Electricity Supply Commission.

Electricity House,
82, Marshall Street,
Johannesburg,
30th June, 1929.

To the Honourable
The Minister of Mines and Industries,
Pretoria.

SIR,

I have the honour to submit the Sixth Annual Report on the operations of the Electricity Supply Commission during the year ended 31st December, 1928, with a brief review of its activities up to the date of this Report.

The Commission's five Undertakings are as follows:— Commission's Undertakings.

Name of Undertaking.	Capacity of Main Generating Sets. Kilowatts.	Kilovolt Ampéres.
Natal Central	60,000 ...	66,600
Witbank*	80,000 ...	94,000
Capetown	30,000 ...	33,300
Durban	36,000 ...	45,000
Sabie	1,350 ...	1,800
Total	207,350 ...	240,700

* The fourth 20,000 kilowatt turbo-alternator at the Witbank Power Station was started up in May, 1929.

A fifth 20,000 kilowatt turbo-alternator for the Witbank Power Station is now on order, thus bringing the capacity of the main generating sets at that station up to 100,000 kilowatts (117,500 kilovolt amperes).

The Commission's Undertakings have now all reached the producing stage.

The position as at 31st December, 1929, in respect of these advances, was as follows:—

Advances received from Treasury		£7,309,965
Cost of raising charges	£212,125	
Interest capitalized	477,910	690,035
Total		**£8,000,000**

Interest charges paid to the Treasury up to 31st December, 1929, on account of capital invested in Undertakings which had reached the revenue-producing stage and had been placed in commercial operation, amounted to £649,458.

The Electricity Act contemplated and provided for the raising of loans by the Commission in the form of stock or debenture issues to the public. After careful review of all the circumstances, it was decided that it would be preferable, at the present time, to consolidate the advances received from the Treasury into a loan or loans, provided mutually acceptable terms could be come to between the Commission and the Treasury.

Negotations in this respect with the Treasury have now been concluded and, briefly, the arrangements agreed upon are that the advances made to the Commission by the Treasury up to 31st December, 1929, be consolidated into two loans of £3,000,000 and £5,000,000 respectively. The interest accruing to the Treasury on these two loans as from 1st January, 1930, amounts to £401,440 per annum, and will be paid by the Commission half-yearly on 30th June and 31st December. The £3,000,000 loan is redeemable on 31st December, 1954, and the £5,000,000 loan is redeemable on 31st December, 1979, contributions from revenue to the Redemption Fund in respect of the latter commencing in 1940.

The loan of £5,000,000, with the longer redemption period, covers the capital invested in the Natal Central and Capetown Undertakings, both of which were established primarily for the supply of electricity to the South African Railways and Harbours Administration for railway traction purposes.

As from the date upon which each of the Commission's Undertakings was placed in commercial operation, provision has been made for the repayment of moneys borrowed in respect of such

The Natal Central (Colenso) Undertaking was taken over by the Commission from the Railway Administration in January, 1927, as a going concern, and the initial construction work on the other four Undertakings established by the Commission has been completed. With regard to the Durban Undertaking, the initial installation of 24,000 kilowatts at the Congella Power Station, as originally contemplated, has been completed but, as explained later in this Report, work in connection with the transfer to the Congella Power Station of the two 6,000 kilowatt sets which are being taken over by the Commission from the Durban Corporation is still in progress and the full permanent supply to the Corporation will not be available until this work has been completed.

During the year 1928, considerable progress was made with the remaining construction work on the Capetown and Durban Undertakings and with the extensions of the Natal Central and Witbank Undertakings.

The progress of these works and the development of the Undertakings is referred to in greater detail later on in this Report.

The starting to work and the first year or two of operation of large Electricity Undertakings involve administrative and management problems inseparable from the initiation of any large enterprise. The solution of these problems and the evolution of the necessary organisation for handling the large scale production and sale of electricity have engaged the attention of the Commission and its officers during the year under review.

Summary of Principal Equipment installed and on order.

The principal plant and equipment installed at the Commission's several Undertakings as at 31st December, 1928, was as follows :—

GENERATING PLANT.

(Including House Turbine Sets at Witbank and Capetown.)

No. of Sets.		Capacity each, Kilowatts.		Total Capacity, Kilowatts.
3	...	20,000	...	60,000
7	...	12,000	...	84,000
3	...	10,000	...	30,000
5	...	1,000 and under		2,650
Total 18				176,650

BOILER PLANT.

No. of Boilers.	Capacity in lbs. of steam per hour (normal rating). Each.	Total.
12	70,000	840,000
16	60,000	960,000
Total 28		1,800,000

TRANSMISSION LINES AND CABLES.

	88,000 volts. Route Miles.	33,000 volts. Route Miles.	21,000 volts. Route Miles.	12,000 volts. Route Miles.	6,600, 3,300 and 2,200 volts. Route Miles.	380/220 volts. Route Miles.	Total Route Miles.
Overhead Lines ...	275	64	39	—	4	21	**403**
Cables	—	28	7	11	3	1	**50**
Totals ...	**275**	**92**	**46**	**11**	**7**	**22**	**453**

TRANSFORMERS.

(Step-up and Step-down.)

	Kilovolt Amperes.
Total capacity installed	281,720

CONVERTING SUB-STATIONS.

Motor Generator Sets.			Rotary Converters.			Totals.		
No. of Sub-Stations.	No. of Sets.	Rating Kilowatts.	No. of Sub-Stations.	No. of Sets.	Rating Kilowatts.	No. of Sub-Stations.	No. of Sets.	Rating Kilowatts.
12	22	44,000	6	12	24,000	**18**	**34**	**68,000**

STAFF QUARTERS.

Number of Married and Single Staff Quarters	94

The following additional plant and equipment was in course of installation as at 31st December, 1928, or has since been placed on order, viz. :—

GENERATING PLANT.

No. of Sets.	Capacity each, Kilowatts.	Total Capacity, Kilowatts.
2	20,000	40,000
2	6,000	12,000
Total 4		52,000

BOILER PLANT.

No. of Boilers.	Capacity in lbs. of steam per hour (normal rating). Each.	Total.
4	70,000	280,000
4	60,000	240,000
Total 8		520,000

TRANSMISSION LINES AND CABLES.

(Approximate lengths.)

