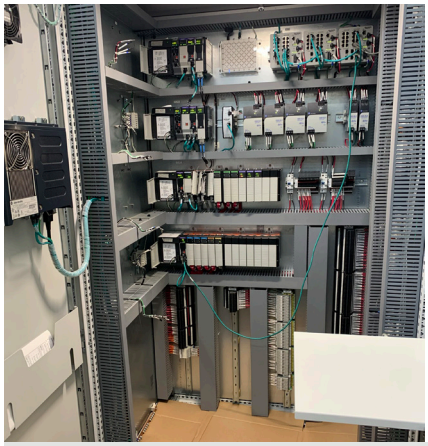
SENSIA
Rockwell Automation + SLB

+ CASE STUDY

Integrated Remote Monitoring and Control Solutions for Offshore Water Injection Systems

Monitoring and Control Systems for Multiple Offshore Water Injection Wells



Challenges

+ 24-week delivery timeline for all systems
+ Complex satellite monitoring system implementation
+ Coordination of multiple suppliers and integrators
+ Resource management for nine remote offshore locations
+ Integration of diverse control and power systems

Key highlights

+ Nine main control systems with eighteen remote cabinets using CLX and FLEX IO technology.
+ Integration of CENTERLINE® 2100 Motor Control Centers.
+ Implementation of Powerflex 755T Variable Frequency Drives.
+ Satellite monitoring system integration.
+ Comprehensive control software suite including FTView, Studio 5000, and Historian.

This case study highlights the successful modernization of remote monitoring and control systems across nine offshore water injection platforms, completed under a stringent 24-week timeline. By deploying a unified solution featuring satellite-based oversight, industrial-grade motor control systems, and smart drive technology, the project enabled real-time data access and precise operational control from centralized locations. Despite logistical complexities and multi-vendor coordination challenges, five platforms were fully operationalized, slashing manual interventions and boosting efficiency. The system's adaptive architecture, supported by advanced control software and robust communication networks, ensures reliable performance in harsh offshore environments. Client feedback underscores its success in transforming operational hurdles into scalable, future-ready solutions, proving the power of integrated remote systems to drive sustainable offshore resource management.

The implementation of integrated control systems and motor control centers (MCCs) for offshore water injection plants represents a critical advancement in offshore production operations. This comprehensive project encompassed the design, supply, and integration of sophisticated control systems across nine offshore platforms.

The project's scope included the development of nine main control systems and eighteen remote cabinets, utilizing CLX and FLEX IO technology. Each platform was equipped with CENTERLINE® 2100 Motor Control Centers from Allen Bradley, integrated seamlessly with the control architecture. To optimize performance and ensure precise control, Variable Frequency Drives (VFD) utilizing the Powerflex 755T model were implemented across all platforms.

A key innovation in this project was the implementation of satellite monitoring systems, enabling remote oversight and management of all nine offshore facilities. This solution provides operators with real-time access to operational data and control capabilities, enhancing efficiency and reducing the need for frequent physical site visits.The project faced significant time constraints, with a demanding 24-week delivery timeline for all systems. This required exceptional coordination between various suppliers and integration partners, particularly for the MCCs and VFDs. The remote location of the offshore platforms added another layer of complexity to the implementation process. The control system architecture leverages advanced technologies including FTView, Studio 5000, and Historian, providing a robust foundation for operational control and data management. The satellite connectivity ensures reliable communication with all offshore facilities, enabling comprehensive monitoring and control capabilities.

Results

Our offshore technical integration project has successfully implemented advanced control and communication systems across five of the nine targeted platforms, demonstrating strategic technological adaptability and operational resilience. The solution has received high client satisfaction, with technical teams praising its sophisticated system architecture that seamlessly bridges complex offshore infrastructure requirements. By precisely engineering a solution that transforms technological constraints into operational advantages, we have redefined the potential for integrated offshore systems.