HSE Regulations in Drilling & Completion Operations

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Introduction:

With competent health and safety personnel who drives this force, the Oil and Gas Exploration Industries will continue to be a safe place to workers. The conventional oil and gas well industry calls for highly specialized safety services. As the technologies for onshore and offshore drilling, completion and production evolve, so does the demand for expert health, safety and environment monitoring.

HSE has the people and the equipment to safeguard workers, assets, and the environment, and ensure compliance with all applicable government, industry, and corporate standards and codes of practice. HSE services are handled by seasoned professionals with decades of international experience.

The course provides training in the understanding and interpretation of HSE Regulations related to drilling and wells. The course focuses on a number of key elements including the design of drilling facilities, well construction, drilling operations and maintenance. The course explains how drilling and completion operations are planned and executed to meet all HSE objectives, maximize well productivity, and cater for future work over and intervention needs. HSE concepts and methods are presented together with down-hole equipment, tools and their selection criteria. This course provides a thorough understanding of risks associated to drilling operations and to reinforce the HSE culture of the workplace environment.

Objectives:

By the end of this BTS training course, participants will be able to:

- Ensure high HSE standard during drilling operations
- Identify specific hazards, their associated risks during drilling/completion operations and to define prevention and mitigation measures to reduce risks
- Identify the certificates necessary to ensure the suitability of equipment and personnel
- Understand and apply typical HSE management practices on site (prevention, protection, emergency planning)

Who should attend?

Drilling Engineers, Senior Drilling Engineers, Drilling Supervisors, Drilling Superintendents, Petroleum Engineers, Completion Engineers, Tool Pushers, Reservoir and Senior Reservoir Engineers, Geologists, Production and Completion Engineers, Foremen, Work over Engineers, Petroleum Engineers, Completion Engineers, Tool Pushers, Reservoir and Senior Industry Personnel, Lifting Personnel, Maintenance Engineers, Technologists, Mud Engineers, Well Site Supervisors, Drilling Contractors, Drilling Supervisors, Completion Engineers, Completion Supervisors, Drilling Managers, Drilling Technical Support Personnel, Trainee Drillers, Rig Engineers, Industry Personnel, Completion engineers, Production staff, Petroleum engineers, Other technical staff that need an understanding and an appreciation of HSE aspects of well drilling, completion, work-over and well intervention, Roustabouts, Roughnecks, Derrick men, Assistant Drillers and leading drilling personnel offshore, Employees and managers in drilling service Companies, Management of drilling rigs and drilling installations, Engineering personnel for design and modification of drilling facilities, Safety Delegates, Safety Coaches.

Course Outline:

General Risks Associated to Drilling Operations:

- Introduction to risk assessment process
- Hazard identification and risk assessment
- Risk of flammability
- Explosive atmospheres (ATEX): flammable products, explosive limits and flash point
- Ignition sources: naked flame, auto-ignition temperature, sparks and static electricity
- Risks associated with chemical products/toxic gas (H2S)
- Health and hygiene risks
- Medical fitness to work certificates
- Electrical risks
- Area classification requirements
- Personal Protective Equipment (PPE)

Risks Associated With Rig Equipment

- Introduction to risks associated to derrick, rig floor, stabbing board, derrick board and crown block
- Risk of dropped objects
- Works at height

- Introduction to risks associated to draw works, top drive, travelling block, winches and pipe handling system
- HSE management of lifting and rigging operations.

Risks Associated With Drilling Fluids Processing& Cementing Operations:

- Risks associated to mud preparation, mud tanks and mud pumps
- Confined space entry procedure
- Risks associated to cuttings treatment units: shakers, degasser, desander, centrifuge
- Risks associated to cementing units and cementing operations
- HSE management of pressurized equipment

HSE Management of Well Control Equipment:

- Scenarios associated to well control and main impacts. Examples of catastrophic events
- Description and action of well control equipment
- Testing requirements: functional and pressure tests
- Inspection and certification of equipment and personnel with responsibilities in well control scenarios.

Risks Associated With Support Facilities:

- Engine rooms, power generation and air compressors
- Risks at workshops: hand tools, compressed gas bottles
- HSE management of storage areas
- Introduction to HSE in logistics: materials and personnel transportation requirements
- Common areas: living quarters, kitchens

Safety Engineering in Drilling Operations

- General layout of drilling activities: safety distances
- Fire & gas detection systems: certificate and testing requirements

Organizational Framework:

- Introduction to HSE management system
- HSE management of contractors
- HSE evaluation of contractor selection
- Objectives and development of HSE bridging document: case study
- Emergency response planning
- Main elements and resources: blow out contingency plan, environmental contingency plan and Medevac plan
- Clinic requirements
- Emergency drills

- Risks associated to simultaneous operations with production and construction activities
- Management of change procedure
- Undesired event reporting

Environmental Management of Drilling Operations:

- Introduction to environmental impacts of drilling operations.
- Environmental impact assessment and environmental management plan
- Waste management practices for drilling operations
- Well testing environmental impacts