



**BUREAU
VERITAS**

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The backdrop to this year's ADIPEC is one of cautious optimism. On the one hand, the UAE offshore market remains sensitive, in line with trends in the Gulf area. On the other, we have recently seen the launch of ADNOC's re-branding, with all subsidiaries benefiting from centralized governance while retaining operational autonomy. Market expectations are that in months to come this should generate more business opportunities.

ADIPEC is one of the most important events in the region's calendar. Bureau Veritas and its subsidiaries MatthewsDaniel and MAC will once again be there, with experts outlining Engineering, Risk and and Dynamic Positioning services. We look forward to seeing you at booth 14436 to discuss how we can support you in designing the most efficient, cost effective and safe units.

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MARINE WARRANTY: RIGHT TEAM, RIGHT PLACE, RIGHT SUPPORT



Bureau Veritas' subsidiary MatthewsDaniel is one of the leading providers of Marine Warranty Services (MWS). During the past year our volume of business has increased thanks to an uptick locally. To serve our clients, however, we need a strong support structure. At MatthewsDaniel, our robust internal systems enable us to provide full support to our MWS Surveyors. We can match client needs with suitably experienced personnel for each job requirement while fulfilling all health, safety and security requirements.

This is an important asset, as organization and delivery of high quality MWS has become steadily more difficult to organize as a result of increased travel restrictions, security threats and health and safety requirements for personnel.

Visa requirements are becoming more onerous, with applications becoming longer, more complex and costly. For example, different types of visa may be required for onshore or offshore attendances. A different party may be required to submit the application according to specific job type. Moreover, certain countries will deny access to individuals with valid visas, if they have recently visited countries not in favor with the visa issuing country. And once a visa has been obtained, security passes are often required. Based on client or State requirements, these are not always straightforward to obtain.

Traveling to other countries with changing rules and requirements makes continuity of service ever more difficult.

Increased threats of terrorism and conflict also complicate delivery. We are continually monitoring the risk in all surrounding countries and in specific areas within higher risk nations at a corporate and country manager level. Throughout the region, the ebb and flow of conflict between and within countries is changing continually, as is terrorist activity, which may revolve around multiple threats or a large single event.

Finally, we are seeing an increase in health and safety requirements. In addition to standard industry requirements, such as PPE, OPITO approved BOSIET, H2S and First Aid certificates, an increasing number of clients demand that their own bespoke course or certification is attained. This may require more regular updating or renewal than the industry standard. Offshore Medicals are also moving away from the normal industry accepted form and becoming more stringent in their content, sometimes including tighter age restrictions.

Thanks to our improved logistical capabilities within the region, strengthened by access to the full Bureau Veritas network, MatthewsDaniel is well placed to meet all these requirements and our clients needs as well as ensuring our personnel fly home safe !

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As project manager for the construction of SBM Offshore's first Fast4Ward™ hull, Hervé Cariou is set to break a record. "A Fast4Ward™ FPSO can be completed six to twelve months faster than the typical three-year schedule for a third-generation FPSO, and at substantially lower cost."

SBM Offshore provides floating production solutions to the offshore energy industry and is the market leader for leased FPSOs. Fast4Ward™, to be constructed at the Shanghai Waigaoqiao Shipbuilding & Offshore yard, is a flagship project - the first ever Multi-Purpose Floater (MPF) program to offer a generic but modular approach to standardize the construction and delivery process.

"Fast4Ward™ has been a priority for the company since development on the concept began three years ago. Our solution meets the industry's need for standardization, but remains sufficiently modular to fit client needs. Fast4Ward™ is the optimum way to deliver fit-for-purpose, cost-effective FPSO solutions with a clear schedule advantage."

SBM Offshore initially appointed Bureau Veritas to review the hull design. Pleased with the quality and speed of turnaround, it then extended that cooperation to full

classification – a first in the evolving relationship between the two companies.

"We hope the construction quality of our MPF™ will benefit from their surveying experience in the construction of ships and complex offshore units, especially in China."

Hervé notes that Bureau Veritas has already provided valuable support in the development of the FPSO design: "The challenge is to know where to put the cursor when standardizing the FPSO's generic features. A too-wide Basis of Design or too-ambitious level of standardization may create issues for the economics of projects.

