

completed to Wellington, and to Bunnythorpe on the north-west, and are under construction towards Wanganui. A line has been erected across the Ruahines from Bunnythorpe to Woodville, and from there north to Waipukurau and south to Masterton. Substations have been erected and the necessary plant installed at Khandallah, Bunnythorpe, Mangamaire, Dannevirke, and Masterton, and a switching-station at Woodville. Extensions to the main lines are being made to Napier and Wanganui, and tenders have been invited for substations at these points. A substation is being built at Ongaonga (for southern Hawke's Bay), and the plant and material is on order for substations at Napier and Wanganui.

HORAHORA POWER SCHEME.

An expenditure of £48,156 has been made on extensions to this scheme during the year. The additions to the power-house and headrace have been completed, and the two new 2,000-kilowatt units put into operation. A considerable amount of work has been done on building a new weir across the river above the head-gates, and on the installation of gates to control the flow of water into the power-station. There has been some delay in the delivery of these gates, and further delays have been caused by heavy floods which occurred in the river during May and June.

A start has been made with the erection of a 50,000-volt line between Waikino and Katikati, to connect the Horahora system with the Tauranga Borough plant at McLaren's Falls.

ARAPUNI POWER SCHEME.

The contractors for the headworks and plant, Sir W. G. Armstrong, Whitworth, and Co. (Limited), have made an active start on the work under their contract. They have erected complete camps for their staff and workmen adjacent to the dam and power-house, and at the quarry-site some miles farther up the river. Considerable progress has been made with the excavation of the tunnel required to divert the river during construction of the dam, with the excavation at the power-house site, in the headrace, at the intake gate wall and weir, and on the above water excavation at the main dam. The construction of an aerial ropeway to bring in stone from the quarry is under way. The high river levels and floods which occurred in May and June have delayed work in the diversion tunnel to some extent. The Department's own staff has completed the formation and preliminary metalling of the access roads, and has built bridges over the Waikato River and the headrace channel, and commenced formation work on the Waotu-Arapuni Road deviation.

As it is most important that as much load as possible shall be available for the Arapuni Station as soon as it is completed, a considerable amount of survey and construction work has been done on transmission-lines.¹

The construction of one main 110,000-volt line has been completed from Hamilton to Auckland, and this will be operated meanwhile from Horahora to give a supply of 2,000 k.v.a. to the Auckland Power Board. The survey has been completed, and construction is in hand of a 50,000-volt line from Arapuni to Rotorua. When completed this will be operated from Horahora until Arapuni is available. An extension of the Te Awamutu 50,000-volt line is under construction to Hangatiki, to give supply to the Waitomo Power Board. Surveys are in hand for a 50,000-volt line connecting Waikino and Bombay, across the Hauraki Plains, and also for the additional main 110,000-volt lines between Arapuni and Auckland.

A portion of the main substation at Penrose to give supply to the Auckland Power Board has been built, and the plant necessary to give temporary supply from Horahora has been installed. Plant is also on order to give supply to the Franklin Power Board.

FUTURE DEVELOPMENTS.

For the current year the main works under construction will comprise—

Lake Coleridge.—Further work on duplication, tunnel, intake, power-house, plant, &c., to bring capacity up to 27,000 kilowatts. Installation of new switch-gear at power-house and Addington Substation. Duplication of main transmission-line to Timaru; erection of main line from Timaru to Oamaru, and erection of substation at Oamaru.