



Subsea Engineering Competency Profile

SAFETY AND RISK ENGINEERING FUNDAMENTALS

DE-005

This competency demonstrates a subsea engineer has working knowledge of:

- safety and risk management principles
- an understanding of the role of safety and risk assessments and the tools employed for safety and risk assessments throughout the lifecycle of subsea production systems
- the application of safety and risk management frameworks over the various lifecycle phases of a subsea production system
- the application of safety and risk management frameworks to operations conducted on the subsea production system
- emergency response and incident response activities

ELEMENT OF COMPETENCE	WHAT THIS COMPETENCE MEANS IN PRACTICE	INDICATORS OF ATTAINMENT
<p>Working knowledge of safety management processes and theory, and how these are applied including:</p> <ul style="list-style-type: none"> • health and safety regulations • safety in design • construction safety assessment • operations safety assessment • safety management systems • emergency response planning • permit to work and maintenance safety systems. 	<p>Capable of providing support for project and operations teams to execute work safely in compliance with all applicable regulations</p> <p>Recognises the role, applications and limitations of safety and risk assessment methodologies employed in the industry.</p> <p>Understands the safety implications of facility design choices</p>	<p>Refer to only as many Indicators of Attainment as you need to demonstrate the Element of Competence</p> <p>Has contributed input into the facilities description, management system description or safety assessment sections of at least two safety cases for a subsea production system.</p> <p>Has led, contributed to, or participated in at least five safety assessments that are related to subsea production systems</p> <p>Can describe how work is executed and controlled on production systems from a safety and risk perspective</p>
<p>Working Knowledge of risk management processes and theory, and how these are applied including:</p> <ul style="list-style-type: none"> • risk assessment principles and processes such as risk and reliability criteria: HAZOP, HAZID, HAZAN, HIRA, FMECA and RAM 	<p>Capable of:</p> <ul style="list-style-type: none"> • Providing input into risk assessment processes as they pertain to lifecycle operations on subsea production systems 	<p>Has lead, contributed to, or participated in at least five risk assessments that are related to subsea production systems.</p>



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ELEMENT OF COMPETENCE	WHAT THIS COMPETENCE MEANS IN PRACTICE	INDICATORS OF ATTAINMENT
<ul style="list-style-type: none"> • process safety principles and the concept of safety critical elements • dropped object assessment • project and asset technical risk assessment • quantitative and qualitative risk assessment • consequence modelling • ALARP principle and its effect on design, compliance and documentation • risk mitigation principles and methods including application of the preferred hierarchy (elimination; control; mitigation) • management of change 	<ul style="list-style-type: none"> • Participating in or leading risk assessments for interventions on subsea production systems or related components • Interfacing with safety and risk management specialists 	<p>Refer to only as many Indicators of Attainment as you need to demonstrate the Element of Competence</p> <p>Can identify and communicate the range of safety and risk issues that can be expected to arise from activities over the lifecycle of the subsea production system.</p>
<p>Working knowledge of emergency response and incident management activities</p>	<p>Capable of:</p> <ul style="list-style-type: none"> • Defining the processes and procedures to be executed in support of emergency response, crisis management and oil spill response activities • Providing support to an Incident Management Team or Emergency Response Team during the response to an incident. 	<p>Has acted as a member of an Oil Spill Response Team, or an Incident Management Team or an Emergency Management Team.</p>