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Guidance document for Training & Capacity Building for E&P Operators.



By

**Directorate General of Hydrocarbon,
MoPNG, Govt. of India.**

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It is recognised that the guidelines compiled in this section will definitely assist each individual worker to improve his/her competence and reduce accidents and possibly mitigate all the hazardous situation which may arise during Workover/Drilling operations and improve the overall efficacy, efficiency and safety of E&P industry.

1. Recommendation for training

Based on the above information provided by the major E&P operators, it is observed that the major operators are having adequate infrastructure for imparting required trainings either in-house or through tie up with the outside agencies. However, the small operators who are relatively new in the E&P business don't have this well-established training infrastructure. They seem to have less experienced manpower having little exposure and technical know-how in comparison to their major counterparts.

Based on the training list received from IDT, IPSHEM and major E&P operators (like RIL, Vedanta Ltd., etc.) and the availability of sharable training facilities with other E&P operators, a list of training courses has been prepared. It is pertinent to mention that the shortlisted training courses are based on internationally accepted & prevalent safe E&P practices and are aligned to OISD Standard (OISD-176).

Table 1. List of Training courses.

S.No	List of Training	Duration of course & Frequency or certificate validity	Personnel to be trained
1	IWCF – Level 2 / IADC Well Sharp Introductory well control course, (Introductory level)	5 days & 5 year	For rig crews below Shift In-charge including Rig-man, Top-man & having no past valid well control certification, New employee (every five year)
2	IWCF-Level 3 (Driller level)	5 days & 2 year	Shift In-charge / Assistant Shift In-charge/Asst. Driller
3	IWCF-Level 4 (Supervisory level)	5 days & 2 year	Tool Pusher, DIC, Rig Manager, Company Man, Offshore Installation Manager (OIM)

4	IADC Well Sharp (Driller Level)	5 days & 2 year	Shift In-charge / Assistant Shift In-charge/ Asst. Driller
5	IADC Well Sharp (Supervisory level)	5 days & 2 year	Tool Pusher, DIC, Rig Manager, Company Man, Offshore Installation Manager (OIM)
6	IADC Well Sharp Introductory Well Servicing course	5 days & 5 year	For crews below Shift In-charge including Rig-man, Top-man, technician & having no past valid well control certification, New employee working on workover rig
7	IADC Well Sharp Work-over & completion (Equipment operator level)	5 days & 2 year	Shift In-charge / Assistant Shift In-charge working with well services & Well Stimulation services (WSS)
8	IWCF Well Intervention Pressure Control (L3/L4)	5 days & 2 year	Well services & Well Stimulation Services, coil tubing, snubbing & wireline operational personnel
9	Safety in Drilling	5 days & 2 year	All employees going to drill site
10	Safety in Drilling for Contractor's Supervisor	1 day & 2 year	All contractor supervisors dealing with drilling operations
11	Safety training for Barge Engineers/ Safety Officers	7 days & 2 year	All Barge Engineers/Safety officers
12	Safety in production operations for contractor's supervisors	1 day & 2 year	All contractor supervisors dealing with production operations
13	Helicopter Underwater Escape Training with EBS (HUET)	1 day & 4 year	All persons travelling to offshore by helicopter
14	Blow-Out Control Contingencies	3 days & 5 Year	Fire Service professionals.
15	Fire Fighting Team Member	5 days & 4 Year	All employees at Site's Fire Fighting team or Search & Rescue Team or Emergency Response Team to train them to handle emergency situations.
16	SAS (Survival at Sea)	5 days & 4 Year	All offshore going personnel.

Note:

- a. Since the contents of the IADC and IWCF accredited training courses are similar, it is sufficient to undergo any one of the courses (either IADC or IWCF) based on the level and assignment of the persons.
- b. The above list is an indicative list. Additional training programmes will need to be identified and imparted to the personnel based on the risk assessment, operations and job profile of the individuals.

Types of Trainings to be imparted:

- i. Initial/Induction Safety Trainings
- ii. Mandatory Safety Trainings
- iii. Refresher Safety Trainings
- iv. Special/Advanced Safety Trainings

OISD-STD-176 may be referred for identification Safety training programmes.

Training Matrix

Every E&P company should develop Training matrix for all its employees based on risk assessment, competency requirement and competency availability.

