

→ BV EVENTS

BV STRENGTHENS HELLENIC LINKS

At a ceremony at the Yacht Club of Greece, in Piraeus, Bureau Veritas has signed agreements for the classification and construction of five ro-ro passenger vessels, two mega yachts and one general cargo ship, all for operation under the Hellenic flag.

Two of the ro-ro passenger ships are for Elefsis Shipyards, while the other three are for Norwegian owners. The two mega yachts are being built by Lamda Nafs Shipyards, while the general cargo ship is for New Lines Shipping. Panos Kammenos, Undersecretary of the Ministry of Mercantile Marine, the Aegean & Island Policy, emphasised that every effort would be made to secure all possible governmental assistance in line with European directives, and that this topic had already been included in the list of government priorities.

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From left to right: Mr. E. Livadaras (Lamda Nafs Shipyards), Mr. S. Diakos (New Lines Shipping), Mr. N. Petihakis (Naval Architect), Mr. D. Bouttier (BV), Mr. P. Kammenos (Undersecretary of the Ministry of Mercantile Marine, the Aegean and Island Policy), Mr. L. A. Chahalidis (BV) and Mr. D. Kalligeris (Elefsis Shipyards).

→ BV EVENTS

NAVAL COMMITTEE DISCUSSES RULES FOR SUBMARINES



The third meeting of Bureau Veritas Naval Committee was held in Paris on 18 April 2008 under the chairmanship of vice admiral Jean-François Baud, president of CPPE, the standing committee for programs and test of French Navy.

BV was happy to welcome as new members: rear-admiral Stéphane Verwaede representing the French Navy Head Quarter and IGA Jacques Cousquer, representing DGA, the French Ministry of Defence procurement and technical body.

submarine and the close relationship between ship design and operational procedures for further consideration by BV. A specific working group including representatives of the navies and the naval shipyards will be set up on these items.

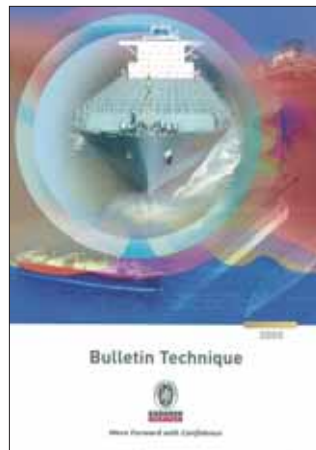
The new rules for corvettes and the amendments of BV naval rules for surface vessels were presented and agreed by the committee. BV also gave a presentation about the latest modifications of the international rules related to the protection of the environment.

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→ NEW PUBLICATION

BV BULLETIN TECHNIQUE

The well-known Bureau Veritas "Bulletin Technique", which over a number of years established a wide and respected readership in the maritime industries is published again. It will be an annual compendium of significant



articles published by BV technical specialists during the course of the year. The 2005 edition is already available in hard copy. The 2006 and 2007 editions will be available soon, with the possibility of downloading from the BV website.

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Move Forward with Confidence

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FOREWORD
BY MATTHIEU DE TUGNY
Marine Chief Executive, North America



The Offshore Technology Conference is one of the most important events in the offshore calendar. Each year, thousands of industry professionals gather in Houston expecting to see the next generation of technological innovation in the offshore oil and gas industry. This year, the meeting takes place at a critical time for the industry, which is riding a "wave of change". That change is affecting every sector of operations, from technology to personnel, and it is being played out against a background of acute equipment and resources shortages. Demand is raising to new technological challenges within the industry, which must grapple with ever bigger projects, ever deeper water, and continually increasing cost structures. Classification societies have a vital role to play in all this. With its wide experience of all aspects of the oil and gas markets, Bureau Veritas is uniquely placed as a market leader to offer a comprehensive service both locally and internationally in what is an extremely challenging industry. Bureau Veritas Houston significantly increased the strength and expertise of its structural marine engineering and hydrodynamics workforce. Whatever your needs in the offshore oil and gas industry, Bureau Veritas has the right experience-based solution for you. We look forward to meeting you at OTC 2008.

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→ BV SERVICES

INTEGRATION: THE KEY TO BV'S FLOATING SUCCESS

As the world leader in the management of floating offshore structures, Bureau Veritas is entrusted with both classification and non-classification work in connection with a number of major projects.

Significant recent deliveries include FPSO Akpo and FPU Moho, under delivery to Total from HHI; the BV-classed FPU P-53, for Petrobras, which arrived in Brazil after conversion at Keppel Shipyard in Singapore, and two FPSOs also built in China and successfully delivered to BV class for CNOOC.

Malaysia's MISC turned to BV to class the conversion of its Orkid FSO, while Petrobras sought BV class for its P-55 semi-submersible project. This will be the biggest semi-submersible ever built.

Total also ordered two other FPSOs for offshore Angola and Nigeria service respectively. The 1.8m bbl Pazflor will be built to BV class at Korea's DSME, while the 2m-bbl Usan will be built to BV class by HHI in Korea.