Bureau Veritas was involved during our internal FEED and provided the full Basic Design approval for our hull. They understood our generic approach and more specifically SBM's design envelope approach: they made several recommendations that improved details of the hull structures."

SBM Offshore and Bureau Veritas have recently signed a technical and commercial frame agreement covering Classification, second party inspection and design assessment studies.

www.sbmoffshore.com



Hervé Cariou
Senior Project Manager, SBM Offshore

LEVERAGING ON FPSO EXPERTISE



Bureau Veritas is supporting many clients with innovative solutions to cut the build time and cost of offshore projects. Approval in Principle and Basic Design Review for several FPSO and innovative Power Plant designs have been recently performed.

The designs are reviewed within the scope of Basic Design Approval, in accordance with Bureau Veritas procedures. This Basic Design Approval covers the hull, as well as structures supporting both topsides and offshore systems. Bureau Veritas also performed its own independent strength assessment, checking compliance with BV Rules criteria. The approach has become common practice for innovative projects.

Over the years, Bureau Veritas has built up valuable experience in FPSO behavior in all types of sea environment, thanks to its provision of technical assistance to around half the world's existing FPSOs. State-of-the-art tools like VeriSTAR Hull (Rule strength and Fatigue analysis) and HOMER (first principles hydro-elasticity coupling Strength and Fatigue analysis) are continuously maintained and improved to support both second and third party activities.

In Classification, Bureau Veritas brings added value with independent analysis and shared expertise. As a result, many clients have chosen to strengthen their co-operation with Bureau Veritas, in systematically requesting Approvals in Principle for future novel concepts.

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SIL STUDIES FOR AN OFFSHORE GULF OIL FIELD

Bureau Veritas recently performed Safety Integrity Level (SIL) studies for an offshore oil field in the Gulf. The project covered drilling platforms, wellhead platforms and a process platform producing oil sent via subsea pipelines to an onshore treatment facility.

Since production began in 1997, the configuration of offshore and onshore installations has changed to optimize oil production, leading to several design upgrades. The aim of the SIL studies was therefore to ensure that the design of the Safety Instrumented Systems is safe and complies with client specifications.



The work was undertaken for each platform and onshore treatment train, with three steps. First, a SIL assignment workshop of all Safety Instrumented Functions was held to define the required SIL. Second, SIL calculations were performed, for example to determine probability of failure on demand and in terms of Programmable Logic Controllers architecture. Finally a SIL verification of all Safety Instrumented Functions was carried out to check that each Safety Instrumented System achieves the required SIL.

With the results of these SIL studies, the client identified which systems needed to be upgraded in order to reach the required SIL and targeted the Safety Instrumented System which required investment in order to increase safety.

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AIM PUBLICATION SUPPORTS LIFE EXTENSION OF JACKET STRUCTURES



In April, Bureau Veritas released its information note related to "Risk-Based Structural Integrity Management of Offshore Jacket Structures". This provides guidance on risk assessment using qualitative, semi-quantitative and quantitative approaches and covering sets of platforms, individual platforms or even structural members.

At a time when most existing offshore platforms have reached or exceeded their design life, the guidance stresses the importance of integrity management of structures, particularly in the case of mature assets.

Integrity management encompasses not only structures but also static pressure equipment, pipelines, rotating machines, electrical equipment and instrumentation. Any piece of equipment that fails can pose major threats to people, the environment, the asset or production. As such, it must be properly inspected and maintained, with frequency of inspection suited to the equipment's likelihood of failure.

For ageing assets, integrity management supports late life decisions needed for life extension for example. Bureau Veritas has extensive experience in life extension of jacket structures, which can undergo periodical certification. Many offshore operators are also using risk-based inspection methodologies to extend the life of their pressure systems. Integrity management results in safer and more efficient management of operations – and ultimately lower costs.

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NEWS IN BRIEF...

■ **NEW RULES FOR FSRUs** Bureau Veritas has developed a Rule Note (NR645) covering the classification of Floating Storage and Regasification Units (FSRUs). The publication builds on Bureau Veritas' extensive experience in the LNG sector and comes in response to industry demand and following close engagement with FSRU stakeholders. The new rules set out technical requirements to address the technical and operational issues of FSRUs, with a unified approach from a safety and design point of view. These Rules enable the classification of all types of floating storage and regasification assets in a comprehensive and pragmatic manner.

