

Honeywell Provides Advanced Process Control for Woodside Offshore Platforms



Benefits

Australia's Woodside Energy chose Honeywell to implement an advanced process control (APC) solution for its North West Shelf assets including the North Rankin A (NRA) and Goodwyn A (GWA) offshore platforms. The project has resulted in the following immediate benefits:

- Improved stability of the operation
- Greater production flexibility
- Increased gas production
- Reduced workload of control room operators, enabling them to spend more time optimizing the process

Background

Woodside is Australia's largest publicly traded oil and gas exploration and production company with a market capitalization of more than \$19.5 billion (as of June 2005). The company has interests in Australia, Africa, the United States and the Middle East.

Woodside's major business is centered on the North West Shelf Venture, Australia's largest resource project and the country's first and largest liquefied natural gas plant. Through this venture and others around the world, Woodside has an annual production of more than 200 million barrels of oil equivalent.

The Challenge

One of the principal operations objectives of the NRA and GWA platforms is to meet demand from an onshore gas plant in a stable and reliable way. In addition, they must respond rapidly to potential changes in demand.

These objectives are complicated by a range of process constraints which affect the operation in multiple ways. Considering the size of the platforms (NRA has 25 production wells and GWA is designed for up to 30 production wells, including five re-injection wells) and potential variables for operations to manage, maintaining a stable gas export while continuously optimizing the platform economics quickly becomes a complex and difficult task for control operators.



Woodside NRA offshore platform

The Solution

After conducting a detailed study to explore potential benefits of implementing an APC system, Honeywell's advanced process control suite, Profit Suite™, was chosen as the solution to achieve the economic and operation objectives.

At the heart of this solution is Honeywell's Profit® Controller, which provides powerful, easy-to-use APC capabilities through the use of Honeywell's patented Robust Multivariable Controller Technology (RMPCT).

Separate Profit Controller applications were implemented for each platform. Profit Controller was applied on both Honeywell and third-party control systems. The controllers manipulate the well chokes and process pressures to achieve a target gas export flow, while respecting the process constraints such as valve openings. Train pressure was continuously minimized to these constraints, while economic objective values placed on each of the wells ensured the most optimum mix of wells was used to meet the gas demand.

In addition, as Profit Controller manipulates multiple process variables continuously and automatically, it significantly reduces the workload of control room operators, enabling them to spend more time optimizing the process, rather than being involved in the continual adjustment of the process.

Another advantage is that Profit Controller has the ability to handle a wide variety of different control systems. This provides an excellent fit for Woodside as the existing control systems originate from different suppliers.

As well as addressing the immediate needs of the project, the use of Profit Controller on both platforms has provided a common base for the future implementation of optimization applications integrating the operation of the two facilities.

The success of the advanced control applications on the individual platforms also creates opportunities for Woodside to push the facilities to an even higher optimization level.

For More Information

To learn more about Honeywell's advanced process control technology, visit www.honeywell.com/ps or contact your Honeywell account manager.

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