Outer Continental Shelf Training and Certification

Final Report Findings and Recommendations

Submitted to

The Bureau of Safety and Environmental Enforcement (BSEE)

Submitted by

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Executive Summary

The Bureau of Safety and Environmental Enforcement (BSEE) is responsible for the oversight of exploration, development, and production operations for oil and natural gas on the Outer Continental Shelf (OCS). BSEE's regulation and oversight of Federal offshore resources ensures that energy development on the OCS is done in a safe and environmentally responsible manner. The functions of BSEE include oil and gas permitting, facility inspections, regulations and standards development, safety research, data collection, technology assessments, field operations, incident investigation, environmental compliance and enforcement, oil spill prevention and readiness, oversight of production and development plans, and resource conservation efforts.[1]

This report includes the results of a review and analysis of current and proposed government training for the oil and gas industry, testing and certification programs and recommendations to BSEE about a formal industry driven training, testing and certification program.

The training and certification evaluation began with a Job Task Analysis (JTA) to establish a baseline for comparison of training programs. The primary goal of this JTA was to codify the subsea engineer, offshore crane operator/ rigger, and driller job occupations by determining the job accomplishments, major accomplishments, tasks, and steps of the Accomplished Performer (AP). Based on feedback from APs and Subject Matter Experts (SMEs), the driller position was added to review and assess duties. The results were then used to compare regulations and industry training and certification programs.

The results of the JTA were used to complete a comprehensive review, evaluation, and validation of the current American Petroleum Institute Rigger Procedures 2D API RP 2D, Sixth Edition, May 2007, Crane Operator/ Rigger and 30 CFR 250 Subpart S Regulations and Subpart O Regulations. Additional training and certification programs were reviewed to complete the analysis.

Safety and Environmental Management Systems (SEMS) regulations contained in Subpart S were compared and contrasted with the Well Control regulations in Subpart O to assess the similarities and gaps. Each Subpart was reviewed in its entirety. The primary focus was to identify which training requirements could potentially merge.

Subpart O provides specific guidelines and information about well control and production safety training, but Subpart S is a safety and environmental management program, which provides guidelines on how to develop a safety plan that includes operator safety training. There is a common purpose to both subparts: safe and clean operation, protection of environment and ensuring all personnel understand and can properly perform their duties in safe manner. A comparison of the gaps and overlaps is included in Appendix A: Review and Comparison of SEMS Subpart O and Subpart S. The ABSG team conducted a detailed comparison and identified the following general findings:

[1] Bureau of Safety and Environmental Enforcement, FY 2015 Budget Justification

- Subpart S training program requires the need to establish and monitor the safety training in all areas of the operation. It requires all personnel to be trained and to have the skills and knowledge to perform their assigned duties
- Subpart O and S are complementary insomuch as each subpart provides certain information about the development of safe operating procedures
- Each Subpart on its own lacks some important information outlined in the other subparts
- The training section in Subpart S is not as comprehensive as the training section in Subpart O with regard to well control and production training
- Subpart O describes how BSEE can assess training programs to ensure well control and production training are in compliance
- Subpart S does not specify BSEE's role and how it may conduct the testing of individuals and/or auditing of the program

API RP 2D provides the following general guidelines:

- Course delivery should be a combination of classroom and hands-on training
- Training facilities should contain the type of crane and equipment that is to be used in the field
- Assessments should be both written and practical

API RP 2D standards recommendations do not provide stringent specifications for the following:

- Position competencies based on level of training
- Types of instructional methodology utilized
- Instructional time and the amount of instructional time dedicated to practical application of concepts
- Qualifications for training instructors
- Class size
- Structure of training day
- Passing rate or score for assessments

In comparison to the more stringent recommendations provided by IADC, OPITO and IWCF, API RP 2D guidance contains more general guidelines that are intended as the lowest acceptable criteria. For example, while most accreditation systems require levels of expertise beyond introductory to be maintained every two years, API requires it every four years.

A comparison of training and certification programs against regulatory standards was conducted to identify gaps and to evaluate industry-driven training programs that could be endorsed by BSEE as model programs. The following accreditation systems and training programs were reviewed during the analysis:

- IADC WellCAP
- IADC RIGPASS
- OPITO
- IWCF

- Subsea Technician training programs
- Industry training programs of companies that work on the OCS (see Table 5)

Industry training and certification programs exceed the standards set by API RP 2D, Subparts O and S. For example, the Drilling Industry provides more comprehensive and specific guidance regarding all training. Certifying bodies provide strict guidance to industry for certification of their internal programs for accreditation. Within the Outer Continental Shelf, IADC is the primary organization that accredits and approves training programs. IADC has been proactive in establishing criteria for training. They have established core competencies and Knowledge, Skills, and Ability (KSAs) for job specialties and levels within each job specialty. Industry and accrediting organizations have also established working groups that include industry stakeholders and training specialists to continually update and refine job competencies and training requirements. Most companies that have internal programs are accredited by IADC or another similar organization. Companies that are not accredited, such as OEMs, have established training programs based upon specific equipment operation and maintenance requirements.

After a comprehensive analysis of 30 CFR 250 Subpart O and Subpart S, API RP 2D, and the industry training programs of 6 companies that work on the OCS (see Table 5), the following recommendations have been identified.

Recommendation 1:

BSEE should become an active participant in the IADC and other industry work groups that update and refine job competencies and training requirements. Areas of focus would include changes in training and accreditation requirements. In this way, BSEE would have a first-hand look at the upcoming changes and criteria with regard to any training element. This would allow BSEE to immediately identify any gaps in the regulatory guidance, make prompt recommendations for change and monitor the performance of industry training and certification programs.

Recommendation 2:

30 CFR 250 Subparts O and S should be merged into one document. There are areas within the current Subparts that require more specific direction as outlined in Appendix A: Review and Comparison of SEMS Subpart S and Subpart O. BSEE should include, at a minimum, program requirements included by IADC and other certification programs. Those include:

- Implementation of Programs
  - Use specific duties as identified by industry and IADC. These can be found on the IADC web site: **http://www.iadc-ksa.org/**
- Training
  - Utilize a combination of training methodologies including classroom, practical or simulation training, and On-the-Job-Training

Recommendation 3:

It is recommended that BSEE adopt competency-based definitions to be used to determine proficiency at a novice to intermediate level for assigned workers. Job positions requiring an advanced level of proficiency to perform job competencies are assessed at an intermediate level.

The standards for competency would include:

Novice: Performer has the level of experience gained in a classroom and/or experimental scenarios or as a trainee on-the-job. Performer is expected to need help when performing this skill and should be supervised at all times.

- Focus on developing through on-the-job experience;
- Performer understands and can discuss terminology, concepts, principles, and issues related to this competency;
- Performer utilizes the full range of reference and resource materials in this competency.

Intermediate: Performer is able to successfully complete tasks in this competency as requested. Help from an expert may be required from time to time, but Performer can usually perform the skill independently.

- Focus on applying and enhancing knowledge or skill;
- Performer has applied this competency to situations occasionally while needing minimal guidance to perform successfully;
- Performer understands and can discuss the application and implications of changes to processes, policies, and procedures in this area.

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1 Introduction

The Bureau of Safety and Environmental Enforcement (BSEE) works to promote safety, protect the environment, and conserve resources offshore through vigorous regulatory oversight and enforcement in a variety of areas including safety management systems and personnel training requirements. BSEE oversees requirements associated with worker safety such as Safety and Environmental Management Systems (SEMS) 30 CFR Subpart S and lessee training requirements referred to as Subpart "O" Well-Control and Production Safety System Training.

This report presents the results of the evaluation of existing safety industry standards and documents, presents a comparison and gap analysis against both Subpart S and the API RP 75 standard, and makes recommendations for a formal industry-driven training, testing, and certification program that is easily implemented by BSEE's management and staff.

1.1 Background

On August 14, 2000, MMS published in the Federal Register (65 FR 49485) final regulations revising 30 CFR 250, Subpart O, Well Control and Production Safety Training. This requirement called for each lessee to prepare a training plan outlining the company's philosophy, including the type, method, length, frequency, and content of their training program. To implement this regulation, the agency used a series of performance measures to periodically assess the quality of lessee and contractor training programs including; audits, written tests, hands on tests and employee interviews. These Subpart O requirements are still in effect, but they are considered by both industry and BSEE to be part of the SEMS training element.

As MMS worked to develop and implement its training requirements after the publication of Subpart O in 2000; groups such as the American Petroleum Institute (API), International Well Control Forum (IWCF), Offshore Petroleum Industry Training Organization (OPITO), and International Association of Drilling Contractors (IADC) were also working in cooperation with the agency and on their own to build training programs and curriculums. One such example is the IADC WellCAP program which established a core training curriculum and employee skill elements that proved to be an effective way of training personnel around the world in drilling, well-completion, and well-workover well control. These training programs provide valuable training opportunities to OCS workers.

API Recommended Practice 2D, Operation and Maintenance of Offshore Cranes, Sixth Edition, May 2007, provides practical guidance for the safe operation, inspection, and maintenance of offshore cranes. This document, which is currently incorporated in BSEE regulations, outlines the necessary qualifications and minimum training requirements for crane operators and riggers which have contributed to safer lifting operations. However, crane incidents still continue on the OCS and the agency believes that a fresh evaluation of crane operator and rigger training requirements is needed to determine what improvements can be made in today's programs. The Seventh edition of API RP 2D will be evaluated for future incorporation with BSEE regulations.

1.2 Project Goal

The major goal of this project is to provide BSEE with the foundation for an industry driven training, testing, and certification program that has the potential to increase safety of personnel conducting work on the OCS. To achieve this goal, the ABSG team reviewed and analyzed current and proposed government and industry training, testing, and certification programs for crane operator/rigger, driller, and subsea engineering training programs.

2 Job Task Analysis

The ABSG team performed a Job Task Analysis (JTA) to establish a baseline for comparison of training programs. The primary goal of this JTA was to codify the subsea engineer and offshore crane operator/ rigger job occupations by determining the job accomplishments, major accomplishments, tasks, and steps of the Accomplished Performer (AP). Based on feedback from APs and Subject Matter Experts (SMEs), the driller position was added to review and assess duties. The results were then used to compare regulations and industry training and certification programs.

2.1 Methodology

The ABSG team conducted assessments and reviews of the job tasks/duties of technical positions for subsea engineers, offshore crane operator/riggers, and drillers (added) using a process and methodology that included continuous and in-depth research and assessment to conduct the JTA. Table 1 details how the ABSG Team completed Task 1 and Task 2 requirements.

Table 1: Tasks 1 and 2 Methodology

Step	Action
1	Develop the Data Collection Plan (DCP) that includes unit visit data collection dates
2	Conduct an extant data review of all policy, procedures, and equipment that impact the performances of the subsea engineers, offshore crane operator/riggers, and drillers
3	Submit an Initial Task List (ITL) for subsea engineers, offshore crane operator/riggers, and drillers derived from the extant data review to BSEE for review and approval
4	Validate and revise the ITL through interviews and observations (if authorized) of SMEs in the field as well as completing task analysis (e.g. task difficulty, importance, and frequency)
5	Enhance the analysis process by proactively preparing a list of round table discussion questions prior to Task Validation Meetings and other interviews. (These questions assist the analysts in identifying gaps in training, policy and procedures and leverages valuable time of the performers, allowing more detailed data to be collected up front in the process)
6	Develop and deliver recommendations for improving subsea engineers, offshore crane operators/riggers, and drillers performance
7	Submit an initial Assessment Report for each of the subsea engineers, offshore crane operators/riggers, and drillers positions, documenting every phase of the analysis, findings, and recommendations

The completed JTA for offshore crane operator/rigger, subsea engineer, and driller established a baseline for evaluation of training curriculum in the subsequent tasks identifying which critical skills must be addressed in training.

The ABSG team Data Collection Plan (DCP) provided the opportunity for ABSG and BSEE to jointly coordinate scheduling activities, and included the review of all the documents applicable to the subsea engineer, offshore crane operator/rigger, and driller positions, as well as any additional resources.

The objective of data collection was to establish a factual basis for codifying the job responsibilities and requirements for the subsea engineer, offshore crane operator, rigger, and driller job specialties, as well as the conditions under which work is performed.

Major data collection steps include:

- Develop a Data Collection Matrix to identify where and how to obtain the needed information for each question.
- Develop a detailed list of data resources.
- Identify Accomplished Performers (APs) and SME's.
- Identify extant data.
- Conduct an extant data review to develop a draft Hierarchy of Performance – the job specialties, job accomplishments, most critical actions, major accomplishments and tasks – for Government concurrence.
- Coordinate AP interviews.
- Coordinate site visit schedule.
- Coordinate time and location of AP focus group meeting.
- Conduct AP interviews to validate/correct extant data, and collect additional data required for the analysis.
- Coordinate SME/Program Manager data validation meeting.
- Conduct SME/Program Manager data validation meeting to review and comment on data prior to analysis.
- Conduct data analysis.

2.2 Extant Data Review

As part of the initial development of a draft Hierarchy of Performance, the ABSG team collected and conducted a review of multiple extant and external sources.

Table 2: List of Extant/External Sources

#	Sources	#	Sources
1	IADC WellCap Course Structure	15	IWCF Drilling Well Control Assessment
2	IADC WellCap Curriculum	16	IWCF Well Control Program
3	IADC WellCap Servicing Operations	17	IWCF Well Intervention Pressure Control
4	IADC WellCap Servicing Snubbing	18	IWCF Level 1 and 2 Syllabus
5	IADC WellCap Wireline Operations Fundamentals	19	ENERMECH Offshore Crane Operator Stage 1
6	OPITO Offshore Crane Operator Stage 1 Introductory Training	20	ENERMECH Offshore Crane Operator Stage 2
7	OPITO Offshore Crane Operator Stage 2 Competence Assessment	21	ENERMECH Offshore Crane Operator Stage 3
8	OPITO Offshore Crane Operator Stage 3	22	Chevron Handbook (Position Responsibilities)

#	Sources	#	Sources
	Competence Assessment		
9	IADC KSA Report Subsea	23	Drilling Rig Task Details and Performance Standards – Derrickhand. Canadian Association of Oilwell Drilling Contractors, Gulf Publishing Company, 1981
10	http://www.onetonline.org/link/details/47-5012.00#ToolsTechnology	24	Drilling Rig Task Details and Performance Standards – Driller. Canadian Association of Oilwell Drilling Contractors. Gulf Publishing Company, 1981
11	http://www.iadc.org/competence-assurance-accreditation-program/accredited-training-providers/	25	Drilling Rig Task Details and Performance Standards – Floorhand. Canadian Association of Oilwell Drilling Contractors. Gulf Publishing Company, 1981
12	Drilling Rig Task Details and Performance Standards – Motorhand. Canadian Association of Oilwell Drilling Contractors. Gulf Publishing Company, 1981	26	Drilling Rig Task Details and Performance Standards – Rig Manager. Canadian Association of Oilwell Drilling Contractors. Gulf Publishing Company, 1981
13	Servicing Rig Task Details and Performance Standards – Derrickhand. Canadian Association of Oilwell Drilling Contractors. Gulf Publishing Company, 1981	27	Servicing Rig Task Details and Performance Standards – Floorhand. Canadian Association of Oilwell Drilling Contractors. Gulf Publishing Company, 1981
14	Servicing Rig Task Details and Performance Standards – Rig Manager. Canadian Association of Oilwell Drilling Contractors. Gulf Publishing Company, 1981	28	Servicing Rig Task Details and Performance Standards – Rig Operator. Canadian Association of Oilwell Drilling Contractors. Gulf Publishing Company, 1981

Table 3: Job Descriptions

#	Job Specialty	#	Job Specialty
1	UK General Subsea Engineer	8	Stena Drilling Assistant Subsea Engineer
2	Company E Drilling Subsea Engineer	9	ONET Rigger Knowledge, Skills, & Abilities (3 documents)
3	(Undisclosed Company) Subsea Engineer	10	ONET Rigger Tasks
4	Industry/Company Subsea Engineer	11	NCCCO Rigger Level 1 & Level 2
5	OPITO Approved Standard Rigger Training (Stages 1 &2)	12	PMASUP305A Operate Offshore Cranes
6	OPITO Approved Standard Rigger Competence (Stages 3 &4)	13	OPITO Approved Standard Offshore Crane Stage 2 & 3 Competence Assessment Standard
7	OPITO Approved Standard Offshore Crane Stage 1 (introductory Training)		

Table 4: Industry Documentation

#	Job Specialty	#	Job Specialty
1	Crane Inspection Report	7	Rigger 1 Deck Coordinator
2	Crane Operator Deck Supervisor	8	Rigger II Roustabout
3	Crane Operator Stage 2 Competence Assessment	9	Driller II
4	Crane Tasks Force Final Report	10	Health and Safety Competencies
5	Tally Book	11	Subsea Specialist Responsibilities

#	Job Specialty	#	Job Specialty
6	Subsea Rotating Chief Responsibilities	12	Subsea Specialist General Job Description

2.3 Interviews

Accomplished Performer (AP) interviews were held to review Major Accomplishments (MAs), tasks, and steps derived from an extant data review. A list of APs and their respective companies are included in the table below.

