

Glenrock Generating Plant Key to PP&L's Wyoming Operation

Sports

Features

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By ERIC W. ALLEN JR.
Mail Tribune Managing Editor

In southern Oregon, we take it for granted that, when we flick the switch on the wall, the light will go on.

In Wyoming, it's a bit less certain than that. Unlimited and dependable electric service is relatively new to the Cowboy State.

In southern Oregon, when we think of electricity, we think of dams and reservoirs and penstocks, of generators whirling from the force of water roaring through the turbines.

In Wyoming, electricity means coal and big boilers and steam-fed turbines and generators, and new transmission lines criss-crossing the vast and often barren land.

None Know It Better

The contrast is sharp. None know it better than officers of Pacific Power & Light Company, which serves much of Oregon and much of Wyoming, and produces its electric energy both from water power and from steam, heated by coal.

And, as a company which is acutely and intelligently aware of its public "image," PP&L has gone to considerable lengths to inform the people of the areas it serves not only of its problem, but also of its accomplishments, and of its efforts to increase the quality and scope of its service.

It was for this reason that a group of newspapermen from its Oregon service areas, plus others, recently were invited to tour Wyoming as guests of PP&L, and to inspect the facilities there. Newsmen from Medford, Klamath Falls, Bend, Astoria, Portland and Pendleton were along, as were a New Times reporter, and writers from national magazines interested in electrical and financial affairs. They were joined later by radio, TV and newsmen from Denver and Wyoming cities.

In Wyoming Nine Years

PP&L has been in Wyoming for about nine years. Its first investment there totaled about \$12 million. Today it is about \$100 million. It has built transmission lines, substations and local facilities.

But the key to its Wyoming operation is a new power generating steam plant at Glenrock. It is named for Dave Johnston, a pioneer power executive in Wyoming, who now is a director emeritus of PP&L, and who is still vitally interested in Wyoming power.

The plant was started in 1956 as part of what PP&L

President Don McClung called a "crash program" to provide new generating facilities for a state which was sadly deficient at the time, and which would have an ever-increasing power deficit unless something big and spectacular were done immediately.

First Unit Is Completed

The first unit of the plant was completed in 1958, to generate 100,000 kilowatts. The day it was dedicated, it was announced that construction of a second 100,000 kilowatt unit would begin immediately. The second unit, doubling the capacity, was finished in December, 1960. Within two years it became evident that growing demand would require additional generating facilities, and third unit was started.

It is now under construction, with completion due a year from now. This will again double the power output of the plant, adding 200,000 kilowatts, for a total capacity of 400,000.

Total investment in the big plant will amount to some \$67 million when completed. But other investments, notably in transmission lines, in a coal mine, and in transportation facilities, bring the total up to about \$100 million in Wyoming.

Coal in Vast Quantities

The Glenrock plant uses coal—coal in vast quantities. It has revived coal mining as an industry in the Glenrock area—an industry almost entirely done by PP&L, which is now the largest employer in the area.

The mine itself is 16 miles away from the Dave Johnston plant, and is connected with it by a road built, owned and operated by PP&L, with an investment of more than \$1 million.

The coal lies in a seam up to 40 or more feet thick, situated beneath an overburden of soil and rock. It is estimated there is a sufficient quantity to last for decades.

Bulldozers and huge highway-type scrapers remove the earth overburden. The coal, which is of a soft, low-grade, sub-bituminous quality, is shattered with drills and powder. Then a giant power shovel (operated by electricity, naturally enough) digs out 8½-ton bites and loads it on to big dump trucks, which take it to a crusher and tippie near the mine.

Coal Deposited In Silo

There the coal is smashed into chunks of 4 inches or smaller, and either deposited in a "silo." From there it is loaded into other big trucks which carry loads of 70 tons or more each load. The trucks go roaring down the road at 35 miles per hour, and can make a round trip in a little over an hour, including loading and unloading.

At the plant the coal is again crushed to smaller size, and finally pulverized into a powder almost as fine as talcum. This is blown into the boiler and, because of its fineness, burns almost like a volatile oil, at 1000 degrees Fahrenheit. The combustion is fast and almost complete this way, and what used to be "clinkers" after coal was burned here is merely a powder-like ash that can be piped away for disposal.

The boiler is comprised of miles of steel pipe into which water is injected. The heat turns the water to steam, the steam turns the giant turbines, which turn the generators, which turn out the electric current.

