

*Waikaremoana.*—Three siphons were used extensively during the year, especially during the latter part when the necessity arose to store water at Taupo; the result was a record low level in Lake Waikaremoana.

The output of a single siphon varied from approximately 280 cusecs at high lake-level to 200 cusecs at low level.

The lake level on 25th March, 1947, was 1,995.3 ft., as compared with the overflow level of 2,015 ft.

Repairs through slips and extensions due to lower lake-levels were made to the siphons during the year.

The rainfall at Onepoto for the year was 81.95 in., as against 50.46 in. the previous year.

Removal of slip material adjacent to No. 3 pipe-line was continued, the spoil being carted elsewhere for levelling. The formation of a road on the upper part of the old slip area was commenced.

Repairs were done to a number of pedestals in penstocks 1 and 2, further replacements being deferred until the summer months.

Painting was commenced on Nos. 1 and 2 pipe-lines.

All machines gave satisfactory service, the usual maintenance and routine tests being carried out. A complete overhaul of No. 3 machine was postponed owing to the power situation.

Special drop tests were made on No. 5 headgate during February.

Balancing tests were carried out on No. 5 unit.

Generator-running times were as follows for the year:—

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>Tuui</i>							
1	7,061	80.6	1,532	17.5	159	8	98.1
2	6,870	78.4	1,632	18.6	258	..	97.1
3	7,408	84.6	1,166	13.3	186	..	97.9
<i>Piripaua</i>							
4	6,039	68.9	2,437	27.8	280	4	96.8
5	5,734	65.5	2,632	30.1	392	1	95.5

*Mangahao Power-station.*—Rainfall at No. 1 dam was again well above the average, but fell off during the last three months, when 14.95 in. were registered, compared with 38.62 in. in the previous year. A major slip on "S" bend on road above No. 2 dam necessitated assistance from Public Works Department. A crib wall was built at a washout near No. 1 dam. Several minor slips were also cleared and roads continuously maintained.

The rainfall for the year was: No. 1 dam, 188.74 in.; No. 2 dam, 121.13 in.; No. 3 dam, 90.24 in.; Power-house, 55.98 in. The average yearly rainfall at No. 1 dam for the previous ten years was 148.72 in.

An augmented maintenance programme was put in hand to overtake arrears which had occurred during the war years.

Regular and frequent inspections of the turbines and generators were made and numerous changes of cast-steel buckets were found necessary owing to continued deterioration. One cast-steel bucket on No. 2 turbine broke while in service, but no damage was caused. A field coil on rotor of No. 2 generator broke down and was replaced with a spare.