Table 5: Accomplished Performers

Company	Type	Name	Specialty
Company A	Drilling Contractor	A-1	Industry Operations
		A-2	Learning and Development
		A-3	Subsea Training Representative
Company B	Accreditation Provider	B-1	Learning and Development
Company C	Operator	C-1	Engineering, Operations, Drilling, and Completion
		C-2	Senior Subsea Intervention Engineer
Company D	Equipment Production and Support	D-1	Learning and Development
Company E	Operator/Drilling Contractor	E-1	Industry Operations
Company F	Drilling Contractor	F-1	Industry Operations

2.4 Final Job Task Lists

The foundational step in the analysis process was to create a valid thorough task list that describes the tasks that the Driller, Crane Operator/Rigger, and Subsea Engineer must be able to perform correctly. Optimal performance for all the tasks performed is based on data collected through extant data review and interviews with APs and SMEs.

This section summarizes the task list and performance intervention results, and includes the following topics:

- Terms and Definitions
- Major Accomplishment (MA) and Task List
- Performance Support Options
- Performance Support Synopsis

Terms and Definitions

The task list has two components, major accomplishments and tasks.

Major accomplishments (MAs) are the results or outputs that make up a job. There are three types of MAs:

- **Normal** – The outputs are produced under routine circumstances and conditions, or are predictable and regular
- **Off-Normal** – The outputs are part of the job, but they are not as routine or predictable as normal accomplishments and are often produced when something unusual happens or goes wrong
- **Emergency** – The outputs are critical and happen under extreme or severe circumstances, and they generally imply devastating consequence of error and/or great speed

Tasks are the activities required to produce the MAs. To determine the type of performance support required (that is, job aids, training, or combination of both, or no support) each task is evaluated using the following criteria:

- **Speed** – Does the task need to be done within seconds or minutes of a stimulus, or is speed not a major factor when completing the task
- **Frequency** – Does the task take place hourly, daily, weekly, monthly, or unpredictably (which includes quarterly and annually)
- **Consequence of error** – If the task is not done properly, are the consequences to the job devastating, high, moderate, or low? This takes into account harm to people, economic damage, or impact on mission
- **Complexity** – How difficult is the task (high, moderate, low); for example, how many steps are required to complete this task? Do these steps require judgment or discernment

Major Accomplishment and Task Synopsis

The ABSG team determined that the Driller technical positions produce 5 normal major accomplishments (duties) comprised of 15 unique tasks.

Table 6: Driller

Code	Major Accomplishments	Number of Tasks
MA-A	Driller Ready to Execute Operations	5
MA-B	Communications to Crew	3
MA-C	Driller Prepared to Drill Surface Hole	3
MA-D	Intermediate and Main Holes Drilled	2
MA-E	Rig Shut Down	2
TOTAL		15

The ABSG team determined that the Crane Operator/Rigger technical positions produce 6 normal major accomplishments (duties) comprised of 22 unique tasks.

Table 7: Crane Operator/Rigger

Code	Major Accomplishments	Number of Tasks
MA-A	Equipment is Ready for Use	3
MA-B	Communications to Crew Member	3
MA-C	Lift Plan Ready for Implementation	4
MA-D	Crane Inspection Complete	3
MA-E	Load Transfer Complete	7
MA-F	Crane Shutdown Complete	2
TOTAL		22

The ABSG team determined that the Subsea Technician technical position produce 5 normal major accomplishments (duties) comprised of 15 unique tasks.

Table 8: Subsea Technician

Code	Major Accomplishments	Number of Tasks
MA-A	Preservation of Operational Integrity	4
MA-B	Equipment Maintenance Complete	4
MA-C	Operational Equipment After Testing	3
MA-D	Equipment Ready for Use	3
MA-E	Activity Records	2
TOTAL		15

Performance Support Options

Once all tasks had been identified, APs and SMEs provided ratings for each task based on four criteria: speed, frequency, consequence of error, and complexity. Based on these ratings, analysts determined the level of performance support needed for the task. The investigation of the data identified the tasks in need of skill and knowledge interventions as well as the most effective means to transfer the skill and knowledge back to the job.

There are four potential levels of performance support:

1. **Train to memory** – The performer must memorize all the steps involved in the task, and be able to recall that information when performing task

2. **Stand-alone job aid** – The information or steps required for completing the task are stored somewhere other than the learner's memory; the performer requires no training or additional support to use the job aid
3. **Job aid with introductory training** – The performer receives a job aid and an introduction about how and when to use it
4. **Job aid with extensive training** – The performer receives a job aid and training that fully practices using the job aid

Performance Support Synopsis

Task analysis revealed that 100% of the tasks require some form of performance support. The majority of the tasks for all three technical jobs (including the combined crane operator and rigger positions) analyzed required a job aid with extensive training.

Table 9: Driller – Performance Support Results

The Driller is responsible for the supervision, coordination, and safety of the drill crew and operations of drilling equipment. The driller is also responsible for the monitoring of the drilling fluids going in and coming out of the well and shutting in the well during well control operations and keeping the Operations Representative and Rig Supt. /OIM informed of all drill floor operations.

MA Code	Tasks	Train to Memory	Job Aid with Extensive Training	Job Aid with Introductory Training
MA-A	Plan Operations.	0	1	0
	Assign positions to crew.	1	0	0
	Conduct crew meetings.	1	0	0
	Manage operations.	0	1	0
	Supervise handling and loading of equipment for rig up.	0	1	0
MA-B	Supervise crew on drill operations.	0	1	0
	Provide corrective feedback.	0	1	0
	Train crew.	0	1	0
MA-C	Run and cement casing.	0	1	0
	Drill out.	0	1	0
	Rig up spud.	0	0	1
MA-D	Adhere to safety and operator's procedures.	0	1	0

MA Code	Tasks	Train to Memory	Job Aid with Extensive Training	Job Aid with Introductory Training
	Drill holes.	0	1	0
MA-E	Maintain equipment.	0	1	0
	Complete tour book.	1	0	0
Totals		3	11	1

Table 10: Crane Operator/Rigger – Performance Support Results

The Crane Operator operates cranes on the rig used to move equipment, containers, supplies, and other materials such as supply vessels and crew boats needed on the rig. The Crane Operator is also responsible for training crews and supervising crane operations. The Rigger assists the Crane Operator in rigging, equipment inspection and maintenance. The Rigger also provides training to new crew members.

MA Code	Tasks	Train to Memory	Job Aid with Extensive Training
MA-A	Organize crane in storage area.	0	1
	Perform housekeeping on crane.	0	1
	Complete maintenance on equipment.	0	1
MA-B	Supervise crew members on lift operations.	0	1
	Provide corrective feedback.	0	1
	Train crew.	0	1
MA-C	Define lift requirements.	0	1
	Complete verbal planning of routine lift.	0	1
	Document critical lift plan.	0	1
	Organize rig equipment.	1	0
	Complete rig-up procedures.	0	1
MA-D	Perform pre-use inspection of rigging and lift points.	0	1
	Complete a thorough inspection of wire rope slings.	0	1
	Complete pre-start checks.	0	1

MA Code	Tasks	Train to Memory	Job Aid with Extensive Training
MA-E	Conduct start-up procedures.	0	1
	Communicate lift plan to crew members.	0	1
	Implement safety measures.	0	1
	Operate crane to lift loads.	0	1
	Execute deck-to-deck lifting.	0	1
	Execute backloading of cargo.	0	1
	Respond to malfunctions and alarms.	0	1
MA-F	Conduct shut down procedures.	0	1
	Maintain logs.	0	1
Totals		1	21

Table 11: Subsea Technician – Performance Support Results

Subsea Technicians/Specialists are responsible for BOP testing, routine maintenance, documentation management, assisting with troubleshooting procedure and end of well maintenance. Subsea technicians operate and maintain BOP and all associated equipment that is used for drilling. Subsea technicians typically move up from another position on the rig and have five to six years of experience.

MA Code	Tasks	Train to Memory	Job Aid with Extensive Training
MA-A	Demonstrate safe work practices.	1	0
	Deliver effective control of work.	1	0
	Apply safety measures at job site.	0	1
	Perform Lockout-Tagout (LOTO).	0	1
MA-B	Remain current on job-specific competencies.	0	1
	Perform preventative maintenance (PM) on equipment.	0	1
	Inspect equipment for operational capability.	0	1
	Perform corrective maintenance on equipment.	0	1
MA-C	Test Blowout Preventer (BOP)	0	1
	Conduct Riser Efficiency test.	0	1

MA Code	Tasks	Train to Memory	Job Aid with Extensive Training
MA-D	Perform daily check-up of equipment.	0	1
	Perform daily check on fluids.	0	1
	Order equipment.	0	1
MA-E	Record data into logs.	0	1
	Maintain test reports.	0	1
Totals		2	13

The results of the Job Task Analysis were used to:

- Complete a comprehensive review, evaluation, and validation of the current API RP 2D, Operation and Maintenance of Offshore Cranes, Sixth Edition, May 2007, that addresses training and competences for Crane Operators and Riggers. Complete Subpart S and Subpart O Regulations recommendations to enhance regulations in 30 CFR 250.1500 and 1900
- Conduct a systematic review and evaluation of various training and certification programs to determine their validity and reliability to meet job performance requirements. These programs are as follows:
    - Subsea Training and Certification Programs
    - IADC WellCap Training and Certification Programs
    - IADC Rig PASS curriculum
    - OPITO training Programs and Guidance
    - IWCF training, Testing and Certification Program
    - Classification Society Training and Certification Program

3 Regulations Analysis

The ABSG team completed a systematic and comprehensive review of SEMS Subpart S and Subpart O. Subpart S is an overall Safety and Environmental Management Systems (SEMS) program which provides requirements on how to develop a comprehensive management plan which includes training elements. Subpart O provides information about the required regulations on well control and production safety system training.

The ABSG team compared and contrasted the training requirements in SEMS regulations contained in Subpart S with the Well Control and safety regulations in Subpart O to assess the similarities and gaps. Each Subpart was reviewed in its entirety with emphasis placed on identifying which training requirements could potentially merge.

3.1 Methodology

The ABSG team compared the 30 CFR 250 document on Subpart O Regulations and Subpart S Regulations to inform BSEE of the effectiveness of the two regulations.

The data sources used for the comparison:

30CFR 250 (Online Version Dated 9/26/14)

1- Subpart O, Well Control and Production Safety Systems Training
2- Subpart S, Safety and Environmental Management Systems (SEMS)

3.2 Analysis

3.2.1 Subpart O and Subpart S

The Code of Federal Regulation (CFR) Subpart O, 30 CFR **§** 250.1500, Well Control and Production Safety Training and Subpart S, 30 CFR **§** 250.1900, Safety and Environmental Management Systems (SEMS) were reviewed and analyzed to determine if training requirements or elements from these two regulations could be consolidated or merged together. The ABSG team focused on the training elements of both regulations and conducted a comprehensive review and assessment of each regulation and identified similarities or differences (gap analysis) between the two regulations.

In general, Subpart O provides specific guidelines and information about well control and production safety training, but Subpart S is a safety and environmental management program, which provides regulations on how to develop a safety management plan which includes a training element related to OCS safety management plan which includes a training element related to OCS safety. The Subpart S training program is one of the essential requirements, which enforces the need to establish and monitor the safety and environmental training in all areas of the operation. It requires all personnel to be trained and to have the skills and knowledge to perform their assigned duties.

Subpart O and S can be viewed as complementary given that each subpart provides certain information about the development of safe operating procedures. However, each Subpart on its own lacks some important information outlined in the other subpart. For example, Subpart O requires a specific training program related to well control (including, drilling, well-completion, well-workover, and well-servicing), but Subpart S does not. Subpart S does specify that BSEE may conduct an audit of the training program, but is not very specific with regard to how it may audit and what may be requested of those audited. It also often refers to well control too broadly. Subpart S does not include all the responsibilities or duties included in Subpart O. It is important to clarify and complete the daily operations as well as startup or shutdown procedures outlined in Subpart S in order to highlight the significant duties of offshore daily operation.

The training section in Subpart S is not as comprehensive as Subpart O; merging the two subparts will enhance the overall training program and requirements for OCS operators.

Subpart O also provides specific information about what BSEE may expect of the well control and production safety training program or how BSEE may audit or monitor the training program, but Subpart S does not specify BSEE's role or process of auditing. It does not explain how it may conduct the testing of the individuals or auditing of the program.

Training elements and other related information were organized and tabulated for comparison. Appendix A: Review and Comparison of SEMS Subpart O and Subpart S, provides a list of training elements pertaining to each subpart, identifying similarities/differences and recommendation for potential training elements that could be merged together. For the most part, actual training element descriptions are used to ensure no deviation or misinterpretations are introduced during this assessment. Observation and comments are provided in the Recommendation column.

3.2.2 Findings

Subpart S is an overall Safety and Environmental Management Systems (SEMS) program which provides requirements on how to develop a comprehensive management plan which includes training elements. Subpart O provides information about the required regulations on well control and production safety system training. There is a common purpose to both subparts: safe and clean operation, protection of environment and ensuring all personnel understand and can properly perform their duties in a safe manner. A comparison of the gaps and overlaps is included in Appendix A: Review and Comparison of SEMS Subpart O and Subpart S. The following general findings were identified by the ABSG team:

- Subpart S training elements requires the need to establish and monitor the safety training in all areas of the operation. It requires all personnel to be trained and to have the skills and knowledge to perform their assigned duties, however it excludes domestic services.
- Subpart O and S are complementary as each subpart provides certain information about the development of safe operating procedures.
- Each Subpart, on its own, lacks some important information outlined in the other subpart.
- Subpart S training section is not as comprehensive as Subpart O (as related to drilling, workover, well service, completion and production safety).
- Subpart O provides specific information about what BSEE may expect of the training program or how BSEE may audit or monitor the training program.
- Although Subpart S does specify that BSEE may conduct an audit of the training program, it is not very specific with regard to how it may audit, what may be requested of those audited, and how it will conduct testing of individuals.

Specific findings include:

- Definitions
    - Subpart S contains a more specific definition for "Contractor" and "Deepwater"
    - Subpart O contains a more specific definition for "Employee Personnel" and eight other definitions not included in Subpart S
- Program Goal
    - Subpart S encompasses the program goal requirements in Subpart O

- SEMS Inclusion Criteria
    - Subpart S provides guidelines for developing policies and procedures for safety plans, but information is very limited
- Implementation of Programs
    - Subpart S does not include specific duties listed in Subpart O
- Training Verification
    - Language in both Subparts is equivalent
- Training Provisions
    - Subpart S does not specify well control training
    - Subpart S does not include requirements for a training program
    - Subpart S does not include guidelines for documentation of training
    - Subpart S does not include requirement for training to recognize potential hazards or incident prevention
    - Subpart O does not include requirements for hazard identification
    - Subpart O does not include requirements for Standard Operating Procedure (SOP) training
    - Subpart O does not include requirements for Safe Work Practices
    - Subpart O does not include requirements for Mechanical Integrity training
    - Subpart O does not include requirements for emergency response training
- Employee Participation Plans (EPP)
    - Subpart O does not include requirements for EPP
    - Subpart S does not include a training plan for accessing EPP
- Unsafe Working Conditions
    - Subpart O does not include requirements for training on reporting unsafe working conditions
    - Subpart S does not include the training plan for reporting unsafe working conditions
- Training
    - Subpart S does not specify the types of training methodology that may be used
    - Subpart S does not include requirements for training sources
    - Regarding frequency of training, Subpart S does not include specific duties for well control
    - Subpart S does not specify when employees must be trained for well control duties
    - Subpart O does not include requirements for providing training as a result of a change in the program
- Program Assessment
    - Subpart O outlines program assessment best practices
    - Subpart O outlines the audit process in accordance in 250.1507
- Testing of Employees
    - Subpart S does not include requirements for specific/periodic training/testing of employees by BSEE
- Non-compliance

- Subpart S does not specify guidelines for non-compliance

Specific findings are included in Appendix A: Review and Comparison of Subpart O and SEMS Subpart S. The comparison table identifies gaps and overlaps found within the two Subparts.

3.2.3 API RP 2D

The American Petroleum Institute (API) is the only national trade association that represents all aspects of America's oil and natural gas industry and traces its beginning to World War I, when Congress and the domestic oil and natural gas industry worked together to help the war effort. In the United States, there are more than 10,000 companies identified as providing oil and natural gas services and supplies to the industry. API is involved with a wide variety of outreach activities and causes, from improving our local community to supporting charities that have global reach. API is dedicated to continuous efforts to improve the compatibility of their operations with the environment while economically developing energy resources and supplying high quality products and services to consumers.

3.2.4 Background:

API is a leader in the development of petroleum and petrochemical equipment and operating standards covering topics that range from drill bits to environmental protection. These embrace proven, sound engineering and operating practices and safe, interchangeable equipment and materials. Many have been incorporated into state and federal regulations and adopted by ISO for worldwide acceptance.

