

RENTAL POWER UNITS HELP START CEMENT PLANT



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.

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," says 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."

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 trailerized generator sets and eleven 1 MW trailerized units, with each having a complete power system — gen-

erator, monitoring control, automatic transfer switch and switchgear. 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.

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,” says Cruz. “During this initial test production period, we produced 25,000 tons of clinker and 5,000 tons of finished cement using the Rental Power units. This production testing allowed our plant to begin manufacturing

cement six to eight months earlier than if we had waited for utility power.”

The periodic maintenance of the Rental Power units is handled by the local Cummins Power Generation distributor, Convento Dexel, while daily refueling is handled by the cement plant personnel and a local fuel supplier. “When we were only operating the generators for eight hours a day, we scheduled oil and filter changes two times a month,” says Chimal. “When we were operating the generators for 16 hours a day, we increased our maintenance to three times a month.”

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.”



Thirteen Rental Power units from Cummins Power Generation power Cementos Cruz Azul while the large transmission line is completed.