

## Automatic Voltage Regulator (AVR) retrofit project Modernizing a Saipem drilling rig and diving support vessel

A successful AVR retrofit project for Saipem on drilling rig *Scarabeo 7* in 2007 opened the way for an identical project to be commissioned September 2011 on board *Bar Protector* a Saipem diving support vessel.

In 2006, Saipem decided to invest in modernization of old Automatic Voltage Regulators type NEBB SF7 installed onboard drill rig *Scarabeo 7*. Saipem contacted ABB Marine Services, Italy to study a retrofit solution with a new digital product, completely interchangeable in the existing system.

### Turnkey upgrade project

ABB Marine offered to Saipem a turnkey solution including survey onboard, engineering and drawings, new AVR system in cabinet including Compact Automatic Voltage Regulator type UNITROL 1000 and all the needed equipment, factory acceptance test of the new products, installation onboard, commissioning and final acceptance test.

The new UNITROL 1000 AVR enhances overall system efficiency, reliability and serviceability.



*Bar Protector* diving support vessel



*Scarabeo 7* semi-submersible drilling rig

### Advantages of new technology

The new AVR employs IGBT semiconductors with microprocessor control and it can be retrofitted to increase the efficiency of plants previously equipped with older mechanical and analog voltage regulators. Other important aspects are the increased expected life cycle time, and full availability of spare parts and properly skilled technicians for service and maintenance.

### Repeat order

Saipem is very satisfied by the reliability of the ABB AVR system onboard *Scarabeo 7*. This is demonstrated by Saipem itself which, this year, placed another order to ABB Marine Italy for an identical AVRs retrofit on their diving support vessel *Bar Protector*.

The scope of supply is exactly the same as on *Scarabeo 7*. The final installation and commissioning onboard *Bar Protector* is foreseen for September 2011 in the Mediterranean area.

These two retrofit deliveries demonstrate the capability of ABB to carry out successful turnkey projects that increase performance and efficiency of existing installations.