SUBSEA WELL ABANDONMENT CASE STUDY: 60 DAYS TO SUCCESS – CRITICAL PROGRAM MANAGEMENT

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OFFSHORE NETWORK INTRODUCTION

The Garden Banks 388 subsea abandonment project was the first abandonment work of its kind to take place in deepwater in the Gulf of Mexico. During this “first of a kind” project, many lessons on how to approach deepwater subsea abandonment were learned and a new methodology was utilized.

As the industry gears up for a significant increase in the amount of deepwater decommissioning and abandonment work many operators and contractors are facing the same challenges that EEX and Cal Dive International faced in 1999.

As such, we have made this paper available so that individuals and organizations planning for deepwater abandonment projects can take advantage of the experience developed during the Garden Banks 388 abandonment project. This white paper outlines the key lessons learned that enabled EEX and Cal Dive International to successfully complete the in just 60 days.

ABOUT THE AUTHORS

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Andy has 35+ years upstream oil and gas operations experience, in GoM offshore, onshore, inland waters and international operations. This includes: Drilling, Completion, Well Interventions, Production Operations, Project Management, Facilities Engineering, Land, Regulatory, HSE, and Partner Negotiations.

Andy also has 8 years experience as a U.S.A.F officer and B-52 aircraft commander. A proven leader who brings creative approaches and solutions to technical challenges and business opportunities.

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Ken Duell was the Cal Dive International Project Manager on the Garden Banks 388 subsea abandonment. Ken was a Senior Vice President at Cal Dive International during the mid-1990’s to early 2000’s (now Helix Energy Solutions). Ken held several senior positions in the offshore industry during his career. Ken is now retired from the offshore oil & gas industry.
Abstract

This paper will describe the fast track method utilized by senior management of both EEX and Cal Dive to meet very critical scheduling requirements for the abandonment of the Garden Banks 388 (Cooper) Field in 2100 feet of water. Being the first deepwater abandonment, several ground-breaking procedures were employed, which included innovative economic considerations as well as challenging operational and contractual hurdles. The procedures utilized at Garden Banks 388 can be employed on certain abandonment projects where there is a requirement for production to be run up to the time limit of regulatory periods prior to shut in and removal of the facility. Commencement of the offshore activities utilizing well-proven traditional methods while specific procedures for each phase of the works is implemented independently. By limiting the number of personnel in the decision making and approval process, by instilling flexibility and excellent communications between the contractor, operator and regulatory parties a project can be moved forward with confidence on a true fast track basis. This enables offshore operations to commence prior to all of the typical project elements being in place and allows for rapid infield decisions and change in operational procedures when required

Discussion

In 1998, EEX Corporation (EEX) was facing a challenge that no one in the oil industry had faced before, the decommissioning and abandonment of a producing field (Figure 2) in water depths of 2,100 feet and deeper. EEX management reviewed their options on how to move on this formidable task. Should they hire an engineering company to work up the plans? Should they study it at EEX, come up with detailed plans and bid out the detailed work? EEX knew what had to be done. As the Nike-ism says “Just Do It!”

EEX had already begun the regulatory process in August 1998 and as of March 1999 the Minerals Management Service (MMS — now the Bureau of Safety and Environmental Enforcement) permits had not been finalized or approvals granted for the project. Management at EEX knew that the permits would be granted but it was a matter of time when it would happen. EEX’s hope was to remove the Floating Production Facility (FPF) and Free Standing Riser (FSR) before the hurricane season reached its peak in late August or early September.

