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Focusing on the anticorrosive line, WEG Coatings world class quality standards.

New concept in electric motors - page 5

Higher Efficiency and lower operation costs with new WEG W22 three phase motor.

Performance and safety - page 7

Learn more about dry transformers which completely avoid the risk of an explosion.

Powerful and efficient

The water jacket cooled WGM motors were designed to meet the increasing demand for compact and reduced noise level machines, where high output power versus frame size ratio is required. *See more on page 4*



New WEG CFW-11 Modular Drive extends line benefits up to 3000kW motors

Improved Plug-and-Play philosophy for three phase induction motor control is one of the important benefits of WEG's CFW-11 variable frequency drive (VFD). The new CFW-11 Modular Drive brings several CFW-11 design benefits of 300kW to 3000kW range motors (380 to 690V), with added versatility for the operation of these larger motors. WEG has also introduced a water cooled CFW-11 specifically designed, produced and tested to support user's offshore needs to face the tough conditions of marine environments. Paulo Roberto Kruger, Automation Sales Manager explained: "The CFW-11M has a modular concept where one can use Power Modules in a book format to create a whole range of power ratings using standard parts. The Power Modules can be mounted side by side allowing a very compact construction for high power rating drives." *See more on page 3.*

WEG supplies products to FPSO P-57 Jubarte

Products delivered to the new FPSO platform include: Low and Medium Voltage Panels, Low and Medium Voltage Motors, MCCs (Motor Control Center) and Medium Voltage Dry Transformers. *See more on page 8.*



The most complete Inverter for the offshore segment

WEG is the only Brazilian supplier of medium voltage speed variation systems and the only one to manufacture all the parts that integrate the systems such as the input cubicles, dry or oil transformers, frequency inverters and motors. *See more on page 6.*



WEG technology for salt spray and humidity resistance

To meet the marine market, WEG coatings meet worldwide quality standards. Proof of this are the 1 million liters of coatings already provided to the Petrobras platforms.

WEG Tintas is the Brazilian leading producer of powder coatings and electric-insulating varnishes. Focused on the anticorrosive line, particularly for the shipping and offshore market, the company is part of the select group of Petrobras suppliers with products applied on several platforms.

The anti-fouling coatings developed for this market sector are tin free and self-polishing, eco-friendly and meet worldwide quality standards

Lackpoxi 76 Wet Surface

Epoxy coating without solvent that makes the application in environments with relative air humidity

above 85% and on hydrojetting surfaces.

It provides the applicant with an increase in productivity since it doesn't have application restrictions on rainy days or those in which the relative air humidity is high. It meets Petrobras standard N 2680.

WEGPOXI Wet Surface 89 PW

Epoxy primer with high solids that allows application in conditions where humidity exceeds 85% even right after hydrojetting the part to be coated. Product recommended for industrial maintenance and protection in general.



WEG Ecoloflex SPC

Tin free anti-fouling self-polishing coating. Indicated to paint hulls of ships (below the water line), it prevents fouling and improves the performance of the vessel.

WEG coatings on the new Petrobras Platforms

More than 110 thousand liters of Lackpoxi 76 Wet Surface paints will be used to paint Platforms P- 59 and P- 60. WEG Technology for salt spray and humidity resistance.

To provide a finishing that offers more durability to a platform offshore with an economic life of about 25 years without causing any harm to the environment. This is the purpose of the Lackpoxi 76 Wet Surface coating manufactured by WEG Coatings. The product meets customer needs such as Petrobras which in May began coating two more Platforms, the P-59 and P-60, demanding about 110 thousand liters of paint. Lackpoxi 76 Wet Surface coating is an efficient solution for those customers that need a product which allows application in environments with relative air humidity above 85%, offering an increase of productivity once there are no restrictions of application on rainy days or with high relative humidity. Since this product is solvent free, it has no harmful effect to the environment.

