

3. General.

The total units generated was 242,391,775, representing an increase of 27·4 per cent. on those of last year. Of these units, 205,579,104 were sold, while 3,147,486 were otherwise accounted for. The balance of 33,665,185 units represents transmission and distribution losses, and amounted to 13·9 per cent. of the units generated.

The maximum system load increased from 44,520 kW. to 51,860 kW., an increase of 16·5 per cent.

The average load factor for the year was 53·40 per cent., an increase on that of last year which was 48·8 per cent.

4. Construction, Operation, and Maintenance.

(1) CONSTRUCTION.

(a) Power-stations.

Lake Coleridge Power-station.—At the power-house work on 66 kV. extensions, in connection with supply of power to the West Coast, was commenced, and two bays of steelwork were completed as an extension to the outdoor structures. The associated air-break switches, busbars, insulators, and connections have also been installed. A steel terminal tower was also erected to terminate the 6·6 kV. line to Murchisons' Homestead, and the telephone and overhead lines to the surge chamber, &c., have been transferred to a new terminal structure to provide space for the two new transmission lines to the Coast.

The new Harper River gates at the intake of the diversion channel were completed by the General Branch during the year; the traffic bridge across the channel was strengthened, and two new suspension bridges were constructed—one across the channel and the other across the river at the gates. The boulder groyne to the west of the gates was extended and a concrete mattress laid on the lake side of the outlet dam.

Waitaki Power-station.—New construction work included the building of stores accommodation at the upper stores floor of the power-house.

A sewerage system for the staff cottages was completed during the year.

(b) Substations.

Addington Substation.—No new construction work was carried out during the year at this substation.

A contract was completed for the extensions to the garage.

Hororata Substation.—No construction work was done at this substation.

Point Substation.—No construction work was done during the year.

Ashburton Substation.—At Ashburton a bank of four 1,767 kVA. transformers was installed to replace the existing bank.

Timaru Substation.—The construction of traverser track and foundations for turntable and new 110 kV. oil-circuit breakers was commenced near the end of the year in preparation for the change over of this station to 110 kV. in place of the existing voltage of 66 kV.

Glenavy Substation.—No construction work was done during the year.

Oamaru Substation.—At Oamaru Substation a fence was erected around the 11 kV. outdoor gear and work on the new cottage was commenced.

Half-way Bush Substation.—In December the switchgear and steelwork for the substation extensions to accommodate the new 110 kV. line to Gore, was received, and in March the work of erection of the extensions was commenced. A contract for excavation and levelling was let and the assembly of the steelwork was started.

Smith's Road Substation.—The erection of a new 33 kV. to 11 kV. substation at Smith's Road for the supply to Springs-Ellesmere Power Board was started, and to date good progress has been made. All the outdoor equipment and transformers have been installed and the indoor switchgear installation is well advanced.

Motukarara Substation.—New pole structures and switchgear were erected to terminate the new 33 kV. line from Stoddarts Corner and give supply to Banks Peninsula Power Board.

(c) Transmission Lines.

The main transmission-line work has been in connection with the lines to the West Coast. This is detailed under Section (g) below.

A 33 kV. line, single circuit 7/14 copper, from Stoddart's Corner to Motukarara Substation (8½ miles) was completed and put into service.

(d) Telephone System.

The trunk telephone system was extended from Lake Coleridge to Hokitika, and the line put into service in November. All sections of the system are now in communication, including Dobson Diesel Station and Arnold River Power-house. A power ringer set was installed at Addington Substation during the year.

(e) Test Department.

The dismantling of the Diesel switchgear and plant and the reinstallation at Dobson, including the necessary testing and adjustment was carried out. Three truck type 11 kV. units were removed from Hororata and installed temporarily at Dobson. The control and relay panels for the 66 kV. substation at Dobson are being constructed. All watertight telephones and test points were installed on the Coleridge-Arahura telephone lines.

Nine telephone test points were built and forwarded to Southland.

The control and relay panels for Arahura Substation are being constructed.

During the year 328 tests and reports were made, and 90 drawings completed.

Six portable telephones of a special light weight were designed and built.