	33,000 volts. Route Miles.	22,000 volts, Route Miles.	6,600, 3,300 and 2,200 volts. Route Miles.	380/220 volts. Route Miles.	Total Route Miles.
Overhead Lines ...	104	36	6	10	**156**
Cables	—	—	—	—	—
	104	**36**	**6**	**10**	**156**

TRANSFORMERS.

	Kilowatt Amperes.
Total capacity on order or in course of installation ...	66,060

Coal Consumption

The following table shows the coal consumed at the Colenso, Witbank, Salt River and Congella Power Stations during the year 1928 :—

Power Station.	Coal Consumed. Tons (2,000 lbs.)	Lbs. per unit generated.	B.T.U.'s. Average per lb. of coal.	Average per unit generated.
Colenso	98,562	1·54	12,420	19,100
Witbank ...	424,025	1·73	11,330	19,570
Salt River ...	22,899	1·75	13,420	23,530
Congella ...	14,653	1·70	12,560	21,350

At the Salt River Power Station, the figures relate to the six months July to December, 1928, inclusive,, and at the Congella Power Station to the five months August to December, 1928, inclusive. Neither of these Power Stations was in commercial operation during the period under review, and the figures of coal consumption relate to the starting up period when construction work was still in progress, tests being carried out and adjustments being made; consequently the coal consumption, per unit generated,

at these two stations is relatively high and will be considerably reduced when the stations are properly run in. For example, the coal consumption at the Congella Power Station at the date of this Report has already been reduced to 1·32 lbs. of coal per unit generated. This high efficiency is mainly due to the adoption of pulverised coal firing in this station.

Consumers.

The total number of consumers as at 31st December, 1928, from the Commission's five Undertakings was 731, an increase of 345 as compared with the previous year. Most of the additional load connected to the Commission's systems during 1928 was made up of a large number of relatively small consumers, but, in the aggregate, the development is encouraging.

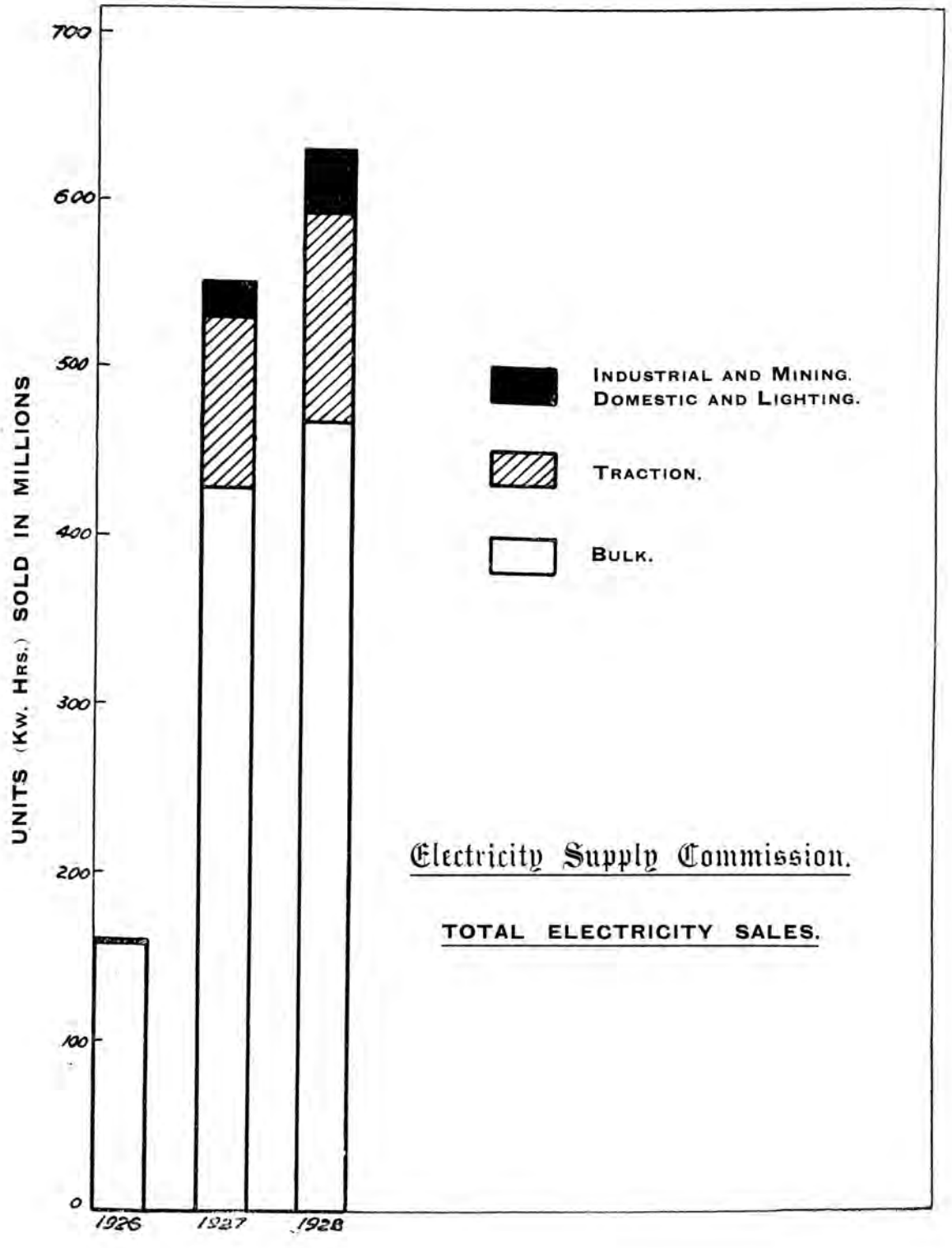
The following table embodies details of the consumers taking supplies of electricity from the Commission as at 31st December, 1928:—

NUMBER OF CONSUMERS.

Undertaking.	Domestic and Lighting.	Industrial and Mining.	Traction.	Bulk Supp'ies.	Total
Natal Central ...	150	14	1	4	**169**
Witbank ...	343	19	—	1	**363**
Capetown ...	183	10	1	1	**195**
Durban ...	—	—	—	1	**1**
Sabie ...	—	3	—	—	**3**
	676	**46**	**2**	**7**	**731**

Negotiations in connection with supplies of electricity to a number of new consumers have been concluded, and the necessary extensions of the Commission's transmission and distribution systems to enable these supplies to be undertaken, are proceeding.

