



ENGINEERS
AUSTRALIA

Subsea Engineering Competency



CONSTRUCTION OPERATIONS ELECTIVE

CEM-003

This competency demonstrates a subsea engineer has a detailed understanding of construction vessel, ROV, AUV and diving operations in support of installation and/or removal of subsea facilities.

This competency enables a subsea engineer to advise the offshore construction manager on construction operations and lead an offshore installation engineering team.

ELEMENT OF COMPETENCE	WHAT THIS COMPETENCE MEANS IN PRACTICE	INDICATORS OF ATTAINMENT
<p>Expert knowledge of:</p> <ul style="list-style-type: none"> Onshore lifting for load-out, offshore lifting, deployment and recovery criteria using surface support vessels, specialist transportation vessels and barges Sea fastening techniques and methods Metrology, short and long baseline survey techniques Application of met-ocean data and weather reports to installation engineering, vessel route planning, and defining limiting sea states and safe working practices at sea Safety Management Systems for load-out, transport, installation and pre-commissioning operations Specific diving operations safety management requirements including diver limitations, contingency and rescue operations 	<p>Capable of:</p> <ul style="list-style-type: none"> Identifying and using applicable Australian and international standards Originating and executing engineering deliverables required for offshore installation of subsea facilities. Application of in-field management of change. Leading a multi-disciplinary offshore installation engineering team to plan and safely execute the installation and pre-commissioning of subsea facilities Engaging with Marine Warranty Surveyor and other specialists to ensure suitability of vessels and installation equipment and correct application of transportation and installation engineering Engaging with and influencing Operations during work planning and execution on or adjacent to operational facilities 	<p>Refer to only as many Indicators of Attainment as you need to demonstrate the Element of Competence</p> <p>Has applied expert knowledge for load-out, transportation, deployment, installation, connection and pre-commissioning of subsea facilities</p> <p>Can cite examples of where offshore installation activities have been planned and executed successfully and demonstrate examples of influence with other disciplines to achieve this outcome</p> <p>Has demonstrable experience leading a team on at least two projects installing subsea production facilities</p>



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ELEMENT OF COMPETENCE	WHAT THIS COMPETENCE MEANS IN PRACTICE	INDICATORS OF ATTAINMENT
<ul style="list-style-type: none"> • Planning and scheduling for offshore installation works, including simultaneous operations (SIMOPS) activities 	<ul style="list-style-type: none"> • Engaging with and influencing other infield vessels during construction works 	<p>Refer to only as many Indicators of Attainment as you need to demonstrate the Element of Competence</p>
<p>Expert knowledge of:</p> <ul style="list-style-type: none"> • HSE factors affecting task plans • Constructability review and reporting • Lessons learned • Contingency planning 	<p>Capable of:</p> <ul style="list-style-type: none"> • Reviewing task plans to improve safety, constructability, schedule, and/or operability • Integrating lessons learned from past projects into current plans and procedures • Recognise and provide advice as to which combination of plans and procedures will result in undesirable outcomes in operations 	<p>Has led at least two constructability reviews.</p> <p>Has led at least two lessons learned workshops and describe a major learning from each.</p> <p>Can communicate the HSE, schedule, cost, and risks of executing projects and procedure to different stakeholders</p>
<p>Working knowledge of:</p> <ul style="list-style-type: none"> • HAZID and HAZOP review techniques • International & Australian standards associated with offshore installation • The regulatory requirements associated with offshore installation planning and operations • The broad range of issues associated with bringing a foreign vessel into Australian waters 	<p>Capable of:</p> <ul style="list-style-type: none"> • Influencing the safe and efficient use of construction assets during installation, including vessels, ROV, AUV and diving teams. • Appropriate use of Stop Work Authority and satisfactory resolution 	<p>Has demonstrable experience leading a team on at least two projects installing subsea production facilities</p>