

The major slip adjacent to No. 3 pipe-line continued to show movement, and it was not until the latter part of the year that a removal of the lower part of the slip was commenced.

During January, February, and March, the opportunity was taken to completely overhaul No. 3 main machine. This maintenance work had had to be postponed from the previous year owing to the power situation. In conjunction with this overhaul No. 3 penstock, 3,450 ft. in length and with a diameter varying from 78 in. to 66 in., was sand-blasted and painted internally with coal-tar paint. A roading alongside the penstock had been built to facilitate this work.

Extensive alterations were made to the test switches on the control board at the Tuai Power-station. New networks were fitted to Nos. 3 and 5 machine voltage-regulators. The governor-locking solenoid and associated equipment of both Nos. 4 and 5 machines was removed.

Satisfactory service was obtained from all machines.

Generating-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). |                                      |
| Tuai          |    |    |               |             |            |             |                        |                    |                                      |
| 1             | .. | .. | 7,061         | 80.39       | 1,388      | 15.80       | 333                    | 2                  | 96.19                                |
| 2             | .. | .. | 7,086         | 80.67       | 1,429      | 16.27       | 265                    | 4                  | 96.94                                |
| 3             | .. | .. | 5,637         | 64.17       | 1,223      | 13.92       | 1,855                  | 69                 | 78.09                                |
| Piripaua      |    |    |               |             |            |             |                        |                    |                                      |
| 4             | .. | .. | 5,870         | 66.83       | 2,486      | 28.30       | 424                    | 4                  | 95.13                                |
| 5             | .. | .. | 5,840         | 66.49       | 2,473      | 28.15       | 421                    | 50                 | 94.64                                |

*Mangahao Power-station.*—The rainfall for the year at No. 1 dam was 110.26 in., compared with 188.74 in. and 198.05 in. in the previous two years. At No. 2 dam the rainfall was 104.29 in., at No. 3 dam 79.55 in., and at the power-house 47.94 in.

The annual load factor dropped to 46 per cent. on a maximum load of 21,300 kW.

Extensive cleaning and painting of steelwork at all dams was carried out.

On 24th November the surge-chamber gates tripped, due to a sustained overload when Tuai tripped out, and the pipe-lines emptied.

All five turbine governors were completely overhauled and the oil renewed.

Two more sets of bronze buckets were received. One set was fitted to No. 3 turbine, and this completed the change to new buckets on the three 6,000 kVA. units. The other set is reamed ready for fitting to No. 2 turbine.

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| 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). |                                      |
| 1 .. ..       | 8,274         | 94.2        | 475        | 5.4         | 35                     | ..                 | 99.6                                 |
| 2 .. ..       | 8,304         | 94.5        | 434        | 4.9         | 46                     | ..                 | 99.4                                 |
| 3 .. ..       | 8,168         | 93.0        | 336        | 4.5         | 220                    | ..                 | 97.5                                 |
| 4 .. ..       | 8,369         | 95.3        | 404        | 4.6         | 11                     | ..                 | 99.9                                 |
| 5 .. ..       | 8,363         | 95.2        | 413        | 4.7         | 8                      | ..                 | 99.9                                 |

A contract has been let for the supply of replacement gates for the by-pass tunnel of No. 1 dam. Negotiations are in hand for a contract for similar gates for No. 2 dam.