Enquiries are also received from time to time by the Commission in regard to supplies of electricity from its Undertakings to Municipalities and other potential consumers in more outlying towns and districts adjoining the areas served by the Commission's existing systems. Owing to the great distances of these consumers from the Commission's power stations and the relatively small loads they can take at present, the Commission's investigations in many cases show that schemes of supply are financially impracticable for the


UNITS (KW. HRS.) SOLD IN MILLIONS
700
600
500
400
300
200
100
0
1926
1927
1928
INDUSTRIAL AND MINING.
DOMESTIC AND LIGHTING.
TRACTION.
BULK.
Electricity Supply Commission.
TOTAL ELECTRICITY SALES.

present. It is, however, apparent that there is a growing tendency amongst power users in South Africa to investigate the possibility of obtaining their requirements from the Commission's power systems, in preference to local generation, and that the advantages of large scale production and distribution of electricity are more fully appreciated than hitherto.

Electricity supplied.

The supply of electricity by the Commission was first commenced in November, 1925, from one Undertaking. At intervals since then supplies from the other four Undertakings were commenced, and the total sales have accordingly shown a progressive increase year by year.

The following table shows the units sold to all consumers during 1926, 1927 and 1928 :—

Undertaking.	Units sold, 1926.	Units sold, 1927.	Units sold, 1928.
Natal Central ...	719,666	104,206,235	**114,213,037**
Witbank	160,031,213	439,061,722	**464,267,213**
Capetown	280,242	5,811,836	**31,038,697**
Durban	—	—	**15,563,460**
Sabie	727,401	1,938,940	**2,829,888**
Totals ...	161,758,522	551,018,733	**627,912,295**

A chart showing the development of electricity sales year by year is reproduced on the opposite page.

The distribution of the units sold in 1928 as between the various classes of consumers was as follows :—

UNITS SOLD, 1928.

Undertaking.	Domestic and Lighting.	Industrial and Mining.	Traction.	Bulk Supplies.	Total.
Natal Central	74,932	2,072,792	106,457,763	5,607,550	**114,213,037**
Witbank ...	304,697	19,645,307	—	444,317,209	**464,267,213**
Capetown ..	20,996	10,781,164	17,604,297	2,632,240	**31,038,697**
Durban ..	—	—	—	15,563,460	**15,563,460**
Sabie ...	—	2,829,888	—	—	**2,829,888**
Totals ...	**400,625**	**35,329,151**	**124,062,060**	**468,120,459**	**627,912,295**

In the case of the Capetown Undertaking, prior to the starting up of the Salt River Power Station in February, 1928, and during the ensuing four months, when the power station was only in operation for one shift per day, except at week-ends, electricity for the Commission's consumers was, by arrangement with the Capetown Corporation, supplied from the Corporation's Dock Road Power Station. At Durban supply was given from the Congella Power Station while construction work was still in progress.

Financial.

The Commission's Balance Sheet as at 31st December, 1928, forms Annexure " B " to this Report.

The Commission's total capital expenditure to 31st December, 1928, was £7,423,596, made up as follows:—

Undertaking.	Capital Expenditure.
Natal Central	£3,351,382
Witbank	1,763,870
Capetown	1,501,367
Durban	699,839
Sabie	107,138
Total	£7,423,596

Net revenue derived from the sale of electricity during construction and other revenue accruing prior to the commencement of commercial operation of the several Undertakings, amounting to £132,571 up to 31st December, 1928, has been credited to capital, so that the Commission's net capital expenditure as at that date was £7,291,025.

A Schedule of Expenditure on Capital Account forms Annexure " C " to this Report.

The capital required by the Commission to finance the establishment of its Undertakings has been obtained by way of advances from the Treasury. Cost of raising and interest charges during construction are capitalised and added to the net amount of the advances.

The capital charges, in addition to interest on advances, which form a charge against the revenue of each Undertaking are:—

(i) contributions set aside for repayment of moneys borrowed; and

(ii) contributions set aside to Reserve Fund for replacements, obsolescence, betterment, exceptional repairs or emergencies.

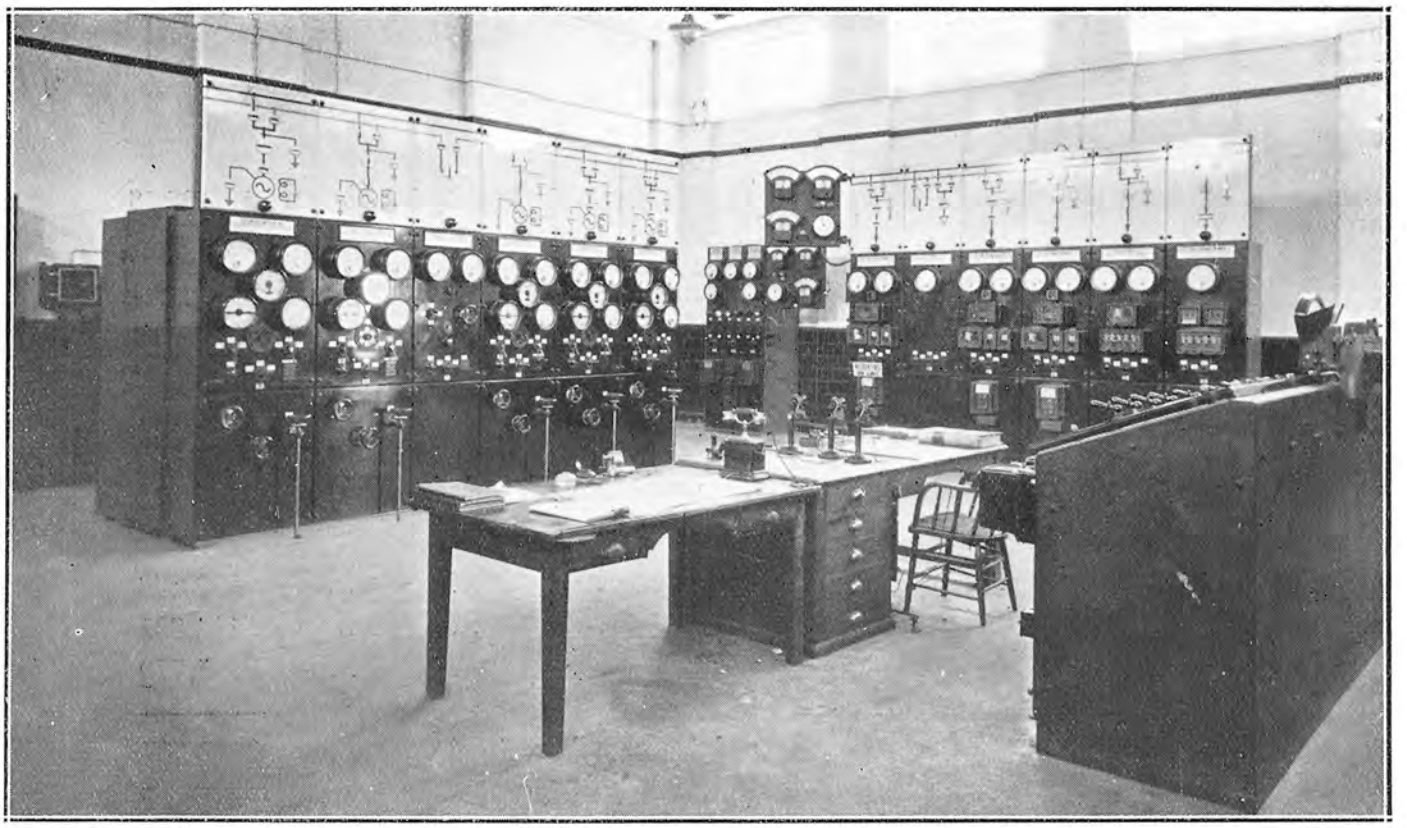
Provision has been made by the Commission for the repayment of moneys borrowed, the position of the Fund in this respect at 31st December, 1928, being as follows:—

