

Short-circuit calculations undertaken included those for faults at 11 kV. bus-bars in both Islands, and miscellaneous work to assist in substation and power-station relay and switchgear applications.

Several inductive co-ordination calculations were undertaken in connection with negotiations with the Post and Telegraph and Railways Departments as a factor in determining transmission-line routes.

Relay protection schemes were designed and equipment ordered for protection of the 50 mVA. auto-transformers at Bunnythorpe and Otahuhu Substations.

Analyses were made of system interruptions.

(d) TRANSMISSION-LINES

Contracts were placed for the towers, insulators, and conductors for the Henderson-Maungatapere 110 kV. line.

Specifications were drawn and tenders invited for the Stoke-Waimangaroa-Blackwater 66 kV. line, and for the Bunnythorpe-Haywards 220 kV. line No. 1. Contracts were placed for the insulators and conductors for both lines, and tenders for the towers for both are under consideration.

Close contact was maintained with the contractors for the supply of the towers for the 220 kV. lines from Whakamaru to Bunnythorpe and Otahuhu. Delays in the establishment of the tower fabricating and galvanizing plant and in the receipt of raw materials resulted in no deliveries being made. A complete standard suspension tower was fabricated by the contractors. Difficulties were encountered in the assembly of the tower, and departmental officers worked in close collaboration with the contractors' engineers in a revision of the design drawings of the tower parts. The test tower is now assembled and ready for the tests. A start was made on the design of special swamp foundations for the Whakamaru-Otahuhu 220 kV. line.

Specifications were drawn and tenders invited for the poles, cross-arms, hardware, insulators, and conductors for the Gore-Roxburgh 110 kV. line.

Designs were completed and tenders called for special items of construction equipment, including aluminium-alloy gin poles, wiring-blocks, and earthing-clamps.

Investigations were made of wire-stringing tensions, insulator deflections, and the mechanical loadings of the supports for various lines, and charts were supplied to the Districts for use in the field.

The material supply position is causing grave delays in the line-construction programme. The prospects for the supply of steel towers, insulators, and copper wire are not hopeful; for the supply of steel-cored aluminium wire fairly good.

REGULATIONS, LINES INSPECTION, ETC.

The first election for members of the Buller Electric-power Board took place, and the Board is now preparing to commence operations. The electric works of the Te Puke Borough Council were purchased by the Tauranga Electric-power Board, and the area of the borough was brought within the Tauranga Electric-power District.

The Bay of Islands Electric-power Board absorbed several small supply authorities, and Fox Glacier Hydro-electric, Ltd., a small new Supply Authority, was granted a licence to commence operations.

The electric lines and works of fifty-four electrical supply authorities were inspected.