API also offers a program called API WorkSafe™ which includes a Service Station Contractor Safety qualification program that identifies contractor personnel who have passed a standardized examination covering the latest service station industry safety practices. The second program offered by API WorkSafe™ is for workers on an E&P Onshore Operations site. It provides training on key safety issues found at onshore job sites and includes an examination covering industry safety practices. API also offers Class ABC Operator training and testing. This new program provides state-specific training on regulations for underground storage tank operators.

API offers courses through API-U, the university that hosts the API sponsored training programs and provides continuing education for oil and gas professionals. While not an official degree or certification program, continuing education units (CEU's) are awarded at the conclusion of each course.

API makes recommendations to organizations providing training to Crane Operators, Crane Inspectors and Riggers as well as providing equipment and maintenance instruction for offshore cranes. API, as approved by the American National Standards Institute (ANSI), has developed a document, Procedures for Standards Development, AMERICAN PETROLEUM INSTITUE FORTH EDITION, ANSI Approved: September 2011; that details the process of API standards development. This document provides guidance on the development, revisions and interpretations API standards, as well as the development of committees and designation of each document into standards, recommended practices, specification or codes. API certification means that an individual has met all the requirements of a given certification program, including passing a professional test.

Within API RP 2D recommendations, instructors assist candidates in determining the correct size and type of rigging equipment required to safely perform onshore and offshore lifting operations to provide an understanding of the critical elements of rigging, lifting and moving loads and personnel safely in onshore and offshore environments.

Findings:

In comparison to the more stringent recommendations provided by IADC, OPITO and IWCF, API RP 2D guidance contains more general guidelines that are intended as minimum standards.

API RP 2D provides the following general guidelines:

- Course delivery should be a combination of classroom and hands-on training
- Training facilities should contain the type of crane and equipment that is to be used in the field
- Assessments should be both written and practical

API RP 2D recommendations do not provide stringent specifications for the following:

- Positions that should meet competencies for each level related to expertise (whereas most accreditation systems have at least three levels of certification)
- Types of instructional methodology that should be utilized as a best practice
- Amount of instructional time that practical experience must constitute and types of practical application that should be conducted and a ratio of hands on to lecture instruction
- Qualifications for training instructors
- Amount of instructional time required for training programs
- Length and schedule of training day and class size
- A passing rate for assessments

Most accreditation systems require levels of expertise beyond introductory to be maintained every two years while API requires it every four years as a base standard.

IADC and OPITO, however, specifically outline instructor qualifications based on the level of the course. Accreditation system assessment passing rates range from 70 (IADC) to 80 percent (OPITO) for trainees and up to 85 percent (IADC) for those pursuing an instructor qualification.

API RP 2D specifies that "Each Crane Owner, Qualified Crane Operator, Qualified Inspector, and Qualified Rigger is encouraged to follow [its] recommendation and to modify or supplement them with any practices or procedures which are more appropriate for the type and duty cycle—both past and future—of the crane, provided the minimum recommendations and the intent of the programs stated herein are met." API RP 2D is required to go through a review process every five years with a one-time extension of up to two years. The current publication, the sixth edition, was published in 2007. Accreditation systems have adopted a shorter review/reassessment process.

4 Training and Certification Analysis

The ABSG team compared training and certification programs against regulatory standards to identify gaps and to evaluate industry driven training programs to identify model programs that could be endorsed by BSEE. The following were reviewed during the analysis:

- IADC WellCAP
- IADC RIGPASS
- OPITO
- IWCF
- Subsea Technician training programs
- Industry training programs of companies that work on the OCS (see Table 5)

4.1 IADC

Since 1940, the International Association of Drilling Contractors (IADC) has exclusively represented the worldwide oil and gas drilling industry. Membership is open to any company involved in oil and gas exploration, drilling or production, well servicing, oilfield manufacturing or other Rig-site services.

IADC's contract-drilling members own most of the world's land and offshore drilling units that drill the vast majority of the wells producing the planet's oil and gas. IADC's membership also includes oil-and-gas producers, and manufacturers and suppliers of oilfield equipment and services. Through conferences, training seminars, print and electronic publications, and a comprehensive network of technical publications, IADC continually fosters education and communication within the upstream petroleum industry. There are approximately 2000 members in IADC. Ninety-eight percent of the offshore industry are members.

IADC holds consultative status at the International Maritime Organization and observer status at the International Seabed Authority. The Association is a leader in developing standards for industry training, notably its Well Control Accreditation Program (WellCAP) ® and Rig-floor orientation program, RIG PASS®, among others. IADC is headquartered in Houston and is one of the city's largest trade and professional associations. IADC also has offices in Washington D.C., the Netherlands, Thailand and the United Arab Emirates, as well as chapters in the UK, Venezuela, Brazil, Australasia, South Central Asia, Southeast Asia, West Africa, the Middle East and across the United States.

IADC's mission is to catalyze improved performance for the drilling industry. The projects and programs are developed *by the industry, for the industry.* IADC's committees, conferences and local chapters offer opportunities for individuals of member companies to connect collaborate and create new solutions in the operational, policy, and regulatory arenas.

IADC offers three types of membership:

- Contractor: reserved for contract-drilling or well-servicing firms
- Producer: open to all energy-producing companies
- Associate: available to manufacturers, suppliers, consultants, educators, oilfield-service firms and others with a professional or commercial interest in the upstream energy industry

IADC maintains a focus on educating, training, and assessing the Drilling Industry. Drawing on 70 years of experience in the industry, IADC operates specially designed accreditation programs that are recognized throughout the world. These programs have been developed to ensure that contents of critical training programs adhere to recognized industry standards.

IADC programs include but are not limited to:

- WellCAP®
- RigPASS ®
- Knowledge, Skill, and Ability (KSA) tool

WellCAP® provides building blocks for a well control culture through every level of an organization. WellCAP offers curriculum guidelines for a full array of drilling and workover activities. Accredited training providers must meet criteria for training materials, facilities, instructor qualifications, simulation exercises, test administration, and course management.

RigPASS® accredits Health, Safety, & Environmental (HSE) and Underbalanced Operations (UBO) orientation programs. The HSE RigPASS curriculum embraces safety fundamentals relevant to new Rig employees. UBO RigPASS familiarizes Rig crews with the procedures, fluids, and equipment associated with this emerging technology.

IADC also has a Knowledge, Skill, and Ability (KSA) tool for the Subsea Engineer (Technician), Crane Operator and Rigger and Driller. The purpose of IADC's KSA Competencies program is to "answer the need for globally accepted competency standards." The program began with 12 positions and has expanded to more than 70 positions. The KSAs are established as a minimum standard with accreditation and recertification every two years. KSAs are established via using industry working groups. The goal is to provide "competency benchmarks and provide a foundation of information for the industry to demonstrate the qualifications of their personnel."

Organizations must submit their process for defining competencies when applying for IADC accreditation. IADC defines competency as "the ability to perform a job properly, combining knowledge, skills, and behavior, as developed through training and experience."[2]

IADC has increased its focus to establish a process to grow instructors including Train the Trainer programs and built-in incentives. Currently, they are introducing a new initiative with a number of higher education and technical schools through the WADI – Workforce Attraction Development Initiative with a standardized curriculum including RIG PASS and in full compliance with standards.

[2] http://www.drillingcontractor.org/new-iadc-project-will-enhance-competency-guidelines-for-drilling-rig-personnel-16481

The goal of WADI is to support the successful selection and assignment of qualified workers in the oil and gas industry. The program seeks to unify the expertise of top industry professionals with the screening and training capabilities of educational entities. The incentives for the program include:

- The ability to expedite building a qualified pool of new employees
- Continuous improvement opportunities with current employees
- Centralized and verifiable records of employee training and credentialing
- Reduced cost to contractors through decreased employee turnover

4.1.1 IADC Rig PASS

The International Association of Drilling Contractors (IADC) accredits active service contractor orientation programs for new employees or employees that are new to a specific operation or area. The purpose of the accreditation system is to identify core elements for drilling and service contractors field employee orientation, and provide a means of recognizing continuing adherence to the core elements for service contractor field employee orientation programs through existing and innovative training techniques. All programs seeking IADC HSE Rig PASS accreditation must be found to be in compliance with all accreditation criteria.

To be accredited service contractors must meet the following general requirements:

- Submit evidence of adherence to the core elements
- Provide accurate and timely information for application and site visits processes
- Comply with all provisions contained within the accreditation criteria on an ongoing basis
- Report training records and program changes
- Respond promptly to any corrective actions issued following a site visit
- Provide applicable fees in a prompt and timely manner

Curriculum and Delivery of Training must meet the following requirements:

- Conform to the standard curriculum outline of the IADC HSE RigPASS Service Contractor Orientation Program
- Incorporate the additional topics uniquely relevant to qualify for “Offshore Endorsement”
- Each course must consist of the core topics plus a minimum of one endorsement
- Minimum time for instruction must be eight (8) hours; the core content must be delivered in no less than six (6) hours
- Instruction may be delivered via lecture, discussion, audio visual, one-on-one personal instruction, electronic, or other means. Evidence of appropriate resources to support the means of delivery must be provided

Suitable facilities and equipment must be available to support means of delivery and Instructor/Facilitator Qualifications should include:

- Industry experience (HSE or petroleum)
- Relevant teaching experience/educational background

- Training or on-the-job instructional experience
- A minimum of two (2) years of experience in any of the categories

Student Assessments must include one or both of the following:

- Dated checklist in which key elements are initialed by both employee and the person administering each point of the orientation
- Knowledge or skills test administered by the program
- Record of each student's assessment must be retained

The program will issue a certificate and an optional card of completion to each student upon successful completion of the course. Only training providers that have been awarded either full or conditional accreditation may issue these cards.

Each accredited program is responsible for managing administrative processes and maintaining continued adherence to the accreditation criteria and retaining records to document those processes. These include:

- Required Records – course registration, student training and assessment, Card of Completion, and class rosters
- Records of Retention – retained for a minimum of five (5) years
- Reporting to IADC – Issuance of Cards of Completion must be reported within 90 days
- Lost Card – May issue a new card but must report both the number of the lost card and the new issued card number to IADC

Quality Control measures include:

- Verification of student identity and control of any records retained are to remain confidential
- Monitoring of IADC program updates and assuring those updates are implemented
- Maintain security of tests, answer sheets, and required records
- Respond to non-conformities identified during site visits

Accreditation is granted for three (3) years. Programs are required to renew after period has ended.

A site visit is required at least once throughout the accreditation period by members of the accreditation audit team Rig PASS offers an 8-hour orientation with ongoing potential to expand as they remain fully compliant with standards.

Table 12: IADC Rig Pass Criteria

Criteria	IADC Rig PASS (Accreditation System)
Levels of Training	Core topics plus a minimum of one endorsement (Offshore/Land)
Course Delivery	Classroom, online or hybrid
Maximum students per instructor(theoretical)	None specified
Maximum students per	None specified

Criteria	IADC Rig PASS (Accreditation System)
simulator(practical)	
Instructor Qualifications	Yes
Instructional Time per day	8 hours minimum (6 must be core content)
Course hours	8 hours minimum
Instructional Methodology	May deliver instruction through lecture, discussion, and audio visual, one on one personal instruction, electronic or other means.
Practical Application/Simulation requirements	Not applicable
Assessment types	Dated initialed checklist and/or knowledge and skills student assessment.
Assessment Passing rate	70%
Final Exam Assessment Standards	Written
Certificate validity	Card of Completion. Each student successfully completing the course is issued a RigPASS card. The RigPASS card does not have an expiration date because it is a safety and orientation program. Only training providers that have been awarded either full or conditional accreditation may issue these cards.
Facilities	Designed for multiple forms of delivery including classroom, worksite, point of hire, point of transit, and electronic. Suitable facilities and equipment must be available to accommodate the chosen location and means of delivery.
Instructor Qualifications	IADC-approved instructor/facilitator qualifications include: Industry experience Relevant teaching experience/educational background Training or on-the-job instructional experience A minimum of 2 years experience in any one of the categories is required, with preferred qualifications including HSE or petroleum experience and either teaching experience. Evidence for satisfying these requirements must be provided at the time of application.

Rig PASS training is conducted by companies and training organizations accredited by IADC under the Rig PASS program. Presently there are more than 350 companies accredited to deliver the Rig PASS orientation in 31 countries.

Table 13: IADC Rig Pass Providers

Location	Number of Providers*
North America	261
South America	10
Europe	5
Africa/Middle East	40
Asia/Pacific	18
*Some training providers may have accreditation suspended or revoked.	

4.1.2 IADC WellCAP

The WellCAP® criteria for accreditation were developed, adapted, published, and promulgated by IADC members acting through the Well Control Committee, with the approval of the IADC Board of Directors. These criteria include curriculum standards, as well as specific standards and requirements for accreditation of well control training programs. All actions with respect to accreditation taken by IADC Accreditation and Certification Staff and the WellCAP® Review Panel is governed by the criteria for accreditation ("criteria") in force at the time an application for accreditation is submitted to IADC. The Well Control Committee and WellCAP® Review Panel periodically reevaluates the requirements of this program and will revise those requirements as circumstances dictate to ensure that they are reasonable and in the best interests of the public and the industry. When the committee proposes a substantive change to the criteria and operating procedures, institutions that are currently accredited have an opportunity to comment on the change before it is implemented. Upon official acceptance of the program change, IADC issues a bulletin about the change and gives affected persons and institutions a specified amount of time to incorporate the change into their programs (not to exceed six months).

The WellCAP program is currently under review following the Macondo Well Incident. The program is undergoing a new accreditation process integrating the OGP WEC 476[3] recommendations. Some of the key training recommendations are:

- Inclusion of barrier management and risk management in well control training
- Improvement of well influx detection and immediate response
- Adaptive training that better suits the well operation, rig type and role of the person involved with a well operation

[3] http://www.ogp.org.uk/pubs/476.pdf

- Introduction to specific levels of training for personnel that may contribute to the avoidance of, response to, or mitigation of a well control situation
- Evolution of scenario or simulator based training to complement existing training
- Improvements to the technical content of the training syllabuses
- Improvement of learning, examination and certification processes
- Adoption of a more systematic auditing process to ensure training goals are consistently achieved

There is an expectation for the WellCAP to move from three levels to five levels. The WellCap Review Panel first proposed this change in 2013. IADC is currently working to align their curriculum with this recommendation.

Table 14: IADC WellCAP Criteria

<table>
<tr><th>Criteria</th><th>IADC WellCAP (Accreditation System)</th></tr>
<tr><td>Levels of Training</td><td>3 (introductory, Fundamental, Supervisory)</td></tr>
<tr><td>Course Delivery</td><td>Classroom and simulator</td></tr>
<tr><td>Maximum students per instructor(theoretical)</td><td>18</td></tr>
<tr><td>Maximum students per simulator(practical)</td><td>6 (must be in groups of no more than 3)</td></tr>
<tr><td>Instructional Time per day</td><td>9 hours maximum (excluding assessments)</td></tr>
<tr><td>Course hours</td><td>
<table>
<tr><th>Dependent upon Course</th><th>Introductory</th><th>Fundamental or Supervisory</th></tr>
<tr><td>Drilling</td><td>8</td><td>20</td></tr>
<tr><td>Workover & Completion</td><td>8</td><td>20</td></tr>
<tr><td>Snubbing</td><td>–</td><td>20</td></tr>
<tr><td>Wireline</td><td>–</td><td>15</td></tr>
<tr><td>Coiled Tubing</td><td>_</td><td>20 (Fund)
36 (Superv.)</td></tr>
<tr><td>Underbalanced Drilling</td><td>_</td><td>12 (Fund)
20 (Superv.)</td></tr>
</table>
</td></tr>
<tr><td>Instructional Methodology</td><td>Combination of lecture, classroom exercise, audiovisual aids and simulation</td></tr>
<tr><td>Practical Application /Simulation requirements</td><td>Must constitute at least 30% of instructional time</td></tr>
<tr><td>Assessment types</td><td>Written and practical</td></tr>
<tr><td>Assessment Passing rate</td><td>70%; 85% for instructor qualification</td></tr>
<tr><td>Final Exam Assessment Standards</td><td>Closed book; 1.5 hours minimum for written, .5 hours minimum for practical</td></tr>
</table>

Criteria	IADC WellCAP (Accreditation System)
Certificate validity	2 years (Note: no expiration on introductory certificates)
Facilities	Facilities must provide floor plans including a sketch of classroom and simulator room layout. Space should be adequate for the number of students and simulators specified for the course(s).
Instructor Qualifications	85% on all prior examinations; delivered a minimum of 60 hours of lecture; 20 hours of simulation instruction at qualification level AND one of the following criteria: a Bachelor's degree and six months of drilling, production, or well service experience; two years field experience; two years as a certified instructor; or professional certification as a teacher with two years classroom experience.

