

Engineering Handbook

Design of Offshore Facilities to Resist Gas Explosion Hazard

As a result of the Gas Explosion Engineering JIP, sponsored by HSE (Health and Safety Executive, UK), STATOIL and Norsk Hydro, FORCE Technology Norway AS now offers the new Engineering Handbook on the **Design of Offshore Facilities to Resist Gas Explosion Hazard**.

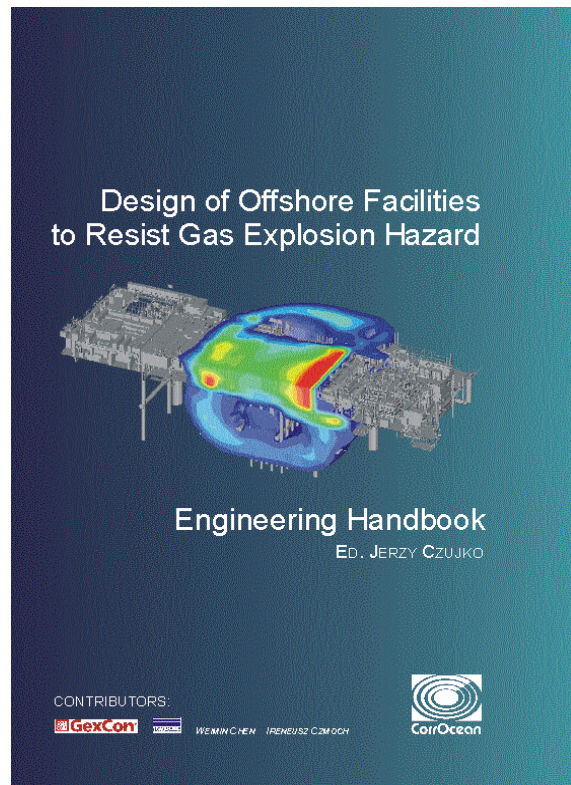
This engineering handbook provides guidance for the design and strength assessment of offshore topside structures against the effects of accidental gas explosions.

Content

There has been extensive research in the field of gas explosion loading and response analysis since 1991 but a detailed engineering handbook on this subject has not yet been produced. The present handbook is designed to fulfill this goal.

This 474 page engineering handbook is a comprehensive tool for the offshore facility designer.

The book presents current knowledge and practical project experience, with special emphasis on the interrelations between the nature and methods of assessment of gas explosion loads, and the behaviour of structures subjected to such loads. In the design and reassessment of topside structures, the issue of gas explosion and its effects has to be managed in the context of the total safety of the installation.



Special emphasis has been given to:

- Structural safety and reliability
- The use of risk analysis methods
- The use of modern numerical methods to compute gas explosion loads with the help of Computational Fluid Dynamics (CFD) models, and structural response with the help of non-linear Finite Element Method (FEM)
- The application of probabilistic methods in the quantification of uncertainties in gas explosion loads and load effects.

Users

- **Professionals** working in the field of gas explosion load assessment and structural engineering and design, will find state of the art information regarding gas explosion load assessment methods and strength assessment methods, supported by test cases presented in the context of existing rules and regulations.
- **Oil field operators** will find methods for the determination of explosion loads, definition of design loads and determination of design acceptance criteria.
- **National authorities and regulatory bodies** will find useful information for the evaluation of new design, as well as design associated with modifications of existing topsides, or in the development of new regulations with respect to possibilities arising from new knowledge and technology.
- **Academia.** Students at all levels of higher education can use this Handbook.

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To order Handbook contact Internet site at:
<http://www.forcetechnology.no/explosionhandbook/>



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