

# Good project management as competitive edge

**Steve Thomas**

Planning manager, Heerema Hartlepool

The Holland based Heerema Fabrication Group builds large complex constructions for the oil and gas industry, such as modules and jackets for platform installations. With many strong competitors tendering for the same contracts, Heerema's track record of superior project management played a significant role when the company's Hartlepool yard was awarded the contract to build the utilities and quarters topside for the Buzzard oil field development in the British sector of the North Sea.



More and more contracts in both the public and private sector are being awarded through the competitive tender process. The ability to seek, evaluate and respond to an invitation to tender form crucial skills needed to win these contracts. Besides assisting the planning department at Heerema Hartlepool in managing their ongoing fabrication projects, Safran's project management software has also proved to be the application to use for bid planning, with Heerema enjoying a number of successes in recent years.

With a strong local presence in the Netherlands and the United Kingdom, Heerema holds a strategic position in the North Sea oil and gas industry. In 1995, Heerema Hartlepool, a UK company, joined Heerema Fabrication Group. Their activities include project management, design, engineering, procurement, construction, installation and hook-up & commissioning. From their location, Heerema's Hartlepool yard is logistically well situated for both Northern and Southern Sector North Sea projects, with unrestricted access to the North Sea.

Since 1995, Heerema Hartlepool has won a number of fabrication contracts awarded by the oil and gas operators on the British shelf of the North Sea, contracts varying in size and scope. Presently, Heerema is close to finishing the construction work for its contract to build one of three decks destined for the Buzzard field.

**On time and within budget.** Located 100 km northeast of Aberdeen, the Buzzard field was discovered in 2001. The field is the largest UK North Sea oil field discovered in the past decade; total original oil in place is estimated to be 1.2 billion barrels with an expected recovery factor of about 45%. Development of the field is well underway and is on schedule and on budget, with first oil expected in late 2006. With the current oil prices, this recovered oil is worth about US \$30 billion.

The Buzzard field is operated by the Canadian-based global energy and chemicals company Nexen. The field will be developed by three bridge-linked platforms supporting the wellhead facilities, production facilities and the living quarters and utilities. Heerema's contract to build the utilities and quarters deck in Hartlepool is with Nexen. Scheduled for sailaway early in 2006, 70% of the construction work is already finished.

Production from Buzzard is expected to reach peak levels of approximately 180,000 barrels

per day by 2007. Based on UK government and industry forecasts, it is expected that at its plateau rate, Buzzard could be responsible for 10% or more of the UK's total oil production.

Based on his experience with Safran's software for project management, planning manager Steve Thomas is confident that the quarters and utilities deck construction will finish on time and within budget. Safran's software provides him and his colleagues with the necessary tools to forecast and keep a complete overview of the project from any perspective, in time to act upon unplanned circumstances that may arise.

**10,000 tonnes of construction.** Heerema's contract for the Buzzard project differs from recent completed projects in size and budget. "The construction of the utilities and quarters deck for the Nexen platform is the biggest fabrication job in the yard since 1995," Thomas explains. The total weight of the topsides will be 10,000 tonnes.

In terms of manhours and people involved in the process, the project is also one of the largest of its kind in Heerema's order books. A total of over 300 people are working on the construction. The total manhours will be in excess of 1 million, including the contribution of the subcontractors. Heerema's own work includes preparation of fabrication drawings, structural, piping and equipment installation, and of course project management.

Heerema employ a number of locally based sub-contractors, both on and off site. Prefabrication of pipework, electrical and instrumentation installation and architectural work are all sub-contracted. Safran is used extensively by the Heerema planning team to plan and coordinate the work between themselves and the various sub-contractors. Managing a project of this size is a complex effort, and could present the project managers with a number of unforeseen events. Both human and material resources need to be in place at exactly the right time, and delays and unexpected shortages could prove to critically drain the budget. Safran's project management software is the tool that allows the project managers to gain the best possible view into the use of resources, not only in past phases of the project, but also in phases to come. With forecast reports, potentially disastrous situations can be prevented in that they show just how resources are allocated for the individual stages in the project.

