

## **Recent Developments in Offshore Codes, Rules and Regulations for Deepwater and Arctic E&P Systems**

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### **ABSTRACT**

An increasing number of new and revised editions of offshore codes, rules, and regulations from the ISO, the API, the MMS, and other organizations and shelf authorities have been or are scheduled to be issued in 2007 and 2008. Det Norske Veritas is participating in these developments and is also publishing its own offshore codes as a service to the offshore energy development industry.

This paper presents most recent rule development issues and discusses the need for harmonization and consistency between the various standards and regulations in the interest of meeting the target reliability and safety requirements of offshore exploration and production systems at reasonable costs. Special attention is given to two of the most growing oil and gas sectors; namely, the deepwater, and Arctic developments.

**KEY WORDS:** Offshore Structures; Rules; Codes; Standards; Regulations; Deepwater, Arctic.

### **INTRODUCTION**

The purpose of this paper is two fold. Firstly, a high level summary of offshore rule development in major national and international organizations involved in regulating the offshore industry will be presented. Secondly, the paper will attempt to draw the attention of oil companies, design houses, and regulators to the growing need for allocating adequate resources to the rule development efforts and the harmonization of these requirements in order to reach the desired balance between risk and reliability of the investment. Although the magnitude of this effort has substantially increased recently, it may still be noticeably disproportionate to the risks involved and the current record profits announced by oil companies due to the dramatic surge in energy prices. The fact that the ISO standards writing is now almost completing its second decade with several standards taking many more years to develop than expected demonstrates this point. Rule development is an effective way for reducing risks and guaranteeing a more secure return on the investment and as such ought to be given a higher priority than it receives at present with regards to resource

availability and attention.

Class societies develop their own rules and follow a rule process that seeks input and recognition from industry experts and government authorities. Unified ship and MODU rules have been in existence for years now under the auspices of IACS. A similar effort aimed at offshore field development and production structures would be beneficial.

Most of the current rule development work is carried out by organizations such as the ISO and the API which are funded by government grants and oil companies. Most research projects supporting the standard development are carried out by consulting companies supervised by committees of volunteering experts. Sometimes these projects have unreasonably limited budgets and in some cases the results are not, in the opinion of this author, receiving as much scrutiny and verification as they should. Therefore, only a select number of consulting companies and university professors and retired researchers get involved in the activity. That may be a contributing factor in the ISO 1990 series taking more than two decade to complete and the growing suspicion that it can be effective in responding to the industry needs for revisions after publication in a timely fashion.

In spite of the limited resources, very dedicated hard working mostly volunteering professionals have been involved in both API and ISO standards work over many years. The system under which these activities are carried out may however be in need of revitalization and improvement. It is not obvious to this author why the research activities for such an important industry as offshore and Arctic development are so limited at a time when profits are staggering with oil prices now passing over the \$100 per barrel mark and may stay there as forecasted by many market analysts. Options for such improvements may include increased R&D budget allocation for the standard development efforts and a more elaborate system for verification and validation of rules/requirements. A quick and efficient system for revision, experience feedback, QA, and FAQ database should probably be established. The ISO work should be accelerated incorporating as planned all relevant API documents for offshore and Arctic exploration and production activities.