

On Wednesday thirty-five men again worked twelve hours on wiping and patrol and completed the wiping from Rangiriri (Tower 313) to Penrose (Tower 527), also from Kainui (201) to Taupiri (214). At 12.56 p.m. both lines were made alive to Penrose, and were put on load, and there were no further flashovers.

On Thursday forty-two men worked twelve hours completing the wiping of the East Circuit (98 towers 215–313) and also wiping on the wood-pole line, while the West Circuit was left on load until 4.15 p.m., when, the East Circuit having been finished, the load was changed over to it.

On Thursday night heavy rain obviated the necessity of completing the wiping of the West Circuit, which was left alive all night, and put into normal service at 8 a.m. on Friday.

On Friday forty men worked ten hours patrolling and examining insulators on the wood-pole line, and found all but a few traces of salt had been washed off by the rain, and the line was tested and ready for service about 5.30 p.m.

In the five days the total number of insulator units cleaned was about 15,000, on 326 towers and 739 poles, on about sixty miles of line between Taupiri and Penrose. Signs of flashover were found on sixty-four strings of insulators, of which six complete strings were replaced, and on fifteen strings the tower (or pole) unit was replaced. Nine lengths of damaged cable have since been replaced, and hay and bark removed from two towers.

(d) Reliability of Supply.

At the sixteen major points of supply the average number of accidental interruptions was 12.5, of an average duration of 16.9 minutes, compared with fourteen and twenty-two minutes, and 7.5 and 5.5 minutes for the two previous years.

In addition, the average number of pre-arranged interruptions for repairs, &c., was 5.9, of an average duration of 1 hour 48 minutes, compared with 5.6 and 1 hour 40 minutes, and 4.1 and 1 hour 15 minutes for the two previous years.

B. PALMERSTON NORTH DISTRICT.

1. CONSTRUCTION.

(a) POWER-STATIONS.

Mangahao Power-house and Headworks.—The new gate winches at the surge chamber were installed and lifting-tests carried out on them. In the meantime, all the necessary control circuits have been completed with the exception of the tripping-circuit. The contacts of the tripping-devices to be installed on the pipe-lines are being altered from the mercury-in-glass type to a mechanical type in order to eliminate the possibility of mal-operation during earthquakes. The extensions to the surge-chamber and the new winch-house were also completed during the year.

Cottages.—Good progress is being made by the contractor with the erection of seven new staff cottages and additional single men's quarters in the village at Mangaore.

Waikaremoana Power-house and Headworks.—At Onepoto construction was commenced on the lake-control scheme, a camp being established and service transformers installed for the camp and construction plant. This work has, however, been suspended for the present.

In the village good progress is being made by the contractor with the erection of eight new cottages for staff accommodation, and it is anticipated that these will be completed in six weeks' time.

(b) SUBSTATIONS.

Khandallah.—In connection with the additions to be made to the outdoor switch-gear, three new cantilevers have been erected, and the motor-operating gear has been installed for the transformer air-break switches.

Melling.—Three new single-phase auto-transformers have been dried out and connected into service: these will facilitate the regulation of the voltage on the 11 kv. bus-bars of the substation.

Paraparaumu.—This is a new substation and, to date, the switch-room and two cottages have been completed, while the rest of the equipment—transformers, switch-gear, &c.—is on order.

Bunnythorpe.—The new 110 kv. O.C.B. disconnects and air-break switch, together with the necessary double-line relays, were put into service on the Bunnythorpe-Woodville duplicate line.

Marton.—110 kv. liquid fuses were installed for the purpose of transformer protection.

Wanganui.—The erection of the steelwork for the fourth bay at Wanganui has been completed, as well as the new line O.C.B. and its corresponding air-break switch. The O.C.B. for a new 4,500 kv.a. transformer bank has been erected, and the new transformers have been dried out and the necessary concrete pads installed.

Hawera.—Considerable trouble has been experienced here in the past due to blown lightning-arrester fuses, and the lightning-arresters have now been replaced by a more modern type.

Stratford.—Construction work at this substation has now been completed. The condenser was dried out and put into service, and a 25 kv.a. local service transformer installed.

New Plymouth.—As at Hawera, the lightning-arresters, of an obsolete type, have now been replaced by a modern design.

Woodville.—With the completion of the duplicate line to Bunnythorpe, the outdoor structure was reconstructed. In order to do this a by-pass was erected round the northern and southern sides of the substation, the Masterton line being supplied directly from Bunnythorpe.

A point of interest with regard to this work is that new eye-bolts on the Mangamaire and Dannevirke sides of the structure were fitted with the line alive. These replaced shorter ones in order to give greater clearance between the air-break switch bases and the O.C.B. jumpers.