Non-classification work which acknowledged

BV's unique depth of FPSO knowledge included front end engineering design analysis of the Peregrino for Maersk. This FPSO will be converted from a Chinese newly built tanker at a yard in Singapore.

The spotlight has recently been on integration of FPSO topsides and hull models as BV has continued to demonstrate how operators can save time and money if models are integrated, and class included, early in the process. Design changes to the topsides during construction, or during the lifetime of the floating asset, can then easily be modelled.

This sort of work is typical of the increasing numbers of upstream projects coming to BV's offshore department. Operators are turning to BV earlier as they realise the value of applying its expertise to the project at the earliest possible stage.

BV is also currently heavily involved in the development of offshore LNG terminals, with a number of projects expected to come to fruition during 2008.

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CLIENT PROFILE

PETROBRAS LIKES BEING CLOSE TO BV



Cristina Pinho
General Manager Production,
Installations and Maintenance,
Petrobras

Two conflicting pressures affected the offshore energy market last year. While high oil and gas prices and global fears about energy security created more demand for offshore projects, national oil companies were slowing the pace of

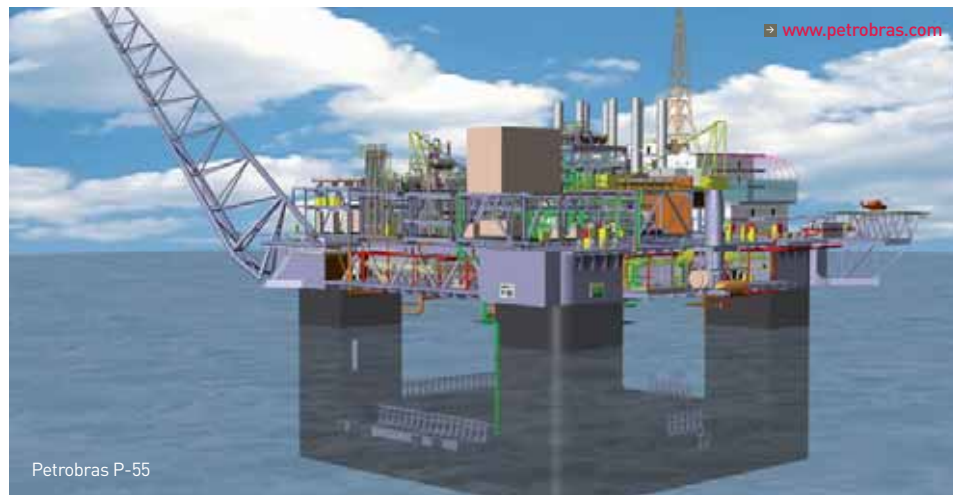
of my job today is giving good technical support to the managers who have to make critical strategic decisions about our offshore units.

"We have around fifty platforms, FPSOs, semi-submersibles and other floating units employed in the offshore industry in Brazil, and my team is responsible for their technical support. We have a lot of in-house expertise but we also work with a large number of partners, academia, classification societies and others to ensure that we get the best results.

"We are always at the state-of-the-art end of

engineering, and our units need the best support. We work with Bureau Veritas on classification, certification and engineering support issues, especially those involving naval architecture. BV helps us with all sorts of issues, and I think we are lucky to work with them.

"Our co-operation is made easier by the fact that BV has a large office in Brazil staffed by a lot of very skilled people. They are right here, close to us, and they can help us very quickly when we need them. We have a strong partnership, and long may it continue."



Petrobras P-55

some developments, for political and strategic reasons. The result of these two forces coming together was a busy market in which many projects progressed, in which expertise was at a premium, and in which BV confirmed its position as market leader.

As the world leader in managing floating offshore structures, BV consistently secures both classification and non-classification work on major projects. And it has many satisfied customers in the offshore sector. One such is Cristina Pinho, General Manager Production, Installations and Maintenance, for Petrobras in Brazil, who says, "The most important part

TECHNICAL FOCUS

NEW BV GUIDANCE NOTE ON FIBRE ROPES FOR DEEPWATER OFFSHORE SERVICES

Fibre ropes have been used extensively in a number of marine applications for many years. But it is only recently that they have been used in the oil industry as mooring lines for station-keeping on floating offshore platforms in deep water. This has necessitated specific product and deployment rules.



The new technology of 'lightweight mooring' was pioneered by Petrobras in Brazil, who ten years ago produced the first permanent floating production systems with fibre rope mooring. At the same time, Bureau Veritas produced the first Guidance Note on this application. Today, fibre rope station-keeping systems are traditionally employed in the Brazilian offshore industry, and also in other regions such as West Africa and the Gulf of Mexico.

Meanwhile, intense R&D activity has produced a better understanding of rope properties. A significant contribution in this respect has been made by the Ifremer-led CLAROM project in France, which since 1996 has conducted extensive tests on the load-elongation properties of fibre ropes – a critical issue for designing and evaluating these systems.

