

5. TEST DEPARTMENT

Installation tests were made on all major new equipment, including switchgear and transformers, a 30,000 kW. generator at Karapiro, two 16,000 kW. generators at Kaitawa, a 24,000 kVA. stator winding at Arapuni, reactance relays, pilot-wire relays, and power-line carrier relays.

A 1,500 kVA. condenser at Kaitaia required extensive test work before installation. Faulty operation of pilot wire and restricted earth leakage protection was investigated. A travel time recorder was designed and constructed for O.C.B. adjustment, and further work done on the manufacture of pneumatic closing-gear for Khandallah 11 kV. switches.

6. PLANT AND MOTOR-VEHICLES

Plant.—During the year essential equipment was installed at the Penrose Garage and at the Palmerston North workshops. A travelling workshop has proved most useful for the repair and overhaul of equipment in the field in the Hamilton district. Although not yet fully equipped, the new workshop at the Taradale Road Depot, Napier, is being used. The larger substations are now all equipped with power-driven lawnmowers.

Vehicles.—The transport position is still difficult owing to the age and condition of vehicles, necessitating heavy maintenance. During the year six trucks were taken over from the Army and sixteen chassis were received. Three of these are being fitted with five-passenger cabs to afford greater all-weather protection for linemen. The lack of new cars and commercial sedans to replace worn-out vehicles and to meet the expanded needs of the system gives rise to considerable concern. Difficulties in supply are appreciated, but the stage is fast being reached where this lack will have serious repercussions in the efficiency of over-all operation.

C. CONSTRUCTION

1. POWER-STATIONS

Arapuni.—A new 30,000 b.h.p. turbine runner is being fitted to No. 6 generating-unit to replace a temporary one.

Karapiro.—The third 30,000 kW. generating-unit was completed and first put on commercial load in May, 1948.

Maraetai.—For progress on the civil engineering construction see Ministry of Works report.

All generating-equipment is now stored in New Zealand ready for installation when the power-house is built.

Kaitawa.—No. 7 generating-unit was placed on load early in April, 1948, and No. 6, with its attendant switchgear, was put into operation in October.

2. SUBSTATIONS

(a) 220 kV.

Otahuhu.—Utilizing a barge, 80-ton floating crane, and the 50-ton Dyson trailer, three condenser stators and rotors were transported from Auckland wharves to a temporary storage building at Otahuhu. Two hundred and twenty-seven 70 ft. piles were cast and driven for the condenser-building foundations and fifty-eight similar piles for transformer foundations. Sewerage and drainage was completed, and eight of the first set of fifteen houses for the permanent village reached an advanced stage of construction.