Balance from 1927	£78,856
Contributions during 1928	104,891
Interest earned	5,770
Balance, as per Balance Sheet at 31st December, 1928 ...	£189,517

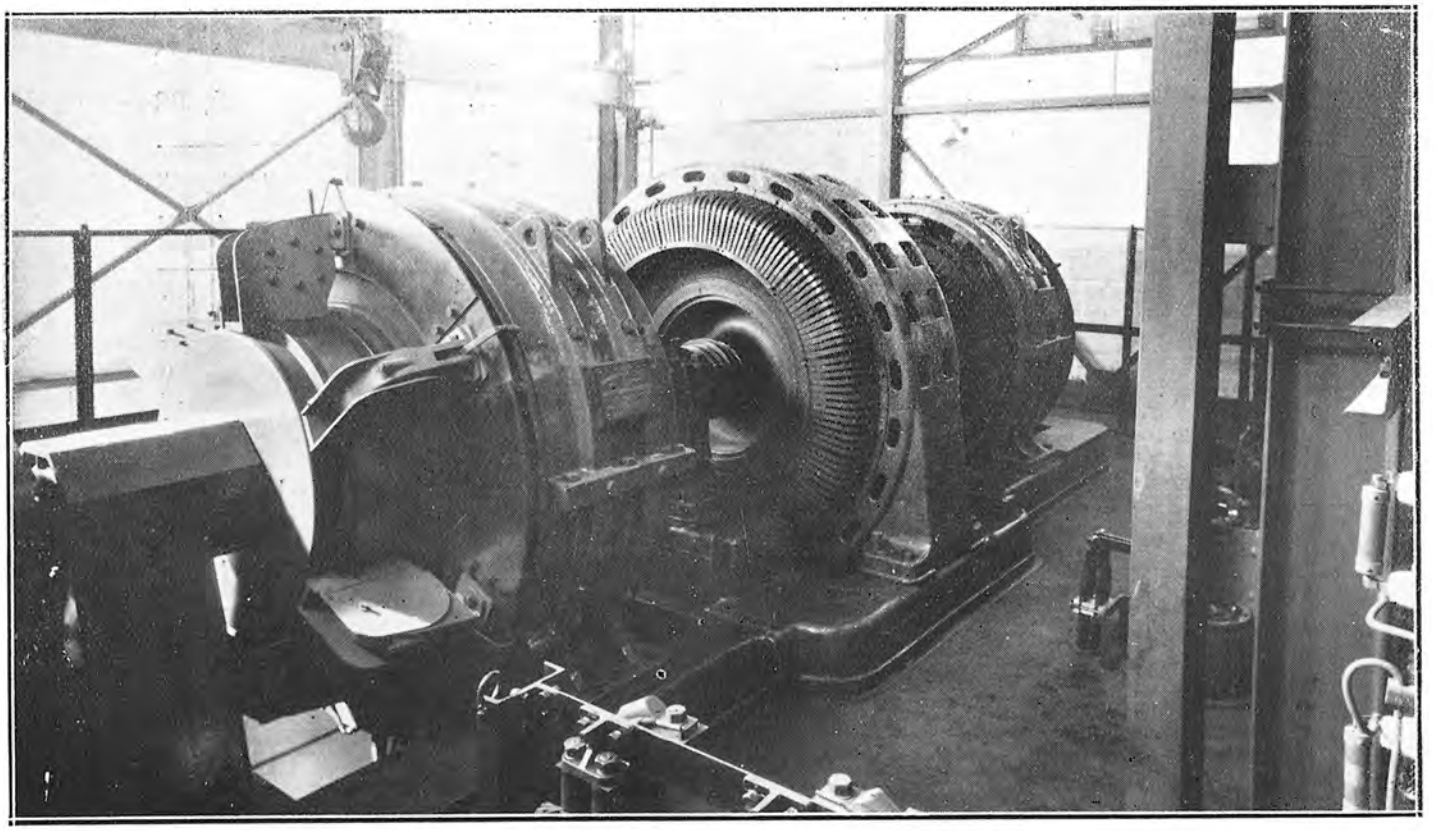
The position of the Commission's Reserve Fund, at 31st December, 1928, was as follows:—

Balance from 1927	£34,499
Contributions during 1928	62,668
Interest earned	2,838
	£100,005
Less expenditure on replacements and betterment	4,117
Balance as per Balance Sheet, at 31st December, 1928 ...	£95,888

