

Gisborne.—Three 50 kV. post insulators replaced, and 11 kV. switches overhauled.

Hawera.—Potential transformer bushing repaired and 110 kV. bushing on spare transformer replaced. Auto transformer on kVA. meter changed.

Khandallah.—Heating in C.T. chambers of several 11 kV. switches necessitated emptying the compound-filled chambers—tightening connectors, making and fitting lock-nuts to prevent recurrence.

The synchronous condenser bearings gave trouble. They were renewed during the year, but trouble persisted; has now been overcome by introduction of circulating and cooling system (not permanent as yet). Contacts on Hutt Nos. 1 and 2 and railway O.C.B.s required renewal. Oil in O.C.B.s also renewed. Telephone switchboard was made up and installed. Printometer D.C. supply changed over to trickle charger. Special heater tank made up to supply steam for salt-spray testing on insulators. One new transformer tank developed a crack which necessitated emptying of oil and welding. Old lightning-arresters dismantled awaiting renewals. Oil in O.C.B.s, P.T.s, &c., circulated as required.

Mangamaire.—New C.T.s installed on metering. Pull rods were replaced in No. 2 O.C.B. New trip coils installed on No. 2 incoming transformer cubicle.

Outdoor 400 volt and alarm circuits were renewed.

Heavy rain caused ingress of water to condenser air ducts.

Repairs effected to prevent a recurrence of trouble.

Masterton.—Flashover occurred on 11 kV. side of local service transformer; repairs effected.

Marton.—Three post insulators on A.B.S. replaced. Telephone switchboard reconditioned. Fault on auxiliary switch on reclosing mechanism repaired. Transformer taps changed from 112,500 to 110,000.

Melling.—Telephone switchboard made up and installed in substation. New switchgear and renewals installed. Oil circulated as required.

Napier.—Several cracked post insulators on 110 kV. structure replaced. 11 kV. switchgear contacts cleaned and oil filtered as required.

New Plymouth.—Transformer bank was shifted to a temporary position to allow alterations to track and pads to proceed. 11 kV. cables were shifted clear of site of new building.

Okato and Opunake.—A fault caused by contact between wires on temperature protection at Okato due to insulation perishing. Protection removed as installation of additional transformer capacity obviated its necessity at present.

Stratford.—Regular maintenance duties carried out and operation satisfactory. New 50/33/11 transformers dried out.

Waipawa.—Current transformer of increased capacity installed. Wiring of meters and relays renewed throughout. Alterations made to the tripping and alarm circuits.

Wanganui.—Fault on 11 kV. bus-bars due to current transformer failures on Wanganui Nos. 1 and 2 feeders caused considerable damage. Switchgear was by-passed and repairs effected. Hand-trip lever on No. 6 O.C.B. required repairs. Overheating on one blade of No. 14 O.C.B. isolator was due to excess of grease; repairs effected. Transformer taps changed from 112,500 to 110,000.

Woodville.—Failure of post insulators on No. 38 O.C.B. isolating-switch resulted in damage to control wires (in conduit); post insulators changed and new conduit and wiring installed. Pull rod on No. 2 O.C.B. failed, and was renewed. Other defective post insulators on O.C.B. isolators changed. Extensive alterations in progress.

General.—Throughout maintenance duties have been regularly attended to; in particular, oil tests and oil filtering and circulation carried out as required and "Hipot" tests on bushings taken.

(c) TRANSMISSION-LINES.

(i) 110 kV.

Mangahao-Khandallah Duplicate Lines.—Insulator testing and cleaning, with numerous replacements, required for higher insulation were thoroughly executed during the year. New strands were required in red-phase conductor at pole 84. Several weights with cracked hooks required replacements. Faulty conductor at pole 79 replaced. Rusty lower members throughout were scraped clean and painted. Several poles required straightening.

Telephone-line: Alterations required at Onslow Road; requiring a new pole. A new hut was erected at Brandons, and lightning-arresters installed on both lines. Broken leads at Manawatu, Manakau, and Brandons Huts repaired, also a break between Horokiwi and Brandons. A pole was shifted at Waikanae River crossing to avoid erosion.

Khandallah-Melling.—Insulator tests and cleaning completed throughout. Insulators changed as required. During overhaul U bolts were changed on tower 24, and tiedowns on tower 25 and chafers on tower 17 replaced. Guard for aerial ropeway at McCurdys re-erected and poles reguyed.

Telephone-line, including Melling-Masterton Section: Broken insulator replaced near Browns and broken binders replaced on tree section, Rimutaka. Telephone-line deviation at Khandallah (State housing) required and carried out. Telephone-lines run at Akatarawa Depot.

Mangahao-Bunnythorpe Duplicate Lines.—Pole-to-pole inspection made; insulators tested, cleaned, and renewed as required. Tracks and culverts attended to. Weights replaced due to broken hooks on P. 262.

New blocks to H poles 197, 218. Turnbuckles on 197 and 198, 218 and 219.

Two strings, broken by stones, replaced.

Telephone-line: Two defective poles replaced. Alterations made at Bunnythorpe to suit Power Board extensions.

Bunnythorpe-Marton-Wanganui.—Overhaul subsequent to pole-to-pole inspection made. Insulators tested and defective units replaced. Wires changed over at poles 105 and 106 to allow pile-driving for bridge over Makino stream; reverted to normal upon completion. Pole 74 at Oroua River shifted back 1 chain due to erosion following heavy flood.