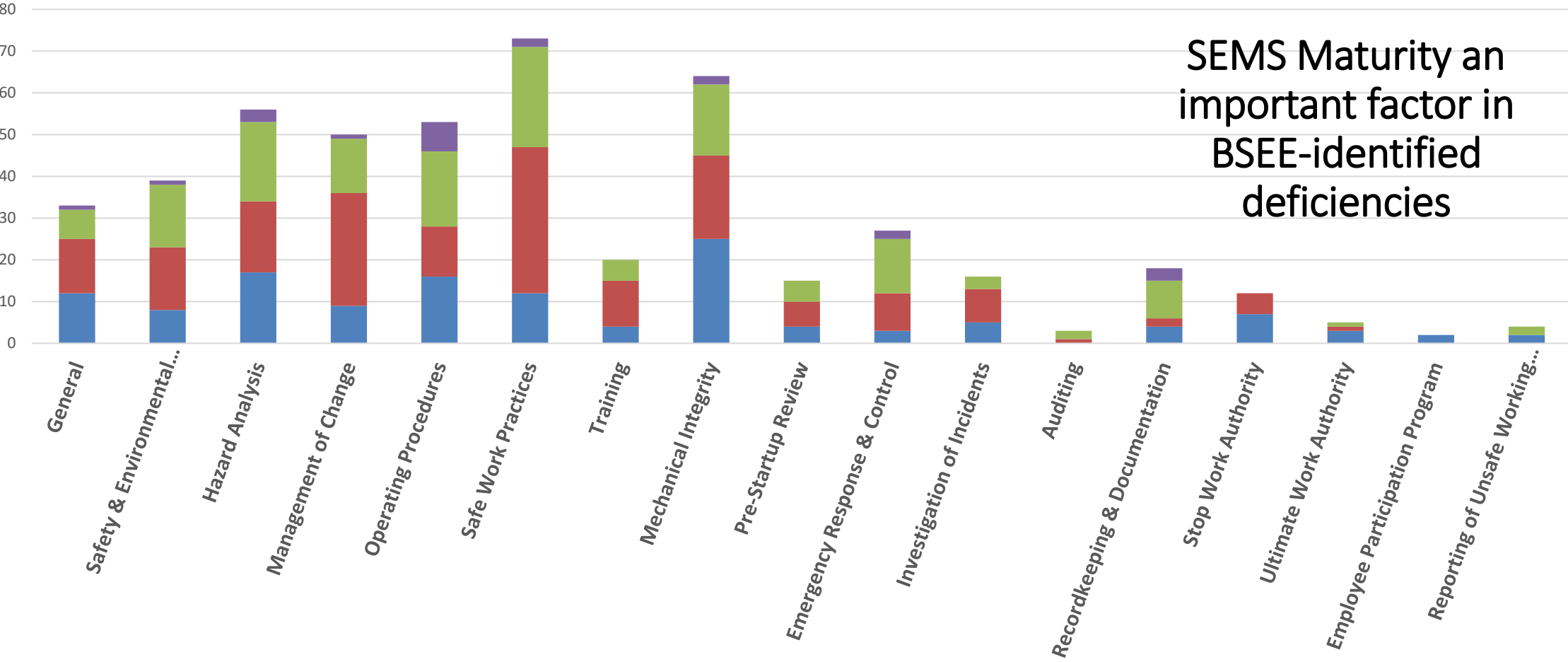
**Establish**  
*Do you say what you do?*

**Implement – part 1**  
*Do you do what you say?*

**Implement – part 2 (Document)**  
*Do you document what you do, update documents appropriately, and provide access to the right people?*

**Maintain**  
*Do you confirm your SEMS is working as designed and review and act when you say you will?*

# Audit Deficiencies by SEMS Maturity Phase per SEMS Element



Establish

Implement

Document

Maintain



# Good Practice & Safety Share Development

All documents available at no cost on COS Web Site



# How is COS data being used?



## COS SAFETY SHARE

### WHAT WILL WE DO TO PREVENT THIS FROM HAPPENING HERE?

#### DROPPED SPOOL DURING LIFT

**What happened?**  
Technicians were carrying out the task of changing an electric down line spool. The technicians rigged up the spool with one sling in order to lift up the spool and place it into the spooling cradle.

**What went wrong?**  
As the overhead crane operator lifted the spool to approximately four feet from the ground, the rigging slid on the spool causing the center of gravity to shift. The spool landed in the cradle at an angle.

**Why did it happen?**  
The work instruction did not specify the minimum number of slings, rigging configuration, or specific cradle to be used for a spool changeout. The work instruction was vague and, by not having specifics, left room for options.  
The technicians, including the task lead, had performed the task multiple times with the correct rigging configuration and cradle. The group made the decision to use what was at hand instead of retrieving a second sling and the correct cradle because it was convenient.

**What areas were identified for improvement?**  
The work instructions for spool product change outs have been updated to include specific rigging configuration requirements and cradle requirements, greatly limiting the ability to choose. The cradle that was used was determined to be too small for a majority of the inventory and has been discarded to prevent a technician from inadvertently using it. The risk assessment and JSEA were both updated to reflect potential hazards from improper rigging, including scenarios involving dropped objects.

