

Municipal Column

Edited by the Village Manager

REPORT ON WINNETKA'S MUNICIPAL ELECTRIC PLANT

(As Presented at Meeting of Illinois Municipal League.)

Winnetka has operated a municipal electric plant since 1900, at which time electric generating equipment was placed in the pumping station of the water department for the purpose of supplying current for street lighting. Commencing in 1901, surplus power was sold for commercial lighting. This portion of the business has grown until now "the tail wags the dog" and but 5.4 per cent of the electrical output is used for street lighting.

The original investment in plant equipment and in overhead lines, amounting to about \$17,000, was financed by a general tax levy, and has since been repaid to the general fund. The initial investment was less than would ordinarily have been required, due to a favorable franchise with the Chicago Telephone Company whereby the poles of the telephone company in the public streets were made the property of the Village of Winnetka, with the right to use them for electrical circuits. The present book value of the electric property is \$258,643.08, nearly all of which has been provided out of surplus earnings of the department.

The present generating station, having a total capacity of 1690 k. v. a., is modern in every respect, being equipped with horizontal condensing steam turbines, direct connected to electric generators operating at 2300 volts, two phase. The boiler plant consists of two new 400 H. P. Springfield water tube boilers and one 300 H. P. Heine boiler, giving a total nominal capacity of 1100 boiler H. P.; boilers are provided with superheaters, chain grate stokers and steam jet ash conveyors. The plant has a full equipment of auxiliary devices such as automatic feed water control, automatic damper and stoker regulators, flow meters, carbon-dioxide recorders and recording electrical switchboard instruments. When the boilers recently installed have been fully tested out, it is expected that a coal consumption of 3.5 lbs. per kilowatt hour will be attainable.

Because of the fact that the plant is located on the shore of Lake Michigan, for the purpose of securing an ample supply of condensing water, and is in a high grade residential section, it is not feasible to deliver coal to the plant by rail. However, coal which is hauled by truck, is fed economically by gravity to the bunkers

and stokers, the plant being located about 60 feet below the street level, on the lake shore. The cost of delivery of coal from railroad siding to plant bunkers averaged 69.5c per ton for the year ending March 31, 1922. Two inch Illinois screenings are burned.

The commercial load on the plant being largely residential in character, with little industrial power, the load factor would ordinarily be low, but because of the fact that the water department is combined with the electric utility, and all water is pumped electrically by induction motor-driven centrifugal pumps, a load factor of some 40 per cent is attainable. The municipal pumping load forms a most desirable connection, inasmuch as the maximum demand, occurring during the summer months, is not coincident with the lighting peak in December, and the resulting investment in generating equipment is considerably lessened.

The electric plant supplies electric service to a population of about 8,000 people and provides energy for the water supply of a population of something over 12,000. There were 2132 meters connected to the lines on Dec. 1, 1922. The electric and water departments are operated jointly as far as supervision and employees are concerned, but a careful separation of operating costs and income is made in the accounting system so that each utility stands on its own feet. The water department and the Village corporate are treated as consumers of the electric department, and all energy furnished is billed out in exactly the same manner as to any other consumer.

The rate schedule provides for lighting service, for power service, for electric range service, for street lighting, and for power for pumping. The lighting rate is the block form, being 10c net per kilowatt hour for the first 100 kilowatt hours, 9c per kilowatt hour for the next 100 kilowatt hours, and 8c per kilowatt hour for all in excess. The power rate includes a demand charge of 75c per connected horse-power, with an energy charge of 5c per kilowatt hour for the first 100 kilowatt hours, 4c per kilowatt hour for the next 100 kilowatt hours, and 3c per kilowatt hour for all in excess. The rate for electric range service is 5c per kilowatt hour. The Village corporate is charged 6.5c per kilowatt hour for energy used for street lighting and the water department is charged 3c per kilowatt hour for current delivered to the bus-bars at the plant for electric pumping. The average cost of production, including generation, distribution, general expense and depreciation for the fiscal year

ending March 31, 1922, was 4.52c per kilowatt hour sold, with coal averaging \$5.82 per ton delivered for the year, and common labor at 65c per hour.

Although the utility is not under the jurisdiction of the Illinois Commerce Commission, being a municipal plant, we have considered it proper to be fully governed by the service rules formulated by the Commission with regard to voltage regulation, periodic meter testing, etc. During the past two years, advantage has been taken of the low price of copper to reinforce the distribution system to provide proper voltage conditions under an ultimate load ten years in advance.

Rules affecting consumers are enforced strictly and impartially, particularly with reference to payment of discounts and meter deposits. Service complaints are handled systematically, are promptly investigated and are reported on by letter to the consumer. Meters are tested without charge, in case of serious question as to meter registration. It is our experience that a liberal policy with regard to motor testing results in a great reduction in the number of actual requests for motor tests.

For the fiscal year ending March 31, 1922, the total output of the electric utility was 2,187,883 kilowatt hours, with a gross revenue of \$138,583.94. The operating costs, includ-

ing a depreciation charge of \$9,013.68, were \$85,682.85, leaving a net profit of \$52,901.09. After deducting the six per cent dividend on the value of the electric property paid to the Village corporate and transferred to the general fund, amounting to \$13,054.77, there remained a net surplus of \$38,846.32.

During the year, \$41,963.62 was expended for new construction, largely additional generating equipment and distribution system copper to take care of the rapidly increasing demand on the system. It has been the policy of the Village to place the surplus earnings back into the property, rather than to operate at reduced rates and provide for extensions by bond issues. During the past five years, the operating surplus has been just sufficient to provide for needed extensions, the rates being substantially the same as those of the Public Service Company of Northern Illinois operating on three sides of us.

Our experience at Winnetka leads us to believe that in a municipality

where an electric utility can be operated on a strictly business basis, with no political interference, the factors which affect its financial success are not different from those applying to privately owned utilities, and that municipal ownership under these conditions is feasible and results in greater satisfaction to the municipality and its consumers.

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