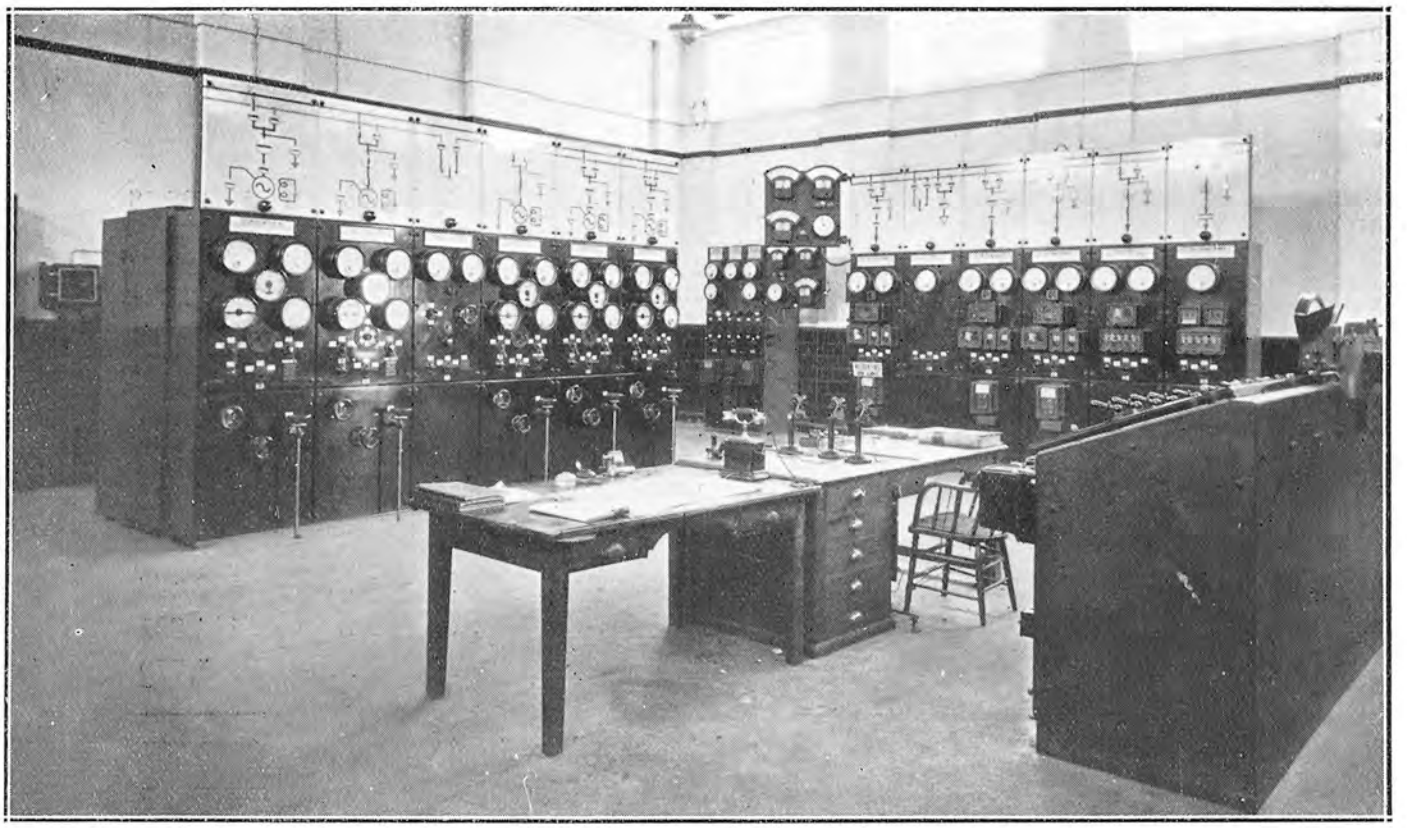
Contributions to the Reserve Fund in 1928 represent approximately 1·13 per cent. of the average capital employed during that year, and the amount standing at the credit of the Fund as at 31st December, 1928, is equivalent to approximately 1·53 per cent. of the capital employed. The total contribution to this Fund in 1928 is larger than indicated by the Revenue Accounts (Annexures "D," "E" and "F") of the three Undertakings in commercial operation during 1928. The explanation of this is that appropriations to the Reserve Fund have been made out of the earnings of Undertakings during construction.



Natal Central Undertaking—Colenso Power Station: Control Room.



Natal Central Undertaking—Sub-Station Motor Generator Unit.



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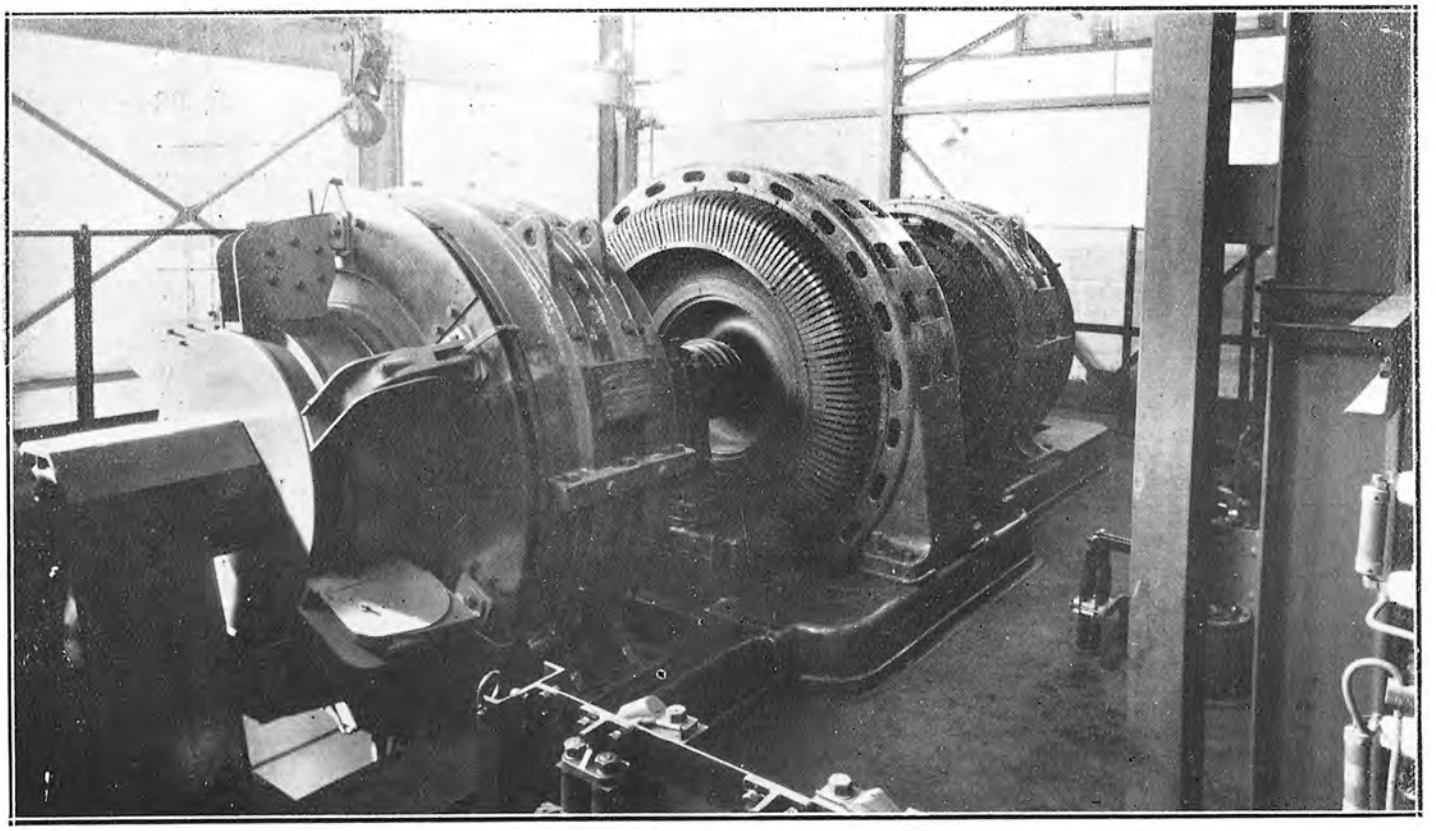