The whole painting will be monitored by a WEG technician who will be alert to the preparation of the surface, the way of application and issues related to product warranty. According to Gustavo Longo, WEG Sales analyst, in Brazil only three companies are authorized to sell this kind of coating and, among them, only WEG is Brazilian. "The market in this



segment is very competitive and we have achieved an important place among the best", says Gustavo.

This is not the first time where WEG supplies coating products for Petrobras Platforms. The quality of the products, in a market which is highly demanding, and the investments in research and technology allowed WEG Coatings to establish another partnership with this customer strengthening the company's performance in marine and offshore sectors.



Transpetro ships receive WEG coatings



One of the largest and most important customers in the marine segment, Transpetro also recently established another partnership with WEG. They bought special Lackpoxi 76 Wet Surface coatings to paint tanks and WEG Ecoloflex SPC 200 and Wet Surface 89 PW coatings to paint the hulls of their ships.

"The vessels need resistant and special coatings which offer high protection because they are always exposed to salt spray which accelerates the corrosion process of the metal. This maintenance procedure of the Transpetro fleet is constantly made and WEG products completely meet the customer's needs", explains Pedro Reibaldi Neto, Sales Manager of WEG Tintas.

Logistics

Usually, the delivery of these products is made some days before the dockings. WEG takes the material to the Transpetro warehouse in Caju, in the state of Rio de Janeiro. There, the customer makes arrangements to send the coatings to the shipyard where the work will be carried out or on board the ship, in cases where docking is done out of the country.

The supply of coatings which started in August of 2008 is due to end in June of this year. WEG Tintas has participated, therefore, of the following Transpetro projects: Cantagalo, Marta, Maísa (Niterói-RJ), Dilya (Rio de Janeiro -RJ), Guarujá, Guará and Tangará (Mar Del Plata - Argentina).

WEG Equipment on the PSV Petrel

WEG Equipment provides propulsion, distribution, control & energy management on new fuel-efficient PSV Petrel.

WEG electric motors, generators, transformers, electrical switchboards, and an automation system for energy management, are all providing optimised operation on the first of a new generation of more fuel efficient cargo vessels built by Wilson Sons UltraTug Offshore, a joint venture between Wilson Sons and Magallanes Navegação of São Paulo state in Brazil.

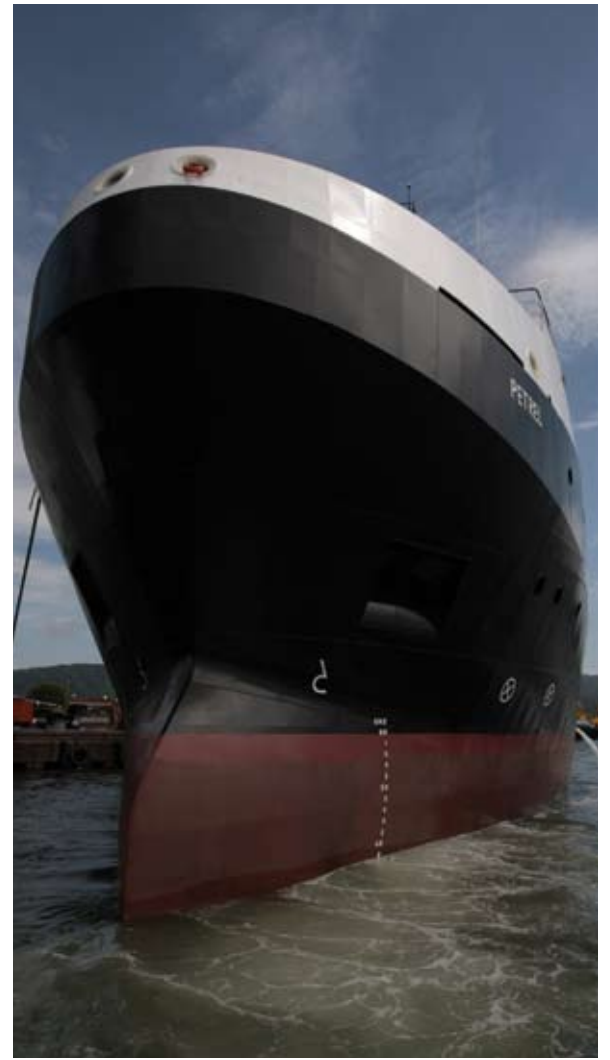
The PSV Petrel is equipped with diesel-electric propulsion, reducing pollution level, being more powerful and far more manoeuvrable. Costing around US\$ 25 million, and with a local build



