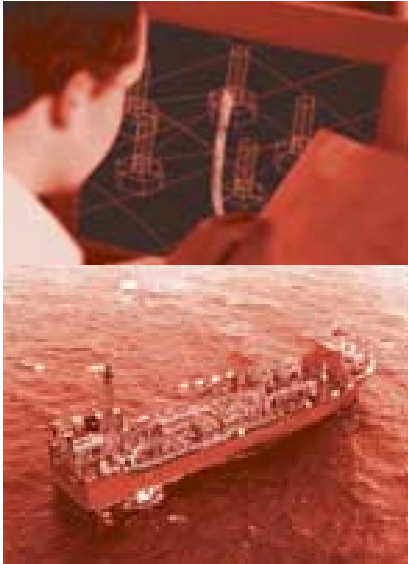


Capability Fact Sheet

The largest riser consultancy in the world



In Engineering Services, our core areas of expertise include the design and analysis of flexible, steel, top tensioned and hybrid risers to many types of floating production platforms such as ship-shaped FPSOs, semi-submersibles and SPARS. Our capability also includes floating vessel hydrodynamic response analysis, integrated riser and mooring design, flow assurance, subsea structures and pipeline design, finite element component analysis, flexible pipe technology, and the development and implementation of integrity management procedures for subsea developments.

Our engineers develop and apply sophisticated engineering techniques that are based on finite element or other numerical methods. We use these techniques to predict design parameters that can include the collapse resistance of a flexible pipe in deep water, the stresses in a steel catenary riser at seabed touchdown, the non-linear wave induced motions of a floating production platform, or the level of wax deposition in a subsea pipeline. Our advanced ability to analyse and to predict response ensures that we design cost effective, reliable and safe solutions.

For verification studies, we bring unique experience from a wide variety of projects, to ensure that all verification services we perform quickly focus on the key issues. In many cases, this has resulted in significant design changes, generated cost savings, and improved safety in systems.

SOLUTION

- Engineering design and consultancy services
- Engineering analysis and design software development
- Research and technology development
 - Riser Design
 - Steel Catenary Riser Design
 - Top Tension Risers
 - Drilling Risers
 - Hybrid Risers
 - Flexible Pipe Technology
 - Moorings & Coupled Design
 - Umbilical Systems
 - Flow Assurance
 - Pipeline Design
 - Finite Element Analysis

RESULTS

- Designed/verified the design of 94% of flexible risers in UK sector of North Sea
- Designed or verified over 50 SCR's for worldwide application. More than any other independent engineering company
- Involved in the design or design verification on eight of the 12 Top Tension Riser projects in the GOM
- Designed first ever steel catenary riser to a floating semi submersible (PXVIII vessel, Petrobras, Brazil)
- Developed 1st industry standard for specification and design of flexible risers (API Spec 17J). We also developed API RP 17B "Recommended Practice for Flexible Pipe"
- Flagship analysis program, Flexcom, is used extensively throughout the offshore industry and is widely regarded as the industry standard for dynamic analysis of compliant structures.