Substations.—At Khandallah Substation the buildings were completed, transformers dried out, and switch-gear erected. The only work remaining to be done is the drying-out of the spare transformer, repairs to windows, and further fencing. The substation was put into operation on the 24th December, when power was supplied to the Hutt Valley Power Board.

Bunnythorpe, Masterton, Mangamaire, and Dannevirke Substations and Woodville Switching Station have all been completed and are in service. On all these substations the air-break switches caused several shut-downs owing to insulator-failure. It was found necessary to dismantle all these defective insulators and convert the switches into disconnecting switches.

At Waipukurau Substation the outdoor steelwork is erected, and the buildings are nearing completion. It is anticipated that supply will be available from this substation in August. Tenders have been invited for the erection of Wanganui Substation, and plans are ready for Napier Substation.

Transmission-lines.—During the year seventy-six miles of main transmission-lines and thirty-three miles of telephone-lines were erected, making a total of 276 miles of transmission-line and 196 miles of telephone-line erected.

The double lines to Khandallah and Bunnythorpe, and single lines to Woodville, Masterton, and Dannevirke, were completed and put into service. The line from Dannevirke to Waipukurau is completed and ready for service, but the substation is not yet completed. Beyond Waipukurau nine miles of lines are completed. On the Bunnythorpe–Wanganui line nineteen miles of line are completed.

It is anticipated that the line to Napier will be completed by December, 1925, and the line to Wanganui by October, 1925. In addition to the above 110,000-volt lines, the following 11,000-volt lines have been built: Mangaore to Shannon, three miles; Khandallah to Petone, four miles and a quarter; Khandallah to Ngahauranga, three-quarters of a mile.

Power-supply Contracts.—Contracts for the supply of power have been signed with Wellington City Corporation, Hutt Valley, Horowhenua, Manawatu-Oroua, Wairarapa, Tararua, Dannevirke, Central Hawke's Bay Power Boards, and Wellington Meat Export Company; and, although the contract is not yet signed, agreement has been reached with the Wanganui-Rangitikei Power Board. Negotiations are under way with the Hawke's Bay Power Board. Arrangements have also been made to supply the Railway Department at Petone Workshops.

In practically all cases the loads are greater than was anticipated, and until the second Mangahao dam is built it may be necessary to call on Wellington steam plant in dry weather. It is also probable that in three years' time the plant will be overloaded, and Waikaremoana will be required.

Dates of Operation.—The following gives the dates on which apparatus was put into operating service: Pipe-line valves, October, 1924; No. 5 unit and its L.T. switch-gear, November, 1924; No. 4 unit and its L.T. switch-gear, November, 1924; No. 3 unit and its L.T. switch-gear, December, 1924; No. 2 unit and its L.T. switch-gear, February, 1925; No. 1 unit and its L.T. switch-gear, June, 1925; Mangaore–Shannon line and switch-gear, November, 1924; main transformers and switch-gear December, 1924; Wellington east and west lines, December, 1924; Hutt Valley line, December, 1924; Khandallah Substation, December, 1924; Bunnythorpe west line (at 11,000 volts), December, 1924; Bunnythorpe east line (at 110,000 volts), March, 1925; Bunnythorpe Substation, March, 1925; Bunnythorpe–Woodville line, 6th April, 1925; Woodville–Mangamaire line, 7th April, 1925; Mangamaire–Masterton line, 17th May, 1925; Woodville–Dannevirke line, 19th May, 1925; Woodville switching-station, 6th April, 1925; Mangamaire Substation, 7th April, 1925; Masterton Substation, 17th May, 1925; Dannevirke Substation, 19th May, 1925; 11,000-volt regulators, 27th May, 1925.

Operation to 31st March, 1925.

The power-house equipment during this period operated on the whole satisfactorily. It was found necessary to repair the main valve on No. 3 machine, and minor generator and governor troubles occurred. Considerable welding was required on the main-transformer tanks.

The apparatus at Khandallah Substation functioned satisfactorily; the only trouble was a leaky transformer bushing, which was replaced by a sound one.

At Bunnythorpe Substation the air-break switch insulators gave trouble, as mentioned before. It was also found necessary to change the current-transformers, on account of the light loading on them.

The 110,000-volt lines operated satisfactorily during the period. The only interruption on these (other than prearranged ones) was in January, when the leakage relay tripped. The switch was closed again and the line held in. Subsequent experience points to the fact that the relay is not properly set.

The 11,000-volt line to Shannon operated without trouble, and on the Hutt line one insulator failure occurred on an air-break switch.

Considerable trouble was experienced with the telephone system.

Supply of power was given to the Horowhenua Power Board on the 3rd November, 1924, and supply maintained throughout the period under review, except for a prearranged shut-down of 8 hours 38 minutes to remove the chimney on the steam plant.

The Manawatu-Oroua Power Board was given supply on the 19th December. There was one interruption of seven hours' duration due to a faulty insulator on an air-break switch, and one prearranged shutdown of three hours and a half to change current-transformers and to alter main-transformer taps.

Supply of power was given to the Hutt Valley Power Board on the 24th December. Until the 10th March this was only night supply, on account of work on Hutt Valley 11,000-volt line. Excluding the daily shut-downs, there were seven interruptions, totalling fourteen hours. One of these (for thirteen hours) was due to a flash-over on an insulator on an air-break switch on Hutt line; four, totalling thirteen minutes, were due to switching operations when an air-break switch insulator broke down; one of four minutes, due to a mistake in switching; and one of forty-three minutes, due to turbine trouble.