Is Taking Other Steps

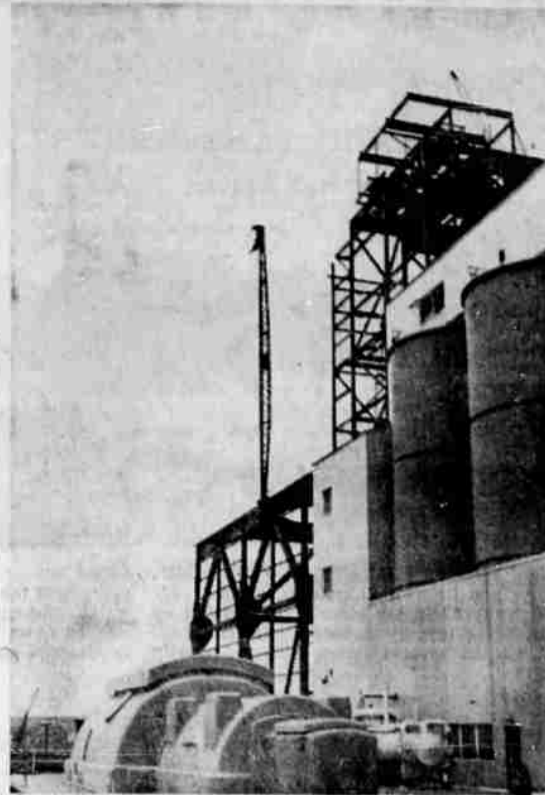
When the new unit is completed, PP&L will be able to generate virtually all the power needed in its distribution system. Meanwhile, however, it is taking other steps to insure adequate power for the power-hungry area, which has increased its demands on an average of some 20 per cent per year over the last decade.

A new substation at Rock Springs in southwestern Wyoming was dedicated at the same time the press tour was visiting, and it marked a new era for power in that area. It ties the PP&L Wyoming transmission grid into the Pacific Northwest Power Pool, through the facilities of the Utah Power and Light Company, from which PP&L is obtaining power until its new Glenrock unit is in operation.

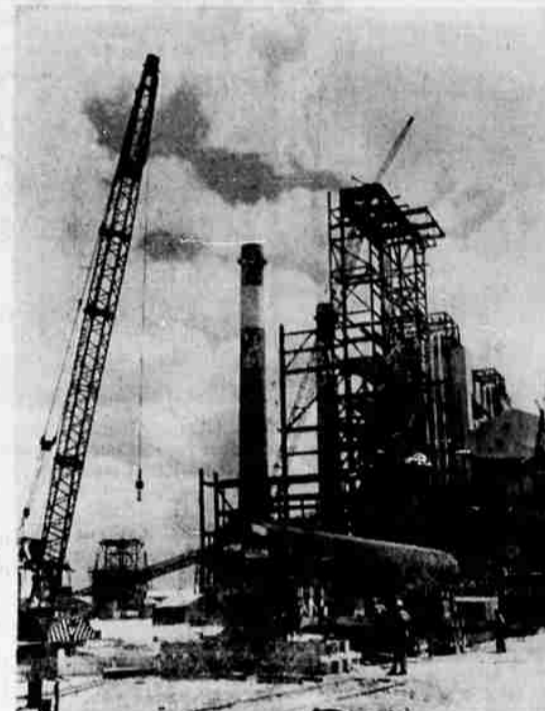
Also under construction is a transmission line to the Flaming Gorge Reclamation project in northern Colorado, where power will be purchased. A new line goes north from Rock Springs to the Riverton-Lander-Atlantic City area, where, among other customers, it serves the new taconite iron-ore mine and beneficiation plant operated by the Columbia-Geneva Division of U. S. Steel, which was constructed only after power became available.

