3. *System Operation.*—The annual increase in demand was maintained, 479,094,860 units being generated, as compared with 424,535,310 last year, an increase of 12·85 per cent. The system maximum demand (excluding Waipori) also increased by 8 per cent., from 90,440 kW. last year to 97,680 kW. The system maximum demand (including Waipori) was 117,924 kW.

4. *Construction.*—Power-stations: The erection of a new cottage was completed at Lake Coleridge. The station building at Highbank was completed, and the crane erected. The erection of outdoor steelwork at this station is nearly completed, and a commencement is being made on the installation of the machines.

Substations: At Hororata the new outdoor structure was completed, and both banks of the 110/66 kV. auto transformers were moved from Timaru and put into service.

Transmission-lines: The 110 kV. line between Timaru and Tekapo was completed, as was also the 66 kV. line connecting Highbank Station with Hororata. Neither line, however, is yet in service.

The Timaru–Ashburton–Hororata lines, which hitherto have been operating at 66 kV., were changed over to operation at 110 kV.

5. *Operation and Maintenance.*—The number of interruptions was again almost negligible, reflecting credit on those responsible. Monowai and Waipori Stations were run in parallel with the system as required.

The continued increased retail sales of energy in Southland confirm the confidence and appreciation of the consumers in the improved service given by the Department consequent upon the linking-up of Southland with the South Island network. The number of consumers is steadily increasing, and at 31st March 12,497 were taking supply in Southland direct from the Department.

6. *Cobb River Scheme.*—Owing to the shortage of man-power, progress on this work was slow. The tunnel is now almost completed, and work is proceeding on the erection of the pipe-line. The contractors are making good progress with the installation of the generating plant.

Transmission-lines are nearing completion, and use has already been made of them for the interchange of standby power between supply authorities in the district.

Registration of Electrical Wiremen

Arrangements were finalized for giving credit for the time spent by apprentices in electrical work whilst members of the armed forces.

The time allowed for the written examination for wiremen was increased from three hours to four hours.

Examinations were held for electrical wiremen, electrical servicemen, radio servicemen, radio transmitters, and cinematograph operators.

Further endeavours were made to have adequate provision for study in defence camps.

The first woman to be registered under the Act was registered in January, 1943.

Arrangements for the registration of assistants to mine electricians were finalized.

Further discussions took place with regard to the increasing shortage of registered electrical wiremen, and it is anticipated that some relief to the position will be forthcoming in the near future and thus permit arrears of maintenance to be overcome.

Design Office

Power-stations.—The design work for Waikaremoana Lower and Highbank Power-stations was completed. Layout drawings were prepared for new power-stations at Karapiro, Waikaremoana Upper, and Tekapo, and the structural-design work for the two former stations was put in hand. Other design work for power-stations included outdoor station building for Karapiro, foundations for new outdoor station at Lake Coleridge, foundation details for new outdoor station at Waikaremoana Main Station, cottages and hostel for Cobb River, and unloading-shed at Cambridge for Karapiro machinery.

Substations.—Buildings designed included administrative block, new workshop block, and temporary office and store building at Hamilton No. 1; new workshop at Waihou; and substation buildings at Motupipi.

Other design work included layout and foundation drawings for control-room, switch-gear extensions, and synchronous condenser at Khandallah and for synchronous condenser at Hororata, and for equipment at Central Park.

New handling equipment dealt with included 200 ton, 60 ton, 50 ton, and 45 ton overhead travelling cranes and 25 ton, 35 ton, and 45 ton traverser trucks.

Existing fire-protection equipment was augmented at a number of power-stations and substations by larger mains, storage reservoirs, and, where necessary, petrol-driven pumping-sets.

The progress of design work was in many cases seriously retarded through late arrival of drawings and information from manufacturers of equipment.

Hydraulic. Investigations were continued on the development of further sources of supply to meet the ever-increasing demand for electric power.

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