

It is now recognized that the Clarence scheme cannot compare with Black Jack's Point or the Clutha schemes, primarily because of its inaccessibility and the time required to get construction started, but probably also because of cost. The survey promises a very substantial development, and it is proposed to complete the investigation far enough for a scheme to be outlined and filed for future use.

Minor Schemes.—A number of these have been looked into, including a number of suggestions for the production of power. Some inspections have been made, notably the Four-mile Creek near Charleston, and Lake Omapere.

Hydrology.—In addition to run off studies in the Cobb and Southern Lake catchments, records have been kept up to date of a number of principal and typical streams throughout the country. The oldest of these, at Taupo and Rotoiti, have now been kept continuously for forty years.

(b) STRUCTURAL SECTION

The major portion of design work and preparation of full working drawings for the Karapiro and Kaitawa Power-station machinery foundations were completed. This included the planning of all services required.

Further plans were finalized for Kaitawa Power-station to permit installation of all outdoor switchgear and transformers. Heavy concrete retaining-walls and floor slabs for the tailrace lining were designed.

A steel-frame store was designed for Tokoroa to provide storage for generator and turbine parts now arriving from overseas for schemes on the Waikato River.

Preliminary work for other power schemes and distribution centres included machinery layouts and architectural planning of Maraetai and Cobb River Power-houses, workshops, control, and administrative blocks.

The initial designs for workshops, control rooms, switchrooms, and offices for the 220 kV. substations at Otahuhu and Bunnythorpe involved extensive investigations into the load-bearing properties of the ground.

Milton and Temuka substation buildings and small service buildings at Piripaua power-station were designed, and planning commenced on the permanent village at Maraetai allowing for an initial thirty houses, hostel, and recreational facilities.

Designs were prepared for traverser tracks, turntables, and water rheostats for various locations, and manufacturers' designs of cranes were checked as required.

(c) ELECTRICAL SECTION

Design work for Karapiro Power-station was completed and drawings supplied to the erection staff. Specifications were drafted for Maraetai control and protective equipment, 400-volt switchgear, and carbon-dioxide fire-quenching equipment, and also for King's Wharf transformers, 22 kV. and 66 kV. switchgear, and control equipment. Investigations were made into Maraetai 220 kV. switchgear. Consideration was given to control arrangements for Whakamaru, and future 220 kV. switching-stations and to Cobb River 66 kV. switchgear. Design work was commenced on Tekapo lighting and power installations. Cable quantities were worked out for No. 5 unit at Waitaki. Equipment for transformer-oil acidity tests was designed and ordered, whilst locally-made transformers were inspected during manufacture. Other work included short-circuit and inductive interference calculations and scheduling cable requirements for the annual bulk order.