It is recommended that every E&P operator should develop a system to assess the development of competence of trainees after the training and on the job after training in line with the OISD-176 (7.0-Evaluation of safety training programme).

2. Recommendations regarding Capacity Building:

Capacity building deals with enhancement of existing Human resources capacity, training Infrastructure, quality of institutions and technology used in an organisation. The recommendations regarding capacity building of E&P industry are summarised as following: -

- i. All major operators need to upgrade their safety training infrastructure with incorporation of latest technologies.
- ii. The medium and small operators need to take help from major operators through collaboration/association/MoU to enhance their capacity regarding men, material, facilities, and technology.
- iii. Every E&P operator needs to carry out risk assessment of their operations and identify the training needs in addition to the recommended list of training and Impart training based on gap analysis to develop required competency.
- iv. Every E&P operator needs to develop a strong crisis management team well equipped and trained to handle emergencies like oil/ gas well blowouts and /or enter into a MoU with one or more international/ Indian agency for

immediate deployment of expert manpower and equipment in a crisis situation.

- v. It is recommended for Constitution of a National Crisis Management Team (NCMT) and Blowout Emergency Response Equipment Centre (BEREC) pooled from the experts working in CMT of different E&P operators & with all necessary identified equipment all across the country, region wise (like East, West, North-East, Central and Southern), with the participation of E&P companies.
- vi. It is recommended to improve the logistic supports for timely mobilization of Blowout control equipment to reduce delays in blowout control operations (It was observed in case of the Baghjan blowout that Guwahati Airport was not having facility for landing the aircraft containing the emergency blow out capping equipment from Singapore, so the aircraft landed at Kolkata and then the equipment was transported to Baghjan by land route. This delayed the Blowout control time significantly).
- vii. Provisions of the Disaster Management Act, 2005 and Rules thereunder may be invoked in case of a Blowout. District administration should earmark a suitable area near the Blow out well for developing emergency facilities and for drilling of relief well for early containment of the disaster. Disaster Management Plan (DMP) of Districts and organizations should be reviewed and suitably revised in view of this incident.
- viii. All possible scenarios of well control (including situation when there is no BOP on the well) should be documented in well control procedure and practiced through regular drills.
- ix. All E&P operators should have their own **Corporate disaster management plan (CDMP)**, emergency response plan (ERP) and disaster management plan (DMP).
- x. IT-enabled systems have to be introduced for Drilling, Work Over and Production operations to ensure availability of real-time information on critical well operations to IM and other relevant officers for improved decision making and to ensure higher attention to safety. Round the clock surveillance of installation should be done with CCTV.
- xi. The organizational structure of HSE needs to be reviewed. Chief of HSE at Corporate level, should directly report to Head of the organisation. All heads of HSE of different regions and groups should report to this group. Organizations should ensure that HSE group is adequately manned by domain experts with HSE specialization, Organizations may also deliberate on creating HSE cadre to create a group of HSE specialist.

3. Recommendations regarding Competency Assessment

Following are the recommendations for improving the competency level of E&P industry: -

- i. Competency and deployment of contractual rig personnel to be ensured through contracts. Competency of key personnel should be verified based on IADC competence assurance guidelines (provided at clause 3.2 below). No person should be engaged without the approval of operator's authorized official in writing. Competency of crew should also be assessed on job by Installation Manager through various drills including BOP drill and day to day monitoring.
- ii. Organisations should move towards Quality and Cost Based Sourcing (QCBS) procedure of contracting rigs and manpower. Competency criteria for key operational personnel of charter hired rigs and Man Management Contract (MMC) should be reviewed and revised to ensure competency. A system based on IADC competence assurance guidelines should be introduced for ensuring competence of the personnel before approving them for engagement. A formal system of approval in writing should be ensured.
- iii. All the oil & gas sector organizations should take actions/ impose penalties against contractors and employees not following the policies, procedures and for the lapses leading to an accident.
- iv. Organisations should conduct a detailed safety audit of all rigs and installations including all critical rig equipment (both hired and company-owned) and map the competence of all key personnel. This should be done on an annual basis in future. Deficiencies/ non-compliances should be complied with as soon as possible. Focus to be given to expeditiously clear all pending safety issues and safety audit observations raised by regulator, OISD, third party or internal teams, in a time-bound manner.
- v. Detailed internal audit by Operator should be conducted within 15 days of deployment of new contract rig as per OISD-STD-145. Internal audit of all rigs and installations should be carried out by specially constituted MDT once every year as per OISD checklist in line with OISD-STD-145.
- vi. Review the existing system of ensuring competency (identifying competency gap, training mechanism, imparting training to bridge the gap, reviewing effectiveness of training) and accordingly develop strategy to develop competency among crew.
- vii. The competency of contractual manpower can be ensured through contract clause while hiring for Drilling/Workover Rig, Equipment or Manpower through O&M contracts.
- viii. A threshold limit for safety performance of a company should be included as one of the qualifying conditions while awarding contracts by all E&P operators.

