

60,000 K.W.H. Steam Electric Plant Finished; \$300,000 Investment

The new steam electric generating plant of Southern Utah Power Company in Cedar Canyon is now practically completed and the plant is in regular operation. The Power Company has shut down its diesel electric generating station which hereafter will be used mainly for emergencies.

Reid Gardner, Manager of the Power Company, stated that the plant has been tested under full load conditions and has operated very satisfactorily. It is now generating an average of 35,000 kilowatt hours each day. Its peak load capacity is 60,000 kilowatt hours. This is the largest generating plant in Utah South of Provo, and the most modern.

The plant is situated approximately one mile East of the city limits of Cedar City and just below the first flood control dam in the canyon. The plant is housed in an attractive brick building.

By the time the plant is completed and all necessary power lines are built to connect the steam plant to the Company's 33,000 volt transmission system and to the Cedar City distribution system, the Company will have spent over \$300,000 for this new improvement. The company raised the money for construction of the plant by issuance of First Mortgage Bonds. The plant was designed and its construction supervised by Loeb and Eames, 57 William Street New York City. The concrete substructure was built by G. A. Wood and Son of Cedar City, and the balance of the plant was constructed and all machinery installed by Harry R. Byers Inc., of Washington D. C. The major items of equipment were furnished by the Babcock & Wilcox Company, Westinghouse Electric Company, Detroit Stoker Company, Worthington Pump Company, Allis-Chalmers Manufacturing Company, and General Electric Company.

The plant is designed especially to burn coal from local mines which it does in a very satisfactory manner. The Company has signed a contract with Guy C. Tucker of Cedar City, for furnishing coal from a new mine he has opened up in Right-hand Canyon. The mine will use electrically operated machines—cutting machine, loading machine, coal crusher, and screens and a power line is now being constructed to the mine location. In the meantime, the Power Company purchasing coal from their mines in Cedar Canyon and Kanarra.

At the present time the plant is burning an average of 28 tons of coal per day and at full capacity will use about 45 tons.

A trestle has been constructed from the main canyon highway to the top of the steam plant building and coal trucks dump the coal directly into a hopper located within the plant building. From the hopper the coal is fed into the boiler by a rotary stoker, located several feet above the grate. Most of the coal burns in the air but the large pieces fall into the grate where they are burned. The grate is driven forward by an electric motor and the ashes are thus automatically removed from the boiler. The ashes fall into an ash hopper and are later transported from the hopper beneath the boiler to a truck outside by means of an ash elevator.

The boiler makes 36,000 pounds of steam per hour under full load and operates at 725 degrees F. and 420 pounds per square inch pressure.

All the water used in the boiler is distilled water which is made in the plant by an evaporator especially designed for this service. The unit uses up very little water and these losses are made up from the City Water mains which pass near the building. The City water is piped to the evaporator where it is distilled before pumping it into the boiler.

The steam from the boiler passes to a steam turbine which drives a 2500 KW generator. This generator operates at 3600 revolutions per minute and generates at 4160 volts. The generator has a normal rating of 2500 kilowatts but can carry 3125 kilowatts for a short period.

After the steam has gone through the turbine and used up its energy in making electricity it is passed into a large condenser to condense the spent steam back into water. This

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is done by passing the steam around tubes filled with cold water from Coal Creek which cools the steam just sufficiently to change it to water. The water from Coal Creek is diverted from the creek channel just above the flood control dam, thus it runs by gravity through the condenser and back into Coal Creek. No Water is used up during this process.

After the steam has left the condenser it is reheated under the pressure to prevent it from turning back into steam and then pumped into the boiler whence the cycle is repeated.

Mr. Gardner stated that as soon as the plant is completely finished it will be opened up for public inspection and everyone will be given an invitation to visit it. There is still a crew of about ten men completing necessary insulation, painting, installing stairs, railings, etc., which probably will take two or three weeks to finish.

The plant now has an operating force of eight men and one more will be added when the Company's new coal truck is received for hauling coal from the mine to the steam plant.