

Erection work on the Tuai-Piripaua double-circuit 110 kV. line was practically completed. Erection work proceeded on the Arapuni-Ongarue 110 kV. line, and survey work was carried out on the Bombay-Waiuku, Edgecumbe - Te Puke, and Khandallah - Central Park lines.

5. *Operation and Maintenance.*—Operation and maintenance have been carried out as usual so far as abnormal conditions have permitted. Shortage of staff and petrol restrictions have made conditions very difficult at times. In spite of this the usual high standard and reliability of supply have been maintained.

SOUTH ISLAND ELECTRIC-POWER SYSTEM.

1. *Capital Outlay.*—At the end of the year 1941-42 the total capital outlay was £7,142,883 representing assets in operation, and £430,595 representing assets not in operation, giving a total capital outlay of £7,573,478.

2. *Financial Results.*—The total revenue for the year amounted to £700,156. Working-expenses were £183,390, resulting in a gross profit of £516,766, which equals a return of 7.2 per cent. on the average capital in operation.

3. *System Operation.*—Lake Coleridge, Arnold, and Waitaki Power-stations were normally run in parallel with Monowai and Waipori. The Dobson Diesel Station was run as required to assist the hydro stations.

An agreement was made with the Dunedin City Council whereby the Waipori Station could be operated more effectively as part of the South Island system.

The maximum half-hourly load on the system (excluding Waipori) was 90,400 kW.

The units generated (excluding Waipori) were 424,569,370. Of these units 334,193,972 were sold by Christchurch District, 30,784,866 by Invercargill District, and 4,870,080 were otherwise accounted for. The balance, 54,720,452, represents transmission and distribution losses amounting to 12.8 per cent. of the units generated.

4. *Christchurch District.*—Construction: Waitaki Power-station. No. 4 unit at Waitaki was completed and placed in service on 25th May, 1941.

Substations: New transformers were installed at Addington. A new outdoor switchgear structure was completed at Ashburton.

Transmission-lines: A new 110 kV. line from Ashburton to Timaru was completed. A double-circuit 11 kV. line at Otira was completed. Approximately 20 miles of the Timaru-Tekapo 110 kV. line was completed.

Operation and Maintenance: Operation and maintenance have been carried out as usual. Abnormal conditions have created difficulties, but the usual high standard and reliability of supply have been maintained.

5. *Invercargill District.*—Supply, Consumers, Unit Sales, &c.: The number of consumers and the connected load continued to increase in all areas. The number of rural consumers is now 12,426 with a connected load of 57,954 kW.

The units sold for various purposes, and the average charges per unit were as follows:—

		d.
Domestic	7,451,619	2.225
Commercial	3,354,376	2.28
Industrial	7,750,831	0.99
Local body (bulk supply)	12,176,546	0.54

Unit consumption in respect of three of Southland's important industries—i.e., coal-mines, freezing-works, and limeworks—was 1,120,312, 3,477,897, and 1,053,807 respectively.

The revenue from sales of electric energy for all purposes in Southland amounted to £161,529.

Operation and Maintenance: Operation and maintenance have been carried out as usual as far as shortage of staff, petrol restrictions, and other abnormal conditions would permit.

New transformers were installed at Invercargill Substation, and new 11 kV. switchgear was installed at Invercargill and Gore Substations. Extensive overhaul of the Monowai-Winton 66 kV. lines was carried out.

On the distribution system thirty-two new transformer installations with a total capacity of 260 kVA. were completed. Extensive transformer overhaul was carried out in the field. In Riverton Borough a change over from 3.3 to 11 kV. was made. At Winton Pole-factory 1,434 concrete poles were cast during the year.

The usual reliability of supply has been maintained.

6. *Nelson District.*—General: No part of the Cobb River scheme is yet in operation except the Stoke Diesel Station and part of the 66 kV. Stoke-Cobb transmission-line (at 11,000 volts).

Construction: Cobb Power-station: The construction of the headworks was continued, but due to drain of manpower the anticipated progress was not made. The work completed included the access road to the dam. The tunnel was pierced, and enlarging and concreting are in progress.

Substations and Transmission-lines: Work proceeded on construction of substations and transmission-lines. The survey of the Stoke-Blenheim 66 kV. line was completed for seventeen miles.

REGISTRATION OF ELECTRICAL WIREMEN.

In addition to the two regular examinations during the year, six special examinations were held, five for members of the armed forces who were proceeding overseas, and the other for a naval petty officer whose ship was leaving before the regular examinations.

Capping and casing was used in the two practical examinations.

There were 382 candidates for the wiremen's written examination and 252 for the practical examination. Of these, the percentages passes were 32 per cent. and 56 per cent. respectively.

For the servicemen's examinations there were 83 and 66 candidates for the written and practical parts respectively, and of these the percentage passes were 59 per cent. and 68 per cent.