



#### Example of project success factors:

- Comprehensive previous experience from executing tailor-made ship and rig solutions, including Navy undertakings
- Vast refrigeration competence and marine in-house application know-how
- Long and proven track record of performing witnessed tests
- Ability to uphold documentation quality despite extensive documentation processing requirements
- Structured and professional project management



## Cooling a platform

How could Chevron Australia make sure the air conditioning of the living quarters of their new Wheatstone gas processing platform would be a success for the next 40 years?

In co-operation with WorleyParsons, Chevron contracted Daewoo Shipbuilding & Marine Engineering (DSME) to construct the upstream platform.

While DSME were to do the construction work, they let Technip turn to Johnson Controls Marine to get a bespoke unit, made to fulfil the extensive requirements.

Among the required features were certified compressors and pressure vessels as well as air-cooled condensers approved for hazardous area.

Johnson Controls' engineers in Sweden reviewed all specifications and designed two chillers that would be able to withstand the harsh offshore environment off the coast of northwest Australia as well as meet the vast requirements on Safety in Designs, SID.

As reliability will be extremely vital on the platform, Johnson Controls' ability to prove the performance in full-load tests was also an attractive element.

Johnson Controls signed the contract with DSME (Daewoo Shipbuilding & Marine Engineering) in February 2012, with equipment delivery in late 2013.

After initial engineering, Johnson Controls settled the conceptual design and in order to meet the delivery time requested by the customer, major materials were purchased from a global array of key suppliers.

Detailed design together with all involved parties continued during the production of the major components, and Johnson Controls used their expertise to produce drawings, documents and software programming.

The Johnson Controls team of engineers spent several thousand man-hours in the project, all of which in a little more than one year.

Production sites were inspected together with the Customer, and test programmes were presented.

Although summer is a long sought-after period by the Swedes, setting up a full-load test for an air-cooled chiller - designed for 38° C air - in this climate, may lead to some difficulties. The Johnson Controls team grabbed the challenge and was able to convert the test bench to suit the needs.

Subsequently, before shipping to Korea, successful full-load tests were performed to verify capacity and technical compliance. These tests were diligently monitored by the Customer group (Chevron/DSME/Technip) as well as 3<sup>rd</sup> party surveyors.

At present (December 2013), the chillers are underway to Korea after production, testing and final inspection.

Our project team has had to exercise its full know-how and dedication while keeping the main objective well in mind – to get a cool and safe working environment for Chevron's men and women even in the toughest and hottest days of the years to come.

Johnson Controls  
Marine Contracting Sweden

