

## Honeywell Provides Process Automation Solution for Major BP Offshore Platform



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Simon Coleman, Clair Project Manager, BP

### Benefits

BP selected Honeywell as its Integrated Control and Safety System (ICSS) provider and reaped the following benefits:

- 95-98% uptime in first three months
- Improved standards for safety and control through experienced team that helped develop and write the performance standard for safety and process control systems
- Purpose-fit solution aligned to BP’s operational needs for efficient first-year operation
- Whole-life solution integrated into growing global business objectives at BP
- Experienced personnel with continuous team knowledge from design phase to final commissioning
- Use of simulator helped identify, correct and avoid issues with production before they occurred in the real world
- Integrated control and safety system

### Background

BP employs more than 100,000 people and operates in over 100 countries worldwide. Focused on a family of brands that are recognized worldwide, the more than 103 year old company still relies on some of its founding principles of success – the unshakable commitment to human progress. BP serves around 13 million customers across six continents providing products that improve quality of life.

The BP Clair facility anticipates production of 60,000 barrels/day through a continuous platform drilling program. BP Clair comprises a conventional platform with production and process topsides facilities supported by a fixed steel jacket. The Clair project achieved first production in February 2005. The Clair field was once regarded as the largest discovered, yet previously undeveloped, oil field on the UK Continental Shelf. It has an estimated oil-in-place of up to 5 billion barrels and is located 75km west of Shetland Isles.

Honeywell was selected by BP as the supplier of the Integrated Control and Safety System (ICSS) for the BP Clair Project. BP



Clair Offshore Platform

## Challenge

During the first year of operation, BP research had established that the control system on existing facilities was a major contributor to lost production during the first year of operation. BP looked for the most appropriate vendor and execution strategy to rectify the situation. Honeywell was competitively selected and work started on the front-end engineering and design (FEED) study of the Clair field during 1998. This study work concluded in mid-1998 when it was established that the project was not economically viable at the time.

BP's strategy for the Clair project was reviewed over the next few years and some partner interests consolidated. Wanting to apply best global practice techniques learned over the next few years, BP applied these to the project to make the Clair field economically viable. With the Clair project, BP initiated a new method of vendor selection, where a few suppliers provide a broad scope of products and services over the life of the field.

## Solution

Honeywell was re-selected as the main automation supplier for both the control and safety systems at the BP Clair facility.

"There were basically four selection criteria that the main automation supplier had to meet to be our ICSS supplier," commented Ian Skinner, Project Engineer, BP Clair Project. The four requirements were:

**(1) People:** had to be capable of thinking and working in a different way than a conventional project environment. The automation vendor would be responsible for the design from front-end engineering and design (FEED) to final handover to operations.

**(2) Solution:** had to be proven technology with recognizable field results.

**(3) First-Year ROI:** had to focus on first year operations and demonstrate a true return on investment. BP research had established that the control system was a major contributor to lost production during first year operation. Field-proven technology was seen as the possible solution.

**(4) Team Continuity:** had to be a consistent team from the initial FEED process to final handover to operations.

Honeywell emerged from the Clair selection process as the lead vendor who met all four requirements.

"Historically, we have seen that in our first year of operations, the DCS has played a major role in the success or failure of a plant start-up," Skinner continued. "In past projects, we've seen as much as \$250M in lost productivity because of issues with the control system – especially during the first year. With Honeywell, we have avoided those issues and been able to meet production targets on time and on budget."

During the front-end engineering and detailed design, Honeywell was instrumental in the development and writing of the performance standards for the safety systems and the process control system. These standards formed an integral part of the safety case submission and the requirements for the independent verification body," continued Skinner.

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After the project was sanctioned the Honeywell engineers were also involved in the more detailed aspects of the Clair design which included:

- PRISMIC Instrument Minimization Review to remove instrumentation that was duplicated on the design and could be removed without affecting the safety or operational capabilities of the installation.
- SIL (Safety Integrity Level) studies were participated in to categorize the safety, environmental and commercial integrity level for every aspect of the platform.
- The Topside Process Control Philosophy was developed in conjunction with BP to generate operational standards to be implemented into a detailed design.
- Function Block Application designs were developed in conjunction with BP to provide a standard solution and operational representation for each of the different plant items associated with the Topsides.
- Honeywell Fire & Gas Engineers were involved with the EPC contractor and the Topsides 3D Model to locate line of sight gas detectors, smoke and heat detectors and F&G closed-circuit TV cameras.

- Abnormal Situation Management standards were utilized in generating the Human Machine Interface (HMI) to minimize the amount of information displayed to the operator to the minimum required to safely operate the platform. This also included an alarm minimization review where every alarm on the Clair system has been reviewed and uniquely identified with priority, cause and remedial action or removed if deemed unnecessary.

"The Honeywell team has provided continuity through the full lifecycle of the project from FEED, design, implementation, testing, commissioning and start-up and will continue to provide support both onshore and offshore through start-up and operation," said Ger Rowlands, BP Process Engineer. "The BP Clair project is reaping the benefits of decisions that were made over three years ago as we commission and start to operate the installation and Honeywell had a tremendous impact on the success of this project."

The Clair Project Team knows the full history of all decisions that have been made and this continuity has been beneficial in providing a state-of-the-art engineering solution for the Clair project using the best proven technology in the marketplace.

"This project has been significant as it was a flagship for early customer engagement to deliver a fit for purpose solution which aligns with BP's operational needs for efficient first year operation," said Graeme Lamont, BP Upstream Account Manager. "We're excited to build on our capability to deliver a whole-life solution in an area that has major operational challenges and should be viewed as not just one project, but part of our growing global business presence in BP Upstream projects."

The final word is with BP. "Honeywell was able to integrate the control and safety system which was a huge benefit for BP," concluded Skinner. "We don't have two vendors supplying two different interfaces and this helps us avoid unnecessary communications and makes graphics and displays consistent. Even with a number of significant challenges, Honeywell was able to deliver what they committed to on time and on budget."

### More Information

For more information on any of Honeywell's Products, Services, or Solutions, visit our website [www.honeywell.com/ps](http://www.honeywell.com/ps), or contact your Honeywell account manager.

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