

APPENDIX D.

ANNUAL REPORT OF THE CHIEF ELECTRICAL ENGINEER.

The CHIEF ELECTRICAL ENGINEER to The Hon. MINISTER OF PUBLIC WORKS.

SIR,—

I beg to report on the position of the development of electric power in the Dominion for the past year, as follows :—

GENERATING-SCHEMES IN OPERATION.

NORTH ISLAND ELECTRIC-POWER SYSTEM.

1. Capital Outlay.

At the close of the year 1936-37 the total capital outlay was £8,546,750, representing assets in operation, and £429,446, representing assets not in operation, giving a total capital outlay of £8,976,196, and Table II gives an analysis of this amount.

2. Financial Results.

The total revenue for the year amounted to £887,410 and working-expenses £144,315, which resulted in a gross profit of £743,095, equal to a return of 8·75 per cent. on the average capital in operation (£8,489,741).

After paying interest (£391,241), depreciation (£10,464), the departmental proportion of the capital charges on King's Wharf Station (£38,120) and cost of raising loans, &c. amounting to £59,130, there was a net profit of £244,140. The accumulated loss now stands at £155,175 for the North Island system.

Comparative figures for the year ending 31st March, 1936, are as follows : Revenue, £795,391 ; working-expenses, £144,068 ; interest, £408,051 ; depreciation, £17,591 ; and King's Wharf charges, £38,148—with a net profit of £187,533.

The decrease in the depreciation charge from £17,591 in 1936 to £10,464 in 1937 is on account of the amount in the Fund having now reached the statutory 12½-per-cent. limitation, the payment of £10,464 being all that was necessary to augment the Fund to bring it up to the aforementioned limitation.

The accumulated Depreciation Reserve and Sinking Funds as at 31st March, 1937, amounted to £1,005,818. Table I gives full particulars of financial results as well as other relevant statistical information.

3. General.

The units generated totalled 688,704,277 for the system. Units actually sold totalled 625,673,473, and units used for station auxiliaries, &c., total 6,497,313.

The balance of 56,533,491 units represents transmission and distribution losses amounting to 8·21 per cent. of the total output.

The maximum load on the system was 124,460 kw. and the annual load factor 63·2 per cent. The total connected load was 923,674 kw., and the demand factor or ratio of maximum load to connected load was 13·47 per cent.

4. Construction, Operation, and Maintenance.

A. HAMILTON DISTRICT.

(1) CONSTRUCTION.

(A) POWER-STATIONS.

Arapuni.—Work was continued throughout the year on the extensions to the power-house building and outdoor station, and on the installation of the fifth and sixth generating-units (Nos. 7 and 8), each of 24,000 Kv.a. About two hundred men were engaged on this work in the first half of the year, and about three hundred in the second half.

Concreting-work for the power-house foundations and tailrace was completed, and the power-house building extensions, together with the machine foundations, are well on towards completion.

The foundation work at the outdoor station was completed, and the new steel structure and most of the additional switchgear have been erected.

The assembling of Nos. 7 and 8 units was commenced about July, and by the end of March the erection of No. 7 turbine was nearing completion, and the scroll case of No. 8 turbine was well under way. Meanwhile the jointing of the stator quarters of No. 7 machine was completed in the workshop, and the whole stator winding dried out and tested in February.

The rotors of both No. 7 and No. 8 machines were completely assembled and tested.

One bank of transformers of 24,000 Kv.a. capacity was dried out and assembled ready for service.

Since the 31st March work has been concentrated upon the completion of No. 7 machine, and it is expected that it will be ready for service during August.