



# Rental Power

## > Case History

Falcondo Nickel Mine, Dominican Republic

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### **Where:**

Falcondo Nickel Mine, Bonao, Dominican Republic

### **What:**

A temporary prime power system consisting of 32 2-MW trailerized Cummins Power Generation Rental Power units providing 64 MW of electricity

### **Purpose:**

To replace electric power from Falcondo's on-site thermal power plant during boiler and steam turbine maintenance, thus preventing a production rollback during a time of high demand for ferronickel ore

### **Primary choice factors:**

Cummins Power Generation Inc. was selected based on reputation, fast delivery and setup, as well as the turnkey service and support capabilities of the local Cummins Power Generation distributor

## **Rental Power keeps Dominican mine at full production during boiler maintenance**

**BONAO, DOMINICAN REPUBLIC** — For the past 34 years, the Falcondo Nickel Mine in the Dominican Republic has produced upwards of 28,000 tons per year of nickel and ferronickel. Located about 50 miles north of Santo Domingo, the mine site includes a metallurgical treatment plant, a crude oil processor and a 198 MW thermal power plant that supplies the mine's electrical needs.

The mine's thermal power plant consists of three oil-fired steam generators and three 66 MW steam turbines that generate power for the plant and provide excess power to the Dominican power grid. Each year, all three turbines have to be shut down in turn for 14 to 21 days while they are inspected and maintained. In the past, one boiler and one turbine were taken offline at a time, while the remaining boilers and turbines supplied the mine at reduced capacity.

### **Ferronickel demand prompts a change**

"Historically, we simply reduced ferronickel production during the thermal plant maintenance," said Wanda Rosario, Falcondo's senior buyer in charge of special projects. "But the worldwide demand for ferronickel — which is a combination of iron and nickel used almost



The use of Rental Power from Cummins Power Generation allowed the mine to continue at full production while steam turbines were serviced.



Thirty-two Rental Power units from Cummins Power Generation supplied 64 MW during maintenance on the thermal power plant.

exclusively by the worldwide stainless steel industry — has become very strong. We decided it would be better to keep the mine working at full capacity by bringing in temporary Rental Power during the maintenance period.”

Working with Argico, the distributor for Cummins Power Generation Inc. in the Dominican Republic, the mine rented 32 2-MW trailerized Cummins Power Generation diesel generators for three months during thermal plant maintenance. According to Luis Gigante, president of Argico, 27 of the Rental Power units operated online continuously at their 1.6 MW continuous rating, while five of the units were used for peaking power and maintenance backups. Each power system includes an engine, generator and control. Each generating unit was standby rated at 2 MW and continuous rated at 1.6 MW. Their digital master control systems ensured high reliability, precise synchronization with the power grid and the other Rental Power units, and maximum fuel economy.

**Cummins Power Generation provides turnkey replacement power**

“We provided the 64 MW temporary power plant to the mine as a turnkey project,” said Gigante. “We handled delivery of all the generating units, provided installation, commissioning, maintenance, repair and complete system operation.” He added:

*“Cummins Power Generation was able to complete the project — from signing the contract to system start-up — in only 45 days.”*

Rosario said Cummins Power Generation was selected to supply the project based on product reputation and the service and support capabilities of the local distributor,

and because the 32 2-MW Rental Power units from Cummins Power Generation provided the most efficient layout on the site. Twenty-seven of the 32 units operated continuously over the three-month maintenance period that included turbine inspections and replacement of some tube-wall panels in the boilers.

**Power reliability is an issue**

While the mine is connected to the national power grid, Rosario said the grid has not been stable enough for Falcondo’s mining operation. “In order for us to operate 24/7, we’ve had to find our own sources of energy,” she said. “About 70 percent of the electricity generated is used in our electric furnaces. The next largest portion operates machinery such as mills and driers. The rest is service power for compressors, motors and lighting and such.”

Fuel for the thermal power plant boilers, the ore reduction process, mining equipment and the Rental Power Units is all refined on-site. Crude oil is piped from Santo Domingo to the mine’s topping plant, which converts the oil into naphtha, diesel and fuel oil. Power for the crude oil pumping station is provided by two permanently installed diesel generating units from Cummins Power Generation that together produce 3.75 MW.

If the worldwide demand for ferronickel remains high, Falcondo will continue to bring in replacement power during its thermal power plant maintenance period. The mine’s proven ore reserves should last another 15 years, and Falcondo is doing its best to remain energy self-sufficient so it can meet the market demand.

For more information about Rental Power or other energy solutions, contact your local Cummins Power Generation distributor or visit [www.cumminspower.com/rental](http://www.cumminspower.com/rental).

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