

Arapuni and Karapiro.—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 Power-station</i>							
1	6,639	75·58	763	8·69	1,382 (a)	..	84·27
2	7,978	90·82	804	9·15	..	2 (b)	99·97
3	7,903	89·97	881	10·03	..	..	100·00
4	7,277	82·84	637	7·25	870 (c)	..	90·09
5	6,607	75·22	1,968	22·40	209 (d)	..	97·62
6	6,367	72·48	1,952	22·22	..	465 (e)	94·70
7	6,685	76·10	1,881	21·41	218 (f)	..	97·51
8	5,976	68·03	1,942	22·11	..	866 (g)	90·14
<i>Karapiro Power-station</i>							
1 (h)	7,677	92·44	616	7·42	11 (i)	..	99·86
2 (j)	4,338	94·14	269	5·84	1 (k)	..	99·98

NOTES.—(a) Shut down from 19th January, 1948, to 16th March, 1948, for overhaul. (b) Breakdown of 11 kV. generator cable on 14th October, 1947. (c) Shut down 14th January, 1947, to 6th May, 1947, to fit a new stator-winding and to change the turbine-runner; and on 26th November, 1947, to recompound a faulty 11 kV. cable-box. (d) Shut down 3rd to 7th October for cleaning as stator-winding was covered with oil; 2nd to 4th December for repairs to servo-motor; and 3rd to 5th January to repair a broken guide-vane link. (e) Breakdown of stator-winding on 11th September, 1947; repairs completed on 30th September, 1947. (f) Shut down 22nd to 23rd May to shift the field rheostat; and 8th to 15th December to clean the stator-winding. (g) Breakdown of stator-winding on 12th October, 1947; repairs completed on 17th November, 1947. (h) Commenced regular operation on 21st April, 1947. (i) Shut down on 9th August, 1947, to remove a spanner found wedged under guide-vane; and on 27th November, 1947, to repair a broken guide-vane link. (j) Commenced regular operation on 22nd September, 1947. (k) Shut down on 28th February, 1948, to repair a broken guide-vane link.

Arapuni.—The low-tension winding of a transformer in an 11/110 kV. bank, developed a fault in July; it was replaced by a spare winding. The original 18,000 kVA. stator winding on No. 4 generator was replaced by a new 23,500 kVA. winding in May.

Karapiro.—Very little trouble has been experienced since the station was put into regular operation on 21st April, 1947. Large quantities of pumice, weed, and timber continue to collect on the screens, necessitating frequent cleaning. The bearing temperatures of Nos. 1 and 2 generating-units were reduced several degrees by removing sixteen springs from the leading and outer edges of each thrust-pad, and the temperature of the auxiliary turbine thrust-bearing was reduced by installing a cooling water service.

Horahora.—As mentioned in my report for the previous year, this station was permanently shut down on 4th April, 1947, and a considerable quantity of equipment was salvaged before the power-house was submerged by the rising waters of the newly-formed Karapiro Lake. Most of the other departmental buildings have since been removed, and the remainder, consisting of five cottages, will be shifted as soon as sites are available for them elsewhere.

Huntly.—Owing to the amount of coal available being insufficient to run the steam-plants at both Huntly and King's Wharf, Auckland, the Huntly plant was not run during the year. It was recently sold to the Mines Department, and is now being dismantled for removal to the West coast of the South Island.

Waikaremoana.—The greatly reduced lake-level made the continuous operation of the temporary siphons difficult. With the assistance of a compressor (acting as a vacuum-pump) the output of two siphons was maintained at a flow of approximately 60 cusecs. Previous recorded outputs of a single siphon varied from 280 cusecs at high lake-level to 200 cusecs at low level.

On the 30th March the downward trend of the lake-level was halted at 1,988·9 ft., the lowest level ever obtained.