

Electronic format can streamline HSE information

A NEW TWIST to its Global Excellence Management System (GEMS) was recently launched by **Diamond Offshore Drilling Inc.**

GEMS is the company's quality program that was developed in the early 1990s to monitor its safety and quality efforts. The new GEMS system has broadened its scope to embrace a user-friendly format that brings "knowledge management" to crew members working in the field around the world.

"We now have a quality system with an easy-to-use electronic format to monitor, control and continually improve our performance," explains **Glen Merrifield**, Vice President of Management Systems.

"The key element is the search engine that can query all documents in the system for information relating to the search criteria," he says. "Employees previously needed to do a manual search through several thick manuals and now they click a few buttons and within seconds they have material that is linked to external regulatory agencies and customer requirements."

For example, employees can type in the word "lifeboat" on the computer and a rapid search is done for all documents relating to lifeboats. A list shows where any documents on lifeboats can be found and provides instant links to the information.

IN-HOUSE PRODUCTION

Helping to coordinate the in-house effort is **Annette Prewitt**, Quality Assurance Manager. The first step was to review the requirements from regulatory agencies, quality programs and Diamond Offshore's customers. Table 1 includes programs from the U.S. **Department of Interior's Minerals Management Service (MMS)**, **International Maritime Organization (IMO)**, **American Petroleum Institute** and **International Standards Organization (ISO) 9002 & 14001**.

"The review showed that the majority of requirements were very similar," she

said, "and a follow-up gap analysis determined which requirements from customers and agencies were missing from GEMS. At that point, GEMS was expanded to meet those requirements."

For the program's cost-effectiveness, Mr Merrifield and Ms Prewitt tackled program development through the use of



Ocean Epoch crane operator Wayne Armstrong stands by hand rails that were raised after GEMS was used to find requirement.

existing software. Compact disks are created in-house. So far, the team has produced two issues of CDs and the information contained on the disks replaces more than two dozen bulky manuals.

GEMS IN ACTION

Many crew members throughout the company's fleet were at first skeptical about the new electronic format but they now realize the advantages. One example of how GEMS brings effective knowledge management to the field personnel occurred on the Ocean Epoch.

During the rig's upgrade in a shipyard in Singapore, the rig received two new SeaTrax cranes. Barge Captain **Mike Rigdon** remembered a safety incident regarding the access area to cranes and used GEMS to conduct a search for "Crane Access." His brief search brought up a Safety Alert on a crane incident and the appropriate requirement for handrail heights on the access platform to the crane.

"After taking measurements on the related areas of the new cranes, we determined that the hand rails would indeed need to be raised," said Mr Rigdon.

"This is what GEMS is all about," said Ms Prewitt. "This example on the Ocean Epoch demonstrates that the goal of GEMS is easy access to information, and then the use of that information to maintain safety and efficiency in our workplace."

GEMS is also proving itself in planning for rig safety meetings. Prior to each meeting, personnel can use the search engine to look up a specific topic and have information ready for the meeting. This is an asset for Job Safety Analysis (JSAs) and pre-tour meetings.

A STEP CHANGE

There are no more outdated manuals. A new disk is issued every six months and all components are updated. Critical HSE items that are added or modified in the interim are sent electronically to

the worldwide fleet and included in the next issue.

With security programmed into the system, a step change in document control has been achieved.

At each new issue, the master CD from the previous issue is archived instead of a truckload of paper.

CUSTOMERS COMMENT

Paul Ardoin, HSE Coordinator for **BHP Petroleum**, appreciates the searchability aspect of GEMS.

"Conducting key word searches with GEMS is very easy. This provides quick access to information that rig personnel in the field need. It is not much good to have information if it can't easily be located.

"For example, the GEMS system offers good Job Safety Analysis principles for each task. We have always told people what they need to know, but we never showed them the information before. Safety is our highest priority, meaning



Diamond Offshore rig crews can find regulations and customer requirements in GEMS.

that if we can't do it safely, we shouldn't be doing it.

"At BHP, we take the time to review drilling contractors' HSE programs and we look for a company with an advanced program. Diamond Offshore certainly offers that."

Captain **John LeBourhis**, President of **John LeBourhis & Associates Inc**, a warranty surveyor and a registered maritime lead auditor, says that one of the advantages of GEMS is that it dovetails with the safety programs of the major oil companies.

