

Once the diversion tunnel is completed, early in 1949, then the task of dewatering the dam-site can begin.

When that stage is completed it will be possible to give a firm estimate of the time required for completion of the job.

Whakamaru.—Investigations are nearly completed, and it is expected that the design work and purchase of plant will soon be put in hand.

Investigation work is being carried out at Waipapa and Atiamuri on the Waikato, and reconnaissance work has been done in connection with the Kaituna and Rangitaiki schemes in the Bay of Plenty area.

In the South Island work has proceeded on the *Cobb scheme*. A small dam was built to give temporary storage and has proved a great boon during dry periods. The construction of the main dam and the installation of two 10,000 kW. units now on order is not expected to be completed before the end of 1951. Here again steel is required to the extent of 1,000 tons for the penstock alone.

Rotoroa.—A topographic survey has been made and is being studied preparatory to intensive investigation. This scheme involves a long tunnel, so that the provision of equipment and personnel for this class of work is likely to be a controlling factor.

Tekapo.—It is expected that the tunnel will hole through before the end of 1948, but it is not anticipated that the plant will be ready to run before the end of 1950.

Here again the supply of reinforcing-steel for the power-house is holding up progress.

Pukaki.—The construction of an earth coffer-dam and the provision of sluice-gates during the year made a great difference to the power position in the South Island. Work is now proceeding on the construction of the earth dam and spillway, which may be completed late in 1949.

Waitaki Fifth Unit.—Although all the parts have not yet left the works, the fifth 15,000 kW. is under erection at Waitaki. Efforts are being made to have the unit in operation by the end of 1948.

Roxburgh.—River studies have shown that it is absolutely necessary to impound water and secure control of the outflow of Lakes Wakatipu, Wanaka, and Hawea for the operation of the 320,000 kW. development, and also the outflow of Lake Wanaka has to be controlled at an early stage in the construction of the scheme to establish control of flood-waters at the Roxburgh dam site.

It is estimated that, provided labour and materials can be made available in sufficient quantity, the work will take at least six and a half years. Under these conditions it is unlikely that the initial operation of the plant could commence before 1955.

In view of this there would be a shortage of electric power in the South Island after 1953 unless steps were taken to bridge this gap. The problem is being studied in order to determine the best means of meeting this situation, and a decision must be reached at a very early date.

At the same time that the above work is going on in connection with the generating-plants, new substations and transmission-lines are in course of erection. Here again the supply of steel is a dominating factor, particularly in relation to the transmission-line towers. Strenuous efforts are being made to secure the necessary quantity required.

The overall picture is one of immense difficulties being dealt with in a determined and courageous manner, and I must express my appreciation of the unflagging efforts that are being made to restore the supply of electric power to normal.

APPENDIX

Further information relating to the past year's working is included in the attached report by the General Manager, while the annual report of the Rural Electrical Reticulation Council is also appended.