

CASE STUDY

CRITICAL CONTROL SYSTEMS AT YORKSHIRE WATER MODERNISED WITHOUT DISRUPTING SUPPLY

Yorkshire Water needed to upgrade ageing control systems at Kirkhamgate Water Treatment Works while maintaining clean water production and meeting evolving cybersecurity requirements.

Actemium UK delivered the complete migration, replacing obsolete PLC and HMI technology with a modern Mitsubishi Electric automation platform. The project improved reliability and maintainability, reduced operational and cybersecurity risk, and established a repeatable approach for future upgrades across Yorkshire Water's asset base.

Sector: Water & Wastewater
Location: Yorkshire Water

Project location: West Yorkshire, UK
Expertise: Automation | Control System Migration | PLC Upgrades | SCADA & HMI Integration | OT Cybersecurity

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CLIENT & REQUIREMENTS

Yorkshire Water operates Kirkhamgate Water Treatment Works near Wakefield, producing approximately 16 megalitres of drinking water each day and supplying around 66,300 people across the region.

As part of its AMP8 investment programme, at present Yorkshire Water is modernising critical infrastructure to improve reliability, resilience and long-term asset performance while strengthening operational technology cybersecurity.

At Kirkhamgate, ageing control equipment needed to be replaced with a modern, supported platform without interrupting drinking water production. The project therefore had to deliver effective system modernisation while protecting continuity of supply at a live treatment facility.

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THE CHALLENGE

The existing Rockwell SLC PLCs and PanelView 550 HMIs had reached the end of their operational life. Maintenance was becoming more difficult and replacement components increasingly hard to source, creating growing lifecycle risk and potential implications for plant availability.

The ageing platform also needed to be modernised to support Yorkshire Water's evolving OT cybersecurity obligations.

With Kirkhamgate remaining fully operational, the migration required careful engineering, testing and commissioning to avoid unplanned disruption to water production.

The project was also one of the first delivered using Mitsubishi Electric's PLC Software Conversion Utility through Yorkshire Water's new System Integration Framework, providing an opportunity to validate and refine the process for wider use.

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THE SOLUTION

Actemium Automation Yorkshire, part of Actemium UK, delivered the complete control system migration.

The existing equipment comprised:

- Two Rockwell SLC PLCs
- Two Rockwell PanelView 550 HMIs

These were replaced with:

- Mitsubishi Electric iQ-R PLCs
- Mitsubishi Electric GOT HMIs

Actemium's scope included software migration, system engineering, integration with the existing site network, testing and commissioning.

The migration was carefully planned to minimise disruption and provide Yorkshire Water with a modern, maintainable platform for long-term operation. Pre-installation testing identified and resolved potential issues before deployment, helping reduce commissioning risk on site.

In addition, Actemium worked closely with Yorkshire Water, Mitsubishi Electric and BPX to refine the software conversion process and wider delivery methodology. Lessons from the project were shared with the partners to improve the efficiency and consistency of subsequent control system upgrades.

LEADA Engineering delivered the associated electrical works as part of a fully collaborative delivery model, working alongside Actemium as a trusted partner across the wider Yorkshire Water asset replacement programme.

Overall, through detailed planning, testing and close collaboration, the migration was completed on time and on budget without unplanned disruption to water production or customer supply.

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CUSTOMER BENEFITS

The upgrade provided Yorkshire Water with a more resilient, maintainable and secure control platform at a critical treatment facility. The key outcomes for the client were:

- **Reduced operational risk:** Replacing end-of-life equipment lowered dependence on obsolete parts and reduced failure exposure.
- **Improved asset performance:** The new platform supports more consistent operations and long-term reliability.
- **Stronger OT cybersecurity:** Modern, supported technology improves cyber resilience and helps meet CAF and NIS requirements.
- **Simplified lifecycle support:** Standardised PLC and HMI technology makes maintenance and future development easier.
- **Lower-risk future upgrades:** A repeatable migration approach reduces complexity and improves delivery efficiency.

TECHNOLOGY PARTNERS



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More about our water and wastewater capabilities