Biggest Area Consumer

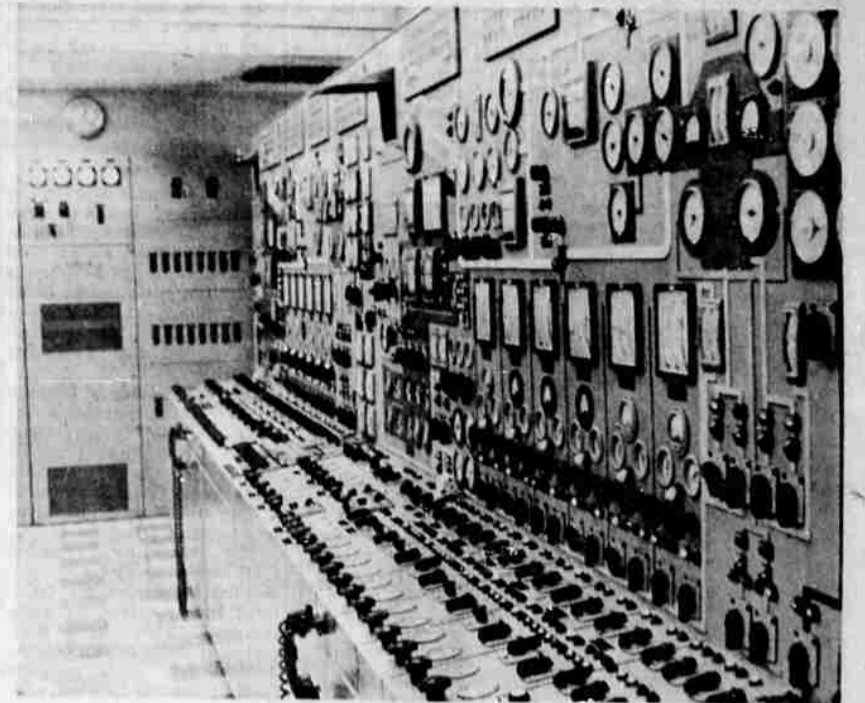
Another industry which has shot the electric demand to ever-new highs is petroleum, which has almost completely converted to electricity, and constitutes one



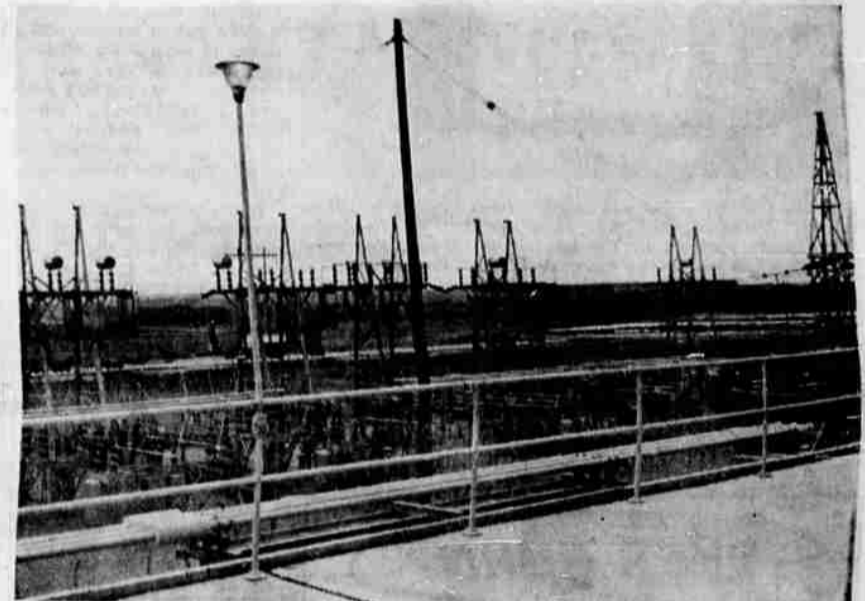
The massive electric generator in the foreground is dwarfed by the 18-story steel framework for the new unit of the plant. Cylindrical objects at right are coal hoppers which feed powdered coal dust into boilers housed in structure.



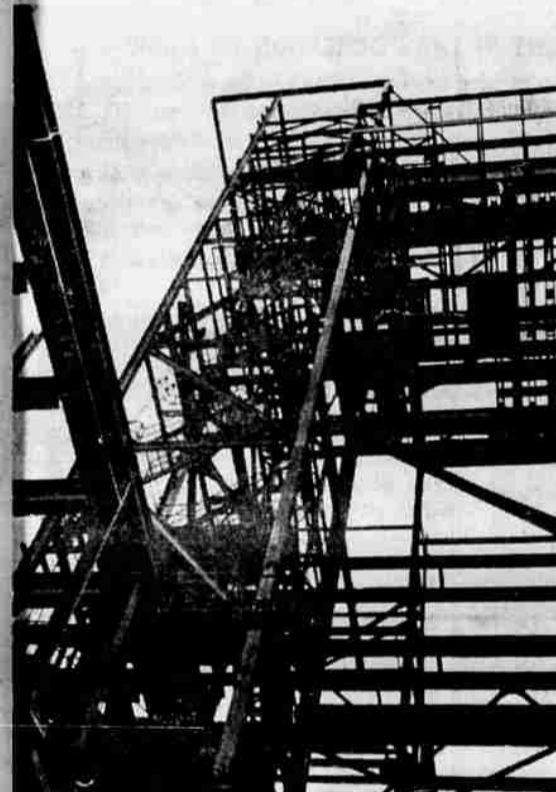
The Dave Johnston steam power plant at Glenrock, Wyo., is being doubled in size. The older units can be seen behind the steel framework of the new unit going up in front. The new boiler, which will generate 200,000 kilowatts, lies in foreground, almost ready for installation.