Besides these guidelines the organisations can practice a module given below for enhancing the competency of their employee and contractual workforce: -

3.1 Competency

The Knowledge, Skill & Ability (**KSA**) components of competence can be defined as:

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- Knowledge: An employee's clear and practical understanding of the material needed to perform his or her job successfully and efficiently. Knowledge can be tested.
- Skill: An employee's ability to perform the job tasks consistently, precisely, and reliably. Skills can be assessed.
- Ability: An employee's physical capabilities (e.g., climbing, lifting, seeing, hearing). Ability can be determined but typically cannot be enhanced.

3.2 Assessment of Competency

There should have a procedure for assessment that is clearly defined, documented, and communicated. A plan and timeline for initial assessment as well as reassessment of the candidate should be recorded/documentated to ensure consistency in applying the program and continued competence of individual employees.

The following events usually indicate the need for an assessment to take place:

- Initial assessment/pre-assessment
 - ✓ Implementation of a competence program.
 - ✓ New hire.
- Change in role or responsibilities
 - ✓ Promotion.
 - ✓ Transfer to new asset class or product line.
- Change in:
 - ✓ Defined competencies.
 - ✓ Equipment upgrades.
 - ✓ Operating procedures
- Reassessment
 - ✓ Company specific reassessment timeframes (yearly, biannually, etc.).
 - ✓ Based on outcome of a risk assessment, safety case, occurrence of, or potential occurrence of an incident, etc.

3.3 Competence Rating System

A competence program requires a system for rating employee performance against the competency line items. A Six-point rating system is recommended to evaluate the competency of individual:

Six-point—No Knowledge / Unsatisfactory / Needs Improvement / Meets Competency Expectations / Exceeds Expectations / Significantly Exceeds Expectations (Table 2 below shows an example record of this six-point rating system.)

Table 2. Example of a Six-point Competence Rating System Record.

Competency (Knowledge, Skill or Ability)	Competence Rating	Assessor Signature	Date
Demonstrate ability to dismantle and re-assemble SPM valve.	3		10-Oct-21
0-No Knowledge			
1-Unsatisfactory			
2-Needs improvement			
3-Meets Competency			
4-Exceeds expectations			
5-Significantly exceeds expectations			

3.4 Methods to achieve competencies

There are four acceptable methods for training and assessment of competencies.

- i. A company may use a Registered Training Organisation accredited to deliver, conduct and assess the specified units of competence. An accredited Registered Training Organisation (RTO) will issue Statements of Attainment and certified qualifications on completion. A drilling company may be a registered RTO in their own right; or
- ii. A company may use an external trainer and/or assessor who holds a Certificate of Training and Assessment, as well as the recognised competencies. The company can be affiliated with a RTO; or
- iii. A company may use a qualified content expert in conjunction with a qualified assessor affiliated with a RTO:
 - The content expert must hold the qualification being assessed; and
 - The assessor must hold the Certificate of Training and Assessment; or

- iv. A person may be considered to have met the required competencies if it can be demonstrated that they have completed an equivalent competency (e.g. international competencies). For rig workers who have undertaken other oil and gas drilling training it will be necessary for the operators to map the worker's competency to the equivalent training package qualifications in this Standard, and arrange gap training if necessary.

3.5 Managing the Outcome

The outcome of assessments can be used to identify competence strengths for career progression and identify competence gaps for further employee development. The company should have a clearly defined process for determining what action to take when an individual is deemed not yet competent.

3.6 Closing Competency Gaps

The employee should be offered opportunities for development and reassessment whenever a competency gap is identified. Opportunities for development may include on-the-job training, formal classroom training, coaching, computer-based instruction, and hands-on/simulator instruction. A plan and timeline for reassessing the candidate should be recorded/ documented to move the employee toward achieving or maintaining competence.