content approaching 60%, the vessel will operate for oil-major Petrobras, providing the capacity to transport up to 3,000 tons of cargo on each voyage.

The equipment package supplied by WEG for the PSV Petrel comprises propulsion motors of 1,500 kW each, two 600kW motors for the bow thrusters, four 1,100 kW generators coupled to the diesel groups that supply the vessel, and two dry transformers. All are connected to WEG electrical switchboards, where the energy and alarm management system ensures both optimised operation and maximised safety.

The PSV Petrel underwent its naming ceremony in January of 2009 in Rio de Janeiro. The vessel is the latest in a long list of marine projects undertaken by WEG; a list that, most recently, includes Petrobras- 53, which is one of largest floating oil platforms (FPU) in the world. The P-53 platform relies heavily on WEG HV electric motors, inverters and generators for its continuous reliable operation in the worst environmental conditions.



New WEG CFW-11: water cooled version

To meet user's offshore requirements, WEG has developed a water cooled CFW-11 version, which goes through a marinizing process to make it deep sea resistant. It is not only a small unit, this product has another great advantage: it can be installed very close to the motor in operation, at the powerhouse. It's the perfect fit to start azimuthal and tunnel motors as it can achieve a 3000kW power in low voltage. It allows an easy integration with the ship's main systems, such as the dynamic positioning and propeller control.

Efficiently matching application needs

By applying this technology to 400kW basic power modules, WEG has enabled the CFW-11 to offer VFD control from 300kW to 3000kW. Up to 5 modules in parallel may be driven by one CFW-11 control module. The compact dimensions make it easy to locate in a new or existing plants and the CFW-11 Modular Drive control panel is available either built by WEG (AFW-11M) or as a kit for completion by the customer or WEG agent.



Uniquely easy configuration options

Ease for customer use in configuration and operation is one of the important benefits of the CFW-11. The removable Human/Machine Interface (HMI) handheld control panel, with its cellphone inspired function and jog-selection keyboard, is one way the operator can communicate with the drive, and covers 100% of the drive functionality. Uniquely amongst drives, the

CFW-11 also offers a USB port on its front panel, allowing additional functionality and updating of drive firmware through connection with a lap top. Alternatively, the CFW-11 is compatible with Profibus, DeviceNet, CANopen, Modbus and Ethernet communication protocols, for factory-wide DCS operation.

Self-configuration with Plug-and-Play accessories



Easy and rapid upgrading and customising of the CFW-11 are facilitated by the Plug-and-Play modular click-in design of the accessory units which are inserted inside the control casing. The CFW-11 automatically recognises and configures the accessory and option units for accurate and safe installation while eliminating the time

and possible errors of manual configuration. The customer insertable, modular units include I/O expansions, encoder interfaces, memory card and communication protocols. The CFW-11 also features Normal and Heavy Duty ratings for quick optimal load type adaptation.

In-built value and cost savings

Further customer value offered by the CFW-11 includes the internal PLC function that eliminates most

requirements for an additional external PLC device. The SOFT-PLC function enables the creation of many possible applications like winding, multipump, cascaded control, crane or elevator. Many of WEG's already developed applications will be free of charge for the customer. The customer can also develop his own applications using high level ladder block language (according to IEC 61131-3) and he can protect his knowledge by using his own password to access the application software. This software can be saved in the memory card. Another possible option is the PLC11 accessory which is a high performance processor card for advanced functionality. This card is also programmed using the same high level language as before.