Natal Central Undertaking—Sub-Station Motor Generator Unit.

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 ten 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 for conversion from alternating to direct current for railway traction purposes; and

(d) local transmission and distribution systems and other miscellaneous buildings and appurtenances.

This Undertaking was acquired by the Commission from the South African Railways and Harbours Administration on 15/16th January, 1927.

The Capital Expenditure on the Natal Central Undertaking to 31st December, 1928, amounted to £3,351,382. As mentioned in the Commission's last Annual Report the purchase price of the Undertaking as acquired from the Railway Administration is a matter for settlement between the Commission and the Administration on the basis laid down in the Agreement, dated 24th December, 1926, in regard to the transfer of the Undertaking. The final figures in this respect had not, as at 31st December, 1928, been finally determined and agreed but, with the exception of one or two small items which are being dealt with separately between the Commission and the Administration, final figures have since been agreed. The purchase price of the Undertaking, based on this agreement, is as follows:—

Capital expenditure incurred by Railway Administration up to 15th January, 1927. (Paid by Commission to Administration by adjustment in Treasury Books)	£2,739,372
Subsequent capital expenditure incurred by Railway Administration in completing works in progress, as at date of transfer (15/1/27), debited to Commission	76,322
Railage and harbour charges, on assets taken over, debited to Commission	254,372
Total, as agreed with Railway Administration	£3,070,066
Stores and Sundry assets taken over separately by Commission from Administration (including railage thereon) ...	66,216
Total Purchase Price payable to Railway Administration ...	£3,136,282
Expenditure incurred by Commission incidental to transfer, e.g., Water Rights, Licence, etc., and miscellaneous items required for Undertaking such as test house and workshop equipment, instruments, etc., less sales of sundry equipment	7,478
Cost of raising charges	93,462
Total Cost to Commission of Undertaking acquired from Railway Administration	£3,237,222
NOTE.—The above total excludes Capital Expenditure incurred by the Commission in connection with supplies of electricity to consumers, other than the Railway Administration (£36,523), and sundry works and Extensions of the Undertaking (£145,041), amounting, up to 31st December, 1928, to	181,564
TOTAL	£3,418,786

Working Results.

The units generated at the Colenso Power Station during the year 1928 total 128,175,490. The units sent out from the power station total 119,521,770, and the maximum half-hourly demand was 27,060 kilowatts, the load factor being 50·28 per cent. The thermal efficiency of the power station on units sent out was 16·66 per cent., an improvement upon the 1927 figure of 16 per cent.—already a favourable result having regard to the nature and characteristics of the predominating traction load. Mention was made in the Commission's last Annual Report of the sudden and

violent fluctuations in the demand on the Colenso Power Station caused by variations in the railway traction load. Some idea of the extent of the fluctuations may be gathered from the fact that, although the maximum half-hourly demand at the power station during 1928 was 27,060 kilowatts, the maximum two-minute demand on the generators was 36,000 kilowatts, with peaks of over 38,000 kilowatts. Experience has shown that the peak loads on the power station are not necessarily coincident with heavy railway traffic, but are apparently caused by combinations of circumstances in connection with railway traffic working.

