



Rental Power

> Case History

Blue Cross Cement, Puebla, Mexico

Our energy working for you.™



**Power
Generation**

Where:

A new cement plant near the town of Palmar del Bravo, Puebla, Mexico

What:

A prime Rental Power system producing 15 MW of electrical power during six-month plant startup

Purpose:

Provide power for plant equipment testing and limited production while waiting for construction of a local utility transmission line

Primary choice factors:

Ability of Cummins Power Generation to supply Rental Power units when needed as well as periodic maintenance by the local distributor

New Portland cement plant relies on Rental Power units for startup power

PALMAR DEL BRAVO, PUEBLA, MEXICO – Cementos Cruz Azul (Blue Cross Cement), one of the world's largest producers of Portland cement, recently constructed a new cement plant near the town of Palmar del Bravo, 85 kilometers (53 miles) south of the city of Puebla. Electrical power was needed for equipment testing and production startup but it was not locally available. The local electric utility was experiencing delays in building a transmission line to supply the plant, so Cementos Cruz Azul turned to Cummins Power Generation Inc. for help in supplying the temporary electric power needed.

"The new state-of-the-art cement plant was constructed, but there was no utility power available to test the plant's motors, fans, conveyors, crushers and rotating kilns," said Oswaldo Chimal, sales manager, Mexico and Central America, Rental Business, Cummins Power Generation. "In order to complete the testing and begin limited production, Cummins Power Generation was contracted to supply 13 Rental Power units with approximately 15 MW of generating capacity for about six months."



The new Cementos Cruz Azul plant at Palmar del Bravo, Puebla, Mexico, will produce 3,000 tons of cement per day when in full production.

Cement making is energy intense

In the process of making cement, limestone, clay and other minerals are crushed and baked in a rotating kiln fired by heavy fuel oil and petroleum coke. The heat drives off water and carbon dioxide, and the mixture partially melts to form a clinker that is cooled and then ground to produce the final cement product. Very large electric motors are required to operate the crushers, rotate the massive kilns and power the induced draft fans. According to Ignacio Cruz, plant manager at Cementos Cruz Azul, the plant will require about 32 MW of utility power when it is in full production.

Operating at capacity, the plant will produce 3,000 tons per day of Portland cement using limestone from the local area's deposits — up to 1,000 feet thick — as a major raw material. The new plant will be the fourth and also the most modern and efficient cement plant in Mexico built by Cementos Cruz Azul, a company that was started more than a century ago.

Rental Power units power plant startup

The Rental Power units supplied by Cummins Power Generation consisted of two 2 MW and eleven 1 MW trailerized units, with each having a complete power system. For the first four months during the equipment testing phase, the Rental Power units only operated for one shift, or about eight hours a day. The electrical testing included operating 2,800 kW electric motors and motors with variable-frequency drives. In addition to testing the 13.8 kV to 4.16 kV main transformers, all of the control and communications equipment was thoroughly tested with the Rental Power units.



Eleven 1 MW and two 2 MW trailerized Rental Power units provide 15 MW of power to the plant during equipment testing and startup.

When the initial equipment testing was completed, the plant began processing raw materials to test the production capabilities. For the next two months, the plant was producing limited amounts of cement by operating the Rental Power units for two shifts, or 16 hours a day.

“We tested all of the plant’s equipment by actually processing raw materials into cement, so we could be assured of a good final product. This production testing allowed our plant to begin manufacturing cement six to eight months earlier than if we had waited for utility power,” said Cruz.

Periodic maintenance of the Rental Power units was handled by the local Cummins Power Generation distributor, Converto Dixel, while daily refueling was handled by plant personnel and a local fuel supplier.

Plant ready when utility power arrives

With help from Cummins Power Generation and its Rental Power units, Cementos Cruz Azul was able to complete its equipment testing and begin limited cement production while the new transmission line was being constructed. When the Federal Commission of Electricity (CFE) was able to supply utility power at the end of February 2007, the plant was immediately able to operate at 80 percent of its full capacity. This saved the company both time and money, leading plant manager Cruz to conclude, “The rental generators worked very well for us.”

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

Our energy working for you.™

www.cumminspower.com

© 2007 Cummins Power Generation Inc. All rights reserved. Cummins Power Generation and Cummins are registered trademarks of Cummins Inc.

“Our energy working for you.” is a trademark of Cummins Power Generation.

F-1809 (9/07) CRP-120