Designed for long life, greater reliability, a longer Mean

Time Between Failure are assured due to a conservative design using the latest generation IGBTs and advanced passive components. The user can access information about every aspect of each Power Module while the VFD is in operation, for example current, temperature and overload. Increased reliability is ensured by the use of intelligent thermal management to enable full protection of IGBTs, monitoring of heatsink and the internal air temperature. The heatsink fan is Automatically controlled and easily disassembled from the product for cleaning and maintenance.

WGM Motors: Water jacket Cooled

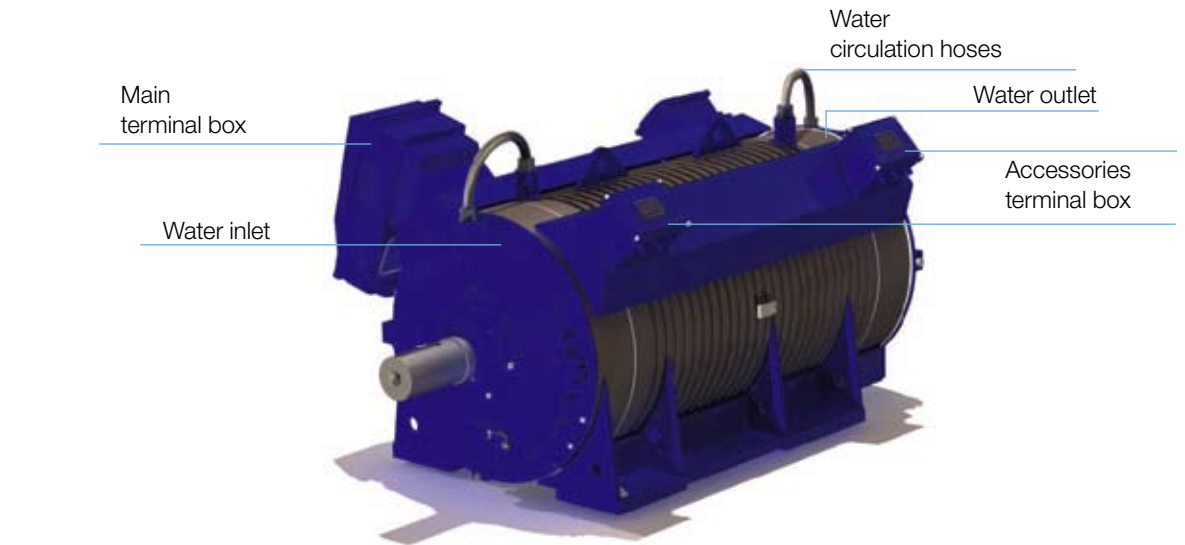
Developed to provide cooling through water flow on the end bells and around the frame allowing an increase on the horsepower / weight ratio and a decrease on the space usage.

The motor cooling is guaranteed by a “water jacket” circulating between the stator core and the outer frame, which allows a more effective heat exchange resulting in a higher power per weight ratio, therefore reducing the size of the motor. This system is ideal for variable speed applications since the thermal efficiency is optimized even on reduced speeds and where space is a concern.

WGM motors can be used in several segments of the industry, especially driving machines that require constant torque even at low speeds. Thus, they are the right choice for applications in high temperature environments, limited space availability for motor operation or motor submitted to dusty environments. This solution has a wide range of applications. Not only on the marine and offshore segments, but in all applications where water cooled motors are beneficial.

In the marine segment, for instance, when operating at DP (Dynamic Position), the vessel's thruster motors can withstand long periods of operation at very low speeds. Under this operation condition, standard cooling methods that rely on shaft mounted fans have the heat exchange capacity greatly reduced since the cooling is directly dependable on motor speed. The “water jacket” solution has its cooling efficiency guaranteed throughout the speed range as the heat removing capacity is independent of motor speed.

