The Soviet-era refinery replaces pens and paper with MicroSCADA Pro. Billion-dollar upgrade brings Pavlodar operation fully up to date.

The Pavlodar Oil Refinery in Kazakhstan was commissioned in 1978, and has been refining crude oil at the rate of 150,000 barrels a day ever since. But the Soviet-era map-and-pin system for tracking faults was in urgent need of updating and a site-wide refurbishment provided the perfect opportunity.

Project
That refurbishment will cost more than a billion US dollars, and increase production rate and the purity of the refined oil, and see a MicroSCADA Pro system managing the whole site to ensure production and efficiency can be maintained.

The refinery was using paper charts, and an Excel spreadsheet, to track faults around the site, so any modern SCADA system would be an obvious improvement, but ABB was able to demonstrate how MicroSCADA Pro would be the perfect solution.

ABB solution
MicroSCADA Pro can deliver process management, the primary objective of the project, but the customer also wanted to start gathering historical data for analysis to better understand the energy consumption across the site and over time.

ABB therefore supplied Historian; a MicroSCADA Pro package able to archive collected data so trends can be tracked over time. Historian enables the user to spot when equipment might be wearing out, or electrical loads could be better balanced. That can reduce costs, and reduce down time, all of which PNHZ Pavlodar Petrochemical (owner and operator of the refinery) wanted to do. MicroSCADA Pro can’t do that alone, so ABB supplied a number of RTU560 units to collect data from the field, and some AFS670 Ethernet switches to carry the data back for central processing.
**Customer benefits**

MicroSCADA Pro offers obvious, and immediate, benefits for the customer coming from a paper-based system. The operational status of the site can be quickly established, and staff instantly alerted when sensed data falls outside defined limits, reducing the workload while increasing efficiency.

Constant monitoring helps the equipment as well as people running it, as trends in performance can reveal developing faults before they create a critical failure. Equipment can be scheduled for maintenance, or replacement, before a serious problem occurs, reducing disruption across the refinery.

Load balancing can also save money. By showing how much energy each piece of machinery consumes the refining process can be streamlined to reduce peak loading across the site, in turn reducing the cost of consumed power.

**ABB advantage**

The functionality provided by Historian was a key factor in the decision to use ABB, as the MicroSCADA Pro combined with Historian perfectly fitted what the customer wanted the system to do.

Pavlodar Petrochemical also wanted a measure of future-proofing, as this installation of MicroSCADA Pro is only stage one of a three-stage refurbishment with the following two stages still at the bidding process. By choosing the industry standard for stage one, the company can be confident of seamless integration with later additions.

Paper-based SCADA systems are becoming a rarity, as the benefits of computerized control are overwhelming both financially and operationally. ABB was pleased to reduce that number by one in Kazakhstan, creating a safer, more efficient, and more environmentally sustainable, refinery as it expands into the 21st century.

---

Contact your local service and sales support team to discuss your requirements further.

For further information visit: [www.abb.com/microscadapro](http://www.abb.com/microscadapro)