The WellCAP program is based on the principle that proper training, emphasizing the knowledge and practical skills critical to successful well control, produces competent rig crews. Using quality benchmarks developed together with operators, drilling contractors, professional trainers and well control specialists, WellCAP ensures that well control training schools adhere to a core curriculum developed by industry. Accreditation is achieved only after an extensive review of a provider's curriculum, testing practices, faculty, facilities, and administrative procedures.

Full Accreditation may be granted to any program that meets the criteria in a satisfactory manner as evidenced by information available about the program and as confirmed by an initial site visit, or other documented evidence requested by the panel.

Conditional Accreditation may be granted to programs making initial application that meet the criteria, but for which a site visit has not yet been performed. The Panel may also grant Conditional Accreditation for a specific period in the case of a program which generally meets the criteria, but which the Panel feels some improvements may be required to optimize instruction. The Panel may rely on the program's history of operation and may request business or other references in awarding conditional accreditation.

Table 15: IADC WellCAP Providers

Location	Number of Providers*
USA/Canada	49
Europe	12
Latin America	42
Asia/Pacific	31
Middle East/Africa	34
*Some training providers may have accreditation suspended or revoked.	

4.2 OPITO

The Offshore Petroleum Industry Training Organisation (OPITO) was formed in 1982 to support the oil and gas industry. That support takes the form of "support(ing) the industry to build a sustainable, competent and safe oil and gas workforce and to ensure that quality, innovation and partnership underpin everything that (they) do" (OPITO). OPITO provides support through providing industry standards, supporting workplace competence, developing a skilled workforce, promoting careers in the petroleum industry, and facilitating networking and information sharing (OPITO). OPITO establishes training criteria for the petroleum industry and approving regional training centers for training and certification.

OPITO has approved training centers all over the world (training centers in the U.S. are limited to Texas and Louisiana) (OPITO). These centers offer training in many roles and competencies, some of which include Authorized Gas Tester, Blaster/Sprayer, Fireproofing, and Safe Driving (OPITO). For the purposes of simplicity and relevance, this document will focus primarily on Offshore Crane Operator and Rigger, with supplementary notes regarding other training.

The Offshore Crane Operator competency is divided into three stages. The first stage is an introductory training program that covers knowledge, nomenclature, and practical application (Stage 1, 2012). The second stage consists of an advanced training program, workplace experience tasks, and a competence assessment (and re-assessment upon expiry) (Stage 2, 2012). The third stage focuses primarily on specific training regarding over-side lifts for fixed structures, floating structures, and transport from vessels (Stage 3, 2012). The training is an amalgamation of classroom instruction and practical application. At the initial levels of training, this competency caters to new and inexperienced entrants. Each subsequent level of training capitalizes on the previous step or applicable experience. Competence assessment and re-assessment certificates are valid for two years.

The Rigger competency is divided into four stages. The first stage is an introductory training program that covers knowledge, nomenclature, and practical application (Stages 1 & 2, 2013). The second stage consists of workplace experience tasks that are signed and documented (Stages 1 & 2, 2013). The third stage is a competence assessment, and the fourth is a competence re-assessment (Stages 3 & 4, 2013). Certification of the introductory training, competence assessment, and competence re-assessment is offered and is valid for two years. No certification is given for the workplace experience tasks.

OPITO covers several other training topics as well. While no formal training is given for drilling, a "Green Hand Training Standard" training outline is provided for new entrants into the offshore drilling industry. Said training encompasses activities such as offshore operations, risk assessment, handling, and working in high places (Offshore Drilling Industry, 2014). OPITO also offers a subsea/subsurface apprenticeship program. This is a 3.5 year program which consists of 1.5 years of collegiate study followed by 2 years of offshore on-the-job training (OPITO). OPITO publishes a multitude of standards that can be easily found on their website.

Table 16: OPITO Accreditation

Criteria	OPITO (Accreditation System)
Levels of Training	3 (Offshore Crane Operator) 4 (Rigger)
Target Audience	At the initial levels of training, this group caters to new and inexperienced entrants. Each subsequent level of training capitalizes on the previous step or applicable experience.
Course Delivery	Classroom and simulator and/or real equipment
Students per instructor(theoretical)	Max 6 (Crane) Max 8 (Rigger)
Students per simulator(practical)	Max 6 (Crane) Max 4 (Rigger)
Instructional Time per day	8 hours maximum contact; 10 hour maximum training day
Course hours	40 hours Stage 1 and 2; 50 hours of supervised operation Stage 3 (Crane) 24 hours (Rigger)
Instructional Methodology	combination of theory and practical application
Practical Application/Simulation requirements	must constitute 70% of training
Assessment types	written and practical
Written Assessment passing rate	80%
Final Exam Assessment Standards	Open book; 1.5 hour time limit for written test; 50 question minimum incorporating various question types; 1:6 Instructor : Delegate ratio for theory training and 1:3 Instructor : Delegate ratio for practical (Crane) * Open book; 1 hour time limit; 50 question minimum incorporating various question types; 1:8 Instructor : Delegate ratio for theory training and 1:4 Instructor : Delegate ratio for practical (Rigger)
Certificate validity	Stage 1 Training no expiry, competence (re)assessment cert. valid 2 years (Crane) Stages 1, 3, and 4 - 2 years; no cert. given for Stage 2 (Rigger)
Facilities	Facilities must be designed to accommodate the full scope of the training, including practical exercises (when applicable). Facilities must be maintained, and, when appropriate, tested and inspected.

Criteria	OPITO (Accreditation System)
Instructor Qualifications	**

* Competence Assessment/Re-assessment has an Instructor: Delegate ratio of 1:1.

** Students and delegates of Rigger training are trained by a staff meeting stringent qualifications. Staff conducting stage 1 and stage 2 training must fully understand the requirements of the industry standard, have a valid OPITO stage 3 or 4 Rigger certificate and a minimum of three years in the Rigger role, be trained in instructional/evaluation techniques, have proven teaching experience, and be included in an ongoing training and development program. Staff conducting stage 3 and stage 4 training must have a valid OPITO stage 3 or 4 Rigger certificate and a minimum of three years in the Rigger role, hold an industry-recognized assessor's qualification, fully understand the assessment center's internal quality assurance of assessment processes and practices, fully understand the requirements of the industry standard, fully understand OPITO requirements for recording assessment decisions and maintaining appropriate records, participate in regular standardization meetings, and undertake professional development.

4.3 IWCF

The International Well Control Forum (IWCF) accredits industry training programs in the areas of drilling well control and well intervention pressure control. Its primary purpose is to develop and administer well control training, assessment, and certification programs. The primary mission of IWCF is to improve competency globally to prevent the recurrence of a major incident (i.e. Macondo) via promoting and promulgating well control knowledge, establishing uniform training, assessment and certification programs which are acceptable globally by all operators, contractors and regulatory bodies. They encourage a step change improvement in the competence and behaviors of personnel throughout the oil exploration and production industry via developing enhanced practical well control training.

IWCF will accredit training providers who are IWCF members and who:

- Provide evidence of suitability of physical resources, human resources, and program management
- Provide course materials, including curricula, lesson plans and practical training that meet IWCF standards and align with the IWCF syllabus
- Independently verify that training outcomes have been met by conducting Centre Audits
- Participate in the audit process

Accredited training providers must follow the IWCF syllabus using a combination of instructional methodologies including lecture, practical questions, discussions, and practical application (simulator). Audits of programs take place a minimum of once every four years. Centers must also carry out an interim audit of its management systems, course materials, and practical assessment records every 2 years against IWCF criteria.

IWCF has accredited 160,000 people in over 200 training centers and maintains 12 national and regional membership branches worldwide. There are 10 training centers in the United States which include New Mexico (1), Houston, Texas (5), and Louisiana (4).

Table 17: IWCF Accreditation

Criteria	IWCF (Accreditation System)
Levels of Training	4
Course Delivery	classroom and simulator
Maximum students per instructor(theoretical)	Level 2: 8; Level 3/4: 10*
Maximum students per simulator(practical)	Level 2: 8; Level 3/4: 10*
Instructor Qualifications	Must have relevant technical knowledge, achieved the standard of IWCF certification for the program they are applying to, and demonstrated that they can teach in a classroom environment.
Instructional Time per day	As required
Course hours	Level 2: Minimum 20 hours; Level 3&4: 5 days; Level 1: 4 days
Instructional Methodology	combination of classroom teaching, practice questions and discussions, and simulation
Practical Application/Simulation requirements	Maximum of two candidates during practical assessment
Assessment types	written and practical
Assessment passing rate	70%
Final Exam Assessment Standards	Practical assessment must be conducted with two candidates and an assessor**; All test sessions are conducted by an IWCF approved independent invigilator***.
Certificate validity	Level 2: 5 years; Level 3 &4: 2 years
Facilities	Facilities must be suitable for instructional delivery and contain a separate space for simulators

* Level 1 is an orientation program. IWCF does not provide guidelines on instructor student ratios. There is no practical portion of this program.

**The role of the practical assessor is to evaluate candidate's performance during the IWCF practical assessment by grading each candidate against IWCF criteria.

To be accredited as a practical assessor, applicants must:

- have the relevant technical knowledge
- have achieved the standard of IWCF certification for the program they are applying to assess
- have completed a training program in the procedures, documentation and methodology of the IWCF practical assessment

•have completed a training program in the operation of each simulator model used at the applicant's assessment center

•be able to program each simulator to create an exercise that meets current IWCF well design rules

•demonstrate their ability to carry out practical assessments according to the IWCF practical assessment procedure

It is mandatory for all new practical assessors to attend the IWCF Assessor training course. This is a five day course which is designed to equip practical assessors with the knowledge and understanding required to conduct practical assessments to IWCF standards; ensuring a consistent global standard of assessment.*** IWCF invigilators receive training prior to conducting test sessions to maintain professional and consistent standards throughout the candidate assessment process. The main responsibility of an invigilator is to ensure that test sessions are run according to invigilator procedures and instructions.

4.4 Competency Definition

A comparison of how organizations and agencies defined competencies was compiled and reviewed to determine the range of indicators used to assess competence. No empirical evidence was uncovered regarding the effectiveness in measuring competence within the industry. A key challenge identified by the ABSG team on methods for competence assessment was to ensure objectivity. Most organizations do use more than one indicator to assess competence; however there is limited evidence about the most effective or reliable indicators to use. BSEE and BOEM (Bureau of Ocean Energy Management) have not established competency definitions.

Table 18: Competency Definitions Per Organization

Organization	Definition	Reference
IADC	The ability of an individual to perform a job properly, combining knowledge, skills, and behavior, as developed through training and experience	Article: http://www.drillingcontractor.org/new-iadc-project-will-enhance-competency-guidelines-for-drilling-rig-personnel-16481
OPITO	The ability to perform activities within an occupation to the standards expected within employment. Individuals must provide evidence that they have the required experience, technical skills, knowledge, understanding and behavior to perform a job role/function and that they apply them consistently, safely and in accordance with procedures and Standards.	OPITO- Oil and Gas Industry Competence Assessment and Verification Guidelines, September 2013 http://www.opito.com/media/downloads/competence-assessment-and-verification-guidelines.pdf
UK Oil and	The ability of every director, manager and	Step Change in Safety (2010)

Organization	Definition	Reference
Gas Industry	worker to recognize the risks in their operational activities and then apply the right measures to control and manage those risks.	http://www.stepchangeinsafety.net/about/strategicplan.cfm
HSE(UK)	To be competent an organization or individual must have: • Sufficient knowledge of the tasks to be undertaken and the risks involved • The experience and ability to carry out their duties in relation to the project, to recognize their limitations and take appropriate action to prevent harm to those carrying out construction work, or those affected by the work	HSE Construction (Design and Management) Regulations, 2007 http://www.hse.gov.uk/construction/cdm/faq/competence.htm
OSHA	One who is capable of identifying existing and predictable hazards in the surroundings or working conditions which are unsanitary, hazardous, or dangerous to employees, and who has authorization to take prompt corrective measures to eliminate them" [29 CFR 1926.32(f)]. By way of training and/or experience, a competent person is knowledgeable of applicable standards, is capable of identifying workplace hazards relating to the specific operation, and has the authority to correct them. Some standards add additional specific requirements which must be met by the competent person.	29 CFR 1926.32(f) https://www.osha.gov/SLTC/competentperson/
International Society for Performance Improvement ISPI	A cluster of knowledge, skills, and behaviors, which can be observed and measured	Boyatzis (1982); Boyatzis, R. (1982). *The competent manager: A model for effective performance.* New York, NY: John Wiley & Sons.
Harvard	"Things" that an individual must demonstrate to be effective in a job, role, function, task, or duty.	Harvard Competency Dictionary
Dreyfus Model of	A competent performer is able to select rules or perspectives appropriate to the	Dreyfus S. and Dreyfus H. A five stage model of the mental activities

Organization	Definition	Reference
Skill Acquisition	situation, taking responsibility for approach.	involved in directed skill acquisition. Operations Research Center, University of California, Berkeley, 1980
Environmental Protection Agency (EPA)	*Competency Evaluation:* Initial evaluation of a field investigator to determine if they have demonstrated the necessary skills and knowledge to independently perform field measurements or sampling.	SESD Operating Procedure: Competency and Proficiency Testing SESDPROC-006-R3

4.5 Proficiency Definition

The ABSG team researched and studied the definitions for proficiency used by organizations and agencies within the industry. The aim of the comparison was to develop a standard definition based on the common factors and terms used throughout the industry.

Proficiency is defined by levels. Therefore, if competency is the knowledge and ability to perform a task, then proficiency is the level of the performer (i.e. fundamental, novice, intermediate, advanced, expert). For example, positions may require a person to not only be competent, but also have reached a certain proficiency level to perform the job.

4.5.1 Competencies Proficiency Scale

Based on the combined research on competency and proficiency, a Proficiency Scale was developed to provide an example of how it could be used in practice. A Proficiency Scale is an instrument used to measure the performer's ability to demonstrate a competency on the job. The scale captures a wide range of ability levels and organizes them into five steps; from "Fundamental Awareness" to "Expert."

This scale serves as the guide to understanding the expected proficiency level of top performers at each grade level.

Table 19: Competency Proficiency Scale

Proficiency Level	Description
Fundamental Awareness (with basic knowledge)	Performer has a common knowledge or an understanding of basic techniques and concepts. • Focus is on learning.
Novice (with limited experience)	Performer has the level of experience gained in a classroom and/or experimental scenarios or as a trainee on-the-job. Performer is expected to need help when performing this skill.

Proficiency Level	Description
	• Focus is on developing through on-the-job experience; • Performer understands and can discuss terminology, concepts, principles, and issues related to this competency; • Performer utilizes the full range of reference and resource materials in this competency.
Intermediate (with practical application)	Performer is able to successfully complete tasks in this competency as requested. Help from an expert may be required from time to time, but Performer can usually perform the skill independently. • Focus is on applying and enhancing knowledge or skill; • Performer has applied this competency to situations occasionally while needing minimal guidance to perform successfully; • Performer understands and can discuss the application and implications of changes to processes, policies, and procedures in this area.
Advanced (with practical application and strategic oversight)	Performer can perform the actions associated with this skill without assistance. Performer is recognized within his/her immediate organization as "a person to ask" when difficult questions arise regarding this skill. • Focus is on applying knowledge, skills, and experience to mentor others; • Performer has consistently provided practical/relevant ideas and perspectives on process or practice improvements which may easily be implemented; • Performer is capable of coaching others in the application of this competency by translating complex nuances relating to this competency into easy to understand terms; • Performer participates in senior level discussions regarding this competency; • Performer assists in the development of reference and resource materials in this competency.
Expert (recognized authority)	Performer is known as an expert in this area. Performer can provide guidance, troubleshoot and answer questions related to this area of expertise and the field where the skill is used. • Focus is strategic; • Performer has demonstrated consistent excellence in applying this competency across multiple projects and/or organizations; • Performer is considered the “go to” person in this area within government and national oil companies;

Proficiency Level	Description
	• Performer creates new applications for and/or lead the development of reference and resource materials for this competency; • Performer is able to advise others on critical decisions across a broad range of strategic and operational functions.