The “water jacket” cooling system consists of heat dissipation through the circulation of water through the channels inside the frame which provide an even and continuous flow. The water is supplied by an external system and enters the motor through the connections on the motor end bell (drive end or non drive end). The passage of water from the end bell to the frame is made through mechanically shielded hoses which avoid the risk of internal leakages.



In addition to exceptional cooling capacity as a result of even distribution of internal temperature, this system considerably reduces the motor noise level and practically eliminates heat exchanges from the motor to the ambient when compared with fin cooled motors.



In operation

In 2008, several water jacket cooled motors were sold in the domestic and international markets. Edison Chouest Offshore Who currently acquires from WEG the complete electrical package for all the Brazilian built vessels, has already purchased several units of WGM motors that will be used on supply vessels being built in the USA.

- Output power: 315 to 2.800kW
- Frame sizes: 315 to 560 (IEC)
- Voltages: 690 V to 6600 V
- Number of poles: 2 to 8

Integrated solution for ships and platforms

By continuously keeping up with market needs and trends, WEG offers an outstanding solution: The Integrated Bridge. These are operation consoles for platform support ships installed on the footwalks of the vessels and making all information necessary for sailing available to the user.

The solution is based on computers prepared for marine applications all interconnected in a redundant ETHERNET net. The solution is extremely reliable because in case of eventual fault in one of the computers the user can alternate any function on any one of the other computers just by browsing through the screens. This is because they are all available on all the console workstations.

Besides integrating the whole alarm and monitoring system of the ship, the managing system of energy and load control, each of the computers performs the function of nautical chart and radar and gives information about the speed of the wind, the inclination of the vessel, etc.



Permanent magnet motor and frequency inverter: compact drive system ensures extra high efficiency levels

WEG Wmagnet synchronous permanent magnet motor and WEG CFW-09PM frequency inverter WEG were specially designed to provide energy saving with higher efficiency levels than required by the IEC 60034-30.



Siegfried Kreutzfeld, managing director of Motors Business Unit, explains: "In outputs from 11 kW to 160 kW, the Wmagnet motors ensure efficiency levels much higher than any other conventional induction motors. They can provide extra high efficiency levels ranging from 94% to 97%, with constant torque at a wide speed range at reduced noise and vibration levels with volume reduced up to 50% and weight reduced up to 35% when compared with the conventional induction motors". The constant torque of the motor with controlled speed at the ratio of 10:1 (up to 3600 rpm) means that the WEG Wmagnet motor is suitable to be used in most applications, such as elevators, conveyor belts, centrifugal pumps, fans, exhausters, electric vehicles, compressors and others. The lower operation temperature, due to the significant reduction of the electrical losses in the rotor and the use of permanent magnets inserted inside the rotor, ensures extended lifetime and higher reliability to the Wmagnet motor. The reduction of the bearing temperature ensures longer bearing relubrication intervals which results in lower

maintenance requirements. Due to the lower operation temperature, the frame size can also be reduced for the same output, resulting in much smaller frame sizes when compared with the conventional induction motors with the same output/speed.

According to Siegfried: "The significant noise level reduction makes WEG Wmagnet motors ideal for applications in buildings, sheltered industrial areas, commercial centers and others". Wmagnet motors can be operated with constant torque, with the same performance, with no need of a forced ventilation unit, even at low speeds. To drive and improve the energy performance of the Wmagnet motor, WEG developed the special CFW-09PM frequency inverter with exclusive specific software for this purpose that uses special algorithm technology with vector control. This control can be made without encoder (sensorless), reducing the number of components and increasing equipment lifetime. As the WEG Wmagnet motor is a synchronous motor it cannot be connected direct on line, requiring always the use of its dedicated frequency inverter.

New WEG W22 three phase motors

Higher efficiency electric motors exceeding EFF1 levels, yet with lower lifetime costs, have been developed by WEG in its new W22 platform three phase induction range.

