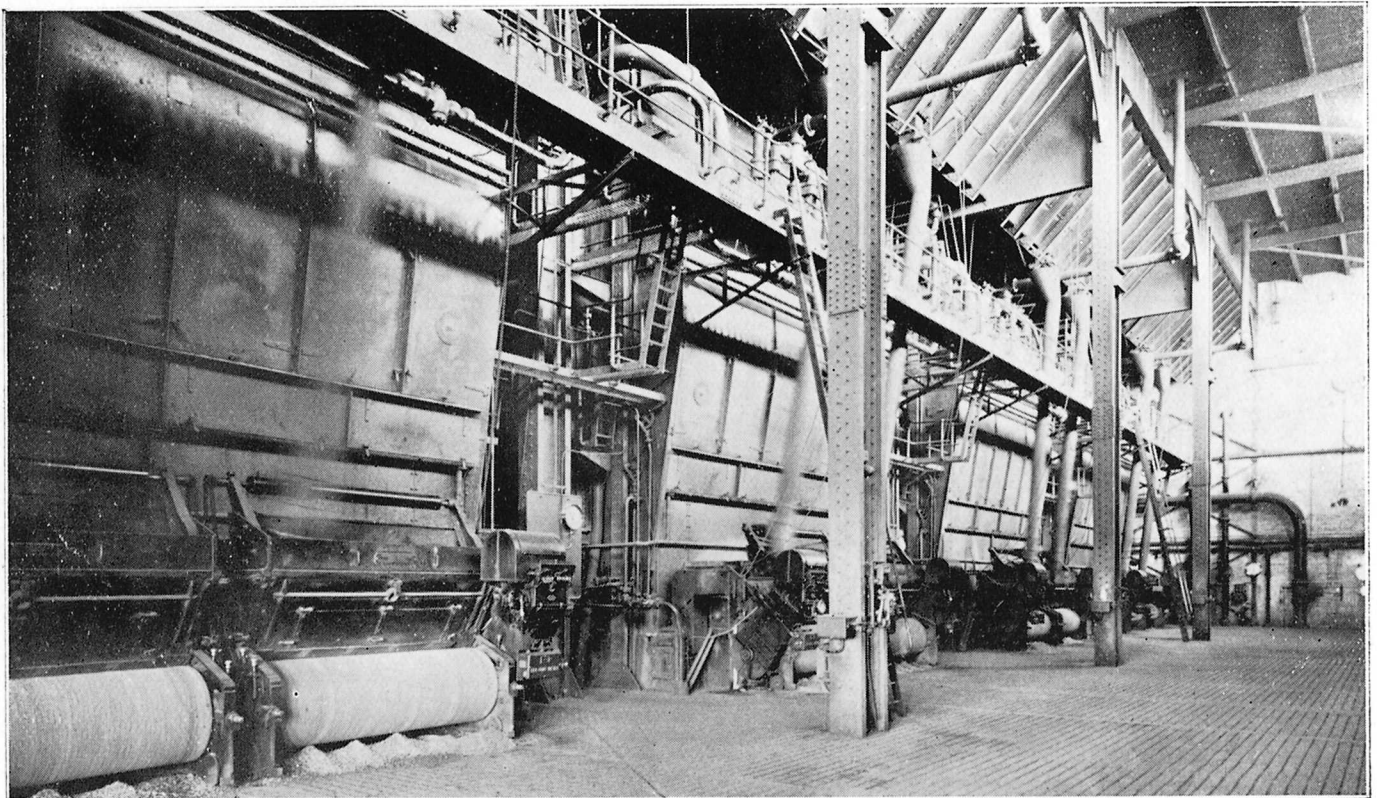


Colenso Power Station—Turbine House.



Colenso Power Station—View in Boiler House.

NATAL CENTRAL UNDERTAKING.

The Natal Central Undertaking comprises:—

- (a) a power station at Colenso consisting of five main generating sets of 12,000 kilowatts each, making a total installation of 60,000 kilowatts, and eight boilers, each of a normal capacity of 60,000 lbs. of steam per hour.
- (b) 275 miles of 88,000 volt overhead transmission lines extending in duplicate from the power station in a northerly direction to Glencoe Junction and in a southerly direction to Pietermaritzburg;
- (c) a step-up sub-station at Colenso and twelve sub-stations (situated at intermediate points between Glencoe Junction and Pietermaritzburg) for distributing electricity and converting it for traction purposes; and
- (d) local distribution systems and other miscellaneous buildings and appurtenances.

This Undertaking, which formed a portion of the South African Railways and Harbours Administration's Natal Electrification Scheme, was taken over by the Commission from the Administration on 15/16th January, 1927.

The capital expenditure on the Natal Central Undertaking to 31st December, 1927, amounted to £3,239,920.

In terms of the agreement, dated 24th December, 1926, between the Commission and the Administration in regard to the transfer of the Undertaking, the purchase price to the Commission of the land, works and other assets acquired is a matter for agreement between the Commission and the Administration based on the capital cost thereof to the Administration, plus railage and harbour charges at public tariff rates on the materials, plant and equipment comprising the Undertaking. The figures in regard to capital cost and railage and harbour charges have not yet been finally determined and agreed, so that the amount of £3,239,920 is subject to adjustment when this has been done.

A summary of the principal points in the agreement concluded between the Commission and the Administration in regard to the transfer of the Undertaking, and a description of the main features of the Undertaking, were included in the Commission's last Annual Report. Mention was also made in that Report of the arrangement

whereby the Commission took over from the Administration all staff employed on the Undertaking as at the date of transfer. A considerable amount of reorganisation work was done during the year 1927, and the control of the whole Undertaking is now concentrated at Colenso.

Working
results.

The units generated at the Colenso Power Station from 16th January to 25th December, 1927, total 114,859,353, and the maximum half-hourly demand was 25,600 kilowatts, the load factor being 50·6 per cent. The thermal efficiency of the power station was 16 per cent.—a very favourable result having regard to the fact that the predominating load, viz., the supply to the Railway Administration for traction purposes, is very variable and subject to sudden and violent fluctuations. The load on the power station not infrequently fluctuates over a range of 20,000 kilowatts within a few minutes. These fluctuations are not confined to any particular time of the day or night and the power station staff do not know from hour to hour what the load is likely to be or when a peak will occur.

The units sold during the year 1927 total 104,206,235, of which 102,311,283 units were supplied by the Commission to the Railway Administration. The units supplied to the Administration for traction purposes total 100,502,299. The requirements of the Administration fell short of expectations, due to railway traffic on the electrified section of the line being considerably below what was anticipated by the Administration. As a result, the output of the Undertaking was small in relation to the capacity of the plant.

The operation of the Undertaking since the Commission took over has been satisfactory and has been characterised by successful co-operation between the Commission's and the Administration's operating staffs in Natal.

The financial results are given in Annexure " D " to this Report.

Housing
accommoda-
tion at
Colenso.

As indicated in last year's Report the housing accommodation for the staff at Colenso is inadequate. Three additional houses for the accommodation of married staff and a block of 28-roomed single quarters are under construction. This is a first instalment in order to provide immediate relief, and further houses are still required and will be provided as soon as this can reasonably be done. A recreation hall for the staff is also urgently needed. The staff are still using the old wood-and-iron buildings provided as a Railway Institute for the construction staff.