Table 20: Proficiency Map

Accreditation	Target Audience	Competency Proficiency Level
IADC RigPASS®	New employees or employees that are new to a specific operation or area	Fundamental Awareness Novice
IADC Wellcap®	Introductory, Fundamental, Supervisory	Fundamental Awareness Novice Intermediate
OPITO – Offshore Crane Operators	Stage 1 – introductory training program Caters to new and inexperienced entrants.	Fundamental Awareness
	Stage 2 – advanced training program, workplace experience tasks, and a competence assessment	Novice Intermediate
	Stage 3 – focuses primarily on specific training regarding over-side lifts for fixed structures, floating structures, floating structures, and transport from vessels.	Intermediate
OPITO – Rigger	At the initial levels of training, this group caters to new and inexperienced entrants. Each subsequent level of training capitalizes on the previous step or applicable experience.	Fundamental Awareness Novice
OPITO – Subsea/Subsurface Apprenticeship Program	A 3.5 year program which consists of 1.5 years of collegiate study followed by 2 years of offshore on-the-job training (OPITO).	Novice Intermediate
IWCF – Drilling Well	Level 1 – awareness course which will focus on the life-cycle of a well, with	Fundamental Awareness

Accreditation	Target Audience	Competency Proficiency Level
Control	particular emphasis on well control.	
	Level 2 (Introductory) – designed for delegates "working in roles which may directly contribute to the creation, detection or control of a well influx" The aim of this course is to provide a basic understanding of the features of drilling a well and the fundamental principles involved in maintaining well control.	Novice
	Level 3 – This course has been designed for drilling crew (drillers and assistant drillers) and others with a requirement to hold an IWCF Well Control certificate. This course is designed to meet the requirements of the accrediting body IWCF and is offered with either Surface or Combined (surface and subsea) BOP certification.	Novice Intermediate
	Level 4 – This course has been designed for drilling supervisors, well engineers, Offshore Instillation Manager (OIM) and others with a requirement to hold an IWCF Well Control certificate. This course is designed to meet the requirements of the accrediting body IWCF and is offered with either Surface or Combined (surface and subsea) BOP certification.	Intermediate Advanced
API RP 2D	Guidance for all Crane Operator, Crane Inspector, and Rigger Training, Maintenance, and Equipment Instruction	Does not specify competency/proficiency levels for positions. Requires maintenance of training every 4 years.

4.6 Competencies for JTA

Performance support required for the tasks as identified in the JTA for each job position was either "job aid with extensive training" or "train-to-memory." Extensive training performance support may occur through a combination of formal instructor-led/classroom training employing the job aid and hands-on practice or through structured on-the-job training with the use of job aids to support work activity. Train-to-memory performance support does not rely on job aids as its primary support since tasks are stored exclusively in memory.

Based on the results of the JTA, the level of performance support required for each task focuses on a novice (newly assigned to job position) to an intermediate worker. This is in alignment with the existing accreditation organizations and agencies listed in the Proficiency Map.

4.7 Recommendation for BSEE

It is recommended that BSEE adopt competency definitions to be used to determine proficiency at a novice to intermediate level for all workers. Job positions requiring an advanced level of proficiency to perform job competencies are assessed at an intermediate level. The ABSG team proposes the competency proficiency scale is designed to support:

- Valid assessment (by individual company) against performance objective
- Fair assessment of performance by each performer/learner
- Objective feedback system
- Transparent system of measurement
- Credibility within oil and gas industry
- Remediation processes

The standards for competency include:

Novice: Performer has the level of experience gained in a classroom and/or experimental scenarios or as a trainee on-the-job. Performer is expected to need help when performing this skill and should be supervised at all times.

- Focus is on developing through on-the-job experience;
- Performer understands and can discuss terminology, concepts, principles, and issues related to this competency;
- Performer utilizes the full range of reference and resource materials in this competency.

Intermediate: Performer is able to successfully complete tasks in this competency as requested. Help from an expert may be required from time to time, but Performer can usually perform the skill independently.

- Focus is on applying and enhancing knowledge or skill;
- Performer has applied this competency to situations occasionally while needing minimal guidance to perform successfully;

- Performer understands and can discuss the application and implications of changes to processes, policies, and procedures in this area.

4.8 Subsea Training

Subsea Technicians/Specialists are responsible for BOP testing, routine maintenance, documentation management, assisting with troubleshooting procedure and end of well maintenance. Subsea technicians operate and maintain BOP and all equipment that is used for drilling. Subsea technicians typically move up from another position on the rig and have five to six years of experience. In addition to the subsea technician/specialist, operators have "Stack Teams" which are roving teams of highly experienced and expert personnel who travel to assist rigs.

Subsea training is provided by a number of industry providers such as industry operators and Original Equipment Manufacturers (OEMS). IADC accredits industry training programs who comply with the IADC standards. Compliance is audited every two years. Industry operators with internal training programs provide training that is accredited by IADC.

Internal training within the industry typically follows IADC guidelines and has three levels of Subsea Specialists (I - Senior; II - Supervisor; and III - Subsea Specialist III). The progression from selection to senior takes approximately five years beginning with the selection/recommendation of an individual, usually recommended from another position on the rig. Subsea training consists of six weeks of classroom training and two weeks of practical training. Technicians are supervised continually once they have completed their classroom training and until they have completed their OJT.

Original Equipment Manufacturers (OEM) provide their own training for their equipment. Training is based upon the operation and maintenance of the equipment they build. They provide four levels of training ranging from Equipment Introduction to Advanced service engineer. OEMs will provide internal training to their customers providing operation and maintenance training but not over-haul. OEMs have internal training programs that are not certified or accredited by a certifying board; however, they have established their training programs based on instructional design and development standards founded on adult learning theory.

4.9 Industry Training

Large industry contractors have internal training programs. They are usually accredited through IADC and audited on a two-year cycle for compliance. Industry follows, and in almost all cases exceeds, the minimum guidance outlined in API RP 2D and 30 CFR 250 Subpart O and Subpart S.

Industry has established a process for training and building a competent workforce that works. Companies grow their own personnel for upward movement. This allows for internal control of personnel selection. All potential personnel moves require an internal review of the individual. A large component of their training, regardless of the position, requires an OJT period after classroom and simulation training is complete. OJT is particularly important as not all events can be simulated in the practical portion of the training. These OJT opportunities include kick precursors, indicators and events

in an irregular operational pattern that are difficult to anticipate and are more true to the job environment.

In addition to training and OJT, all new personnel on the rig wear orange hats and all of their activities are monitored. This includes personnel who are experienced on other rigs, but are just becoming familiar with the operations on this rig. Following orange, trained personnel graduate to green and then grey hats. OJT allows for practical experience with expert supervision.

4.10 Training Comparison to Regulations

Industry training and certification programs usually exceed the standards set by the regulatory authorities. Industry provides more comprehensive and specific guidance regarding all training. Certifying bodies provide strict guidance to industry for certification of their internal programs for accreditation. Within the Outer Continental Shelf, IADC is the primary organization accrediting and assisting programs to establish approved training programs.

Industry has been proactive in establishing criteria for training. They have established core competencies and Knowledge, Skills, and Ability (KSAs) for job specialties and levels within each job specialty. Companies that have internal programs are for the most part accredited by IADC or another organization. Companies that are not accredited, such as OEMs, have established training programs based upon specific equipment operation and maintenance requirements.

Industry and accrediting organizations have established working groups that include industry stakeholders and training specialists to continually update and refine job competencies and training requirements.

5 Recommendations

The ABSG Consulting team has compiled the results of our analysis collected throughout the project and provides recommendations on changes within the regulations and industry driven training and certification.

5.1 Recommendations for 30 CFR 250 Subpart O and Subpart S

After a comprehensive review of 30 CFR 250 Subpart O and Subpart S, ABSG recommends that Subpart O and Subpart S be combined into one regulation. There is a common purpose to both subparts and the findings indicate that there are a number of duplications within them that can be eliminated by using the more specific guidance from one or the other. There are also gaps noted that are addressed and recommendations made to close.

Specific recommendations for combining the two Subparts are itemized in Appendix A: Review and Comparison of SEMS Subparts O and Subpart S and are presented below.

In addition, Appendix B: SEMS Subparts O and Subpart S Combined represents the merger of both subparts using the recommendations outlined below.

Table 21: Recommendations for 30 CFR 250 Subpart O and Subpart S

Reference Area	Gap or Overlap	Recommendation
Definitions	Subpart S contains a more specific definition for "Contractor" and "Deepwater"	Utilize all definitions from Subpart O, except for the "contractor" definition. Utilize the contractor and deepwater definitions from Subpart S.
	Subpart O contains a more specific definition for "Employee Personnel" and eight other definitions not included in Subpart S	
Program Goal	Subpart S encompasses the program goal requirements in Subpart O	Utilize language from Subpart S.
SEMS Inclusion Criteria	Subpart S provides guidelines for developing policies and procedures for safety plans, but information is very limited	Utilize Subpart S language. Add specific information about training for tasks and duties instead of referencing API RP 75. Add detailed training outline.
Implementation of Programs	Subpart S does not include specific duties listed in Subpart O.	Include duties from Subpart O. Establish and implement a training program so that all personnel are trained in accordance with their assigned well control, deepwater well control, production safety duties and responsibilities to work safely and are aware of potential environmental impacts.
Training Verification	Language in both Subparts is equivalent	Utilize language from Subpart S, Safe Work Practices (250.1914).
Training Provisions	Subpart S does not specify well control training	Utilize language from Subpart O.
	Subpart S does not include requirements for a training program	Utilize language from Subpart O.
	Subpart S does not include guidelines for documentation of training	Utilize language from Subpart O.
	Subpart O does not include requirements for training for hazard identification	Utilize language in Subpart S. Include normal and well control operation.
	Subpart O does not include requirements for training for	Utilize language in Subpart S. Add requirements for well control

Reference Area	Gap or Overlap	Recommendation
	Standard Operating Procedure (SOP) training	operation, emergency, and Safe Working Authority (SWA) training.
	Subpart O does not include requirements for training for Safe Work Practices	Utilize language in Subpart S. Include requirements for safe work practices in well control operation.
	Subpart O does not include requirements for Mechanical Integrity training	Utilize language in Subpart S.
	Subpart O does not include requirements for emergency response training	Utilize language in Subpart S. Add requirements for well control operation.
Employee Participation Plans (EPP)	Subpart O does not include requirements for EPP	Utilize Subpart S language. Add a training plan for accessing EPP.
	Subpart S does not include a training plan for accessing EPP	Utilize Subpart S language. Add a training plan for accessing EPP.
Unsafe Working Conditions	Subpart O does not include requirements for reporting unsafe working conditions	Utilize language in Subpart S. Add a training plan for reporting unsafe working conditions.
	Subpart S does not include the training plan for reporting unsafe working conditions	Utilize language in Subpart S. Add a training plan for reporting unsafe working conditions.
Training	Subpart S does not specify the types of training methodology that may be used	Utilize language in Subpart O. Add requirements for training to be presented using a combination of methodologies.
	Subpart S does not include requirements for training sources	Utilize language in Subpart O.
	Subpart S Does not include specific duties for well control nor does it include any training or training frequency for this duty	Utilize Subpart O language and add requirements for providing interim or additional training as a result of a change in the Program.
	Subpart O does not include requirements for providing training as a result of a change in the program	Utilize Subpart S language. Add requirements for providing interim or additional training as a result of a change in the Program.
Program Assessment	Subpart O outlines program assessment best practices	Combine language from both Subpart O and Subpart S.

Reference Area	Gap or Overlap	Recommendation
	Subpart S outlines the audit process in accordance with API RP 75	In addition to Subpart S, add language from Subpart O
Testing of Employees	Subpart S does not include requirements for specific testing of employees by BSEE	Utilize language in Subpart O.
Non-compliance	Subpart S does not specify guidelines for non-compliance	Utilize language in Subpart O.

5.2 Recommendations for Training, Testing, and Certification Programs

Industry training and certification programs provide guidance to industry for certification of their internal programs for accreditation. Within the Outer Continental Shelf, IADC is one of the primary organizations accrediting and assisting programs to establish approved training programs.

Recommendation 1:

BSEE should become an active participant in the IADC and industry work groups that update and refine job competencies and training requirements. Areas of focus would include changes in training and accreditation requirements. They would have a first-hand look at the upcoming changes and criteria with regards to any training element. This would allow for BSEE to immediately identify any gaps in the regulatory guidance and make recommendations for change and to monitor the performance of industry training and certification programs.

Suggested Implementation Plan

To implement the above recommendation, the following should be considered as starting point:

- Identify and contact the industry working groups (including OEMs if possible) with identified programs (included in this report) that would meet BSEE's requirement.
- Identify and create a dedicated team to join or become an active participant in the working group.
- The team objectives would be
    - To be involved with the industry
    - Become subject matter experts (SMEs) regarding the industry training activities
    - To be the training liaison between BSEE and the industry. The advantage of having such team would be regular interaction with the industry and gaining and retention of industry knowledge
- Identify the industry working group meeting schedule (domestically and internationally)

- Develop an objective and methods for the newly created team to capture the lessons learned, industry changes, new techniques, industry requirement, etc. from the industry
- Attend the scheduled working group meetings
- Utilized the gained knowledge to update BSEE's requirement
- Utilize training team to organize and meet with the industry working groups for sharing and informing the group about any update and new training requirement from BSEE

Recommendation 2:

It is recommended that 30 CFR 250 Subparts O and S be merged into one document. There are areas within the current Subparts that require more specific direction and BSEE should include the minimum requirement established by IADC and other certification programs. Those include:

- Implementation of Programs
    - Use specific duties as identified by industry and IADC. These can be found on the IADC web site: **http://www.iadc-ksa.org/**
- Training
    - Use industry standards for using a combination of training methodologies. Industry utilizes classroom, practical or simulation training, and On-the-Job-Training

Suggested Implementation Plan

To implement the above recommendation, use the comparison and findings of this report as a guide for merging the two subparts or updating Subpart S with additional information from subpart O.

Recommendation 3:

It is recommended that BSEE adopt competency-based definitions to be used to determine proficiency at a novice to intermediate level for assigned workers. Job positions requiring advanced level of proficiency to perform job competencies are assessed at an intermediate level. These definitions would apply to all positions regardless of job title (Crane Operator, Driller/Rigger, or Subsea Engineer).

The standards for competency would include:

Novice: Performer has the level of experience gained in a classroom and/or experimental scenarios or as a trainee on-the-job. Performer is expected to need help when performing this skill and should be supervised at all times.

- Focus is on developing through on-the-job experience;
- Performer understands and can discuss terminology, concepts, principles, and issues related to this competency;
- Performer utilizes the full range of reference and resource materials in this competency.

Intermediate: Performer is able to successfully complete tasks in this competency as requested. Help from an expert may be required from time to time, but Performer can usually perform the skill independently.

- Focus is on applying and enhancing knowledge or skill;

- Performer has applied this competency to situations occasionally while needing minimal guidance to perform successfully;
- Performer understands and can discuss the application and implications of changes to processes, policies, and procedures in this area.

Suggested Implementation Plan

To implement the above recommendation, the following should be considered as starting point:

- Form an industry working group or join an existing working group (see suggested implementation plan for recommendation 1).
- Consult with the new or existing/identified organizations (list included in this report) for developing a mutually accepted competency standards/scale.
- Leverage their expertise and adopt their competency standards/scale and/or draft a new or modified version for BSEE's use.
- At a minimum, ensure the new competency standard reflect the industry practices.

Appendix A: Review and Comparison of SEMS/Subpart O, and Subpart S

Subpart O and Subpart S Definition Comparison				
Terms	**Definition**		**Findings**	**Recommendation**
	Subpart O	**Subpart S**		
Definitions	Contractor and Contract Personnel Employee Personnel I or you Lessee Periodic Production operations Production safety Deepwater well control Well completion/well workover Well-control	Contractor Employee Personnel Deepwater	-Subpart S contains a more specific definition for Contractor -Subpart O contains a more specific definition for Employee Personnel -Subpart O contains eight definitions not included in Subpart S -"Deepwater" is included in Subpart S, but not Subpart O	Utilize all definitions from Subpart O, except for the "contractor" definition. Utilize the "contractor" and "deepwater" definitions from Subpart S

Subpart O and Subpart S Requirements and Criteria Comparison				
Criteria	**Requirement Breakdown**		**Findings**	**Recommendation**
	Subpart O	**Subpart S**		
Goal of Program	1- Safe and clean OCS operation 2- To ensure employees, contractor personnel	1- To promote safety and environment protection by ensuring all personnel aboard a facility comply with the organization's	Subpart S encompasses the requirements in Subpart O.	Utilize language from Subpart S

Subpart O and Subpart S Requirements and Criteria Comparison				
Criteria	**Requirement Breakdown**		**Findings**	**Recommendation**
	Subpart O	**Subpart S**		
	understand and can properly perform their duties (250.1501)	SEMS program 2- To ensure organization (part of SEMS program) program identifies, addresses, and manages safety, environmental hazards, and impacts during the design, construction, start-up, operation (including, but not limited to, drilling and decommissioning), inspection, and maintenance of all new and existing facilities, including mobile offshore drilling units (MODUs) when attached to the seabed and Department of the Interior (DOI) regulated pipelines. 3- To ensure all personnel involved with the SEMS program are trained and have the skills and knowledge to perform their assigned duties. (250.1901)		
SEMS Inclusion Criteria		a- Must meet the minimum criteria outlined in this subpart:	Subpart S provides guidelines for developing policies and procedures for safety plans, but	Utilize Subpart S language. Add specific information about training for tasks and duties instead of referencing API RP 75. Add detailed training

Subpart O and Subpart S Requirements and Criteria Comparison				
Criteria	**Requirement Breakdown**		**Findings**	**Recommendation**
	Subpart O	**Subpart S**		
		(1) General (see §250.1909) (2) Safety and Environmental Information (see §250.1910) (3) Hazards Analysis (see §250.1911) (4) Management of Change (see §250.1912) (5) Operating Procedures (see §250.1913) 6) Safe Work Practices and contractor selection (see §250.1914) (7) Training (see §250.1915) (8) Mechanical Integrity (Assurance of Quality and Mechanical Integrity of Critical Equipment) (see §250.1916) (9) Pre-startup Review (see §250.1917) (10) Emergency Response and Control (see §250.1918) (11) Recordkeeping (Records and Documentation) and additional BSEE requirements (*see* §250.1928) (12) Stop Work Authority	information is very limited	outline. (1)Section 250.1911: Include well control as one of the specific jobs or provide a list of jobs (2)Section 250.1912: Include hazard analysis to identify potential hazards with changes that are proposed or made (3) Section 250.1913: Include clear definition as who is responsible for Well completion/well control/well workover (4) Section 250.1914: Include safe work practices for well control/well workover for employees and contractors (5) Section 250.1917: Include completed training for Normal and Well Control operation as the operator or driller might encounter emergencies and have to control the well in Section E.