The new W22 industrial motors are being introduced in three different stages covering different frame sizes and outputs, with the 225 – 355 (up to 400 kW) frame size exhibited by WEG at Hannover 2008, the 132 – 200 size in early 2009 and the 63 – 112 size in mid- 2009. Other innovative improvements, supported by patent and registered design applications, offer lower noise and vibration, even higher reliability with an extended lifetime, and easier maintenance.

Cutting losses

Siegfried Kreutzfeld, managing director of Motors Business Unit, commented: "With losses reduced by 10% to 40 % across the range, W22 industrial motors provide efficiency improvements equal to or better than EU EFF1. These improvements will enable the W22 motors to meet the latest requirements for high energy efficiency. Further development of the W22 motors will enable them to meet the Premium Efficiency Category for the USA, before 2010, and Australia's MEPS (Maximum Efficiency Program Series)."

To offer these improvements at lower running and lifetime cost of ownership, WEG has undertaken extensive redesign of key motor components.

Improved efficiency and reliability: the result of improved cooling system

A highly critical redesign is the fan cover (cowling) shape and the ventilation fan itself. The innovative WEG designs provide better airflow over the motor frame, thus maintaining temperatures within the optimum operating range and improving reliability and lifetime; the design is subject to international patent applications.

Additional aerodynamic improvements to the outside area of the frame have enhanced the airflow effectiveness and minimized any hotspots, further benefiting reliability.

For example, the terminal box and the central eyebolt have been moved to avoid the air flow reduction. The lower temperature further enhances the benefits

of WEG's unique WISE – WEG Insulation System Evolution – (with international patents pending), which offers extended resistance to degradation of the insulation.

Built-in inverter compatibility

The W22 industrial motor range has been designed from the start for operation with advanced frequency inverters, to offer flexibility and increased energy efficiency, while resisting voltage spikes and voltage rise time. It is available as a package with WEG's CFW11 Optimal Flux frequency inverter drives.

Substantial noise reductions

Noise levels due to the ventilating system have been substantially reduced, by 3dB (A) to 8dB (A). This brings the W22 noise levels from 72dB to 80dB, substantially lower than IEC recommendations and equal to or lower than competitors.

Improved durability and environmental resistance

The W22 industrial motors are manufactured with WEG's own high quality cast iron to ensure maximum durability and life under aggressive conditions. Redesign of the fan cover (cowling) has also ensured greater strength to resist everyday impacts and eventual accidents. In addition, the fan cover has been redesigned for improved heat dissipation from the bearings, while being strengthened for increased resistance to deformation and better bolt protection.

The feet are now cast integrally with the motor frame, giving greater stiffness, better damping in high vibration installations, and ensuring flatness for easy mounting on the motor plinth.

Additionally, the strengthened feet have been designed with integral lifting holes; this has enabled the eyebolt seating to be removed from the frame. For more even cooling. Standard Degree of Protection is IP 55. This is easily upgraded to IP65 with a WEG adaptation kit, comprising a replacement housing with new bearing seals, for improved dust and water ingress protection, enabling high pressure water cleaning to be employed. This can be supplied for customer fitting, or by WEG maintenance service.



The most complete Inverter for the offshore segment

The MVW01 line of medium voltage inverters from 500 to 6,000 HP attends the needs and expectations of the marine industry, associating state-of-the-art technology and robustness with simplicity in the conception and ease in programming and handling which assures high performance and reliability. A wide range of solutions in speed variation for medium voltage motors of 2,300 V, 3,300 V and 4,160 V besides the line of low voltage inverters up to 1,500 HP. In this way, the user feels comfortable to choose the most convenient solution considering the purchase, implementation and installation values, energy demand and space.

The MVW01 presents state-of-the-art technology for medium voltage inverters through a structure with IGBTs of 6,5 kV combining resistance and safety with the minimum quantity of power components which assures great reliability and easy operation to the equipment in a compact solution with last generation technology. The multilevel NPC topology (neutral point clamped, 3/5 levels) allows a great balance between the output wave form to the motor and the number of power components without the need to connect them in series.