"I have been following Diamond Offshore since 1976 and it is one of the first drilling contractors to achieve this level of a safety and quality program," he

said. "Diamond Offshore has a large fleet of semisubmersibles and the company will have to comply with International Maritime Organization's ISM codes. This compliance can be very stressful for any drilling contractor but Diamond Offshore is well prepared for compliance. In this industry today, safety programs are key to a successful business organization," he adds.

"I have the GEMS program on my desk and I am very impressed."

Ben Poblete, Risk Management Specialist, **Lloyd's Register**, explains that he was commissioned by the Falkland Islands to survey all drilling contractors working off of Brazil and to review safety management procedures.

"When I saw the GEMS program, I knew Diamond Offshore has the essential elements and the review process was easy. Diamond Offshore is capable of meeting any requirement globally." Mr Poblete adds that a quality program needs to be flexible to meet all of the requirements.

"Diamond Offshore has achieved that because the company has a strong commitment at the top and it is pushed throughout every level. This type of comprehensive safety/quality program is part of doing business globally. It is just the right thing to do."

"The overall commitment of Diamond Offshore leaders and workforce is impressive, in terms of safety and the protection of the environment, specifically in terms of Shell's experiences with the Ocean Worker and Ocean King," said **Steve Davis**, HSE Leader for **Shell E&P**.

Recently Diamond Offshore became interested in taking ownership of Shell's HSE Case Development and developing specific HSE cases for rigs working for Shell (currently the Ocean Worker).

"I am impressed with the Diamond Offshore leadership's willingness to step up to the plate and assure the alignment of GEMS with Shell Group's HSE management system," he explained.

"Diamond is doing a fantastic job of getting cases built for early next year." A case is a site specific demonstration of Shell's management system at work and an extension of Shell's system to any given rig.

"I must comment on the 'can do' attitude of Diamond's staff, both in the office and on the rig," he says, "because it is a natural link to standard management system elements.

"Overall," said Davis, "Diamond's HSE organization is outstanding in being proactive and highly responsive." ■

Diamond Offshore's gap analysis chart (portion of each program shown below)

DODI GEMS Global Excellence Management System	MMS SEMP Safety & Environmental Management Program	API Specification Q1 Quality Assurance Program for the Petroleum Industry	ISO 9002 Quality Assurance Standards	ISM Code International Management Code for the Safe Operations of Ships and for Pollution Prevention
1.01 Management Leadership and Commitment	1 - General Management Program Elements & Principles (1.01)	4.1 Management Responsibility (1.01)	4.1 Management Responsibility (1.01)	1 - General (1.01)
1.02 Risk Assessment	2 - Safety & Environmental Information (1.04)	4.2 Quality System (1.01)	4.2 Quality System (1.01)	2 - Safety and Environmental Protection Policy (1.04)
1.03 Personnel & Training	3 - Hazards Analysis (1.02)	4.3 Contract Review (1.08)	4.3 Contract Review (1.08)	3 - Company Responsibility and Authority (1.01)
1.04 Safety & Environmental	4 - Management of Change (1.11)	4.4 Design Control (NA - Product)	4.4 Design Control (NA - Product)	4 - Designated Person(s) (1.05,1.04)
1.05 Operations	5 - Operating Procedures (1.05)	4.5 Document and Data Control (1.10)	4.5 Document and Data Control (1.10)	5 - Master's Responsibility and Authority (1.05,1.04)
1.06 Maintenance	6 - Safe Work Practices (1.04)	4.6 Purchasing (1.09)	4.6 Purchasing (1.09)	6 - Resources and Personnel (1.03)
1.07 Audits & Corrective Actions	7 - Training (1.03)	4.7 Control of Customer Supplied Product (1.09)	4.7 Control of Customer Supplied Product (1.09)	7 - Development of Plans for Shipboard Operations (1.05,1.04)
1.08 Contract Review	8 - Assurance of Quality & Mechanical Integrity of Critical Equipment (1.06)	4.8 Product Identification and Traceability (NA Product)	4.8 Product Identification and Traceability (NA Product)	8 - Emergency Preparedness (1.05,1.04)
1.09 Third Party Services	9 - Pre-Startup Review (1.08)	4.9 Process Control (1.05)	4.9 Process Control (1.05)	9 - Reports and Analysis of Non-conformities, Accidents and Hazardous Occurrences (1.04)