Subpart O and Subpart S Requirements and Criteria Comparison				
Criteria	**Requirement Breakdown**		**Findings**	**Recommendation**
	Subpart O	**Subpart S**		
		(SWA) (see §250.1930) (13) Ultimate Work Authority (UWA) (see §250.1931) (14) Employee Participation Plan (EPP) (see §250.1932) (15) Reporting Unsafe Working Conditions (see §250.1933). b- Must include a job safety analysis (JSA) for OCS activities identified or discussed in your SEMS program (see §250.1911). c- Must meet or exceed the standards of safety and environmental protection of API RP 75 (as incorporated by reference in §250.198).		
Implementation of Program	Establish and implement training program so that all employees are trained to competently perform their assigned well control, deepwater well control, production safety duties. (250.1503)	Establish and implement a training program so that all personnel are trained in accordance with their duties and responsibilities to work safely and are aware of potential environmental impacts. (250.1915)	Subpart S does not include specific duties listed in Subpart O	Add specific duties listed in Subpart O to Subpart S
Verification of Training	Verify that employees understand and can perform	Ensure that suitably trained and qualified personnel are	Language in both subparts are equivalent	Utilize language from Subpart S, Safe Work Practices (250.1914)

Subpart O and Subpart S Requirements and Criteria Comparison				
Criteria	**Requirement Breakdown**		**Findings**	**Recommendation**
	Subpart O	**Subpart S**		
	the assigned well control, deepwater well control, production safety duties. (250.1503)	employed to carry out all aspects of the SEMS program. (250.1909)		
Training Provisions	If you conduct operations with a subsea BOP stack, your employees and contract personnel must be trained in deepwater well control. The trained employees and contract personnel must have a comprehensive knowledge of deepwater well control equipment, practices, and theory. (250.1503)	Provide initial training for the basic well-being of personnel and protection of the environment and, Ensure that persons assigned to operate and maintain the facility possess the required knowledge and skills to carry out their duties and responsibilities, including startup and shutdown. (250.1915)	Subpart S does not specify well control training	Utilize language from both Subpart O and Subpart S.
Training Plan	The training plan must specify the type, method(s), length, frequency, and content of the training for your employees. 1- At a minimum the training plan must include: a- Procedures for training employees in well control, deepwater well control, or production safety practices; b- Procedures for evaluating the training programs of your contractors; c- Procedures for verifying	Develop a method on how to verify that the contractors are trained in the work practices necessary to understand and perform their jobs in a safe and environmentally sound manner in accordance with all provisions of this section. (250.1915)	Subpart S does not include requirements for a training program	Utilize language from Subpart O

Subpart O and Subpart S Requirements and Criteria Comparison				
Criteria	**Requirement Breakdown**		**Findings**	**Recommendation**
	Subpart O	**Subpart S**		
	that all employees and contractor personnel engaged in well control, deepwater well control, or production safety operations can perform their assigned duties; d- Procedures for assessing the training needs of your employees on a periodic basis; e- Recordkeeping and documentation procedures; and internal audit procedures.(250.1503)			
Training Documentation	1-Upon request of the District Manager or Regional Supervisor, you must provide: a- Copies of training documentation for personnel involved in well control, deepwater well control, or production safety operations during the past 5 years; and b- A copy of your training plan. (250.1503)		Subpart S does not include guidelines for documentation of training	Utilize language from Subpart O

Subpart O and Subpart S Requirements and Criteria Comparison				
Criteria	**Requirement Breakdown**		**Findings**	**Recommendation**
	Subpart O	**Subpart S**		
Hazard Identification		All personnel, including contractors, must be trained on how to recognize and identify hazards and how to construct and implement Job Safety Analysis (JSA). (250.1911)	Requirements for hazard identification training are not included in Subpart O	Utilize language in Subpart S, include normal and well control operation.
Standard Operating Procedures		All personnel, including contractors, must be trained on operating procedures. (250.1913)	Requirements for SOP training are not included in Subpart O	Utilize language in Subpart S. Add requirements for well control operation, emergency, and SWA training,
Safe Work Practices		All personnel, including contractors, must be trained on safe work practices (250.1914)	Requirements for Safe Work Practices are not included in Subpart O	Utilize language in Subpart S. Include requirements for safe work practices in well control operation
Mechanical Integrity		Each employee involved with maintaining of equipment and systems must be trained on the mechanical integrity program so they can implement the program. (250.1916)	Requirements for Mechanical Integrity training are not included in Subpart O	Utilize language in Subpart S
Emergency Response		All personnel, including contractors, must be trained on emergency response and control measures.	Requirements for emergency response training are not included in Subpart O	Utilize language in Subpart S. Add requirements for well control operation

Subpart O and Subpart S Requirements and Criteria Comparison				
Criteria	**Requirement Breakdown**		**Findings**	**Recommendation**
	Subpart O	**Subpart S**		
		(250.1918)		
Stop Work Authority Procedures		1-All personnel, including contractors and new personnel who perform activities on the OCS, must be trained on Stop Work Authority (SWA) procedures, SWA must be reviewed during all meetings focusing on safety of the facility. (250.1930) 2-All personnel, including contractors and new personnel who perform activities on the OCS, must be trained on SWA and clearly know who has the Ultimate Work Authority (UWA) and who is in charge of a specific operation or activity at all time, including when the responsibility shifts to a different individual. (250.1931)	Requirements for SWA training are not included in Subpart O. Subpart S does not include the training plan for SWA	Utilize language in Subpart S. Develop detailed SWA training program for all employees including the contractor
Employee Protection Plan		All personnel, including contractors, must be trained and have access to Employee Protection Plan (EPP). (250.1932)	Requirements for EPP are not included in Subpart O. Subpart S does not include a training plan for accessing EPP.	Utilize Subpart S language. Add a training plan for accessing EPP.

Subpart O and Subpart S Requirements and Criteria Comparison				
Criteria	**Requirement Breakdown**		**Findings**	**Recommendation**
	Subpart O	**Subpart S**		
Unsafe Working Conditions		All personnel, including contractors, must be trained on reporting unsafe working conditions. (250.1933)	Requirements for training on reporting unsafe working conditions are not included in Subpart O. Subpart S does not include the training plan for reporting unsafe working conditions.	Utilize language in Subpart S. Add a training plan for reporting unsafe working conditions.
Training Methodology	Alternative training methods can be used and must be conducted according to the and meet the objectives of the organization training plan and may include: Computer-based learning, films or other equivalents, hands-on demonstration and training (250.1504)		Subpart S does not specify the types of training methodology that may be used.	Utilize language in Subpart O. Add requirements for training to be presented using a combination of methodologies.
Training Sources	Training may be obtained from any source that meets the organization training plan (250.1505)		Subpart S does not include requirements for training sources	Utilize language in Subpart O
Frequency of Training	Organization can determine the frequency of the training as long as the following are met: 1- Provide periodic training to ensure that employees maintain understanding	1- Periodic training to maintain understanding of, and adherence to, the current operating procedures, using periodic drills, to verify adequate retention of the	Subpart S does not include specific duties for well control. Subpart S does not specify when employees must be trained for well control duties. Subpart O does not include	Utilize Subpart O language. Add requirements for providing interim or additional training as a result of a change in the Program

Subpart O and Subpart S Requirements and Criteria Comparison				
Criteria	**Requirement Breakdown**		**Findings**	**Recommendation**
	Subpart O	**Subpart S**		
	of, and competency in, well control, deepwater well control, or production safety practices; 2- Establish procedures to verify adequate retention of the knowledge and skills that employees need to perform their assigned well control, deepwater well control, or production safety duties; and 3- Ensure that your contractors' training programs provide for periodic training and verification of well control, deepwater well control, or production safety knowledge and skills. (250.1506	required knowledge and skills. 2- Whenever a change is made in any of the areas in your SEMS program and procedures that impacts the personnel ability to properly understand and perform their duties and responsibilities. 3- Training and notification of change must be given before personnel are expected to operate the facility (250.1915)	requirements for providing training as a result of a change in the program	
Program Assessment	BSEE may periodically assess the training programs, using one of the following: 1- Training system audit 2- Employee or contract personnel interviews 3- Employee or contract	The SEMS program must be audited by an accredited Audit Service Provider (ASP) according to this subpart and section 12 of API RP 75 1- The plan must exceed the recommendation of API	Subpart O outlines assessment best practices. Subpart S outlines the audit process in accordance with API RP 75	In addition to Subpart S add language from Subpart O

Subpart O and Subpart S Requirements and Criteria Comparison				
Criteria	**Requirement Breakdown**		**Findings**	**Recommendation**
	Subpart O	**Subpart S**		
	personnel testing. Hands-on production safety, simulator, or live well testing. (250.1507)	RP 75 2- Written audit plan must be submitted to BSEE at 30 days before the audit 3- Audit frequency, must not exceed 3 years after the 2 year time periods for the first audit. 4- Audit Team. Your audits must be performed by an ASP as described in §250.1921 5- Audit report and audit findings, observations, deficiencies identified, and conclusions must be submitted to BSEE within 60 days of the audit completion date. 6- Copy of your CAP for addressing the deficiencies identified in your audit must provide BSEE within 60 days of the audit completion date. (250.1920)		
BSEE testing procedures	Employees or contract personnel may be tested at your worksite or at an onshore location. You and your contractors must: 1- Allow BSEE or its		Subpart S does not include requirements for specific testing of employees by BSEE	Utilize language in Subpart O

Subpart O and Subpart S Requirements and Criteria Comparison				
Criteria	**Requirement Breakdown**		**Findings**	**Recommendation**
	Subpart O	**Subpart S**		
	authorized representative to administer or witness the testing 2- Identify personnel by current position, years of experience in present position, years of total oil field experience, and employer's name (e.g., operator, contractor, or sub-contractor company name) (250.1508) Employees or contractor may be required to conduct hands-on, simulator, or other types of testing, you must: 3- Allow BSEE or its authorized representative to administer or witness the testing 4- Identify personnel by current position, years of experience in present position, years of total oil field experience, and employer's name (e.g., operator, contractor, or sub-contractor company name); and 5- Pay for all costs associated with the testing, excluding salary			

Subpart O and Subpart S Requirements and Criteria Comparison				
Criteria	**Requirement Breakdown**		**Findings**	**Recommendation**
	Subpart O	**Subpart S**		
	and travel costs for BSEE personnel (250.1509)			
Non-compliance	If the training program is not compliant, BSEE may initiate one or more of the following enforcement actions: 1- Issue an Incident of Noncompliance (INC); 2- Require you to revise and submit to BSEE your training plan to address identified deficiencies 3- Assess civil/criminal penalties; or 4- Initiate disqualification procedures. (250.1510)		Subpart S does not specify guidelines for non-compliance	Utilize language in Subpart O

Appendix B: SEMS/Subpart O and Subpart S Combined

Introduction

The Bureau of Safety and Environmental Enforcement (BSEE) works to promote safety, protect the environment, and conserve resources offshore through vigorous regulatory oversight and enforcement in a variety of areas including safety management systems and personnel training requirements. BSEE oversees requirements associated with worker safety such as Safety and Environmental Management Systems (SEMS) 30 CFR Subpart S and lessee training requirement referred to as Subpart "O" Well-Control and Production Safety System Training.

This report presents the combined Subpart O and S based on the findings and recommendation provided in the corresponding report. It should be noted that the following sections are based on Subpart S and wherever applicable training and other related information from Subpart O has been added. The combined version of these two subparts provides a more consistent and unified information related to training and STEMS program.

For ease of use or referencing the STEMS (Safety, Training and Environmental Management Systems) will be used throughout this combined subpart. The arbitrary name "STEMS" can be changed upon approval or adaptation of the combined program.

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Terms and Definitions

Definitions listed in this section apply to this subpart and supersede definitions in API RP 75, Appendices D and E; COS-2-01, COS-2-03, and COS-2-04; and ISO/IEC 17011 (incorporated by reference as specified in §250.198). The terms used in this subpart have the following meaning:

Accreditation Body (AB) means a BSEE-approved independent third-party organization that assesses and accredits ASPs.

Audit Service Provider (ASP) means an independent third-party organization that demonstrates competence to conduct STEMS audits in accordance with the requirements of this subpart.

Contractor and Contractor Personnel means anyone, other than an employee of the lessee, performing well control, deepwater well control, or production safety duties for the lessee.

Corrective Action Plan (CAP) means a scheduled plan to correct deficiencies identified during an audit and that is developed by an operator following the issuance of an audit report.

Deepwater means the entire OCS, including all water depth of more than 1000 feet (323 m) or more.

Deepwater well control means well control when you are using a subsea BOP system.

Employee means direct employees of the lessees who are assigned well control, deepwater well control, or production safety duties.

Facility means wells, structures, living quarters, drilling and workover packages, process equipment, utilities, pipelines and mobile offshore units.

I or You means the lessee engaged in oil, gas, or sulphur operations in the Outer Continental Shelf (OCS).

Lessee means a person who has entered into a lease with the United States to explore for, develop, and produce the leased minerals. The term lessee also includes an owner of operating rights for that lease and the BOEM-approved assignee of that lease.

Normal operation according to API SPEC 17E is defined as "operating systems within the intended basic functionality".

Operator means the individual, partnership, firm, or corporation having control or management of operations on the leased area or a portion thereof. The operator may be a lessee, designated agent of the lessee(s), or holder of operating rights under an approved operating agreement.

Periodic means occurring or recurring at regular intervals. Each lessee must specify the intervals for periodic training and periodic assessment of training needs in their training programs.

Personnel means direct employee(s) of the operator and contracted workers.

Production operations include, but are not limited to, separation, dehydration, compression, sweetening, and metering operations.

Production safety includes measures, practices, procedures, and equipment to ensure safe, accident-free, and pollution-free production operations, as well as installation, repair, testing, maintenance, and operation of surface and subsurface safety equipment.

Ultimate Work Authority (UWA) means the authority assigned to an individual or position to make final decisions relating to activities and operations on the facility.

Well-control means methods used to minimize the potential for the well to flow or kick and to maintain control of the well in the event of flow or a kick. Well-control applies to drilling, well-completion, well-workover, abandonment, and well-servicing operations. It includes measures, practices, procedures and equipment, such as fluid flow monitoring, to ensure safe and environmentally protective drilling, completion, abandonment, and workover operations as well as the installation, repair, maintenance, and operation of surface and subsea well-control equipment.

Well completion/well workover means those operations following the drilling of a well that are intended to establish or restore production.

Acronyms

Acronyms used frequently in this subpart have the following meanings:

AB	Accreditation Body,
ASP	Audit Service Provider,
CAP	Corrective Action Plan,
COS	Center for Offshore Safety,
EPP	Employee Participation Plan,
ISO	International Organization for Standardization,
JSA	Job Safety Analysis,
MODU	Mobile Offshore Drilling Unit,
OCS	Outer Continental Shelf,
SEMS	Safety and Environmental Management Systems,
SWA	Stop Work Authority,
USCG	United States Coast Guard
UWA	Ultimate Work Authority.

1 Why Must I have a STEMS Program?

To promote safety, protect the environment, and conserve resources, you must develop, implement, and maintain a safety, training and environmental management system (STEMS) program. Your STEMS program must address the elements described in Section 3, 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.

(a) If there are any conflicts between the requirements of this subpart and API RP 75; COS-2-01, COS-2-03, or COS-2-04; or ISO/IEC 17011 (incorporated by reference as specified in §250.198), you must follow the requirements of this subpart.

(b) Nothing in this subpart affects safety or other matters under the jurisdiction of the Coast Guard.

2 What is the goal of my STEMS programs?

The goal of your STEMS program is to promote safety and environmental protection by ensuring all personnel aboard a facility are complying with the policies and procedures identified in your STEMS.

(a) To accomplish this goal, you must ensure that your STEMS program is developed and applicable to your specific facility and encompass the life cycle of your facility from design to decommissioning. Your STEMS program must identify, address, and manage safety, environmental hazards, and impacts during design, construction, start-up, operation (including, but not limited to, drilling, well control, deepwater well control, production safety operations, well completion/ well workover and decommissioning), inspection, and maintenance of all new and existing facilities, including mobile offshore drilling units (MODUs) when attached to the seabed and Department of the Interior (DOI) regulated pipelines.