Selection of the Main Contractor

The task seemed overwhelming but EEX had a secret weapon on their side…. Trust. EEX management had decided up front that they were going to handle this project differently from how other companies in the deepwater areas would handle it. Their trusting and open discussions with the MMS were working well at advancing the permitting process. Couldn’t they use the same tact to get the plans for the fieldwork put together and executed? Management thought it was worth a try. EEX management and staff met to determine the essential needs for the project. They knew that EEX did not have the
staff to put the project details together, so they looked for a company who had the
decommissioning and abandonment expertise and at the same time was capable of
working in the deepwater environment. EEX settled on Cal Dive International (CDI) as
the major contractor that fit the bill. CDI had the turnkey contracting track record in the
decommissioning and abandonment in the shallower Gulf of Mexico waters and had the
knowledge and capabilities to handle the deepwater work. Discussions between the two
companies began in April 1999 on how EEX wanted to handle the project. Contractors
in the oil industry understand the bidding process. The usual scenario is that the service
companies who are the successful low bidder on a project work the project with the most
cost effective labor force and equipment. If there are any changes in the scope of the
work, they can charge a higher day-rate and recoup their extra costs. A contract the size
of a small novel is usually required to cover the scope of the project and work liability
issues. Most of the adjustments to the agreement are handled by a change order. EEX
wanted to keep the agreement simple. They wanted to make sure the work was done
properly to satisfy the MMS and maintain the high standards of work that EEX subscribed
to as good corporate and environmental citizen.

Simplification of Agreements

The forests of East Texas breathed a sigh of relief when EEX and CDI on the 21st June
1999 signed a five-page agreement. The agreement had a trusting “Just do it” feeling to it
but covered the liability and change of scope issues in stark simplicity. EEX’s feeling about
the agreement was that they wanted to be able to handle the work without the usual
finger pointing and accusations that are hidden in the legalese of the “agreement with
contractor”. In fact, the agreement was based on trust. Trust that the job would be done
properly, safely and in an environmentally sound way. Trust that if there were changes in
the scope of the work, due to unforeseen problems, the two parties would work together
to solve the problems through open discussions and minimize the need for change
orders. Trust that though EEX wanted to keep the cost of the project under control, they
had not gone with the low bidder and were committed to provide CDI with a reasonable
margin for their effort to control those costs. Trust that CDI would choose subcontractors
that were capable of doing the work and would be willing to be open and trusting of all
those involved with the project.

Chain of Command

With the agreement inked between EEX and CDI, the work began on planning the rest
of the project parts and their respective subcontractors. The project was broken down
into its basic parts, decommissioning of the pipelines, riser removal, Floating Production
Facility (FPF), plugging and abandonment of the wells and retrieval of the required subsea
equipment. The people at EEX and CDI who would work the issues were chosen. Sticking
to the idea of trust and simplicity, there were only four EEX and four CDI people who
were needed to manage the project. EEX believed that by limiting the number of EEX
personnel in the decision making and approval process and by instilling flexibility and
excellent communication between the contractor, operator and the regulatory parties,
the project would move forward with confidence and on a true fast track process
(Figure 1).
Subcontractors

So far the EEX concept of trust was working and it had seemed to simplify the process. Now the true test to the “trust” concept was going to happen. The subcontractors for the project needed to be chosen. It was decided to pick the most capable contractors instead of bidding the work. The subcontractors would be ones who would do the work with capable people, the proper equipment and backup support. The subcontractors were chosen and assigned their respective parts of the operation. Open communication was insisted on by EEX. This enabled the questions to be answered by the right person with the proper information. Problems could then be addressed and solved as quickly as possible.

Project Kickoff Meeting

On June 3, 1999, EEX held the project kickoff with as many as 80 people in attendance. The participants represented EEX (both office and field personnel), CDI and all CDI selected subcontractors (both office and field personnel) involved in the project from start to finish. By bringing everyone together at one time, EEX and CDI were able to maximize the intercommunication of the participants. The breaking down of the walls of competition and building the bridges of trust were an incredible boost for the project. As the planned schedule was rolled out, each of the people in the room was able to see how their services fit into the overall project. Where problems popped up with one subcontractor, another subcontractor would speak out and tell how they could help to solve the problem. Because trust filled the room, companies who normally are competitors for the same services focused on the project and were willing to help the project succeed. The EEX field personnel in the meeting were able to give details about the equipment and whether or not an operation had inherent problems.
Parallel Planning

The regulatory process continued into June 1999 and the permits from the MMS were approved on June 17, 1999. Though EEX had not received the needed approvals to start work, the plans and mobilization of equipment for the project had a parallel time line to the regulatory process. The parallel mobilization gave EEX, CDI and the subcontractors the ability to have crews and equipment on location and working two days after the MMS approvals were received in the EEX office.

