

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 1937–38 the total capital outlay was £9,095,787, representing assets in operation, and £120,627, representing assets not in operation, giving a total capital outlay of £9,216,414, and Table II gives an analysis of this amount.

2. Financial Results.

The total revenue for the year amounted to £978,492 and working-expenses £177,545, which resulted in a gross profit of £800,947, equal to a return of 9·03 per cent. on the average capital in operation (£8,861,213).

After paying interest (£349,816), depreciation (£50,725), the departmental proportion of the capital charges on King's Wharf Station (£37,593) and cost of raising loans, &c., amounting to £2,151, there was a net profit of £360,662.

Comparative figures for the year ending 31st March, 1937, are as follows : Revenue, £887,410 ; working-expenses, £144,315 ; interest, £391,241 ; depreciation, £10,464 ; and King's Wharf charges, £38,120—with a net profit of £244,140.

The accumulated Depreciation Reserve and Sinking Funds as at 31st March, 1938, amounted to £1,227,053. Table I gives full particulars of financial results as well as other relevant statistical information.

3. General.

The units generated totalled 798,354,000 for the system. Units actually sold totalled 720,490,034 and units used for station auxiliaries, &c., total 6,637,589.

The balance of 71,226,377 units represents transmission and distribution losses amounting to 8·91 per cent. of the total output.

The maximum load on the system was 143,240 kW. and the annual load factor 63·6 per cent. The total connected load was 1,064,571 kW., and the demand factor or ratio of maximum load to connected load was 13·46 per cent.

4. Construction, Operation, and Maintenance.

A. HAMILTON DISTRICT.

(1) CONSTRUCTION.

(a) POWER-STATIONS.

Arapuni.—Extension work at Arapuni to provide for two additional generating-units was practically completed during the year.

Excavation of the tailrace was completed, and after tests the water was allowed to rise, the pumps were withdrawn, and the needle dam was removed.

The extension of the power-house building to its final dimensions, providing for two future generating-units, was practically completed during the year. A new office was built in concrete for the Station Superintendent, and other rooms lined with sound-proofing material. At the south end of the building the retaining-wall was completed and back-filled and concrete structures cast for the water rheostat and oil-storage tanks, which were then erected. Concrete-work for the lift and cable shaft was completed and part of the interior steelwork erected. A protective fence was built along the top of the cliff above the power-house.

At the outdoor station the construction of the repair-room extension was completed, together with cable trenches and footpaths.