

CUSTOMER SUCCESS STORY

CONTROL SOLUTIONS

NORTH SEA PLATFORM, INTERNATIONAL OIL COMPANY

“[On the offshore] platform, we had one of our most complex turnarounds in the field’s history, and we accomplished everything we needed to do. While ‘on time’ is the most visible measure, completion of the necessary tasks from a process safety standpoint was even more important. The teamwork to plan and execute the work was great.” – Operations Manager

PROBLEM

The field lies in a water depth of approximately 150 meters in the North Sea. Production platforms need to be self-contained units, but the platform has only a single GE Frame 6B as its primary power source and is close to its weight limit. It is supplemented by a small Solar Mars, which can maintain production for a limited period if the 6B is offline for maintenance. The owner can lose approximately 50,000 barrels of oil production per day (bopd) with no power source available. Although the existing Mark IV control system was still functioning, the limited supply of spares and loss of trained maintenance personnel were looming issues. To mitigate this, the platform was required to maintain an extensive stock of spare parts. The owner’s own rigorous administrative procedures for risk profiling had driven their previous decision to not proceed with a controls upgrade, due to the high scheduling risks. The control system also had very strict documentation requirements to support the owner’s ongoing operations and maintenance.

SOLUTION

GE Energy’s Control Solutions business worked with the owner and the platform maintenance/engineering contractor to upgrade the Frame 6B control. Because it retains all of the existing cabinets, field wiring, and terminations, GE’s Mark IVm—a Mark IV to Mark VIe technology migration solution—was able to accommodate the owner’s risk profile. The project included verification of all critical control loops and the majority of non-critical loops. In addition, GE upgraded the existing gas turbine flame detectors to a Reuter Stokes Flame Tracker design, and provided a comprehensive training program on the new Mark VIe technology.

PAYBACK

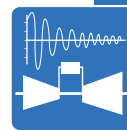
To ensure completion within the outage window, GE performed a rigorous factory acceptance test in Hungary, which included full documentation and checkout. Of course, there were the inevitable project challenges that arose during site commissioning, but the new system worked the first time. Of particular benefit was the presence of an experienced GE field engineer, who was able to quickly resolve issues as they arose. “The high points were that this turnaround accomplished critical maintenance and verification that our key systems work to plan. This corrected some long-standing reliability issues and was performed in a very safe manner,” said the owner’s operations manager.

BENEFITS

- Removed the owner’s risk for lost production, but more importantly helped ensure the 6B is available for a full production plant restart following an outage
- Reduced the spare parts risk due to replacement with modern components
- Retained the existing in-situ cabinets and field wiring
- Greatly improved the diagnostic and troubleshooting ability to help prevent problems from arising



Mark* IVm Control System Migration



Gas Turbine Control



Reuter Stokes Flame Tracker*