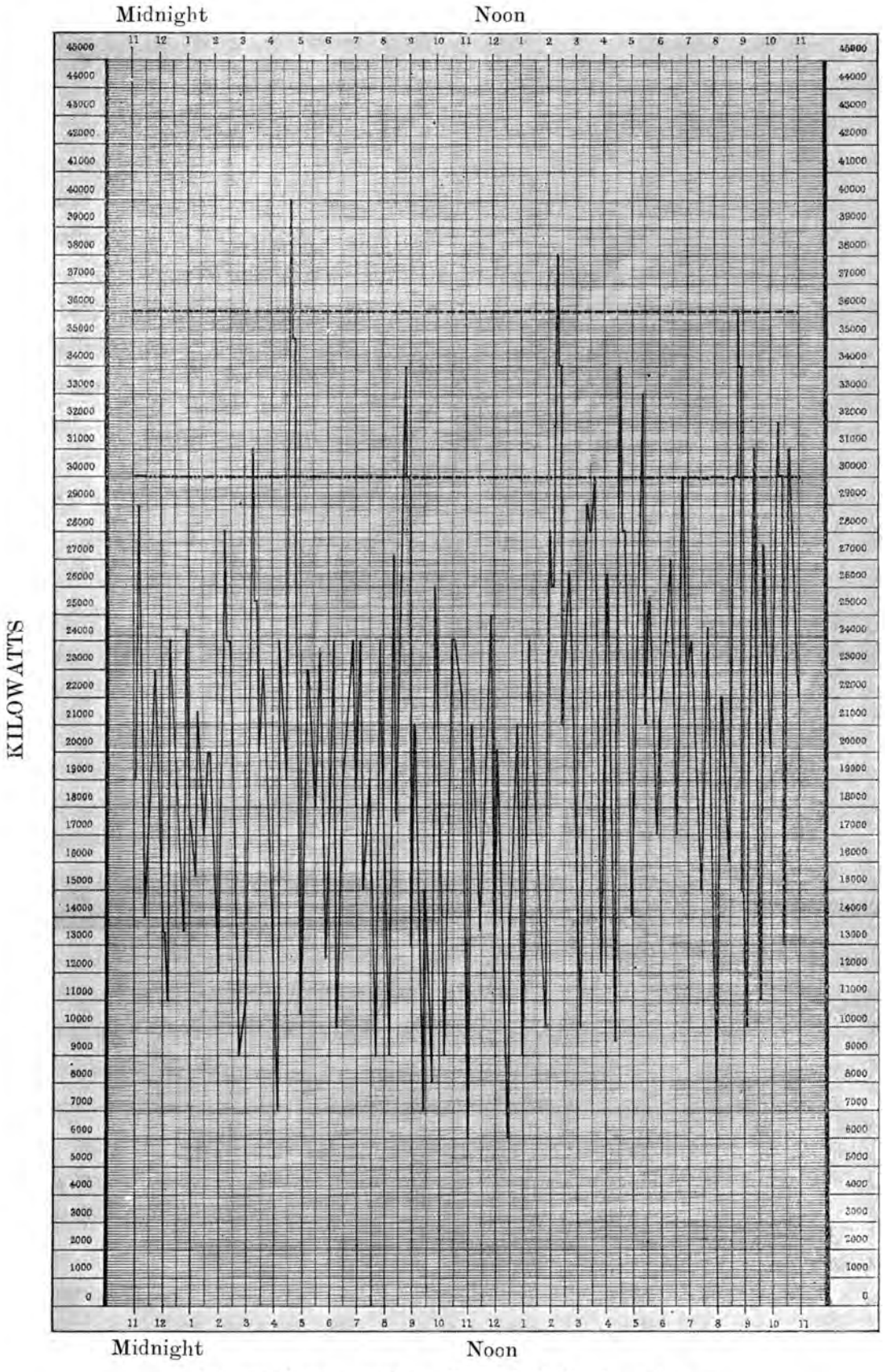
A typical 24-hour load curve of the Colenso Power Station is reproduced on page 14.

The units sold during the year 1928 total 114,213,037, of which 108,501,033 were supplied by the Commission to the Railway Administration. The units supplied to the Administration for traction purposes total 106,457,763 as compared with 100,502,299 during the $11\frac{1}{2}$ months ended December, 1927. Allowing for the half-month difference between the figures, the increase in railway traction requirements in 1928 as compared with 1927 is only of the order of $1\frac{1}{2}$ per cent. Due largely to railway traffic between Glencoe Junction and Pietermaritzburg having fallen short of that anticipated by the Administration (and for which the Undertaking was designed) the Administration's electricity requirements for traction purposes still fall considerably short of expectations.

This fact, in conjunction with the high capital cost taken over by the Commission from the Railway Administration on the transfer of the Undertaking, results in a correspondingly higher cost per unit for railway electricity requirements than was originally estimated for by the Administration.

The Commission's aim from the outset has been to give the Administration and its other consumers reliable and satisfactory service at the cheapest price possible, regard being had especially to the desirability of low prices during the first few years to encourage development and promote increases in the output of the Undertaking, which is the most important factor in reducing the average cost per unit.

With these objects in view, a complete reorganisation of the Undertaking was commenced shortly after the Commission took



Colenso Power Station—Typical Daily Load Curve.

over from the Railway Administration, and for the past 18 months the Undertaking has been under centralised control from Colenso. The more pressing requirements in respect of housing accommodation and recreation facilities for the staff have also been met, thus raising the efficiency of the staff and ensuring better service to the Commission's consumers.

The Commission's efforts towards increasing the output of the Undertaking and encouraging development can best be judged from the following figures showing the increase in sales to consumers other than the Railway Administration.

NATAL CENTRAL UNDERTAKING:

SALES TO CONSUMERS OTHER THAN S.A.R. & H.

Year.	Units Sold.
1926	719,666
1927	1,894,952
1928	5,712,004
1929 (estimated)	10,000,000

The operation of the Undertaking throughout the year has been satisfactory and the response of the Commission's local officers and staff in recognising their responsibilities and contributing towards an atmosphere of co-operation and mutual assistance as between the Commission and its consumers is commendable.

The co-operation between the operating staffs of the Commission and the Railway Administration, which has been characteristic from the outset, is largely responsible for the successful operation of the system. The policy of giving the best service possible is being continued, and the assistance rendered by the Commission's officers to consumers in any difficulties they may encounter from time to time, with a view to enabling them to secure the greatest measure of benefit from the use of electricity, has contributed materially to the satisfaction of the consumers.

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

Extension of Undertaking.

Reference was made in the Commission's Annual Reports for 1926 and 1927 to the decision come to in conjunction with the Railway Administration :—

(a) to extend the boiler house at the Colenso Power Station to provide for the accommodation of four more boilers;

(b) to install two more boilers similar to the eight original boilers; and

(c) to convert the single-unit sub-station at Willbrook into a double-unit sub-station by installing a second 2,000 kilowatt motor generator set, and auxiliary equipment.

This work has been completed.

Staff Accomodation.

The first instalment of three houses for married staff and a block of 28-roomed single quarters at Colenso, mentioned in the Commission's last Annual Report, has been completed and the houses and quarters are occupied. A recreation hall for the staff has also been built, and the old wood and iron buildings provided as a Railway Institute for the construction staff have been taken down and removed by the Administration. This work of improving the housing, mess and recreation facilities the Commission regards as of the utmost importance. The case of the single staff at Colenso was particularly urgent. Some of the men were housed in wood and iron buildings originally erected for the construction staff, and proper mess facilities were non-existent. Additional staff accommodation was also required consequent upon the transfer of the Distribution Headquarters, temporarily established at Estcourt, to Colenso. Further houses are still required both at Colenso and for the distribution staff at the sub-stations.