This is one of the myriad of control rooms needed for the operation of the steam plant. Power generated here flows to many parts of power-poor Wyoming.



This switching yard is adjacent to the steam power plant, and channels electric power to many parts of Wyoming.



The new steam plant unit, rising 18 stories, is nearly at its maximum height. An idea of its size is conveyed by dramatic picture above, looking almost straight up from a second-story floor.

of the biggest consumers of the area, both for pumping from the ground, and for pumping through the thousands of miles of pipeline.

New oil and gas fields also have opened up, and mining of bentonite, iron steel and uranium have also boosted electric demand.

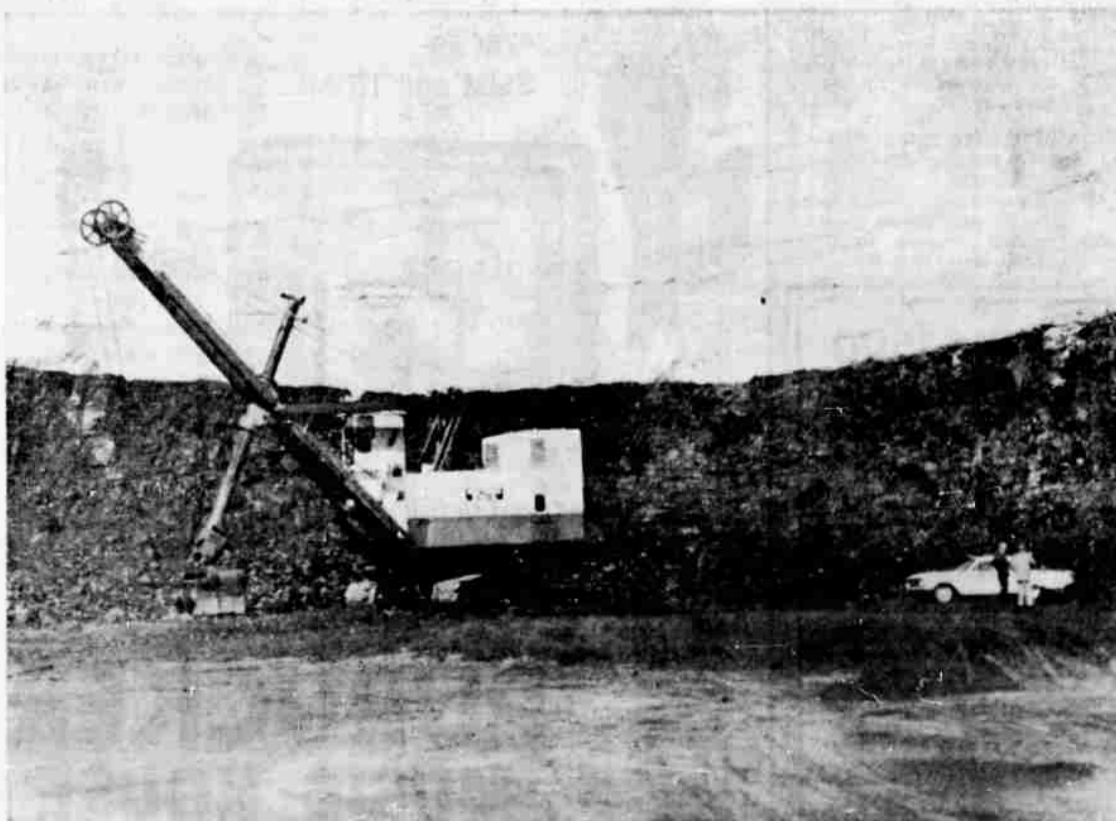
Casper, which is some 18 miles from the Glenrock steam plant, is a town of nearly 40,000, and is PP&L's Wyoming headquarters. It is a rich city, boasting three oil refineries and the offices of a number of oil producing companies.

