

UniSim Provides Operator Training for Shell New Zealand Gas Development Project



Benefits

The Pohokura gas field was discovered by Shell Exploration New Zealand Limited (SENZL) in February 2000.

Honeywell provided an operator training simulator for the Pohokura project resulting in the following benefits:

- Provided operators with intimate plant knowledge prior to plant startup
- Provided process engineers with extensive testing and validation of the process design models
- Identified and helped improve vessel design and control strategies
- Extensive third-party DCS and SIS system logic testing and corrections
- Overall reduction in commissioning time and production loss

Background

Shell's interest in New Zealand is responsible for producing over 85 percent of the country's gas. This gas, together with condensate, naphtha, oil and LPG, totals 57 percent of New Zealand's energy supply.

The Pohokura gas field is located on the Taranaki coastline of New Plymouth. It is similar in size to the onshore Kapuni field, the largest gas field in New Zealand.



Bounty Ocean drilling rig

Challenge

The Pohokura gas development project will play a crucial role in meeting New Zealand's gas needs so timing was critical to this project. SENZL needed a well-trained operations team that was ready for initial operation and prepared to minimize plant startup difficulties. To achieve this, the offshore facility, pipeline and onshore facility were modeled in their entirety.



Pohokura fire water pond

Solution

Honeywell provided SENZL with UniSim® Operations Suite, a comprehensive training and process simulation solution, which is designed to provide intensive hands-on experience for the operations personnel. This dynamic simulator is a collection of software modules combined to form a process control system simulation model that represents the dynamic operation of the plant. All plant equipment is modeled and a replica of the actual DCS system is used by the operators to control the dynamic plant simulator.

SENZL provided technical details for the project such as equipment specification, logic configuration information, pipeline models and process information.

During model development, the process was built as five sub-models, utilizing multiple modeling resources in parallel, before being integrated into a single UniSim process and pipeline model. The model is constructed in such a way as to enable the instructor to isolate different areas for standalone training. These include the onshore plant, stabilizer column and glycol contactor, and regeneration. When an area is isolated for standalone training, the rest of the process still exists and is fully operable.

The simulator integrates a third-party DCS system. This allowed significant DCS troubleshooting and provided numerous challenges, but endless value to SENZL.

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The project was completed in a relatively short time frame with extreme pressure placed on startup dates.

SENZL is already reaping the benefits of investing in UniSim. Numerous opportunities for improvement were identified during model development, testing and use. UniSim also allowed initial process design, control, logic, graphics and operation procedures to be thoroughly tested prior to commissioning. Operations staff has adopted the system and SENZL is confident in a safe and smooth plant startup.



Pohokura Ensco platform transport

More Information

For more information about UniSim, visit www.honeywell.com/ps, or contact your Honeywell account manager.

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