Due to the unique characteristics of the IGBTs already acclaimed in the low voltage inverters such as very low losses and simplicity on the peripherals, the frequency inverter presents high efficiency (97% and reaching 99% at rated conditions) and very low heat dissipation.

The input rectifier configuration for 12 or 18 pulses reduces the harmonics currents to extremely low levels, provides high power factor on the power supply and

fully attends the recommendations of IEEE519.

At control stage, the MVW-01 has a multiprocessing design using 32 bit processors (64 bit busbars) with mathematics in floating point and high performance assuring high efficiency on the motor control.

In trying to demystify the application of medium voltage inverters, the MVW01 follows the same programming philosophy of the WEG line of low voltage inverters. By using the same standard of MMI of the line of low voltage inverters, the MVW01 makes its parameterization extremely simple with no need for special training or softwares sold aside. It is also possible to parameterize the MVW-01 through the Superdrive, a WEG drives parameterization software which attends the whole line of WEG drives.

To assemble and replace power elements quickly, the IGBT modules are separated into three inverter arms assembled on removable individual racks, one for

each phase of the motor. The control and power components are interchangeable among the several sizes of inverters in such a way as to standardize and reduce the number of spare parts as well as to reduce the purchasing and storage costs of these components. The changing of these racks doesn't take more than three minutes due to their great mechanical practicality. The racks are available both with air and water cooling systems which increases even more the versatility of this product.

Main features:

- Ride-Through/Flying-Start
- Alarms and Faults
- Superdrive
- Trace Function
- Operation with Ground Fault



Complete solutions with transformers

It doesn't matter if you choose dry or oil. WEG has the exact solution for onshore and offshore applications.

One of WEG's main concerns is to match safety and outstanding performance of machines it supplies. Thinking about the integrity of companies properties, WEG engineers developed dry transformers as an alternative to the oil-filled equipment.

For offshore application, this is the perfect choice, since Dry Transformers are environmentally friendly since they are toxic-free machines and the risk of combustion ignition is completely eliminated. This is assured with the application of fire-proof CW229 resin, which is the only product item available on the market with UL certification. They are manufactured in accordance with NBR 10295 and IEC60076-11 Standards.

Dry Transformers are available from 300 to 15,000 kVA, voltages 0.6; 1.2; 7.2; 15; 24.2; 36.2 kV and with Degree of Protection from IP 00 to IP 55.

Oil

When the application is onshore, WEG has the best solution as well. Oil-filled transformers for power, distribution and industrial purposes. These products are available in classes up to 550kV and outputs up to 350MVA.



IES: Durability and efficiency in a complete structure

The Integrated Electric Systems - IES were created to supply assembled and interconnected electric solutions ready to receive external connections. It is possible to install the whole electrical plan of a vessel such as the main switchgear, switchboard panels, transformers, speed variators and automation system inside the IES. When using the IES solution, the construction of a ship or platform can be built in parallel allowing for the panelboards to be installed when the electrical room is ready.

Another application of the IES is on revamps or reforms of platforms, on which, in some cases, the work is done on only one specific module. The IES is easily adaptable to each project because a team

of trained engineers is at the customer's disposal to adjust the solution to meet the demands of the application.

The structure of the IES is made up of lateral columns and superior and inferior steel beams with inspection and quality certification. External and transversal welding of the floor using the MIG semi-automatic process. The sheets are sealed with silicon and the doors with naval standard rubbers. The lining of the internal walls and the ceiling is made with a double carbon steel sheet ASTM 36, 100% galvanized and fixed with self-threading screws. Very resistant, the roof stands a load of 200Kg/m². It also has an air cushion between the



tiles and the ceiling and gutters on the sides to allow the outflow of water.

The access door opens out with a minimum angle of 90 degrees and has an anti-panic bar. The floor stands a load of 1,250Kg/m² due to the welded carbon steel transversal and longitudinal beams. A mechanical cleaning, sanding and removal of oil and grease is done before the coating is applied. Premier Epoxy coatings with polyurethane anti-lymphatic finishing are used to assure the durability of the IES.

