

Piripaua (Waikaremoana Lower Development): The widening and clearing-out of the tailrace commenced early in 1945 below the junction of the by-pass canal, and the tailrace stream was completed during June.

The concreting of the double garage was completed, concrete paving being extended around to the entrance. Doors and windows were installed.

The chlorinating-plant was installed, but some adjustments and minor work are still required.

Sealing of roads is complete except for 1 chain on the village road. The Tuai-Piripaua access road was maintained, and a start was made on the reshaping of the surge-chamber road.

Kaitawa (Waikaremoana Upper Development): A building and float well was constructed for Kaitawa Lake automatic level gauge. Erection of the crane at the power-house was completed and a test load of 30 tons provided for the Inspector of Machinery. Two main transformers were transported, assembled on undercarriages, and placed on pads outside. Further installations are being carried out as materials are provided.

Two 110 kV. P.T. banks ex Waipawa and Dannevirke, were installed for new distant protection, which is now in service. Concrete paths and car drives were laid down at cottages in village.

At the beginning of the year the two tunnels being driven towards the control shaft had penetrated into very wet country, which continued almost to the shaft. No. 1 tunnel was carried through to the shaft and, going beyond towards the lake, it has been enlarged from 8 ft. to 10 ft. diameter so that it will provide enough water for both tunnels and both machines. Better progress has been made and less water encountered in the section from the shaft to the lake than from the valley to the shaft. The second control shaft is under construction and will be completed before the second tunnel is connected through. The position and prospects are now very satisfactory, and it is anticipated that the break through to the lake will be achieved without serious difficulty.

A contract was let for the fabrication and erection of the two penstocks. There has been some delay in starting, but a factory was built, and work of welding the steel pipes is now in progress.

Construction of the power-house is virtually complete, but finishing cannot be done until the generating machinery is erected. Plastering has yet to be done.

Work on the tailrace, including a new flood spillway, has been done, and, in conjunction with this, the canal leading to the intake of the main development is being enlarged.

(b) Substations

Penrose.—A further seventeen 22 kV. switches were converted during the year, making a total of twenty-one out of twenty-four.

Both of the new 110 kV. P.T.s were put into service during the year, and distance relays were energized from one of them (No. 1 line).

The new control room was fitted with a false ceiling and with fluorescent lighting, and has been partially in use as the changeover of the 22 kV. switchgear has proceeded.

Cable junction boxes were fitted in the structure, and cabling for the 110 kV. O.C.B. control panels commenced.

The old temporary 110/50 kV. transformer bank was dismantled and returned to Tuai.

The communications room was completed ready for installation of equipment and the panels for the Penrose-Mount Roskill supervisory control system were placed in position, but not wired for service.