

# Foxboro® Instrumentation Solution

## Petroleum Refining

### Summary

Foxboro® instrumentation enables leading Russian refiners automate to meet growing global demand for petroleum products.

### Business Value

The proven reliability and robustness of the Foxboro instrumentation helped Russian refineries obtain the best price, the best technology, and the best performance guarantee. Based on the success of Foxboro instrumentation at these facilities, additional Foxboro products are now being considered in additional plants operated by these Russian-based companies.



### Benefits

- Precise, reliable measurement of temperature, flow, and level
- Improved valve control and plant output
- Improved visibility and flow of instrumentation information throughout plant

### Technical Challenge

Demand for petroleum products are high and expected to grow steadily as power requirements continue to increase. The market is highly volatile and success lies in the effectiveness with which suppliers of petroleum and its byproducts can respond to market dynamics. To gain advantage in this active market, petroleum suppliers around the globe are increasingly automating production, business, and customer operations. Although this automation is extending throughout and beyond the enterprise, its value remains highly dependent on the quality and application of the field instruments that are vital to monitoring and control of production processes.

With reliable, accurate data on temperature, pressure, flow, and level, refiners can not only boost their output, but also benefit from improved information on the performance of all production equipment. This enables refiners to optimize availability and utilization of their production assets.

Recognizing the importance of instrumentation to operational and business success, three leading Russian refineries have selected Foxboro® Measurements and Instruments division as their primary device technology supplier. These refineries are part of larger Russian-based organizations that together provide well over 2 percent of the world's total petroleum production.

## The Foxboro Solution

The refineries evaluated instrumentation options, and looked to obtain the best price, the best technology, and the best performance guarantee. After comparing alternatives, they concluded that process instrumentation built on Foxboro technology met all criteria. They specified instrumentation of the following types:

- **Temperature and pressure transmitters to monitor numerous process points** — the refineries selected Foxboro temperature and pressure transmitters for performance, application versatility, and dependability. Contributing to both performance and flexibility was the availability of a wide variety of electronic modules and mounting configurations, as well as multirange and multi-variable instruments that can accommodate absolute, gauge, and differential pressure, along with temperature.
- **Buoyancy-mounted level transmitters to monitor the volume of tank and distillation columns** — Foxboro level transmitters are well suited for petroleum process operations, designed to provide reliable and accurate measurements in applications involving corrosive liquids, low- and very-high temperature liquids, low and medium viscosity, high static pressure, vacuum service, or settling solids.
- **Flowmeters** — this includes magnetic, vortex, and mass flowmeters to measure the flow rate and transmit an electrical signal, which correlates to the movement of petroleum at various stages of the refining process. Foxboro flowmeters combine a flow tube, signal cable, and transmitter, providing best-in-class accuracy along with simplified startup — all in a compact, efficient, and durable design.
- **Positioners to control valve operation throughout the line** — Foxboro family of positioners cover all control technologies from traditional pneumatic control and 3-15 psig control through the latest 100% solid-state sensing and control circuitry to all modern mainstream communications protocols.



## Results

The refineries have now implemented Foxboro instrumentation throughout their plants, from crude to finished product tank farms. This includes temperature and pressure measurement instrumentation at crude distillation, catalytic cracking, saturated gas plant, hydrocracker, reformer, blending, vacuum, and coking operations. It also includes level measurement at tank storage, distillation, blending units, and measurement of flow from crude tank to finished tank. The refineries also use Foxboro instrumentation on boilers, emissions control, and recovery systems.

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### Foxboro

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