



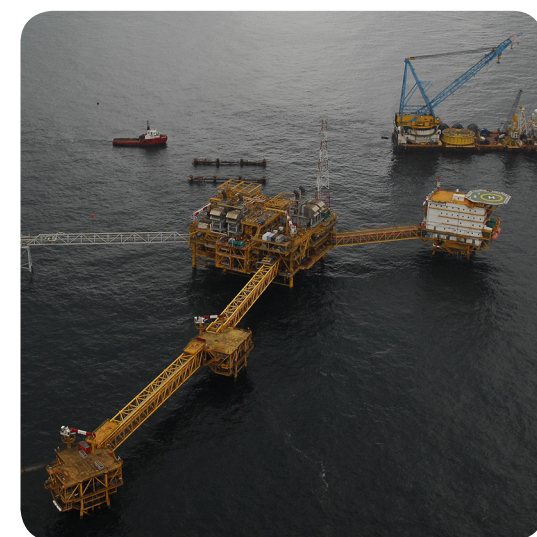
Engineering

Over the last decade, Ariosh has successfully delivered complex engineering projects ranging from existing facility revamps to large-scale Greenfield initiatives. Ariosh extensive design experience is underpinned by our world-class facilities, proven capacity and access to global network of engineering specialists. Ariosh develops partnership with companies that complement, enhance and extend our capacities and resources.

Ariosh engineers and designers deliver integrated design solutions covering onshore, offshore, subsea and deepwater projects. From Conception to Operation, our capabilities extend to every stage of asset lifecycle.

New Field Development

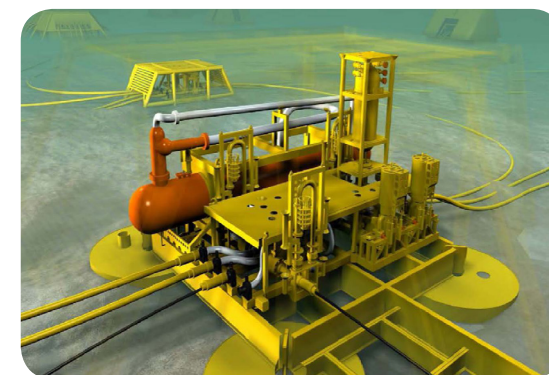
Ariosh provides the expertise required to identify business and technical solutions in the earlier stages of field development. Ariosh has delivered innovative and world-class solution to problems associated with field development in hostile environments. Ariosh also offer support over the life of any field during expansion, optimization and decommissioning phases with a wide range of services, including feasibility studies, HSE studies, risk analysis, strategic and commercial advice.



Subsea and Deepwater

Ariosh provides a comprehensive range of engineering services for floating production and subsea production systems. Our subsea design capabilities include:

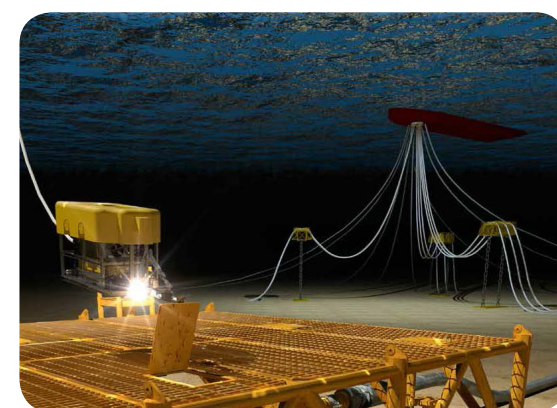
- Flowline Design
- Risers Design
- Control Systems and Umbilical Specification
- Subsea Structures and Component Design
- Subsea Process drawing development e.g. P&ID, PFD, C&E diagrams
- Design pressure & temperature philosophy
- Start-up and Shutdown operating guidelines
- Hydrate remediation strategy
- Equipment duty specification/datasheet
- Technical evaluation of vendor proposals