(b) All personnel involved with your STEMS program must be trained to have the skills and knowledge to perform their assigned duties safely. Additionally, all personnel must undergo operational safety training.

3 What must I include in my STEMS programs?

You must have a properly documented STEMS program in place and make it available to BSEE upon request as required by Section 22(b).

(a) Your STEMS program must meet the minimum criteria outlined in this subpart, including the following STEMS program elements:

(1) General (see Section 5)

(2) Safety and Environmental Information (see Section 6)

(3) Hazards Analysis (see Section 7)

(4) Management of Change (see Section 8)

(5) Operating Procedures (see Section 9)

(6) Safe Work Practices (see Section 10)

(7) Training (see Section 11)

(8) Training Requirement (see Section12)

(9) Training Method (see Section 13)

(10) Training Frequency (see Section 14)

(11) Mechanical Integrity (Assurance of Quality and Mechanical Integrity of Critical Equipment) (see Section 15)

(12) Pre-startup Review (see Section 16)

(13) Emergency Response and Control (see Section 17)

(14) Investigation of Incidents (see Section 18)

(15) Auditing (Audit of Safety and Environmental Management Program Elements) (see Section 19)

(16) Recordkeeping (Records and Documentation) and additional BSEE requirements (see Section 25)

(17) Stop Work Authority (SWA) (see Section 27)

(18) Ultimate Work Authority (UWA) (see Section 28)

(19) Employee Participation Plan (EPP) (see Section 29)

(20) Reporting Unsafe Working Conditions (see Section 30)

(b) You must include a job safety analysis (JSA) for OCS activities identified or discussed in your STEMS program (see Section 7).

(c) Your STEMS program must meet or exceed the standards of safety and environmental protection of API RP 75 (as incorporated by reference in §250.198).

4 Special Instructions

(a) For purposes of this subpart, each and every reference in COS-2-01, COS-2-03, and COS-2-04 (incorporated by reference as specified in §250.198) to the term *deepwater* means the entire OCS, including all water depths.

(b) The BSEE does not incorporate by reference any requirement that you must be a COS member company. For purposes of this subpart, each and every reference in COS-2-01, COS-2-03, and COS-2-04 to the phrase *COS member company(ies)* means you, whether or not you are a COS member.

(c) For purposes of this subpart, each and every reference in the relevant sections of COS-2-01, COS-2-03, and COS-2-04 (incorporated by reference as specified in §250.198) to the *Center for Offshore Safety* or *COS* means *accreditation body* or *AB.*

(d) For purposes of this subpart, each and every reference in ISO/IEC 17011 (incorporated by reference as specified in §250.198) to *conformity assessment body (CAB)* means *ASP.*

5 What are management's general responsibilities for the STEMS program?

You, through your management, must require that the program elements discussed in API RP 75 (as incorporated by reference in §250.198) and in this subpart are properly documented and are available at field and office locations, as appropriate for each program element. You, through your management, are responsible for the development, support, continued improvement, and overall success of your STEMS program. Specifically you, through your management, must:

(a) Establish goals and performance measures, demand accountability for implementation, and provide necessary resources for carrying out an effective STEMS program.

(b) Appoint management representatives who are responsible for establishing, implementing and maintaining an effective STEMS program.

(c) Designate specific management representatives who are responsible for reporting to management on the performance of the STEMS program.

(d) At intervals specified in the STEMS program and at least annually, review the STEMS program to determine if it continues to be suitable, adequate and effective (by addressing the possible need for changes to policy, objectives, and other elements of the program in light of program audit results, changing circumstances and the commitment to continual improvement) and document the observations, conclusions and recommendations of that review.

(e) Develop and endorse a written description of your safety and environmental policies and organizational structure that define responsibilities, authorities, and lines of communication required to implement the STEMS program.

(f) Utilize personnel with expertise in identifying safety hazards, environmental impacts, optimizing operations, developing safe work practices, developing training programs and investigating incidents.

(g) Ensure that facilities are designed, constructed, maintained, monitored, and operated in a manner compatible with applicable industry codes, consensus standards, and generally accepted practice as well as in compliance with all applicable governmental regulations.

(h) Ensure that management of safety hazards and environmental impacts is an integral part of the design, construction, maintenance, operation, and monitoring of each facility.

(i) Ensure that suitably trained and qualified personnel are employed to carry out all aspects of the STEMS program.

(j) Ensure that the STEMS program is maintained and kept up to date by means of periodic audits to ensure effective performance.

6 What safety and environmental information is required?

(a) You must require that STEMS program safety and environmental information be developed and maintained for any facility that is subject to the STEMS program.

(b) STEMS program safety and environmental information must include:

(1) Information that provides the basis for implementing all STEMS program elements, including the requirements of hazard analysis (Section 7);

(2) process design information including, as appropriate, a simplified process flow diagram and acceptable upper and lower limits, where applicable, for items such as temperature, pressure, flow and composition; and

(3) mechanical design information including, as appropriate, piping and instrument diagrams; electrical area classifications; equipment arrangement drawings; design basis of the relief system; description of alarm, shutdown, and interlock systems; description of well control systems; and design basis for passive and active fire protection features and systems and emergency evacuation procedures.

7 What hazards analysis criteria must my STEMS program meet?

You must ensure that a hazards analysis (facility level) and a JSA (operations/task level) are developed and implemented for all of your facilities and activities identified or discussed in your STEMS. You must document and maintain a current analysis for each operation covered by this section for the life of the operation at the facility. You must update the analysis when an internal audit is conducted to ensure that it is consistent with your facility's current operations.

(a) *Hazards analysis (facility level).* The hazards analysis must be appropriate for the complexity of the operation and must identify, evaluate, and manage the hazards involved in the operation.

(1) The hazards analysis must address the following:

(i) Hazards of the normal and well control operation;

(ii) Previous incidents related to the operation you are evaluating, including any incident in which you were issued an Incident of Noncompliance or a civil or criminal penalty;

(iii) Control technology applicable to the operation your hazards analysis is evaluating; and

(iv) A qualitative evaluation of the possible safety and health effects on employees, and potential impacts to the human and marine environments, which may result if the control technology fails.

(2) The hazards analysis must be performed by a person(s) with experience in the operations being evaluated. These individuals also need to be experienced in the hazards analysis methodologies being employed.

(3) You should assure that the recommendations in the hazards analysis are resolved and that the resolution is documented. Personnel affected by the potential hazards and recommendations must be informed and trained to recognize the potential hazard if encountered the same or similar hazards in the future.

(4) A single hazards analysis can be performed to fulfill the requirements for simple and nearly identical facilities, such as well jackets and single well caissons. You can apply this single hazards analysis to simple and nearly identical facilities after you verify that any site-specific deviations are addressed in each of your STEMS program elements.

(b) *JSA.* You must ensure a JSA is prepared, conducted, and approved for OCS activities that are identified or discussed in your STEMS program. The JSA is a technique used to identify risks to personnel associated with their job activities (included but not limited to; production, well control, well completion/workover). The JSAs are also used to determine the appropriate mitigation measures needed to reduce job risks to personnel. The JSA must include all personnel involved with the job activity.

(1) You must ensure that your JSA identifies, analyzes, and records:

(i) The steps involved in performing a specific job including well control;

(ii) The existing or potential safety, health, and environmental hazards associated with each step; and

(iii) The recommended action(s) and/or procedure(s) that will eliminate or reduce these hazards, the risk of a workplace injury or illness, or environmental impacts.

(2) The immediate supervisor of the crew performing the job onsite must conduct the JSA, sign the JSA, and ensure that all personnel participating in the job understand and sign the JSA.

(3) The individual you designate as being in charge of the facility must approve and sign all JSAs before personnel start the job.

(4) If a particular job is conducted on a recurring basis, and if the parameters of these recurring jobs do not change, then the person in charge of the job may decide that a JSA for each individual job is not required. The parameters you must consider in making this determination include, but are not limited to, changes in personnel, procedures, equipment, and environmental conditions associated with the job.

(c) All personnel, which includes contractors, must be trained in accordance with the requirements of Section 11. You must also verify that contractors are trained in accordance with Section 11 prior to performing a job.

8 What criteria for management of change must my STEMS program meet?

(a) You must develop and implement written management of change procedures for modifications associated with the following:

(1) Equipment,

(2) Operating procedures,

(3) Personnel changes (including contractors),

(4) Materials,

(5) Operating conditions, and

(6) Training Program.

(b) Management of change procedures do not apply to situations involving replacement in kind (such as, replacement of one component by another component with the same performance capabilities).

(c) You must review all changes and consult with employees and contractors prior to their implementation.

(d) The following items must be included in your management of change procedures:

(1) The technical basis for the change;

(2) Hazard analysis to evaluate the impact of the change on safety, health, and the coastal and marine environments;

(3) Necessary time period to implement the change; and

(4) Management approval procedures for the change.

(e) Employees, including contractors whose job tasks will be affected by a change in the operation, must be informed of, and trained in, the change prior to startup of the process or affected part of the operation; and

(f) If a management of change results in a change in the operating procedures of your STEMS program, such changes must be documented and dated.

9 What criteria for operating procedures must my STEMS program meet?

(a) You must develop and implement written operating procedures that provide instructions for conducting safe and environmentally sound activities involved in each operation addressed in your STEMS program. These procedures must include the job title and reporting relationship of the person or persons responsible for each of the facility's operating areas and address the following:

(1) Initial startup;

(2) Normal operations including well control;

(3) All emergency operations (including but not limited to well control, medical evacuations, weather-related evacuations and emergency shutdown operations);

(4) Normal shutdown;

(5) Startup following a turnaround, or after an emergency shutdown;

(6) Bypassing and flagging out-of-service equipment;

(7) Safety and environmental consequences of deviating from your equipment operating limits and steps required to correct or avoid this deviation;

(8) Properties of, and hazards presented by, the chemicals used in the operations;

(9) Precautions you will take to prevent the exposure of chemicals used in your operations to personnel and the environment. The precautions must include control technology, personal protective equipment, and measures to be taken if physical contact or airborne exposure occurs;

(10) Raw materials used in your operations and the quality control procedures you used in purchasing these raw materials;

(11) Control of hazardous chemical inventory; and

(12) Impacts to the human and marine environment identified through your hazards analysis.

(b) Operating procedures must be accessible to all employees involved in the operations.

(c) Operating procedures must be reviewed at the conclusion of specified periods and as often as necessary to assure they reflect current and actual operating practices, including any changes made to your operations.

(d) You must develop and implement safe and environmentally sound work practices for identified hazards during operations and the degree of hazard presented.

(e) Review of and changes to the procedures must be documented and communicated to responsible personnel.

10 What criteria must be documented in my STEMS program for safe work practices and contractor selection?

Your STEMS program must establish and implement safe work practices designed to minimize the risks associated with operations, maintenance, modification activities, and the handling of materials and substances that could affect safety or the environment.

Your STEMS program must also document contractor selection criteria. When selecting a contractor, you must obtain and evaluate information regarding the contractor's safety record and environmental performance and level of training received. You must ensure that contractors have their own written safe work practices. You must determine additional safety training that may be required for the contractors. Contractors may adopt appropriate sections of your STEMS program. You and your contractor must document an agreement on appropriate contractor safety and environmental policies and practices before the contractor begins work at your facilities.

(a) A contractor is anyone other than direct employee performing work for you including contractors providing domestic services to you and other contractors. Domestic services include janitorial work, food and beverage service, laundry service, housekeeping, and similar activities. At a minimum the domestic service providers must have sufficient knowledge of safe work practices and potential safety hazards relating to their assigned tasks and duties.

(b) You must document that your contracted employees are knowledgeable, trained and experienced in the work practices necessary to perform their job in a safe and environmentally sound manner. Documentation of each contracted employee's training and expertise to perform his/her job and a copy of the contractor's safety policies and procedures must be made available to the operator and BSEE upon request.

(c) Your STEMS program must include procedures and verification for selecting a contractor as follows:

(1) Your STEMS program must have procedures that verify that contractors are conducting their activities in accordance with your STEMS program.

(2) You are responsible for making certain that contractors have the skills and knowledge and are trained to perform their assigned duties and are conducting these activities in accordance with the requirements in your STEMS program.

(3) You must make the results of your verification for selecting contractors available to BSEE upon request.

(d) Your STEMS program must include procedures and verification that contractor personnel understand and can perform their assigned duties for activities such as, but not limited to:

(1) Installation, maintenance, or repair of equipment;

(2) Construction, startup, and operation of your facilities;

(3) Well control and turnaround operations;

(4) Major renovation; or

(5) Specialty work.

(e) You must:

(1) Perform periodic evaluations of the performance of contract employees that verifies they are fulfilling their obligations and their training and skills continue to meet the requirement of your STEMS program, and

(2) Maintain a contractor employee injury and illness log for 2 years related to the contractor's work in the operation area, and include this information on Form BSEE-0131.

(f) You must inform your contractors of any known hazards at the facility they are working on including, but not limited to fires, explosions, slips, trips, falls, other injuries, and hazards associated with lifting operations.

(g) You must develop and implement safe work practices to control the presence, entrance, and exit of contract employees in operation areas.

11 What training criteria must be in my STEMS program?

Your STEMS program must establish and implement a training program so that all personnel are trained in accordance with their assigned duties and responsibilities to work safely and are aware of potential safety hazards or environmental impacts. Training must address such areas as:

- How to recognize and identify hazards and how to construct and implement JSAs (Section 7)
- Operating procedures (Section 9)
- Safe work practices (Section 10)
- Mechanical integrity (Section 15)
- Emergency response and control measures (Section 17)
- Stop work authority (Section 27)
- Ultimate work authority (Section 28)
- Employee participation plan (Section 29)
- Reporting unsafe working conditions (Section 30)

12 What training requirement must be in my STEMS program?

Your training program must include:

(a) Initial training for the basic well-being of personnel and protection of the environment, and ensure that persons assigned to operate and maintain the facility possess the required knowledge and skills to perform their assigned duties and responsibilities, including startup and shutdown procedures.

(b) Training plan that specifies the type, method(s), length, frequency, and content of the training for your employees. Your training plan must specify the method(s) of verifying employee understanding and performance. This plan must include at least the following information:

(1) Procedures for training employees and contract personnel in well control, deepwater well control, or production safety practices. If you conduct operation with subsea blowout preventer (BOP) stack, The trained employees and contract personnel must have a comprehensive knowledge of deepwater well control equipment, practices, and theory;

(2) Procedures for evaluating the training programs of your contractors;

(3) Procedures for verifying that all employees and contractor personnel engaged in well control, deepwater well control, or production safety operations can perform their assigned duties;

(4) Procedures for assessing the training needs of your employees on a periodic basis;

(5) Procedures for validating and documenting your instructor's qualifications;

(6) Procedures for documenting and recordkeeping of training; and

(7) Internal audit procedures.

(c) Communication requirements to ensure that personnel will be informed of and trained as outlined in this section whenever a change is made in any of the areas in your STEMS program that impacts their ability to properly understand and perform their duties and responsibilities. Training and/or notice of the change must be given before personnel are expected to operate the facility.

(d) How you will verify that the contractors are trained in the work practices necessary to understand and perform their jobs in a safe and environmentally sound manner in accordance with all provisions of this section.

13 What training methods and sources must be in my STEMS program?

(a) You may use alternative training methods. These methods may include computer-based learning, films, or their equivalents. This training should be reinforced by appropriate demonstrations and "hands-on" training. Alternative training methods must be conducted in accordance with, and meet the objectives of, your training plan.

(b) You may get training from any source that meets the requirements of your training plan.

14 What training frequency must be in my STEMS program?

You determine the frequency of the training you provide your employees. You must do all of the following:

(a) Provide periodic training to ensure that employees adherence to the current operating procedures, maintain understanding of, and competency in, well control, deepwater well control, or production safety practices;

(b) Establish procedures, using periodic drills, to verify adequate retention of the knowledge and skills that employees need to perform their assigned well control, deepwater well control, or production safety duties; and

(c) Ensure that your contractors' training programs provide for periodic training and verification of well control, deepwater well control, or production safety knowledge and skills.

(d) Provide additional training in the event the there are any changes in the program.

15 What criteria for mechanical integrity must my STEMS program meet?

You must develop and implement written procedures that provide instructions to ensure the mechanical integrity and safe operation of equipment through inspection, testing, and quality assurance. The purpose of mechanical integrity is to ensure that equipment is fit for service. Your mechanical integrity program must encompass all equipment and systems used to prevent or mitigate uncontrolled releases of hydrocarbons, toxic substances, or other materials that may cause environmental or safety consequences. These procedures must address the following:

(a) The design, procurement, fabrication, installation, calibration, and maintenance of your equipment and systems in accordance with the manufacturer's design and material specifications.

(b) The training of each employee involved in maintaining your equipment and systems so that your employees can implement your mechanical integrity program.

