

Wyodak Plant



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Rocky Mountain Power
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Wyodak Plant is named for its geographic location, just 75 miles west of the border between Wyoming and South Dakota, on 36 acres near Gillette, Wyo. We commissioned the single-unit plant in 1978, when it was heralded as the world's largest air-cooled steam power plant.

Honors for its unique nature and efficiency were received from, among others, the National Society of Professional Engineers and the Edison Electric Institute.

Generating capability is 335 megawatts. We operate the plant and own 268 MW of that output, and the remainder goes to co-owner Black Hills Power.

The plant is equipped with a dry sulfur-dioxide scrubber. Particulate emission controls include a 2011 cloth filter bag house.

Wyodak burns 2 million tons of sub-bituminous coal per year. It is supplied to the plant via a conveyor from the Wyodak Mine, adjacent to the plant and owned and operated by Black Hills Corporation.

That coal is burned by a boiler 20 stories tall to produce steam that is 1,800 pounds of pressure per square inch at 1,000 degrees Fahrenheit. Pipes carry that steam to the turbine to turn its blades to engage the generator to produce electricity.

The spent steam is sent to the air-cooled condenser, which works on the same principle as a car radiator. Its 69 fans – each more

than 24 feet in diameter – cool the steam to transform it back into water, which is returned to the boiler to again be heated into steam to repeat the cycle.

Air-cooled thermal plants use 93 percent less water than their water-cooled counterparts, an important technology for regions like northeastern Wyoming where water is scarce.

Another unusual practice Wyodak employs is processing effluent from Gillette's Waste Water Treatment Facility for use in the boiler. Other water used in the plant is recycled from the plant's ash pond.

Power generated by Wyodak Plant begins its journey to customers via high-voltage transmission lines to substations in north and northeast Wyoming.

PacifiCorp is one of the lowest-cost electricity producers in the United States, providing approximately 1.7 million customers in the West with reliable, efficient energy. PacifiCorp operates as Rocky Mountain Power in Utah, Wyoming and Idaho, and as Pacific Power in Oregon, Washington and California. PacifiCorp's electric generation, commercial and energy trading, and mining functions are operated as PacifiCorp Energy.

We are serious about our commitment to the communities in which we do business. So are our 72 Wyodak Plant employees. They are active in their communities and – as a group – contribute to the health of those communities through local initiatives and through our Community Giving Campaign, which includes the United Way and other human services organizations.