

Case Study

Mining Company Accelerates Startup, Increases Production/Revenue and Reduces Costs with PlantCruise Distributed Control Solution



“Due to the stability and reliability of the PlantCruise system, unplanned shutdowns are a thing of the past. We are most pleased with the performance of PlantCruise by Honeywell”

Mr.Wang Yanbin, Vice Chief Engineering Director, Yichun Luming Mining Co., Ltd.

Background

Yichun Luming Mining Co., Ltd., Yichun city, Heilongjiang province is the largest molybdenum mine in China with an annual capacity of 25,000 tons. In 2014 Yichun Luming embarked on a project to modernize controls at the plant. The process of beneficiation involves the removal of waste minerals from molybdenum ore to produce a higher grade product (concentrate). The process involves a combination of crushing, grinding and milling as well as heavy liquid separation. The safe and efficient handling of the process involves substantial instrumentation including data acquisition, continuous process control and machinery controls. Following investigation of available control solutions Yichun Luming Mining Co., selected PlantCruise by Honeywell to automate the beneficiation process.

Challenge

Demands in the beneficiation process are many. Frequent startup and shutdown is characteristic of the process giving rise to potential issues such as:

- increased power consumption for semi-autogenous grinding and ball grinding
- increased wear and replacement of lining plate spares
- fluctuation of density fineness which affects quality
- decreased production and cost increases resulting in lost opportunity

As the value of product is high system failures and downtime cannot be tolerated. According to Mr. Wang Yanbin Vice Chief Engineer/Director “We required a first-class Distributed Control System (DCS) to accomplish the centralized monitoring, centralized operation as well as centralized production command and coordination of the entire process including the large-scale equipment with its own control system. Our goal was to optimize

control in key processes such as grinding-flotation which separates and dissolves impurities and dosing which controls the flow of effluents. Meanwhile we must improve the equipment running rate, optimize the technological indexes and improve production efficiency. We are counting on the control system to deliver convenient and fast installation, programming, and debugging. Reliable operation and easy maintenance are also important to us. It is especially important for our technicians to become familiar quickly with the new control system.”

Solution

Traditionally the automation of large-scale molybdenum-copper mining and beneficiation was accomplished by PLCs and Supervisory Control and Data Acquisition (SCADA) systems. Although these older systems are effective they are difficult to program, operate and maintain. Today’s technologies provide opportunities for improvement.

Yichun Luming Mining Co selected PlantCruise by Experion by Honeywell. The scope of Honeywell supply included

- PlantCruise hardware and software
- Engineering debugging services
- System installation
- On-site network configuration
- Server synchronization
- Communication debugging

PlantCruise is an extension of Honeywell’s award-winning Experion Process Knowledge System (EPKS) well-suited to meet Yichun Luming Mining Co., requirements. It is a proven distributed control system (DCS) that is easy to use and maintain. Based on the proven Experion C300 controller,

PlantCruise offers a host of innovative technologies that can lead to improved plant performance and better business results in an increasingly competitive environment:

- Simplified engineering and maintenance functionality
- Enhanced input/output (I/O) design
- Profit® Loop algorithm for predictive control
- Built-in function blocks and pre-built templates
- Rich function libraries to easily create control strategies
- User-friendly tools such as Control Builder, Enhanced Bulk Builder, Quick Builder, Smart Reporting and HMIWeb Solution Pack
- Simple human machine interface including Abnormal Situation Management displays.
- Alarm management tools such as alarm shelving, alarm tracker and dynamic alarm suppression.

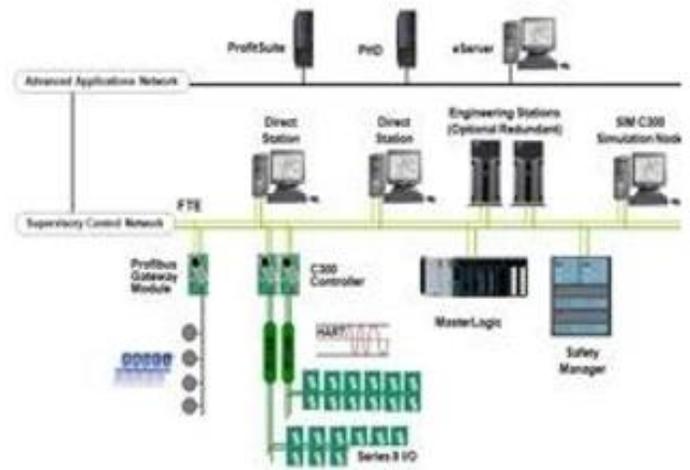
These and other PlantCruise features enabled Yichun Luming Mining Co to greatly reduce the time required to engineer controls and displays, configure reports and build interfaces. PlantCruise makes it easy for operators to run the plant by giving them the information they need to make timely decisions without cluttering their view of the process. This in turn helped the company meet their ambitious startup schedule and avoid downtime.

Benefits

PlantCruise is a powerful and affordable solution offering advanced optimization and batch control technology usually found in larger DCS platforms. The system offers strong incentives for mineral mining and processing operations:

- Maximized uptime and improved plant reliability and efficiency
- Engineered from the ground up to be more robust than PLC-based systems.
- Reduced cost of ownership
- Enhanced operator effectiveness through alarm management and displays
- Communicates effortlessly with third-party devices and drives

According to Mr. Yanbin “due to the stability and reliability of the PlantCruise system, shutdowns no longer occur. If there are any on-site problems, the after-sale service and response by Honeywell is very good. If necessary Honeywell will dispatch engineers to the site to resolve any issues.”



The historical trend display makes it convenient for Yichun Luming Mining to seek historical data and conduct production analysis which helps facilitate operation and maintenance. The diagnostic and alarm information are very detailed and viewed at a glance. The system enables users to modify the configuration from multiple terminals so as to greatly improve the work efficiency and shorten the engineering configuration time.

PlantCruise is scalable to meet expanded or future system requirements.

Other PlantCruise benefits include:

- Maximized uptime and improved plant reliability and efficiency
- Engineered from the ground up to be more robust than PLC-based systems.

Around the world, Honeywell is recognized as the leader in control technology with a long history of working with the process industries. We help industrial customers improve their business performance by providing world-class process automation technology and services.

For More Information

To learn more about how Honeywell's PlantCruise by Experion can benefit your business visit our website

www.honeywellprocess.com or contact your Honeywell account manager.

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