Maersk Drilling launches Green Rig project

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In the A.P. Moller - Maersk Group, the environmental strategic ambition is to pursue energy efficiency in daily operations, across all business units. The strategy contains the aspiration to go beyond compliance in order to build competitive advantage through a systematic approach to identify potentials for more efficient use of resources, lower emissions and optimising cost.

Maersk Drilling’s pursuit of this ambition is demonstrated by the development of an ISO 14001 compliant environmental management system and the launch of several environmentally focused projects in the past months.

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The environmental culture is a focus area here and now. There is always room for improvement when it comes to environmental performance, and we are striving to reach an environmental culture that can match the highly developed safety culture.

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In general, this project demands a high degree of cooperation, not only internally between the rig crews and engineering and operation departments, but also with the operators using the rigs. An open dialogue has been initiated with customers to exchange ideas on how to implement the green improvements.

One idea considered is to use electrical power supplied from a neighbouring fixed production platform where the electrical power is produced by waste heat recovery or supplied from shore.

The cooperation and support from customers is a key foundation for future improvements and green changes. Oil companies will also have special interest in projects resulting in lower fuel consumption and gas emissions as they supply the fuel for the rigs and pay emissions taxes in regional areas where taxation schemes apply.

**AWARENESS CAMPAIGN**

It is of key importance that environmental aspects have the commitment of employees as well as management. Communication, education and training on how to conserve natural resources and why it is essential to do so are important and necessary processes to ensure a sustainable mindset change among employees.

The Green Rig Campaign 2009 was launched 1 January. It consists of awareness materials sent to the rigs and offices around the world, as well as a competition where employees are invited to send in ideas for environmental improvements.

In general, the campaign has been very well received onboard the rigs and has raised discussions among crews.

Participation level by employees in the green rig competition is an encouraging sign of raised awareness. Lasting over three months (from January to mid-April), the competition urges employees both on- and offshore to forward “green” ideas for the rigs. This resulted in over 100 ideas during the first month, ranging from highly technical solutions to “hands-on” and easy-to-implement ideas.

To reduce emissions of greenhouse gases, a popular source of inspiration for ideas sent by staff was the use of alternatives sources of energy: windmills on the rig’s legs or solar panels on top of accommodation blocks or helidecks. Calculations show that under ideal conditions of sunlight, such as the ones experienced in the Middle East, an area equivalent to 10-12 football pitches covered with photovoltaic solar panels would be required to supply the amount of energy typically needed on a drilling rig.

While it is therefore an unrealistic ambition to cover a major share of the rig’s energy consumption using such technologies, specific usages should be investigated, following the model of the aircraft warning lights at the top of the legs of jackup rigs, which have been using solar energy for years.

Many offshore employees came up with practical measures to reduce all sorts of waste: implementing new habits regarding washing of linen or towels, installing motion or light sensors to optimise lighting schemes of rig both indoor and outdoor, finding alternatives to using disposable plastic cups and bottles, etc.

One of the prized suggestions from the competition’s first round was to use breakaway coupling and quick-closing mechanisms on all transfer hoses to reduce spills. This has been used for oil transfer lines for years but should also be used for other lines.

Another suggested using electrical filter equipment to reduce counterproductive harmonics on the electrical system, thereby potentially improving the engine’s efficiency by 10%-20%.

All the good ideas collected through the competition are being reviewed by the relevant departments and their implementation investigated thoroughly. The output of this process will be the installation of new equipment on some rigs, optimising systems in general on all rigs and the publication of a best-practice booklet aimed at offshore employees and rig management teams. This project will continue for the years to come and will be part of the follow-up for continuous improvement in relation to our ISO 14001 certification.

A project with the aim of developing a green rig mapping tool has been initiated. The purpose is for the Green Rig project team and Maersk Drilling management to get an overview of the possibilities for increasing our eco-efficiency and enable evaluation and implementation of the most beneficial projects and improvements. Most importantly, the software should be user friendly and support the day-to-day work with environmental initiatives.

**ISO 14001, ENVIRONMENTAL TRAINING PACKAGES**

Maersk Drilling started Lloyd’s Environmental 14001 certification in 2006 for rigs and offices. Since 1 July 2007, the company has been running an environmental monitoring program that is a structured collection of environmental performance data. Greenhouse gas emissions are reported based on fuel consumption, with the first report issued...
in early 2008. It became the baseline for our global action plan to reduce emissions and total impact on the environment as a result of our activities.

The company is also running a global environmental performance monitoring programme that ensures structured reporting and consolidate key environmental performance data consistent with the impact caused by operations. Monitoring also provides the baseline for the data for future measurements and identifies possible areas of improvement.

A training package has been developed that consists of a one-hour e-learning programme giving basic training on identifying relevant environmental issues and defines activities on board that have an environmental impact.

The training introduces the principles and importance of environmental legislation and the authorities responsible for its enforcement. It also introduces international conventions, laws and regulations we comply with in order to protect our environment. Employees are trained in how to avoid environmental incidents, particularly oil spills, and learn about responses to the accidents and emergency situations that have a potential impact to the environment.

The course provides a comprehensive overview of the environmental issues associated with our operations, consisting of:

- Discharge to sea
- Emissions to the atmosphere
- Waste generation
- Risk assessment for spill/accidents
- Bunker operations and use of oil spill equipment
- Maintenance/inspection.

ENVIRONMENTAL INITIATIVES IN THE OFFICE

In parallel to the Green Rig project and campaign, a project group has been set up to drive cost-effective environmental improvements in Maersk Drilling’s head office.

The projects include a review of the use of energy and resources, waste generation and recycling. Starting in February 2009, all paper generated in the office are being recycled. Polypropylene cups have been replaced with glass cups, and individual desk bins have been replaced with larger collective recycling containers around the office. Employees are also encouraged with little reminders to use stairs instead of the elevator and switch off the computers when away from the desk.

This article is based on a presentation scheduled for the 2009 IADC Environmental Conference & Exhibition, 12-13 May in Stavanger, Norway.

The green rig project demands a high degree of cooperation not just from rig crews and the engineering and operations departments, but also the operators. Maersk Drilling believes that customer support is key for making future ‘green’ improvements and has initiated an open dialogue with customers to exchange ideas on how to address the environmental challenge.