



BP Chirag Oil Project ESCHER focusses on Caspian Sea

Escher Process Modules (ESCHER) secured a prestigious order from BP at the beginning of last year for the design and delivery of a gas dryer installation consisting of a glycol contactor, gas scrubber, glycol regeneration unit and hoisting equipment. The gas dryer is part of the BP Chirag Oil Project in the Caspian Sea. It was shipped out from the Netherlands to Azerbaijan at the end of August 2011. In October this feat of engineering was put in its final place on the offshore platform. Vincent Rüter, deputy director of ESCHER, explains how the project has progressed and outlines the next steps.

BP has five offshore platforms in the Caspian Sea for the development of the Azeri-Chirag Deepwater Gunashli (ACG) field, which started in 1994. The field is now completely operational and BP is using the five platforms to produce oil and export it via a large terminal at a rate of 1.2 million barrels a day. BP has invested another six billion dollars in an additional platform – the Chirag Oil Project – that will be operational by year-end 2013. BP approached ESCHER in autumn 2009 and requested a design for a gas dryer installation needed on the new offshore production platform for the Chirag Project.

ESCHER and BP had previously cooperated with each other several times. But on this occasion it was not just about a new design with important safety aspects, but also about a state-of-the-art end-product. ESCHER is doing more than just the design, emphasises Rüter, it is also responsible for the execution of the design, manufacturing, testing and transport. At the beginning of last year BP and ESCHER conducted negotiations for the gas dryer installation. This is a major project for ESCHER which was discussed thoroughly. The design and proposal were subsequently tailored to fit the project and in March 2010 ESCHER received from BP the contract to design, build, certify and deliver the new installation.



The gas dryer installation extracts water and hydrocarbons from the gas. The gas mixture runs through two large drums. The first drum removes the free water and the second absorbs most of the residual water and hydrocarbons by means of the added glycol. The 'dry' gas then passes through the outlet. A regeneration unit is used to cleanse the glycol of some of the water and hydrocarbons for reuse in combination with freshly added glycol. The exact inlet specifications and, even more important, the outlet specifications were laid down contractually.

Vincent Rüter is enthusiastic about the innovative nature of the design. He says: "What we've developed for this client is also usable in other fields. For example CO₂ drying, because it involves the same aspects. The lessons learnt from previous projects were examined critically during the design work, because ease of maintenance, accessibility and safe operation of the installation were key aspects. When it comes to these subjects you can learn time and again from earlier projects or recently gained experience."

"Besides the lessons learnt, the dimensions and weights of the entire installation required extra attention, because of its use offshore, the need for hoisting, the safety requirements and because the installation has to fit into the limited space available on the drilling platform. Optimisation and efficiency are very important."



To design the installation ESCHER cooperated intensively with various specialists available in-house at parent company Iv-Groep. They included professionals at Iv-Oil & Gas, Iv-Consult and Iv-Industrie. "That is the real strength of our organisation and also part of the added value we offer our clients," says Rüter.

On completion of the drawings and calculations, ESCHER in its role of main contractor engaged various qualified subcontractors and suppliers for the required components and activities. For the manufacturing of the installation the leading role in this project went to Hollandia Systems of Heijningen (the Netherlands), where the skid-mounted unit was ultimately constructed under ESCHER's responsibility and supervision. ESCHER cooperates regularly with this company on account of its considerable know-how within the offshore, chemical and process industries. All in all it took six months to complete the manufacture and assembly of the piping. In early August the installation underwent a thorough Factory Acceptance Test (FAT) in consultation with the client. This was followed by fine-tuning, after which the structure was shipped to the Caspian Sea towards the end of August to be lifted on to the platform in October. The next step will be to connect the installation to the rest of the oil platform of which it will be an integral part. Vincent Rüter expects the internals to be installed in the drums in spring 2012. He does not expect the installation to be commissioned before year-end 2012. For that process ESCHER will provide various specialists to work alongside the client on the platform for the commissioning of the entire installation. After commissioning the climax will be the Site Acceptance Test (SAT), which involves demonstrating that everything is working properly and that all defined specifications have been met. "We will obviously remain responsible for the project all the way to the end of the warranty period in 2014," says Rüter.

Vincent Rüter
Deputy director, Escher Process Modules