Pipeline & Flowlines

We have vast experience with design of onshore and submarine pipelines and flowlines. With our multidisciplinary workforce, we provide specialist engineering and support services for all aspects of pipeline and flowline engineering including:

- Route Selection
- Line Sizing & wall thickness optimization
- Pipeline Design for Strength
- Thermal Design & Insulation
- On-Bottom Stability analysis
- Bottom Roughness & Span Analysis
- Spool piece Design
- Strain-based design
- Pipeline Walking Study



Onshore and Offshore Topsides

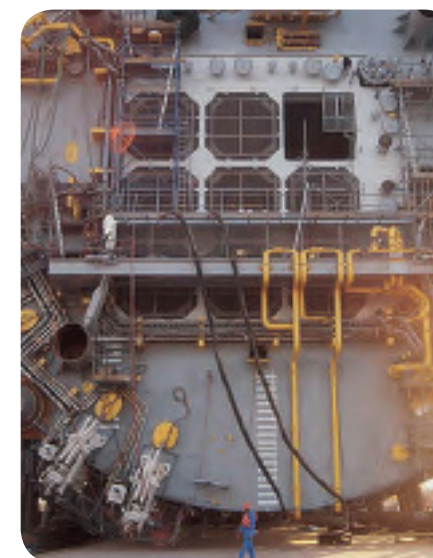
Ariosh onshore and offshore topside design capabilities cover all engineering disciplines.

Process: Ariosh Process team draws from best-in-class specialty engineers with adept expertise on production facility design and construction to provide a comprehensive range of services including: Process Studies, Flow Assurance, Plant optimization and debottlenecking, Feasibility, Expansion and Revamp Studies, Process Modeling and Simulation, Hydraulic Analysis, Asset Integrity Management and HAZOP review.

Mechanical & Piping: Ariosh's Piping/Mechanical specialists provide a comprehensive range of Piping/Mechanical engineering services including: Pipe Stress Analysis, Vessel Design, Rotating Equipment Design, Piping System Design, Heating Ventilation and Air Conditioning (HVAC) Design, Material Engineering and Technical Bid Evaluation.

Electrical: We are experienced in design, specification, installation commissioning and operation of electrical power systems in the oil and gas industry. Our engineering design covers: Power System Studies, Power Distribution Systems, HV & LV Generation, Emergency Power Systems and Electrical support Services.

Instrumentation & Control experience includes: DCS, ICS, SCADA, F&G and ESD Systems, Telecommunication Systems and Fire Alarm Systems.



Capabilities

Ariosh has remarkable experience providing independent engineering solution from early concept phase through FEED and detailed engineering to installation and commissioning. Ariosh provides multidisciplinary engineering services covering:

- **Project Management & Administration**
- **Conceptual Studies**
- **Front End Engineering Design (FEED)**
- **Detailed Engineering Design**
- **Construction Management**
- **Integrity Management**
- **Procurement and Construction Support**
- **Hookup and Commissioning Assistance**

Civil/Structural: Highly proficient in all aspect of structural engineering and drafting including: Topside & Jacket Design, Pile and Foundation Design, Caisson & Riser Design, Module and Deck Extension Design, Failure Investigation Study, Weight Control and Advanced Non-linear Finite Element Analysis.

Technical Safety: Design and specification of Firewater Systems, Effluent Management & Waste, Flare, Vent & Exhaust studies, Loss prevention covering safety Philosophies, Consequence Analysis, QRA, Formal Safety Case, HAZID, HAZOP, LOPA Escape Evacuation and Resque Analysis, Drop Object Study.

Project Execution Strategy

We support our clients in their plan for development and operation by building the best possible business case and concept solution. Using a Project Execution Model (PEM) based on best practice from many of the industry's most challenging projects, we are able to increase efficiency and boost quality of our selection process.

Our time-tested PEM helps us select the optimum concept solution. It drives technical/economic optimization of the selected concept, best for purpose technology selection, price and delivery time planning. Through PEM, we are able to manage execution risk for all parties; establish an agreed and firm design basis; develop a sound and consistent basis for ITT and other project execution activities.