In November 2007, combining research knowledge with feedback from design, manufacturing, operations and related certification activities, Bureau Veritas published an updated Guidance Note. This document provides up-to-date procedures for the certification of ropes, in line with the new ISO 18692:2007 'Fibre ropes for station-keeping – Polyester' standard. It also provides updated guidance on the engineering of fibre rope moorings, including load-elongation properties.

Furthermore, since fibre ropes are now being employed in other, different - but no less critical - applications, such as deep water handling, thus triggering new developments in rope technology, the scope of the Guidance Note has also been widened to include such new applications.

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NEW SERVICES

CAP FOR BULK CARRIERS

Bureau Veritas CAP is a value-added tool for shipowners and managers who want an independent assessment of their vessel's condition or an instantly recognisable quality rating of their vessels. It provides a comprehensive survey report in an easily accessible and understandable format that documents the assigned CAP ratings, surveyors' observations and photographic records.

The BV CAP Bulk Carrier Annex is a tri-modular system containing requirements for structure, hull fittings & machinery and propulsion & auxiliary machinery. The scope of BV CAP for bulk carriers covers all of Rightship's requirements, which are applicable to Capesize bulk carriers of 25 years and over. Rightship accepts BV procedures for fatigue analysis as well as the BV CAP ratings for ultrasonic thickness measurements and coatings.

At present BV is the only class society having received Rightship's formal approval for covering the requirements for machinery and deck fittings. BV CAP specialists are in contact with Rightship to



ensure that vetting requirements take into account classification standards and operational aspects of bulk carrier shipping. Based on feedback from BV experts the coating requirements have been made more flexible. BV expects that vetting requirements for Bulk Carrier CAP will follow a similar evolution as for tankers and that bulk charterers will soon be requesting CAP reports for 25 year old Panamax and 20 year old Capesize vessels.

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NEWS RULES

BV DEVELOPS EXPERTISE IN PSPC

Bureau Veritas, together with representatives of the shipping industry, has been actively participating in several expert coatings groups and international meetings in connection with the implementation of the IMO Performance Standard for Protective Coatings (PSPC).

PSPC applies to dedicated seawater ballast tanks on all types of vessels of 500 GT and above, and to double-side skin spaces in bulk carriers of 150 m or more in length, with a building contract placed on or after 1 July 2008. IACS had brought this date forward to 8 December 2006 for CSR ships.

The PSPC targets to provide a useful coating life of fifteen years, and stipulates minimum requirements for the definition, approval, inspection, and performance of coating systems. PSPC coating inspections are to be performed by coating inspectors, certified to NACE 2, FROSIO III or equivalent.

Shipyards, in co-operation with shipowners and coatings manufacturers, must produce a coating specification and inspection procedure which meets all PSPC requirements. This procedure must be approved by the flag Administration or a Recognised Organisation.

The shipyard's quality assurance system has to cover all the approved coating specification and inspection procedures and must ensure that all reports and records are compiled. Non-conformities must be properly reported and corrected. The reports and records will constitute the Coating Technical File (CTF), which is to be approved by the Administration, and kept on board the ship.

It will require a major commitment from all parties - not least in terms of investment in training and education, and in construction planning - to ensure that this new standard is safely and efficiently harmonised within the overall ship construction process

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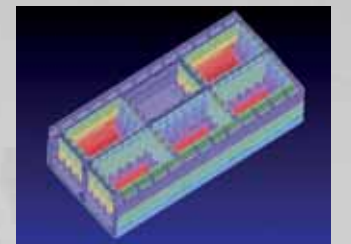


...NEWS IN BRIEF...

✉ **Bureau Veritas to class first Sealed LNG carriers.** The new concept, developed by DSME, will be employed on three membrane 151,000 m³ LNG Regas Vessels ordered by Exmar for delivery in 2009 and 2010. They will be able to withstand higher pressure in the cargo tanks than conventional LNG carriers. As a result, boil-off gas dumping, when the ship's power requirements are low, may then be limited or avoided. Another advantage is the greater flexibility of the ship in terms of cargo operations which generate large quantities of boil-off gas...

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✉ **New VeriSTAR Hull available.** The FEM program fully applies the IACS CSR for bulk carriers and oil tankers. It has been developed to provide designers, shipyards, and BV offices with an efficient tool to check compliance with the CSR criteria for yielding, buckling and fatigue.



This in-house development uses Femap pre- and post-processor and has many functionalities: automatic corrosion deduction to get the "net thickness" model, automatic detection of capacities for an easy loading process, automatic calculation of loads based on pressures, accelerations and ship motions, automatic application of the boundary conditions, and automatic determination of the elementary plate for buckling assessments, all this specific to the selected CSR rules. Internal checks of the model are also automatically conducted before launching the solver to avoid loss of time. The program provides results in terms of stress values and stress ratios for a quick analysis. If the readers find that the word "automatic" is too present, software's users are very happy indeed...

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