Rock Springs, on the other hand, is a poor city, with some 10,000 population, which was hard hit when the railroad changed from coal to diesel power and

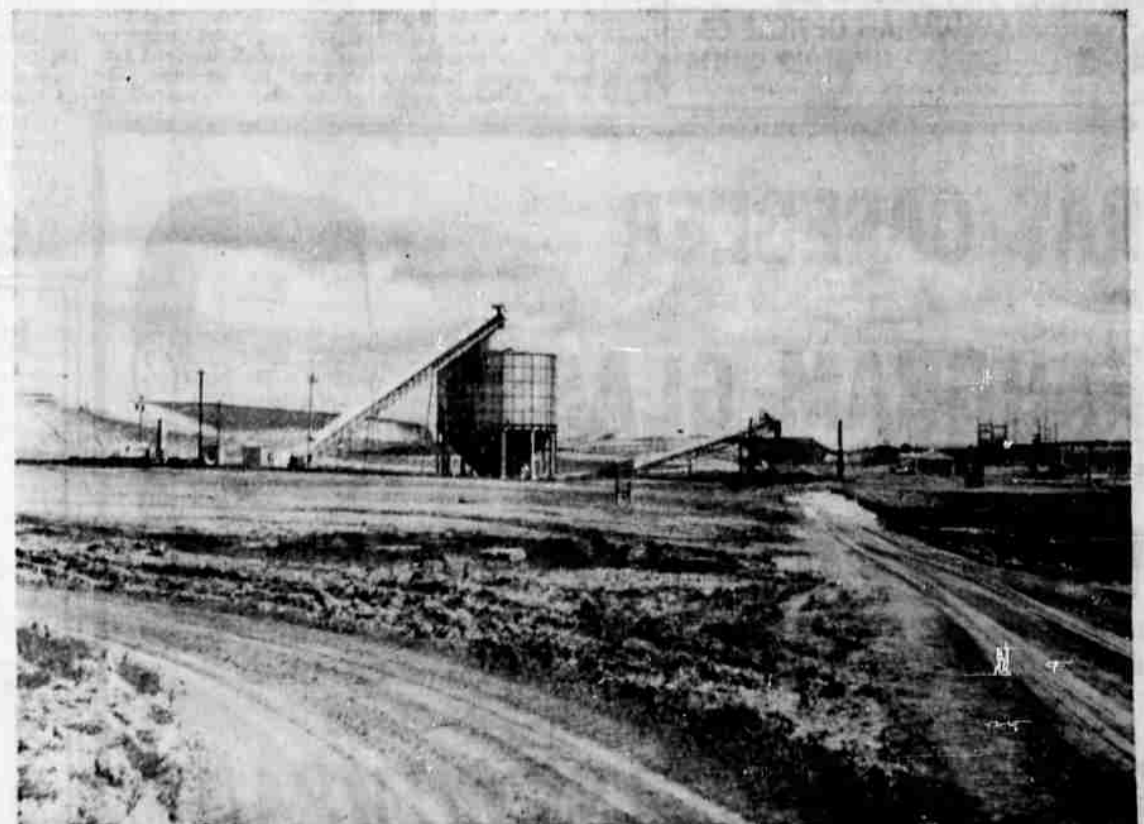
the coal mines closed. So the opening of the new substation, to handle 230,000-volt transmissions, eventually in four different directions, makes it a real electrical crossroad, adding both to its prosperity and to its sense of importance.

Dedication of the substation, and the continued expansion of generating and transmission facilities, are symbolic both of PP&L's efforts to bring industrialization to Wyoming, and its confidence of success.

The day evidently is coming when a resident of Rock Springs can switch on an electric light, or start a power-consuming industry, with the same confidence that a resident of southern Oregon now can do. The economy of Wyoming, and of the entire west, will benefit thereby.



The coal mine operated by Pacific Power & Light Company near Glenrock, Wyo., is shown above. The overburden of soil (light-colored material above) is scraped away, the coal is shattered with powder, then loaded in big trucks, 8½ tons or more at a time, by the electrically-powered shovel. The seam of coal is as much as 40 feet thick, and covers hundreds of acres.



Raw coal is dumped into crusher at left of picture, is reduced to fist-sized hunks or smaller, then conveyed into the big "silo" which can hold a full day's supply. It then is reconveyed into giant trucks which carry 70 tons or more each trip on the 16-mile trip to the steam plant.