



Rental Power

> Case History

Water pumping stations at Al Hunnay, Saudi Arabia



**Power
Generation**

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Where:

In the Saudi Arabian desert, 155 miles north of the capital city of Riyadh

What:

A total of 76 Rental Power units from Cummins Power Generation producing 65 MW of prime power in an area not served by the electrical grid

Purpose:

To provide remote electric power to run pumps for a water pipeline supplying the city of Riyadh

Primary choice factors:

Cummins Power Generation offered the best technical solution at the lowest cost

Rental Power from Cummins Power Generation Inc. keeps water flowing to Riyadh, Saudi Arabia

RIYADH, SAUDI ARABIA — Riyadh is the capital of the Kingdom of Saudi Arabia and is situated in the center of the Arabian peninsula on a large plateau. In this rapidly growing city surrounded by desert, water is a precious commodity and the demand is always increasing.

The country has undertaken a program to build desalination plants that produce both potable water and electricity. Drilling deep wells into the Al-Manjor rock layer was one way the city could gain the necessary fresh water quickly. With the Al Hunnay wells located 155 miles (250 km) north of Riyadh, the Saudi Ministry of Water & Electricity called on Cummins Power Generation to provide 62 MW of long-term Rental Power necessary for making the water flow to the city.

The Al Hunnay water project consists of 40 deep wells, pumping stations, holding tank and pipeline running across miles of desert. In addition to the wells, three pumping stations spaced at 31 mile (50 km) intervals boost the water pressure in the pipeline to keep it flowing. All the power to run the pumps comes from 76 containerized 1500 kW Rental Power units from



Seventy-six Rental Power units from Cummins Power Generation produce 65 MW of continuous power for pumping water to the city of Riyadh.



Beyond the reach of the electrical grid, power from the Rental Power units is distributed to pumps servicing 40 deep water wells.

Cummins Power Generation. Each power system includes an engine, generator and control.

“Utility power did not exist in this area and is not planned to be available until later in the decade ... it made sense to provide the power system on a long-term rental.”

Power is generated 24/7

Each Rental Power unit produces 1000 kW on a continuous basis, 24 hours a day, seven days a week. Forty of the units are located at the main pumping station, and the three booster pumping stations have 12 units each.

“Utility power is not connected in this area and is not planned to be available until later in the decade,” says Donald Watson, general manager, Cummins Power Generation. “Under these circumstances, it made sense to provide the power system on a long-term rental. We provided all the Rental Power units and installed the transformers, switchgear and accessories. The Cummins Power Generation distributor in Saudi Arabia, General Contracting Company, provided all the logistical support, operation and maintenance.”

The environmental conditions under which the units have to operate are sometimes brutal. Daytime temperatures during the summer can reach 131 degrees Fahrenheit (55 degrees Celsius), with a great deal of

blowing dust. Under these conditions, air filters have to be changed frequently and regular radiator maintenance is crucial. Each Rental Power unit is normally taken out of service for oil and filter changes every 250 hours — or every 10 days. Diesel fuel for the units is provided by the Saudi Ministry of Water & Electricity.

Extra generation capacity for standby power and increased loads

Not all of the Rental Power units are running at one time, according to Watson. A few are idle and used as standby units when others are being maintained. Also, the power demand varies with the demand for water. “The ministry advises us when it is going to start extra pumps, and then we start more Rental Power units to match the increased load,” says Watson.

After several years of operation, there have been no equipment problems that have interfered with supplying the required power. The project has earned an “excellent” rating from the Ministry of Water & Electricity.

Cummins Power Generation designs, builds and maintains on-site power generating systems and provides Rental Power for short or long-term projects.

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

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