■ **UAE SEMINARS ON ENGINEERING AND RISK SERVICES** Bureau Veritas UAE is organizing seminars in Abu Dhabi (7 November) and Dubai (8 November) to introduce its non-classification services. The new Services department, part of Bureau Veritas Marine and Offshore, is dedicated to the delivery of Engineering and Risk services that fall outside the scope of classification. It encompasses subsidiaries such as Tecnitax, HydrOcean, MatthewsDaniel and MAC. Risk services offer, help, improve the safety and reliability of installations, reduce the risks to As Low As Reasonably Practicable, and demonstrate risk management to local authorities. The seminars will also cover services to optimize maintenance and repair resources and costs.



STRONG GROWTH IN FSRUs

Urgent energy needs in the Middle East are boosting the FSRU market – an issue reflected in the fact a third of the world's total FSRUs are located in the region. Of the 21 FSRUs in operations worldwide, two are based offshore Egypt, two offshore UAE, and one each in Israel, Kuwait and Jordan. And two more assets are under construction, to be operated offshore Turkey and Bahrain.

The need for this type of fast-track access to energy projects in the Middle East will not stop there, with at least four projects expected to come to fruition over the next few years. To support owners, operators and shipyards in developing safe designs, Bureau Veritas has published its Rule Note dedicated to the Classification of FSRUs, relying on 50 years of experience in the LNG industry.

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ADOPTING A BEST PRACTICE APPROACH TO VERIFICATION

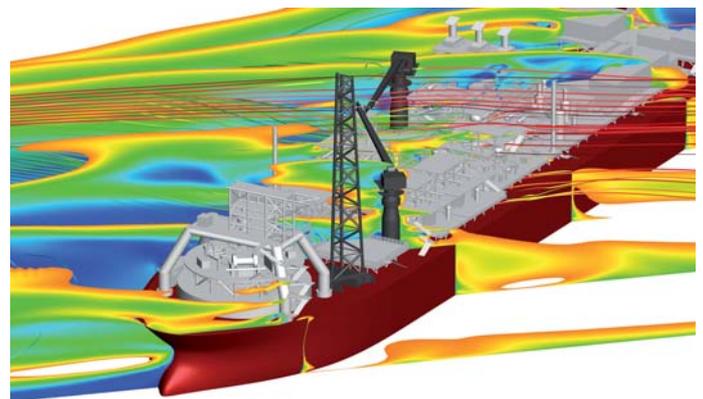
Verification is a vital method of assuring the continued efficient safe operation of an Oil & Gas asset via independent and competent scrutiny of Safety and Environmentally Critical Elements throughout the life cycle of the asset. The overall approach is similar within the North Sea, Europe and Middle East, and can be implemented for both offshore and onshore assets. However each region has distinct localised differentiators, in terms of legislation, terminology and historical method of implementation.

Over the past 18 months, Bureau Veritas has undertaken a number of Technical Integrity Verification contracts in the Middle East. It has built on best practice, using a hybrid methodology based on UKCS experience but tailored to suit the ADNOC Code of Practice. This has resulted in clients such as GASCO receiving a Verification service that is not simply compliant with local legislation, but goes greatly beyond their initial expectations. The best practice, hybrid methodology can be used as a template around the world to ensure our clients continue to operate both safely and efficiently.

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HIGH-LEVEL ENGINEERING FROM HYDROCEAN AND TECNITAS



The Services Department delivers engineering, assistance and risk services that lie outside classification. This department includes subsidiaries Tecnitás and Hydrocean and Departments specialised in Risks, Reliability, Maintenance (RRM) and Measurements (VLM). The first is an expert in Structure, the second, in Hydrodynamics and Aerodynamic. With a strong focus on research and development, they work to improve key engineering services for Designers, Oil Majors and Yards at every phase of a project.

They took part in several CITEPH Projects (R&D projects founded by French major Oil & Gas companies), and regularly collaborate with companies including Technip, Total, Chevron, Subsea7, SBM Offshore, Exmar and BP to provide high-level engineering services. Research ranges from DP analysis and green water analysis to aerodynamic studies.

Tecnitás and Hydrocean also take part at every stage of a construction project. They perform risk, safety and reliability studies including HAZID & HAZOP workshops, QRA, FERA, EERA and Helideck hot plume evaluation. They have taken part in very high profile projects, like the construction of KAOMBO, for example by performing structural analysis and mooring & design analysis.

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