

Case Study

Honeywell APC Helps World's Largest Producer of Acrylic Fiber Exceed \$2M in Annual Benefit



The project included a performance guarantee of USD \$640K per year in guaranteed benefits. The results exceeded USD \$2M per year, more than tripling the guaranteed results. AKSA IPP employees, including operators, engineers, and management, earned incentives based on these APC results.

Background

Aksa Akrilik Kimya Sanayii A.Ş., a company of Akkök Holding, one of the established industrial groups of Turkey, was founded in 1968 in Yalova to meet Turkey's need for acrylic fiber and started manufacture with a capacity of 5000 tons per year in 1971.



Today, Aksa is the world's largest and Turkey's only acrylic fiber producer. Aksa produces acrylic fiber to meet the knitwear needs of two million people per day, with daily production capacity reaching 850,000 kilograms.

Aksa exports to more than 300 customers, in more than 50 countries, on 5 continents, with approximate turnover amounting to one billion dollars. 67% of sales are to the domestic market, while 33% are exported. Aksa is a global giant with approximately 300 customers in over 50 countries across 5 continents.

Challenge

Aksa has achieved success in continuing its growth by increasing power plant efficiency and maintaining power plant stabilization.

Solution

Honeywell's extensive experience with Advanced Process Control (APC), plus Aksa's experience in 2011 with Honeywell's APC on their Solvent Recovery Unit, contributed to Aksa's confidence in the Honeywell.

For Aksa's Solvent Recovery Unit, the Advanced Process Control application was implemented with Honeywell's Profit Suite™ software, on an APC server linked to the plant control network.

The main objectives of the application included reducing steam consumption, maintaining quality specifications and stabilizing plant operation.

The objective of the new project was to provide Aksa with solutions to improve Industrial Power Plant (IPP) process profitability by implementing Advanced Energy Solutions (AES).

Benefits

The key elements of the project scope and benefits included:

- Allowing expensive gas to be substituted by cheaper coal due to improved optimization/control of boiler combustion;
- Implementing AES Advanced Combustion Control (ACC) solution on coal fired boiler B1 to reduce natural gas combustion, improve combustion stability and reduce stack loss;
- Implementing AES Advanced Temperature Control (ATC) on boiler B1 to increase turbine/boiler cycle efficiency;
- Implementing APC for SCR NOx reduction solution for boilers B1 and B2 with target to stabilize NOx emissions and reduce ammonia consumption;
- Implementing AES Master Pressure Control (MPC) and steam network optimization solutions to stabilize steam network and minimize production cost by allocating steam through steam turbines instead of Pressure Reducing Valves (PRVs);
- Implementing AES Target Optimizer to safeguard the power tie line control.

Results

The Advanced Process Control capabilities implemented for Aksa resulted in:

- Increased boiler effectiveness and turbine operation range;
- Increase overall plant efficiency;
- Minimized operational and fuel costs;
- Increased boiler combustion efficiency, operation range;
- Increased Boiler/Turbine cycle efficiency;
- Optimized the Steam Network to maximize profit;
- Reduced flue gas emission, enabling better adherence to NOx, CO emission limitations;
- Optimized combustion process, resulting in more optimized power and heat generation;
- Optimized multiple load allocation
- Optimized transient states (dynamic control, superior response in transient states-load changes);
- Improved on-line prediction, optimization and contract compliance of electric consumption and generation;

This project included a performance guarantee of \$640,000 USD annually in guaranteed benefits. Actual results exceeded that amount, delivering more than \$2M USD in annual benefits, more than tripling the guaranteed results.

Overall, Aksa IPP employees, including operators, engineers, and management, are very pleased with the APC solution results. These employees earned incentives based on the results.

For More Information

To learn more about Honeywell's products and services, visit our website www.honeywellprocess.com or contact your Honeywell account manager.

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