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NOTICE: COS Safety Shares are based entirely on data/voluntary reports by US Operators and Contractors and you use it at your own risk. We do not warrant the accuracy of reported data and make no representation, warranty, either express or implied, or assume any liability with respect to the accuracy, completeness, or utility of the information contained therein. It is not undertaken to meet the duties of employees, manufacturers, or suppliers to warn and properly train and equip their employees or others exposed to health and safety risk.

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## COS-3-07

### GUIDANCE FOR THE DEVELOPMENT OF AN EFFECTIVE CRANE MAINTENANCE TRACKER (CMT)

JUNE 2021

- SEMS AUDIT & CERTIFICATES
- DATA COLLECTION, ANALYSIS & REPORTING
- GOOD PRACTICE DEVELOPMENT
- SHARING INDUSTRY KNOWLEDGE

CENTER FOR OFFSHORE SAFETY

# SEMS Audit Guidance & Good Practices

## Auditing SEMS

- COS-1-01 SEMS II Audit Protocol (Gap Analysis)
- COS-1-06 Audit Planning
- COS-1-07 Corrective Action Plan
- COS-1-08 Audit Report Format
- COS-1-09 Auditor Guidance
- COS-2-03 SEMS Auditing Requirements, 2<sup>nd</sup> edition
- COS-2-05 Requirements for COS SEMS Certificates

## SEMS Implementation

- COS-3-01 Leadership Site Engagement, 2<sup>nd</sup> edition
- COS-3-02 Skills & Knowledge Management, 2<sup>nd</sup> edition
- COS-3-03 SEMS Maturity Self-Assessment
- COS-3-04 Robust Safety Culture
- COS-3-06 Developing & Managing Procedures
- COS-3-07 Crane Maintenance Tracker
- COS-3-08 Verifying Existing Barriers

# Leaning Forward to Drive Industry Safety

## LEADERSHIP

- Improve coordination with trade associations and regulators
- Provide value to larger & smaller operators and contractors
- Site Engagements

## DATA

- Increase member value w/benchmarking and custom reports
- Highlight linkages to field operations, Expand lifting info
- Increase visibility and marketing of safety message

## SEMS

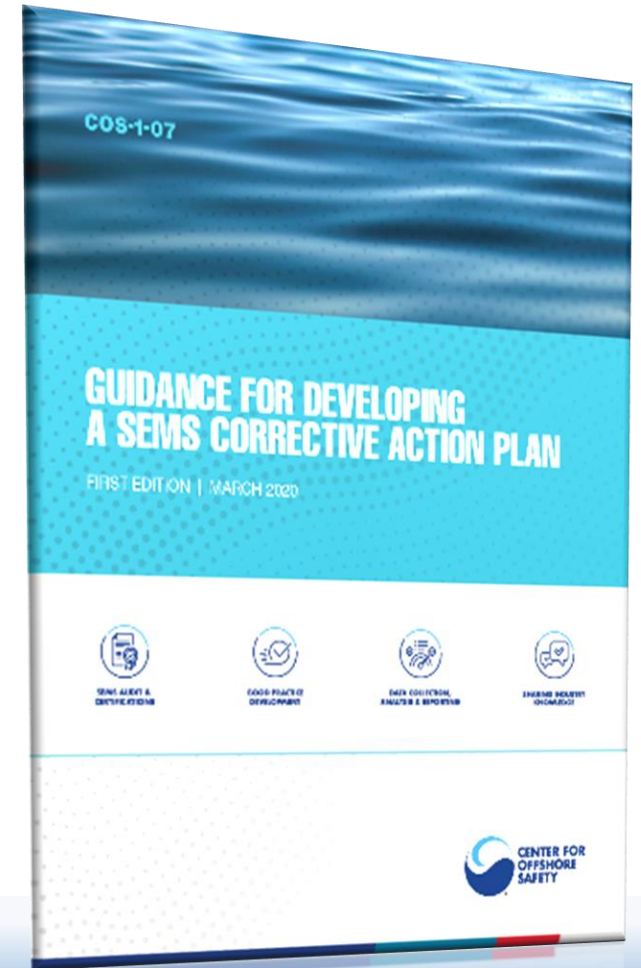
- Expand library of SEMS Good Practices:
  - Remote Audits, Fatigue Risk Management
  - 4<sup>th</sup> edition of API RP 75
- Extend reach of COS SEMS Certificates outside U.S.

# Documents nearing publication

- COS-1-09/RP 75 4th *Guidance for Conducting SEMS Audits*
- COS-1-10 *Guidance for Remote Audits*
- COS-3-05/RP 75, 4<sup>th</sup> edition *OOC/COS Guidance for SEMS Interface Agreements*
- COS-2-05 *Requirements for SEMS Audit Certificates with International Addendum*



# COS Audit Planning, Reporting, and CAP Guidance Documents for API RP 75 4<sup>th</sup> ed.





# Elements of a Safety and Environmental Management System (SEMS)

## API RP 75, 4<sup>th</sup> Edition

- Leadership
- SEMS Interface Management
- Risk Assessment & Risk Controls
- Procedures
- Safe Work Management & Safe Work Practices
- Knowledge & Skills
- Asset Design & Integrity
- Management of Change
- Pre-startup Review
- Emergency Preparedness & Response
- Investigating & Learning from Incidents
- Evaluation & Improvement of SEMS
- SEMS Information



## API RP 75 W



# Contact info

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