Field Flexibility

When the work offshore began, it was imperative that the communication levels remain high. EEX and CDI personnel met each morning to review what had happened during the previous workday and resolve any problems that lay ahead for the project. Subcontractors planning or performing work at the time were welcome at the meeting. The trust and flexibility that was key to the planning now moved to the offshore arena. EEX allowed the field supervisor in charge to make minor modifications to the procedures or the timing of events if they would keep the project moving ahead. The communication of the changes went out to all the parties involved in the project. Major changes or problems would be handled and approved in the EEX office, but in a highly expedited manner.

Project Flexibility

The parts of the project that had critical timing because of hurricane season were the decommissioning of the production equipment and pipelines, removal and transport the FSR to port, removal and transport the FPF to port, retrieval of the mooring system and temporary abandonment of the wells. With the critical part completed, EEX was able to use its flexibility and trust to allow CDI to demobilize for other industry projects. It was an understanding that CDI would plan the remaining work into their overall Gulf of Mexico project schedule. By allowing this, EEX reduced the risk of damage or delays to the critical parts of the project due to weather. In return, CDI was able to give EEX a favorable turnkey price with dayrate provisions for potential contingency works as CDI had full flexibility with its vessel's utilization.
Conclusion

EEX faced the abandonment of the Garden Banks 388 (Cooper) Field in a new and innovative way. They began their regulatory work early, realizing that the MMS would be on a learning curve with them. Their open discussions with the MMS set a precedent for the way projects will be handled through the regulatory process in the future. EEX’s commitment to communication broke down the walls of misunderstanding that sometimes go up during the permitting process. When the MMS questions were satisfied, the permits were quickly approved and the project was allowed to proceed.

The way EEX decided to not “re-invent the wheel” or “study the project to death”, gave momentum for the project to keep moving ahead. EEX knew the mechanics of what they had to do to accomplish their goals. Knowing they were understaffed it was logical to bring in a major contractor that had the labor, equipment, knowledge and track record in decommissioning and abandoning offshore projects. They decided that CDI had the experience and willingness to try a new project management style. By limiting the number of personnel in the decision making and approval process, EEX was able to create an atmosphere that fostered the open communication and frankness that was needed to keep the project on the fast track.

The flexibility in both the EEX / CDI agreement and the field management enabled EEX to reschedule and redirect the project. When problems arose, alternate plans could be implemented almost immediately. CDI applauded the way EEX put everything on the table for discussion, including the discussion of a fair margin for CDI and its subcontractors. Realizing that the service companies were not non-profit organizations was a major shift for an exploration and production company. EEX’s management concept convinced CDI and the subcontractors to openly participate in the project rather than be just a service to the project. The competitive walls came down at meetings and in the field with a spirit of trust, cooperation and assistance giving added energy to get the job done.

By using this new project management style, EEX was able to pull success from what some in the industry would have thought a failure. EEX won over the MMS by providing them with the facts and information they needed to understand and approve the project permits. The open communication and flexibility of the main contractor and subcontractors kept the project on the fast track and allowed the field to produce up to the date that decommissioning began in the field. Problems were handled quickly and efficiently with only minor delays. For the industry analysts that still have doubts about the project management style, they should be aware that EEX will spend $15.0 – 25.0 MM less than what the estimates were to do the work using conventional methods.
of planning and project management. Critical tasks were done in a safe, on-time and environmentally sound manner, with the equipment stored and ready for redeployment on the next project (Figure 3). EEX hopes that the procedures used at Garden Banks 388 can be employed for future deepwater projects.

**FIGURE 2: BEFORE FIELD ABANDONMENT**

**FIGURE 3: AFTER FIELD ABANDONMENT**

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