

**INTECSEA**

WorleyParsons Group

# Offshore Construction Management Services

Capability & Experience





# Capability Overview

INTECSEA has a proven track record for providing solutions to problems faced when implementing frontier projects, by providing contract and execution planning, coordination, engineering, interface and offshore execution throughout the project lifecycle. This ensures a seamless transition from design through commissioning for our customers.

INTECSEA's Offshore Construction Services Team experience and expert knowledge will ensure that, among other things; constructability is implemented throughout the project life cycle, construction methods and techniques remain competitive within the design, project coordination between the operator and contractor is maintained throughout the project life cycle, the intent of the design is carried into the construction and execution, and that the operator's goals of safety performance, schedule, quality, and cost control are not compromised.

## Select Areas of Expertise

- Offshore installation equipment and marine vessel capabilities
- Deck cargo barge and heavy lift capabilities
- Contractors engineering and management capabilities
- Construction pre-planning, planning and implementation
- Project risk assessment and uncertainty
- Offshore construction risk assessment
- Subsea survey
- Deepwater pipeline/flowline system installation
- Offshore marine terminal installation
- Hull transportation, installation and integration

## Seamless transition from design through commissioning

INTECSEA has a proven track record for providing solutions to problems faced when implementing frontier projects, by providing contract and execution planning, coordination, engineering, interface and offshore execution throughout the project lifecycle.



# Engineering Services

## Pre-Construction Planning

During concept selection and detail design, INTECSEA's Offshore Construction Services Team works with the customer's design and engineering team to ensure a design that is construction friendly and construction competitive. INTECSEA Construction Services Team personnel also facilitate procurement; fabrication and delivery of materials and equipment are planned and implemented in order to meet the project construction schedules. These services include: constructability review, construction cost estimate, design and construction risk assessment, construction optimization review, welding and AUT specifications, construction and installation specifications, material procurement and expediting, provision and coordination of inspection/QA services, equipment fabrication support, SIT planning and development, pig development and testing program, and permits.

## Construction Planning

During construction planning, INTECSEA's Offshore Construction Services Team works with the customer in developing project contracting strategies and assists in contractor selection. In addition, the Offshore Construction Services Team works with the customer and contractor in developing construction execution plans that meet the project goals and ensure the intent of the design is maintained. These services include: construction planning and strategy, shipyard and fabrication yard pre-qualification, ITB package development, bid evaluation, contracting support, contract administration, construction execution plan, construction assurance plan, construction procedure review, welding procedure review, AUT procedure review, construction HAZID and HAZOP facilitation, integrated project schedule development, logistics, load-out and transportation execution plan, and commissioning and hook-up.

## Construction Execution

During construction execution, INTECSEA's Offshore Construction Services Team works with the customer and contractor to maintain the intent of the construction plans and the design during execution. These services include: fatigue testing program management, material and equipment delivery and tracking, contractor equipment audits, field surveillance procedure development and implementation, contractor inspection test plan review and approval, installation contractor(s) monitoring and training, on-site contractor interface, client representation, project status/tracking/ reporting, management of change implementation and tracking, and lessons learned documentation.





# Project Experience

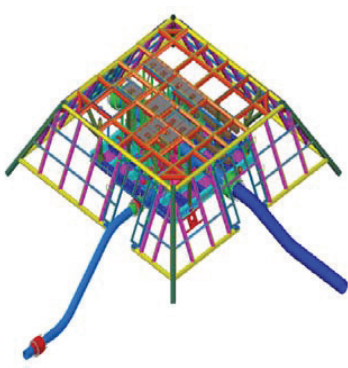


## Jubilee Field Development

**CUSTOMER** Anadarko  
**LOCATION** Ghana

IDENTIFY EVALUATE DEFINE EXECUTE OPERATE

The field consists of reservoirs in water depths ranging from 900 to 1,700 meters. The current phase of development includes nine production wells, six water injection wells, and two gas injection wells. A total of five production drill centers will be tied back to a turret-moored FPSO via dual 12-inch steel flowlines and dual 10-inch flexible risers. The single gas injection drill center will be connected to the FPSO with an 8-inch flexible riser and 10-inch steel flowline, while the two water injection drill centers will be connected in series to the FPSO via dual 10-inch flexible risers and single 12-inch steel flowlines. Gas and production will be routed through a riser base structure.