(c) The frequency of inspections and tests of your equipment and systems. The frequency of inspections and tests must be in accordance with BSEE regulations and meet the manufacturer's recommendations. Inspections and tests can be performed more frequently if determined to be necessary by prior operating experience.

(d) The documentation of each inspection and test that has been performed on your equipment and systems. This documentation must identify the date of the inspection or test; include the name and position, and the signature of the person who performed the inspection or test; include the serial number or other identifier of the equipment on which the inspection or test was performed; include a description of the inspection or test performed; and the results of the inspection test.

(e) The correction of deficiencies associated with equipment and systems that are outside the manufacturer's recommended limits. Such corrections must be made before further use of the equipment and system.

(f) The installation of new equipment and constructing systems. The procedures must address the application for which they will be used.

(g) The modification of existing equipment and systems. The procedures must ensure that they are modified for the application for which they will be used.

(h) The verification that inspections and tests are being performed. The procedures must be appropriate to ensure that equipment and systems are installed consistent with design specifications and the manufacturer's instructions.

(i) The assurance that maintenance materials, spare parts, and equipment are suitable for the applications for which they will be used.

16 What criteria for pre-startup review must be in my STEMS program?

Your STEMS program must require that the commissioning process include a pre-startup safety and environmental review for new and significantly modified facilities. "Significantly modified facilities" refers to any modification when a system or component is changed with a new component that may not have the same performance capability, this may include redesign and system upgrades, etc. Components that are changed with a new component but with the same performance capability are not considered a significant modification. New and significantly modified facilities are subject to this subpart to confirm that the following criteria are met:

(a) Construction and equipment are in accordance with applicable specifications.

(b) Safety, environmental, operating, maintenance, and emergency procedures are in place and are adequate.

(c) Safety and environmental information is current.

(d) Hazards analysis recommendations have been implemented as appropriate.

(e) Training of operating personnel in well control, deepwater well control, or production safety practices has been completed.

(f) Programs to address management of change and other elements of this subpart are in place.

(g) Safe work practices are in place.

(h) All personnel are knowledgeable about emergency response plan.

17 What criteria for emergency response and control must be in my STEMS program?

Your STEMS program must require that emergency response and control plans are in place and are ready for immediate implementation. These plans must be validated by drills carried out in accordance with a schedule defined by the STEMS training program (Section 11). The STEMS emergency response and control plans must include:

(a) Emergency Action Plan that assigns authority and responsibility to the appropriate qualified person(s) at a facility for initiating effective emergency response and well control, addressing emergency reporting and response requirements, and complying with all applicable governmental regulations;

(b) Emergency Control Center(s) designated for each facility with access to the Emergency Action Plans, oil spill contingency plan, and other safety and environmental information (Section 6); and

(c) Training and Drills incorporating emergency response and evacuation procedures conducted periodically for all personnel (including contractor's personnel and domestic services providers), as required by the STEMS training program (Section 11). Drills must be based on realistic scenarios conducted periodically to exercise elements contained in the facility or area emergency action plan. An analysis and critique of each drill must be conducted to identify and correct weaknesses.

18 What criteria for investigation of incidents must be in my STEMS program?

To learn from incidents and help prevent similar incidents, your STEMS program must establish procedures for investigation of all incidents with serious safety or environmental consequences and require investigation of incidents that are determined by facility management or BSEE to have possessed the potential for serious safety or environmental consequences. Incident investigations must be initiated as promptly as possible, with due regard for the necessity of securing the incident scene and protecting people and the environment. Incident investigations must be conducted by personnel knowledgeable in the process involved, investigation techniques, and other specialties that are relevant or necessary.

(a) The investigation of an incident must address the following:

(1) The nature of the incident;

(2) The factors (human or other) that contributed to the initiation of the incident and its escalation/control; and

(3) Recommended changes identified as a result of the investigation.

(b) A corrective action program must be established based on the findings of the investigation in order to analyze incidents for common root causes. The corrective action program must:

(1) Retain the findings of investigations for use in the next hazard analysis update or audit;

(2) Determine and document the response to each finding to ensure that corrective actions are completed; and

(3) Implement a system whereby conclusions of investigations are distributed to similar facilities and appropriate personnel within their organization. If necessary, train personnel on incident prevention and how to avoid incident by implementing the appropriate corrective action.

19 What are the auditing requirements for my STEMS program?

(a) Your STEMS program must be audited by an accredited ASP according to the requirements of this subpart and API RP 75, Section 12 (incorporated by reference as specified in §250.198). The audit process must also meet or exceed the criteria in Sections 9.1 through 9.8 of *Requirements for Third-party STEMS Auditing and Certification of Deepwater Operations* COS-2-03 (incorporated by reference as specified in §250.198) or its equivalent. Additionally, the audit team lead must be an employee, representative, or agent of the ASP, and must not have any affiliation with the operator. The remaining team members may be chosen from your personnel and those of the ASP. The audit must be comprehensive and include all elements of your STEMS program. It must also identify safety and environmental performance deficiencies.

(b) Your audit plan and procedures must meet or exceed all of the recommendations included in API RP 75 section 12 (as specified in §250.198) and include information on how you addressed those recommendations. You must specifically address the following items:

(1) Section 12.1 General.

(2) Section 12.2 Scope.

(3) Section 12.3 Audit Coverage.

(4) Section 12.4 Audit Plan. You must submit your written Audit Plan to BSEE at least 30 days before the audit. BSEE reserves the right to modify the list of facilities that you propose to audit.

(5) Section 12.5 Audit Frequency, except your audit interval, must not exceed 3 years after the 2-year time period for the first audit. The 3-year auditing cycle begins on the start date of each comprehensive audit (including the initial implementation audit) and ends on the start date of your next comprehensive audit.

(6) Section 12.6 Audit Team. Your audits must be performed by an ASP as described in Section 20. You must include the ASP's qualifications in your audit plan.

(c) You must submit an audit report of the audit findings, observations, deficiencies identified, and conclusions to BSEE within 60 days of the audit completion date.

(d) You must provide BSEE with a copy of your CAP for addressing the deficiencies identified in your audit within 60 days of the audit completion date. Your CAP must include the name and job title of the personnel responsible for correcting the identified deficiency(ies). The BSEE will notify you as soon as practicable after receipt of your CAP if your proposed schedule is not acceptable or if the CAP does not effectively address the audit findings.

20 What qualifications must the ASP meet?

(a) The ASP must meet or exceed the qualifications, competency, and training criteria contained in Section 3 and Sections 6 through 10 of *Qualification and Competence Requirements for Audit Teams and Auditors Performing Third-party STEMS Audits of Deepwater Operations,* COS-2-01, (incorporated by reference as specified in §250.198) or its equivalent;

(b) The ASP must be accredited by a BSEE-approved AB; and

(c) The ASP must perform an audit in accordance with Section 19(a).

21 What qualifications must an AB meet?

(a) In order for BSEE to approve an AB, the organization must satisfy the requirements of the International Organization for Standardization's (ISO/IEC 17011) *Conformity assessment—General requirements for accreditation bodies accrediting conformity assessment bodies,* First Edition 2004-09-01; Corrected Version 2005-02-15 (incorporated by reference as specified in §250.198) or its equivalent.

(1) The AB must have an accreditation process that meets or exceeds the requirements contained in Section 6 of *Requirements for Accreditation of Audit Service Providers Performing STEMS Audits and Certification of Deepwater Operations,* COS-2-04 (incorporated by reference as specified in §250.198) or its equivalent, and other requirements specified in this subpart. Organizations requesting approval must submit documentation to BSEE describing the process for assessing an ASP for accreditation and approving, maintaining, and withdrawing the accreditation of an ASP. Requests for approval must be sent to DOI/BSEE, ATTN: Chief, Office of Offshore Regulatory Programs, 45600 Woodland Rd, Sterling, VA. 20166.

(2) An AB may be subject to BSEE audits and other requirements deemed necessary to verify compliance with the accreditation requirements.

(b) An AB must have procedures in place to avoid conflicts of interest with the ASP and make such information available to BSEE upon request.

22 How will BSEE determine if my STEMS program is effective?

(a) The BSEE, or its authorized representative, may evaluate or visit your facility(ies) to determine whether your STEMS program is in place, addresses all required elements, is effective in protecting worker safety and health and the environment, and preventing incidents. The BSEE, or its authorized representative, may evaluate any and all aspects of your STEMS program as outlined in this subpart.

These evaluations or visits may be random and may be based upon your performance or that of your contractors.

(b) For the evaluations, you must make the following available to BSEE upon request:

(1) Your STEMS program;

(2) Your audit team's qualifications;

(3) The STEMS audits conducted of your program;

(4) Documents or information relevant to whether you have addressed and corrected the deficiencies of your audit; and

(5) Other relevant documents or information.

(c) During the site visit BSEE may verify that:

(1) Personnel are following your STEMS program,

(2) You can explain and demonstrate the procedures and policies included in your STEMS program; and

(3) You can produce evidence to support the implementation of your STEMS program.

(d) The BSEE, or its authorized representative, may periodically assess your training program, using one or more of the methods in this section.

(1) *Training system audit.* BSEE or its authorized representative may conduct a training system audit at your office. The training system audit will compare your training program against this subpart. You must be prepared to explain your overall training program and produce evidence to support your explanation.

(2) *Employee or contract personnel interviews.* BSEE or its authorized representative may conduct interviews at either onshore or offshore locations to inquire about the types of training that were provided, when and where this training was conducted, and how effective the training was.

(3) *Employee or contract personnel testing.* BSEE or its authorized representative may conduct testing at either onshore or offshore locations for the purpose of evaluating an individual's knowledge and skills in perfecting well control, deepwater well control, and production safety duties.

(4) *Hands-on production safety, simulator, or live well testing.* BSEE or its authorized representative may conduct tests at either onshore or offshore locations. Tests will be designed to evaluate the competency of your employees or contract personnel in performing their assigned well control, deepwater well control, and production safety duties. You are responsible for the costs associated with this testing, excluding salary and travel costs for BSEE personnel.

(e) The BSEE, or its authorized representative, may test your employees or contract personnel at your worksite or at an onshore location. You and your contractors must:

(1) Allow BSEE or its authorized representative to administer written or oral tests; and

(2) Identify personnel by current position, years of experience in present position, years of total oil field experience, and employer's name (e.g., operator, contractor, or sub-contractor company name).

(f) The BSEE, or its authorized representative, may conducts, or requires you or your contractor to conduct hands-on, simulator, or other types of testing, you must:

(1) Allow BSEE or its authorized representative to administer or witness the testing;
(2) Identify personnel by current position, years of experience in present position, years of total oil field experience, and employer's name (e.g., operator, contractor, or sub-contractor company name); and
(3) Pay for all costs associated with the testing, excluding salary and travel costs for BSEE personnel.

23 May BSEE direct me to conduct additional audits?

(a) The BSEE may direct you to have an ASP audit of your STEMS program if BSEE identifies safety or non-compliance concerns based on the results of our inspections and evaluations, or as a result of an event. This BSEE-directed audit is in addition to the regular audit required by Section 19. Alternatively, BSEE may conduct an audit.

(1) If BSEE directs you to have an ASP audit, you are responsible for all of the costs associated with the audit, and

(i) The ASP must meet the requirements of Section 19 and 20 of this subpart.

(ii) You must submit an audit report of the audit findings, observations, deficiencies identified, and conclusions to BSEE within 60 days of the audit completion date.

(2) If BSEE conducts the audit, BSEE will provide you with a report of the audit findings, observations, deficiencies identified, and conclusions as soon as practicable.

(b) You must provide BSEE a copy of your CAP for addressing the deficiencies identified in the BSEE-directed audit within 60 days of the audit completion date. Your CAP must include the name and job title of the personnel responsible for correcting the identified deficiency(ies). The BSEE will notify you as soon as practicable after receipt of your CAP if your proposed schedule is not acceptable or if the CAP does not effectively address the audit findings.

24 What happens if BSEE finds shortcomings in my STEMS program?

If BSEE determines that your STEMS program is not in compliance with this subpart, we may initiate one or more of the following enforcement actions:

(a) Issue an Incident(s) of Noncompliance (INC);

(b) Assess civil/criminal penalties;

(c) Require you to revise and submit to BSEE your STEMS Program (including training plan) to address identified deficiencies; or

(d) Initiate probationary or disqualification procedures from serving as an OCS operator.

25 What are my recordkeeping and documentation requirements?

(a) Your STEMS program procedures must ensure that records and documents are maintained for a period of 6 years, except as provided below. You must document and keep all STEMS audits for 6 years and make them available to BSEE upon request. You must maintain a copy of all STEMS program documents at an onshore location.

(b) For JSAs, the person in charge of the job must document the results of the JSA in writing and must ensure that records are kept onsite for 30 days. In the case of a MODU, records must be kept onsite for 30 days or until you release the MODU, whichever comes first. You must retain these records for 2 years and make them available to BSEE upon request.

(c) You must document and date all management of change provisions as specified in Section 8. You must retain these records for 2 years and make them available to BSEE upon request.

(d) You must keep your injury/illness log for 2 years and make them available to BSEE upon request.

(e) You must keep all evaluations completed on contractor's safety policies and procedures for 2 years and make them available to BSEE upon request.

(f) For SWA, you must document all training and reviews required by Section 27(e). You must ensure that these records are kept onsite for 30 days. In the case of a MODU, records must be kept onsite for 30 days or until you release the MODU, whichever comes first. You must retain these records for 2 years and make them available to BSEE upon request.

(g) For EPP, you must document your employees' participation in the development and implementation of the STEMS program. You must retain these records for 2 years and make them available to BSEE upon request.

(h) You must keep all records in an orderly manner, readily identifiable, retrievable and legible, and include the date of any and all revisions.

(g) You must maintain copies of training plan and documentation for personnel involved in well control, deepwater well control, or production safety operations during the past 5 years and upon request provide to District Manager or Regional Supervisor.

26 What are my responsibilities for submitting OCS performance measure data?

You must submit Form BSEE-0131 on an annual basis by March 31st. The form must be broken down quarterly, reporting the previous calendar year's data.

27 What must be included in my STEMS program for SWA?

(a) Your SWA procedures must ensure the capability to immediately stop work that is creating imminent risk or danger. These procedures must grant all personnel the responsibility and authority, without

fear of reprisal, to stop work or decline to perform an assigned task when an imminent risk or danger exists. Imminent risk or danger means any condition, activity, or practice in the workplace that could reasonably be expected to cause:

(1) Death or serious physical harm; or

(2) Significant environmental harm to:

(i) Land;

(ii) Air; or

(iii) Mineral deposits, marine, coastal, or human environment.

(b) The person in charge of the conducted work is responsible for ensuring the work is stopped in an orderly and safe manner. Individuals who receive a notification to stop work must comply with that direction immediately.

(c) Work may be resumed when the individual on the facility with UWA determines that the imminent risk or danger does not exist or no longer exists. The decision to resume activities must be documented in writing as soon as practicable.

(d) You must include SWA procedures and expectations as a standard statement in all JSAs.

(e) You must conduct training on your SWA procedures as part of orientations for all new personnel who perform activities on the OCS. Additionally, the SWA procedures must be reviewed during all meetings focusing on safety on facilities subject to this subpart.

28 What must be included in my STEMS program for UWA?

(a) Your STEMS program must have a process to identify the individual with the UWA on your facility(ies). You must designate this individual taking into account all applicable USCG regulations that deal with designating a person in charge of an OCS facility. Your STEMS program must clearly define who is in charge at all times. In the event that multiple facilities, including a MODU, are attached and working together or in close proximity to one another to perform an OCS operation, your STEMS program must identify the individual with the UWA over the entire operation, including all facilities.

(b) You must ensure that all personnel clearly know who has UWA and who is in charge of a specific operation or activity at all times, including when that responsibility shifts to a different individual.

(c) The STEMS program must provide that if an emergency occurs that creates an imminent risk or danger to the health or safety of an individual, the public, or to the environment (as specified in Section 27 (a)), the individual with the UWA is authorized to pursue the most effective action necessary in that individual's judgment for mitigating and abating the conditions or practices causing the emergency.

29 What are my EPP requirements?

(a) Your management must consult with their employees and contractors on the development, implementation, and modification of your STEMS program.

(b) Your management must develop a written plan of action and training regarding how your appropriate employees, in both your offices and those working on offshore facilities, will participate in your STEMS program development and implementation.

(c) Your management must ensure that employees and contractors have access to sections of your STEMS program that are relevant to their jobs.

(d) Your management must develop training methods for accessing and evaluating relevant section of your STEMS program for determining the effect of modifications to your STEMS program.

30 What procedures must be included for reporting unsafe working conditions?

(a) Your STEMS program must include procedures and training for all personnel to report unsafe working conditions in accordance with §250.193 (Reports and Investigations of Possible Violations). These procedures must take into account applicable USCG reporting requirements for unsafe working conditions.

(b) You must develop and provide periodic training program (as detailed in section 13) on how to recognize, identify and report unsafe working conditions.

(c) You must post a notice at the place of employment in a visible location frequently visited by personnel that contains the reporting information in §250.193.