WEG was also concerned with the transport and lifting of the IES when the structure was built. For this reason, the system was manufactured with reinforced edges and the lifting can be done with pending cables or on an appropriate lowered flatbed truck. Monitoring is permanent throughout the transport. The internal lighting is designed according to the luminous density requested. All the wiring goes through fire galvanized conduits and condulets. There is emergency lighting and special luminaries and sockets can be found in strategic places. Besides all that, the structure has air conditioning which provides better working and operating conditions for the equipment.

WEG supplies products to FPSO P-57 Jubarte

The company responsible for the engineering, procurement and construction of the FPSO P-57 is Single Buoy Moorings (SBM) which have a team in Brazil for seven months devoted exclusively to the P-57 project.

After going through severe tests at WEG's facilities in Brazil, the products were shipped to equipment manufacturers in Brazil and Switzerland or sent directly to the shipyard in Singapore where the ship is being converted and where most part of the products provided will be integrated to the platform.

In this way, WEG completes another important round in becoming one of the main players on the highly demanding offshore segment.

"The joint work between SBM and WEG is not just a partnership, it is a strong relationship with a common aim. The P-57 is a great and complex project with a tight schedule and the two companies are side by side with close communication between them and with Petrobras", declares Jean-François Labrunie, FPSO P-57 - Package Manager of SBM.

The P-57 FPSO, anchored by SMS (Spread Mooring System), was designed to produce oil and gas on the Jubarte field and will be installed at a waterdepth of 1,300 meters.



P-57 will be the largest FPSO provided by SBM Offshore. The project planning allows it to be accomplished in just 35 months from the reception of the letter of intent until it is ready for installation at the end of 2010. The FPSO P-54 below is a good example of how P-57 will look like.

The package provided through WEG FRANCE has Medium Voltage Panels, Low Voltage Panels, MCCs (Motor Control Centers), and Medium and Low Voltage Dry Transformers, among other supervision and security sub-systems. Through several OEMs, the supply is completed by motors for gas compressors supplied to MAN Turbo in Switzerland; motors for water pumps supplied to SULZER in Brazil and motors for general application pumps supplied to KSB in Brazil. All these products are ABS certified and, when required, classified area certified according to Brazilian and International standards.

"It is Petrobras' characteristic to work close with suppliers since each project is a new challenge, a new barrier to clear. We can't overcome everything alone. On P-57, where the national content requirement is very high, proximity is a determining factor. And WEG is not only a Brazilian company, it is an outstanding company all around the world: structure, working environment, engineering and quality are very positive aspects that we have taken into consideration", says Claudio Jacyntho, Platform Sector Manager of Petrobras.

FPSO Espírito Santo starts production

Fast solution and with adjustments for space restriction. This was the focus of WEG supply to Single Buoy Moorings - SBM in March last year. Two sets of phase-shift transformers, medium voltage frequency inverters and motors for export pumps were the products delivered at the company shipyard in Singapore.

SBM's FPSO Espírito Santo has recently started the oil production the BC-10 field, operated by Shell. The platform runs with WEG motors which operate crude oil export pumps. SBM is the largest FPSO owner in the world and it has large experience with WEG products on its platforms.

Electrical package supply

Package	Quantity
MV Switchgears	39
Low Voltage Panels	136
Explosion Proof Low Voltage Panels (Eex e)	22
Medium Voltage Transformers	08
Low Voltage Transformers	09
Medium Voltage Motors for Pumps	10
Medium Voltage Motors for Compressors	04
Motors in General / OEMs (LV)	150
PMS - Power Management System	01
UPS- Uninterrupted Power Supply	01



Brazil has been a growing power of a new petroleum era. WEG's MTW-04 Medium Voltage Panel, an arc proof assembly designed to support 50kA internal arc was developed, tested and certified, and is now available for new offshore projects.