

## Case Study

### OJSC Angarsk Petrochemical work with Honeywell to Improve Productivity and Operator Efficiency at Coking Unit



“Honeywell Experion PKS R.410 process control system enhances safety of the 21/10 3M delayed coking unit, and simplifies operational efforts to boost productivity.”

#### Background

OJSC Angarsk Petrochemical Company (APC) is the largest oil refining and petrochemical plant in Russia’s Irkutsk Region and is a major oil product supplier in Siberia and the Far East. The plant was built in 1945.



Angarsk Refinery, Irkutsk Region (Eastern Siberia).

Since 2007, the company has been a part of Rosneft. Main products include gasolines, diesel fuels, jet fuel, various grades of oil, bitumens, electrode coke, heating oil, butyl alcohols, sulphuric acid, and methanols. In 2013, the refining capacity was upgraded to produce Euro-4 and Euro-5 diesel fuels.

Today, the company produces more than 200 types of petroleum products, sold in 64 regions of the Russian Federation and exported to more than 15 countries. By capacity and refining depth, Angarsk Petrochemical Company ranks among the top ten out of the twenty eight enterprises in the industry and first of Rosneft’s downstream refining assets.

#### Challenge

In 2010, Angarsk Petrochemical Company called for bids to implement an automated process control system at its 21/10 3M delayed coking unit. The unit converts heavy oil tar, catalytic cracking heavy gas oil, pyrolysis resin, asphalt, and solvent refining extracts to produce petroleum coke, gasoline components, diesel fuel, light and heavy gas oils, heating gas and hydrogen sulphide. The unit’s feed capacity is 640,000 tons per year.

The project involved replacing the legacy control system with a modern, reliable solution to simplify operation efforts and enhance output and production control efficiency. APC selected Honeywell’s Experion PKS R410 software platform. The system provides:

- More efficient production control,
- Improved utilization of equipment and other resources,
- Higher labor efficiency growth rate,
- Reduced costs, and
- Higher product quality, more efficient decision making and improved bottom line.

#### Benefits

Experion PKS R410 combines an advanced automation platform with innovative software applications. This is the unique process automation system which focuses on people and builds their knowledge, improving productivity and optimizing process control by unifying people with process variables and business requirements. Best practice handling of any issues arising during the upgrade ensures seamless migration to ultimately reduce incidents caused by operator error.

With Experion PKS R410 the unit is able to maintain optimum process parameters for safer operation, preventing unplanned downtime, lowering steam and fuel consumption and making the operator's job much easier.

### Solution

In 2013, Honeywell provided a comprehensive set of services to equip the 21/10 3M delayed coking unit with Experion PKS R410. The installation and start-up were completed in summer 2014.

Experion PKS integrates robust instrumentation, workstations and process control software into a single network. Operator workstations are equipped with LCD screens showing detailed process information as mimic diagrams, trends, alarm windows and other auxiliary controls.

On the hardware level, Experion PKS uses C300 controllers for powerful and reliable control of the platform processes. The Experion C300 controller implements control strategies and interfaces to various types of I/O devices, while also offering direct support for custom applications.

The integration with Safety Manager, a safety instrumented system platform that safeguards the facility's assets helps share critical safety information with the process control system and prevents failures and minimizes their impact by protecting equipment, monitoring for fire and gas leaks, and supporting critical control functions.

Before implementing the distributed control system at the 21/10 3M unit, Honeywell's experts carried out preparatory work and tests and were assisted by the automatic control engineers, employees of the refinery, as well as the Chief Instrument Engineer's departments of the refinery and the OJSC Angarsk Petrochemical Company. Software installation and equipment set-up were performed by Honeywell's engineers.

### For More Information

To learn more about Honeywell's products and services, visit our website [www.honeywellprocess.com](http://www.honeywellprocess.com) or contact your Honeywell account manager.

### Honeywell Process Solutions

Honeywell  
1250 West Sam Houston Parkway South  
Houston, TX 77042

Honeywell House, Arlington Business Park,  
Bracknell, Berkshire, England RG12 1EB UK

Shanghai City Centre, 100 Junyi Road  
Shanghai, China 20051