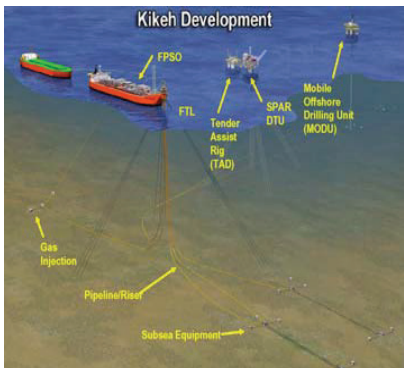


## Neptune LNG LLC

**CUSTOMER** SUEZ Energy North America  
**LOCATION** Massachusetts, USA

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Neptune LNG LLC was granted a permit to build, own, and operate the Neptune Deepwater Port approximately eight miles off the coast of Gloucester, Massachusetts. The port facilities consisted of two offloading buoys where specialized LNG carriers moor and discharge re-vaporized LNG. The port provides a substantial new supply of natural gas to the New England region. INTECSEA was contracted to assist Neptune LNG in developing the design of the port and preparation of the deepwater port permit application. INTECSEA was responsible for the field layout and subsea pipeline system design, including the transition manifold.



## Murphy Kikeh Field Development

**CUSTOMER** Petronas Carigali and Murphy Sabah  
**LOCATION** Kikeh Field, Malaysia

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The Kikeh area is located 120 km northwest of the island of Labuan, offshore Sabah, East Malaysia in approximately 1300 m water depth. INTECSEA was contracted by Murphy Oil Co. to provide engineering and project management services to the project team. The scope of work on this project touched all parts of the field development. Specific areas of focus included detailed design review of the FPSO and DTU topsides facilities, flexible flowlines and risers, subsea equipment, field layout, interface management assistance, regulatory compliance. A separate project team was set up to assist Murphy in the development of a 12" export pipeline.



## Oooguruk Offshore Field Development

**CUSTOMER** Pioneer Natural Resources Alaska, Inc.  
**LOCATION** Oooguruk Field, Alaska

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INTECSEA has been contracted to perform pre-FEED, FEED, construction support and detailed design for the development of the Oooguruk Field in Alaska's Beaufort Sea. Drilling is from the offshore gravel island located in approximately 5ft of water. This is will be the second subsea Arctic oil production pipeline, following the successful start-up of BP's Northstar pipelines in 2001 (also designed by INTECSEA). Produced fluids are gathered and transported to shore in a buried subsea three-phase flowline. Inshore, the flowlines transition to above-ground insulated lines and run to an existing pipeline at a drilling facility owned by another operator.



## MEPS Prototype

**CUSTOMER** Anadarko Petroleum Company  
**LOCATION** GOM, USA & Offshore West Coast of Africa

IDENTIFY EVALUATE DEFINE EXECUTE OPERATE

The near-surface flowline system is also part of the MEPS for offloading produced fluid. WorleyParsons was responsible for detailed engineering, procurement, and onshore and offshore construction management of the prototype MEPS. WPS performed preliminary field engineering for potential field developments in offshore West Africa.



## Nikaitchuq Field Development

**CUSTOMER** Kerr-McGee Oil & Gas Corporation  
**LOCATION** Spy Island, Alaska

IDENTIFY EVALUATE DEFINE EXECUTE OPERATE

INTECSEA was contracted to perform pre-FEED, FEED, detailed design and construction support on subsea flowlines for the Nikaitchuq Field offshore the coast of the North Slope of Alaska's Beaufort Sea. The flowline and utility bundle will connect to a new onshore facility built at Oliktok Point to process the Nikaitchuq production. The Nikaitchuq production facilities will include between one and four gravel island drill centers connected by intrafield flowlines for transporting the three-phase production, gas and injection water. The water depth at the drill centers ranges from 6 to 10 feet.

# Success Through Insight