→ For a more graphic overview of the current statuses and the schedule ahead, Safran includes the ability to display bar charts to provide a fully detailed visual impression. This easy-to-use and straightforward outlining capability allows project managers to organise the schedule into steps, and to collapse or roll up subtasks to show a summary when working with a large schedule. The interactive bar chart is integrated with resource histograms and a spreadsheet-like table for data entry, updates and modification, ensuring complete control of the project. The beauty of this integration is that once the data is entered in the application, it forms the basis for all bar charts and reports, saving you the hassle of having to enter data twice.

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**Safran’s first installation in the UK.** When Heerema was awarded the contract for the Buzzard field in 2003, Steve Thomas was by no means new to project management, and had already been using Safran software for a number of projects. Some existing Safran customers, such as Aker, were already managing UK based projects with software from Safran, but Heerema was Safran’s first independent UK client.

Heerema Hartlepool purchased Safran in 2000, and since then, it has become the preferred and standard planning tool for fabrication contracts throughout the organisation, with all four members of the planning team using Safran in their daily work operations. Before Safran, they were using Artemis 7000 as their planning tool. The decision to replace this software was not only based on a need for a new tool as such, but equally important was the desire to avoid the vulnerability attended with Artemis.

As Steve Thomas explains: “Internal Artemis resources were scarce, and we did not have anyone to take over if the person with the knowledge of Artemis suddenly decided to leave the company. We needed a more user friendly and flexible application and a software vendor who was able to provide more and better support.”

For Heerema, Safran’s advanced reporting features and graphics that allow data to be presented in a logical and easily accessible way, played a major role in the decision process. “With sophisticated histograms that allow us to see for example the manpower load graphically, we have the flexibility that we need to recognize and react to sudden changes,” says Steve Thomas.

In order to benefit fully from the features included in a robust project management software like Safran, it is necessary that the software includes functionalities that provide project managers with the information they need, when they need it. With Safran, users can generate valuable reports that can be relied on, reports that give a full and detailed overview of any phase in the project cycle, from any perspective. For instance, if the lead planner needs to see the overall progress of the entire project, the software is able to generate a report providing him or her with just that information. Likewise, a sub-contractor may ask for a report showing the total manhours registered for their company for a specific period.

Thomas emphasises the uniqueness of Safran’s user assistance: “When you’re stuck in the middle of something and you need help, there is always a quick response and you always get expert help from a competent person on the other end of the line. You don’t have to call a help desk and get someone new every time who has to be brought up to speed on how we run things before they can respond to our problem.”

**The more, the messier.** One of the great advantages of Safran promoted by users is the ability to interface with other applications, such as the Web, proprietary software or document handling software. For Steve Thomas and his planning team however, experience has shown that entering data in Safran manually is the most convenient process for continually updating



the project information and keeping track of the progress. With information coming from a number of different sources, formats and subcontractors, the planning team finds that this is the most secure way of maintaining the quality of the data that provide the basis for the reports generated by Safran to keep Heerema's projects under control.

"Providing the many subcontractors with web access to certain features of Safran and enable them to enter their information directly in the application, could," Steve Thomas fears, "potentially result in a messy database with a lot of inaccurate information that we would have to spend time double checking."

Besides interfacing with Excel for their own use and benefit, Thomas and his team have not yet had the need to set their Safran application up to integrate with other software that they use. This may only be a question of time though, as Heerema continues to win contracts consolidating their reputation for high-standard project management. ♦

### Buzzard field facts

Nexen will be the operator of the field on behalf of its co-venturers and the agreed equities are as follows:

Nexen	43.2 %
Petro-Canada UK Limited	29.9 %
BG Group	21.7 %
Edinburgh Oil and Gas PLC	5.2 %

The Buzzard field straddles two licenses - P.986 and P.928(S) with a water depth of approximately 100 metres.

The current development plan anticipates that the field will be produced through 27 production wells, eight of which will be pre-drilled and available for production start-up in late 2006. Nineteen additional wells will be drilled over the life of the project.

Reservoir pressure will be maintained through an active waterflood program by re-injection of produced water supplemented by treated sea water when necessary. Under the base case, 16 water injection wells will be drilled through two subsea manifolds located about 1 kilometre from the platforms. Four of these wells will be pre-drilled and available at the time of production start-up.