

Power available.

The areas mentioned include several large consumers, particularly factories dealing in milk products, and as in some cases it will be found desirable for the Department to supply direct to these concerns it is proposed to reserve 500 h.p. of the available supply to meet demands from these consumers.

The total power installed at Horahora is 6,300 kw., or 8,400 h.p., which will be dealt with as follows :—

	Horse-power.
Spare standby unit	1,400
For Waihi Gold-mining Company	3,300
For Arapuni construction-works	200
For special industries	500
For losses in transmission	600
Available for local authorities	2,400
	8,400

Allocation of Power available.

In allocating the power the population and other considerations such as existing installations have been taken into account, and the following allocation is the result of a careful investigation into the whole of the factors :—

	Horse-power.
Thames Valley Power Board	900
Te Awamutu Power Board	600
Cambridge Power Board	200
Central Power Board	350
Hamilton Borough Council	300
Waihi Borough Council	50
	2,400

The capacity of the existing steam plants in the district is also being carefully investigated, as it is probable that arrangements will be made whereby a supplementary supply of power will be obtained during peak-load or low-water periods, thus enabling the water-power to be utilized to its fullest extent.

Distribution.

Contracts for supply of material for erection of lines and substations to a value of approximately £50,000 have been entered into. Some of this is now coming to hand, but delay owing to the shipping difficulty has arisen regarding the delivery of the main contracts, particularly those for poles. In the meantime line routes and points of supply are being determined, and negotiations completed with the various consumers, and the staffs and plant are being assembled in readiness to proceed vigorously with the distribution-lines as soon as the material comes to hand.

NORTH ISLAND SCHEME.

The general scheme of the North Island distribution provides for supply from three main power-stations—viz., Mangahao, Waikaremoana, and Arapuni—together with a complete reticulation joining up these three sources of power.

Mangahao.

Substantial progress has been made with the works at Mangahao during the year. The road-formation is practically complete, and the testing of the foundations for the dams is under way. Great delay has been experienced in the delivery of the construction steam-power plant, the boilers for which have been erected. The sawmill has been erected, and has started cutting timber for the housing of the staff, and four of the permanent staff cottages have been erected.

Arapuni.

Extensive exploration work was required at the site of the proposed dam, and is now nearing completion. In testing the character of the rock and its suitability for foundations, and the distance to which the concrete-work should extend, a total of 3,474 ft. of shafts, stopes, drives, and adits has been put in at the site of the dam, gate-wall, and spillway weir. One of these drives runs right under the river, and will be used eventually to form a cut-off wall at the base of the dam. Another drive runs the greater part of the length of the diversion tunnel which will be required to carry the river during the period of construction of the dam.

Important tests are nearing completion to determine the waterproofness and the strength of the rock which forms the sides and bottom of the gorge, and other tests are in hand to determine the suitability for use in concrete of the stone and sand available in the district. A geological report has been made by the Geological Survey Department, and chemical tests are being carried out at the Dominion Laboratory.

Owing to shortage of staff nothing has been done during the year in connection with the Waikaremoana and transmission-line surveys.

SOUTH ISLAND MAIN SCHEMES.

During the year a detail survey has been completed of the proposed Central Otago schemes, the results of which are now being prepared. Owing to shortage of staff it has not been possible to carry the general South Island scheme any further during the year.

ELECTRIC-POWER BOARDS.

The policy of the Department generally is to supply power in bulk, leaving the reticulation and retail supply in the hands of the local authorities. In the past the only local authorities available have been the cities, boroughs, counties, and Town Boards; but with the extension of electric supply into the country areas a stronger organization became necessary, and this has been provided under