

*Penrose.*—The three Diesel engines were completely dismantled for inspection by the Inspector of Machinery. A magnetic test by the Department of Scientific and Industrial Research of a suspected hair crack in No. 1 engine crankshaft produced a negative result. All crankshafts were passed as fit for service.

*Huntly.*—The Mines Department completed dismantling the plant in September and transferred it to the west coast of the South Island.

*Arapuni and Karapiro.*—Lake Taupo Control: The rainfall in the Lake Taupo area for the year was 70·34 in., compared with 66·17 in. for 1947–48.

The level of Lake Taupo at the beginning of the year was 1,172·75 ft. which rose to 1,176·74 ft. early in December, and only fell to 1,175·45 ft. by the 31st March, 1949.

*Arapuni:* A new stator for No. 8 generator arrived in July and was put into service in December. No. 6 generator has been shut down since 17th February, to replace the temporary 25,000 b.h.p. turbine runner by a new 30,000 b.h.p. runner that was originally ordered for this machine in June, 1939. The cast-iron downstream bend pipes of Nos. 7 and 8 bypass butterfly valves were replaced by new mild-steel bend pipes on account of erosion and cavitation.

*Karapiro:* Turbine efficiency tests were carried out on No. 1 generating-unit in November. A chlorinating plant for the village water-supply was installed in January. Cables were laid for the village reticulation and street-lighting, and supply to the village was changed over from a temporary 50/11 kV. bank to the 110/11 kV. bank in January. The Cambridge Electric-power Board metering was changed over from Leamington to Karapiro on 1st January.

Generator-running times were as follows:—

Generator No.	Time on Load.		Time Idle.		Time under Repair.		Percentage Availability for Service.
	Hours.	Percentage.	Hours.	Percentage.	Not in Demand (Hours).	In Demand (Hours).	
<i>Arapuni</i>							
1	7,660	87·44	1,100	12·56	..	..	100·00
2	7,585	86·59	1,130	12·90	41 (a)	4 (b)	99·49
3	7,633	87·13	1,127	12·87	..	..	100·00
4	7,741	88·37	1,019	11·63	..	..	100·00
5	7,051	80·49	1,709	19·51	..	..	100·00
6	6,160	70·32	1,592	18·17	1,008 (c)	..	88·49
7	6,978	79·66	1,753	20·01	29 (d)	..	99·67
8	5,538	63·22	1,424	16·26	1,798 (e)	..	79·48
<i>Karapiro</i>							
1	6,474	73·90	1,497	17·09	789 (f)	..	90·99
2	7,391	84·37	1,038	11·85	331 (g)	..	96·22
3	6,397	87·97	875	12·03	..	..	100·00(h)

NOTES.—(a) Shut down on 6th and 7th April for maintenance work on the 6 kVA. pendulum-drive generator. (b) Fault on D.C. cable of 6 kVA. pendulum-drive generator, 8th March. (c) Shut down on 17th February to replace a temporary turbine runner by the permanent runner. (d) Shut down on 19th October for repairs to main butterfly valve bypass. (e) Shut down from 1st November to 31st December to install a new stator and winding, and from 3rd to 17th February to fit a new sealing-hose to the main butterfly valve. (f) Shut down from 9th February to 9th March for examination. (g) Shut down from 14th to 28th March for examination. (h) Running-times are taken from 2nd June, 1948.

*Waikaremoana.*—The main lake-level improved rapidly, reaching a maximum level of 2,007·2 ft. early in December, the hydraulic position thus comparing more than favourably with the previous year.

Annual rainfall of 101·3 in. showed a definite increase over the 1947–48 total of 86·1 in.