

Case Study

ABB maintains deep sea equipment for Royal Dutch Shell Performing at 850 meter depths in Norway's largest natural gas field

When A/S Norske Shell, a division of Royal Dutch Shell, needed to find a cost-effective way to maintain some of their most difficult-to-reach equipment; they had to make certain that maintenance of these important assets was expertly performed.

The company's sub-sea wellhead equipment operates in seabed depths up to 850 meters in the Ormen Lange gas field, and provides natural gas to the onshore processing plant located near Kristiansund, Norway.

Shell managers knew that keeping this automation in prime condition would be extremely challenging, so they had to find a team with an unusually high level of skills. Shell chose ABB as a strategic partner because of its expertise in all of the specialties needed to keep the Shell systems and equipment performing at optimal levels.

In 2007, with their ABB Service Environment™ program, ABB began providing service, system operation and preventive maintenance to Shell's budget areas: projects, operations, maintenance, and minor modifications. Shell soon found that ABB not only kept their automation in prime condition, they also helped maximize production and maintain safe conditions.

Providing service, system operation and preventive maintenance Discovered in 1997, the Ormen Lange gas field is the largest natural gas field currently being developed on Norway's continental shelf. It is the second biggest gas field in Norway, after Troll. The gas processing plant at Nyhamna supplies up to 20% of Great Britain's need through the world's longest subsea pipeline.

Ten years after its discovery, production began at Ormen Lange. The technology used has to be especially robust because it operates under extreme conditions such as subzero temperatures, strong underwater currents and stormy seas.



ABB provides Shell with system support at the site or from ABB's remote monitoring and operations room including:

- General service, process tuning and maintenance
- Process Simulator
- Support and repair
- System modifications and expansion
- Training

ABB has also performed well on security issues. From planning through implementation, has ABB complied with Shell's information security policy.

Meeting industry challenges

ABB's Service Environment, a successful program that ABB uses with Shell, was developed specifically to meet the rapid advances in automation and information technology. The integrated systems requires a vast variety of expertise to manage and maintain.

The Service Environment provides companies with a comprehensive range of services designed to generate maximum value throughout a field's lifecycle. ABB tailors the roles, responsibilities and scope in each Service Environment to match a company's operational philosophy and requirements within multiple budgets areas for service, system operation and preventive maintenance.

To provide the best possible maintenance, ABB uses a bundled service approach to maintain responsibility for companies' ISO processes, training, tools, simulator, telecom, electrical and third party suppliers.

Saving on maintenance costs

From the beginning, ABB has worked closely with Shell to save on maintenance costs. The two companies developed long-term goals for how their integrated operations could share work processes and efficiently exchange information.

ABB worked within Shell's budget areas: projects, operations, maintenance and minor modifications. Along with sharing work and improving communications, to keep costs down, and contribute to achieving 70% condition-based maintenance, ABB remained flexible and limited contract administration to only 6.3%.

Importantly, ABB kept on-site work to a minimum by making extensive use of their remote work facility.

Single contact point for clear communication

ABB provides a single point of contact for Shell, making it easy for the company's units and teams to work with them. ABB has improved communications for:

- Automation and electrical issues
- IT security
- Production process tuning and analysis
- System and product specialist teams
- System overview
- Installed configuration
- Evolution planning
- Resource planning
- Work process owners team
- Quality assurance

This clear definition of work, roles, responsibilities and authority helps ABB work smoothly with Shell.

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