APPENDIX D.

ANNUAL REPORT OF THE CHIEF ELECTRICAL ENGINEER.

The Chief Electrical Engineer to the Hon. the 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:—

GOVERNMENT SCHEMES IN OPERATION.

LAKE COLERIDGE ELECTRIC-POWER SUPPLY.

The year ending 31st March, 1929, represents the fourteenth year of operation of the Lake Coleridge scheme, and the year's working shows very satisfactory results.

The attached tables (I, III, and V) give the analysis of results obtained for the year's operation, connected load details being given in Table IV.

Financial Results.

The capital outlay at the end of the year was £1,581,262, as against £1,561,081 for the previous year, showing an increase of £20,181, and is analysed in Table II. The total revenue for the year was £186,963, as compared with £171,127 for the year ending 31st March, 1928, and after payment of all charges, including interest and depreciation, but not sinking fund, a surplus of £50,374 was shown. This amount has been credited to the Sinking Fund Account, bringing that fund to a total of £112,839, to which must be added accrued interest earned of £2,931, bringing the total amount to the credit of the sinking fund to £115,770. The arrears of sinking fund contributions as at the 31st March, 1929, are now reduced to £7,561, and all arrears should be wiped out next year. Table I shows particulars of financial results and load records.

The total cost per unit generated was 0·303d., being a decrease of 0·069d., due to increased output with a decrease in operating-costs. Total operating-costs have decreased by £9,924, due to decreased management and generating costs and decreased Harper diversion maintenance. Particulars of working-costs are shown in Table III.

Connected Load.

The total connected load at the end of the year was 157,399 kw., being an increase of approximately 15·4 per cent. on that of the previous year. Details of connected load are given in Table IV.

Power-house Load and Operation.

The maximum output from the power-house for the year was 24,370 kw., representing an increase of 15·9 per cent. over the previous year's maximum. This increase is a normal one, and the addition of the Lyttelton–Christchurch Railway electrification demand has not materially affected this figure. Units output from the power-house totalled 108,011,955, as against 93,853,759 for the previous year, an increase of 15 per cent. The maximum units generated for the year in any one day was 368,500, on 28th March. The annual load-factor was 50·7 per cent., or 0·3 per cent. lower than that of the previous year.

There was no overload experienced on the full capacity of the plant (27,000 kw.), and no calls were made on the tramway stand-by plant for this reason or due to any interruption to supply. During the period from 31st March to 30th June, 1929, the maximum demand on the power-house reached 27,540 kw.—viz., on 19th June.

Transmission-lines.

The Glenroy–Glentunnel section of the north line was converted from 7/·135″ aluminium to 19/13 copper at the end of June, 1928, and there remains now only one section of main transmission-line to be converted to copper—viz., twenty-four miles of north line between Hororata and Christchurch. This work was not put in hand during the year owing to the high cost of copper, but will be carried out when the copper-market becomes more favourable.

Progress in live-line insulator-testing and line-work has been maintained, and interruption to service reduced by changing insulators and poles without shut-down. No extensive routine insulator-testing, however, was carried out during the year, as the available staff was employed on extra work in new-line construction and the overhaul of wiring systems.