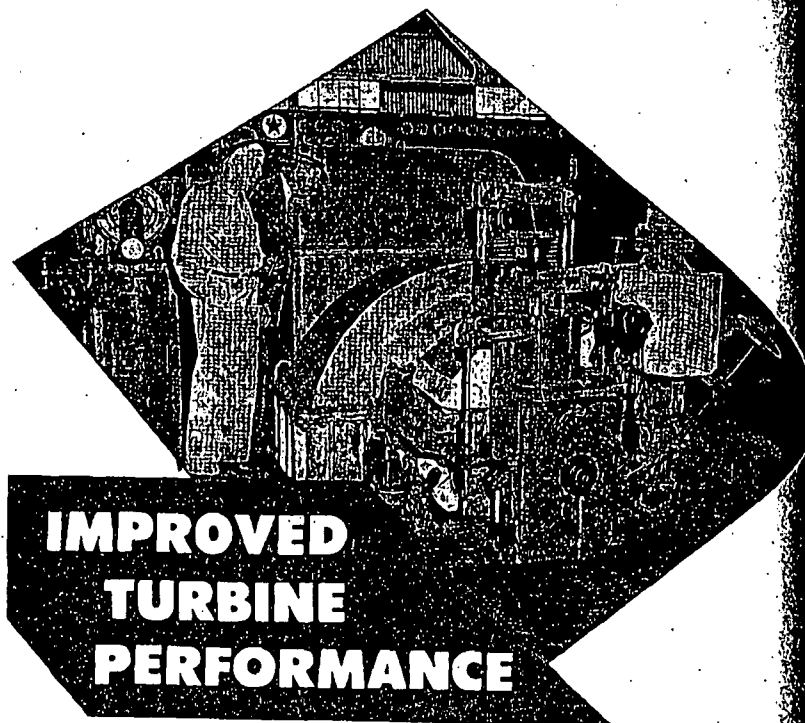




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CHITTY SWAIN, EDITOR • MARCH 1953 • ESTABLISHED 1882

Power

Coal Power for the West?

WEST COAST ENGINEERS will be much interested in a proposal to burn coal in mammoth mine-mouth plants in Utah and transmit the resulting electrical energy more than 600 miles, at 500,000 volts, to load centers on the Coast. This could be a paying proposition by 1975, according to a study (page 90) recently made public by the U.S. Bureau of Reclamation. By that time, the Bureau predicts, the 22 states west of the Mississippi River will be generating electrical energy at five times the present rate.

The most challenging segment of this study relates to California. By 1975, the Bureau estimates, more than half of California's power will come from coal-fired plants. This will involve burning 34 million tons of coal per year.

Granting this, the customary procedure would be to ship the coal by rail to plants in California, because it has almost invariably been cheaper (for long distances) to ship coal than to transmit the corresponding kilowatt-hours from mine-mouth plants.

Looking forward to a vast load growth and great advances in high-voltage long-distance transmission, and assuming other favorable conditions, the Bureau concludes that, by 1975, it will be cheaper to generate the power in Utah and transmit it to California. The "shipping cost" per kw-hr from eastern Utah to a 230,000-volt substation near Los Angeles is given as 1.86 mills for electrical transmission and 2.19 mills for coal haulage.

To arrive at the very low figure of 1.86 mills to transmit one kw-hr 660 miles, the Bureau assumes a yearly charge of only 4.75% on the transmission-line investment. This includes interest 3%, amortization 0.89%, replacement of equipment 0.74%, and "in lieu of insurance" 0.12%.

A privately owned transmission line, to provide for normal interest, etc., would have to allow 10 to 15% which would make the electrical transmission cost far greater than that of coal haulage. We must take it that the study assumes Government ownership.

As is too often the case in such comparisons, the paper savings, based on the 4.75% rate, are largely imaginary. Take the one item of taxes, for example. Government transmission lines would necessarily displace tax-paying facilities—either privately owned transmission lines or privately owned railroad traffic. Any proper estimate of transmission costs by the use of public lines must allow for inevitable tax losses.

In the national average, each dollar paid for coal freight carries about 15 cents of tax charge, direct and indirect. Granting that it is not easy to figure how much railroad tax national, state and local governments would lose by eliminating 34 million tons per year of coal shipment from Utah to California, it is certain that an important allowance must be made for a fair comparison.

Economists could go much deeper into this matter and show that the other "savings" made possible by the abnormally low interest and depreciation rates are largely imaginary, but this is no place for a discussion of economic theory. It is enough to point out that realistic allowances for taxes, interest and depreciation would largely invalidate the Bureau's conclusion that electrical transmission would be cheaper.

Yet we would not suggest discarding this report completely. Much of value for future planning can be learned by studying its load growth and fuel-supply estimates for all the western states.

Then, too, there is always the possibility that coal haulage in 1975 may be more costly than we imagine today, or that we shall find some way to transmit electric power more cheaply than now seems possible.

We of *POWER* would certainly not place ourselves in the position of saying that it will never pay to generate most of California's power by burning coal in Utah. We merely say that, in our opinion, the data and the comparisons in this particular study do not lead to that conclusion.