



## Good, Quick Decision Making at Collahuasi - Due to Control System Evolution

Copper mining control system evolution minimizes new facility start-up time, decreases training time, allows integration to 3rd-part systems and enables quicker and better decision making.

**Client:** Compañía Minera Doña Inés de Collahuasi  
**Location:** Northern Chilean Andes  
**Scope of Work:** Evolution from ABB's Advant Control System to System 800xA Extended Automation

*"The resources that System 800xA Extended Automation offers allow the operators to have the tools to make good decisions in a timely manner. In reference to maintenance, our control system technicians have a system that allows them to have ready access to the information they need to respond quickly to alarms and failures."*

Sr. Alexis Muñoz  
Instrumentation and Control System Engineer  
Compañía Minera Doña Inés de Collahuasi



**Compañía Minera Doña Inés de Collahuasi (Collahuasi) chose System 800xA Extended Automation from ABB. The project was completed last fall, but they are already realizing benefits, including a shorter start-up time for the new process area, shortened training time, faster time to make good process change decisions, and more.**

### The Background

Compañía Minera Doña Inés de Collahuasi (Collahuasi) is a mining company that opened for business in 1998. It produces and sells copper concentrate and copper oxide. It is located in the North of Chile, 200 kilometers east of the city of Iquique. Collahuasi's facilities are at 4,200 meters above sea level. It is the third largest copper mine in Chile, producing 400,000 tons of copper per year, which is three percent of the world's capacity. In the original commissioning phase of the facility, ABB's Advant control systems were selected for control of the concentration plant.

ABB also provided Collahuasi with drives and ring motors for one SAG mill and two ball mills. Powerful ABB gearless drives, rated at 15.5 megawatts each, drive two eight-meter (26 feet) diameter ball mills that grind small pieces of ore at eleven revolutions per minute. However, the plant's showpiece is the world's largest gearless mill drive. The 21 megawatt ABB drives system powers the SAG mill of over 12 meter (40 feet) in diameter.

Additionally, ABB supplied the electrical equipment for a crusher station, including large, medium voltage drive systems for an overland and a downhill conveyor. Engineering and installation of a complete automation and control system for the overland conveyor project was also provided by ABB.

In 2003, ABB received a contract for a centralized filtering system that reduces network harmonics and the reactive power requirement.

### **The Solution**

When Collahuasi added its Ujina-Rosario 'transition' project (new installations in the Rosario Mine and expansion of the ore treatment capacity of existing concentrator plant at Ujina) they selected ABB's System 800xA Extended Automation to control both. Their objective was to have only one operating platform, so that operators could easily transition from control and operation in the existing plant to the new plant. To accomplish this, the existing plant was evolved from its Advant platform to System 800xA.

The new facility began operations in the fall of 2004. It has four Process Portal workstations, ten AC800M controllers, and 4,300 (S800) I/O.

### **Investment Enhancement Through Evolution**

"Within our plant we have a series of mechanical equipment that have their own control system," Collahuasi Instrumentation and Control Engineer Alexis Muñoz said. "An advantage of the 800xA technology is that we have an open system based on Windows technology. This allows us to have connectivity with third-party systems. Establishing this connectivity was easy. There were no communication or connectivity issues.

"The new technology allowed us to minimize the costs at the configuration and engineering stages. It also allowed us to minimize spare parts costs in the start up stage, as well as for our inventory of one to two years of spare parts that will be maintained at our facilities."

## **Why Choose ABB?**

- Reducing Time to Decision and Action
- Reducing Training Time and Cost
- Investment Enhancement Through Evolution
- Enable Optimized Response to Alarms and Failures

### **Reducing Time to Decision and Action**

Sr. Muñoz continued: "The resources that System 800xA offers allow the operators to have the tools to make good decisions in a timely manner. In reference to maintenance, our control system technicians have a system that allows them to have ready access to the information they need to respond quickly to alarms and failures."

For more information on how ABB's System 800xA Extended Automation can be employed to solve your control issues, visit us at [www.abb.com/controlsystems](http://www.abb.com/controlsystems).

For more information on how ABB's Industrial IT technology can be employed to solve your metals and mining issues, visit us at [www.abb.com/metalsandmining](http://www.abb.com/metalsandmining).



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