The recreation hall at Colenso, besides providing boarding facilities for the single men, has been designed to provide amenities for the employees and their families which cannot otherwise be enjoyed in a small township like Colenso.

Supplies to Consumers.

All the existing local authorities and other larger power users (other than Collieries) adjoining the route of the electrified section of the Natal Main Line between Glencoe Junction and Pietermaritzburg are now taking power from the Colenso Power Station. In addition to the consumers mentioned in the Commission's last Annual Report these consumers now include the Mooi River Local Board, while the works of the South African Rubber Manufacturing

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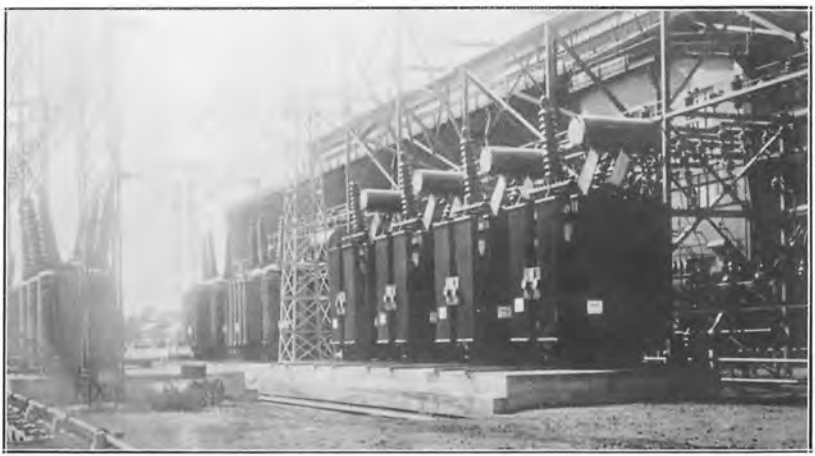
Supplies to Consumers.

All the existing local authorities and other larger power users (other than Collieries) adjoining the route of the electrified section of the Natal Main Line between Glencoe Junction and Pietermaritzburg are now taking power from the Colenso Power Station. In addition to the consumers mentioned in the Commission's last Annual Report these consumers now include the Mooi River Local Board, while the works of the South African Rubber Manufacturing

Company, Limited, at Howick, will be connected to the system this year. Apart, therefore, from colliery loads or the establishment of any new industrial enterprises, the development of new supplies in the Commission's existing area of supply is now largely confined to relatively small consumers.

Substantial colliery and other potential loads exist in the Glencoe and surrounding districts. During 1928 negotiations were opened with the Newcastle Municipality for a bulk supply of electricity from the Commission's Undertaking as an alternative to the erection of a new Municipal Power Station at Newcastle. The Municipality has since decided to purchase a bulk supply of electricity from the Commission, and application is being made by the Commission to the Electricity Control Board for an extension of the Commission's area of supply to include Newcastle and the intervening area between Glencoe Junction and Newcastle. It is anticipated that, once the Commission's transmission line from Glencoe to Newcastle has been completed and is in service, other loads in this area will be secured and that this transmission line will form the nucleus of a power supply system radiating from the Commission's sub-station at Glencoe Junction.

Witbank Undertaking—Doornpoort Dam.



Witbank Undertaking—19,000 K.V.A. Transformer Bank at Witbank Power Station.

WITBANK UNDERTAKING.

The Witbank Undertaking comprises:—

(a) a power station at Witbank, consisting of four main generating sets of 20,000 kilowatts each, giving a total installation of 80,000 kilowatts, and fifteen boilers, each of a normal capacity of 70,000 lbs. of steam per hour;

(b) a 21,000 volt reticulation system in the Witbank district for transmitting electricity to the Commission's consumers in that district;

(c) a 2200/380/220 volt transmission and distribution system within the Witbank Municipal Area for the supply of electricity to consumers and for street lighting within the Township; and

(d) other miscellaneous buildings, works and appurtenances.

The Witbank Power Station is inter-connected with the power supply system of The Victoria Falls and Transvaal Power Company, Limited, on the Witwatersrand by means of a 132,000 volt overhead transmission line, between Witbank and Brakpan, owned and operated by that Company.

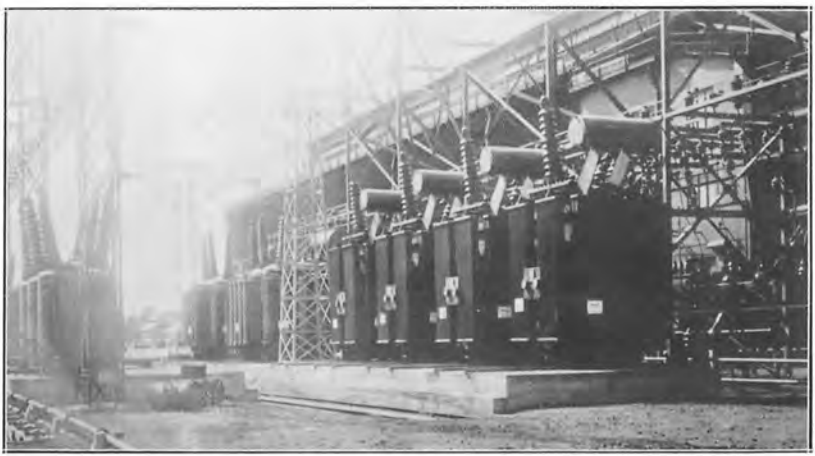
The capital expenditure on the Witbank Undertaking to 31st December, 1928, was £1,763,870.

Working Results.

The units generated at the Witbank Power Station during the year 1928 total 491,030,570 and the maximum hourly demand was 61,899 kilowatts, the load factor being 85·37 per cent. The thermal efficiency of the Witbank Power Station on units sent out was 16·46 per cent., a slight improvement upon the figure of 16·2 per cent. for 1927.

The units sold from the Witbank Undertaking during the year 1928 totalled 464,267,213, of which 19,950,004 units were supplied to consumers in the Witbank district, an increase of 6,560,671 units, or approximately 49 per cent., as compared with the year 1927. The balance of the units sold were supplied in bulk to The Victoria Falls and Transvaal Power Company, Limited.

Witbank Undertaking—Doornpoort Dam.



Witbank Undertaking—19,000 K.V.A. Transformer Bank at Witbank Power Station.

WITBANK UNDERTAKING.

The Witbank Undertaking comprises:—

(a) a power station at Witbank, consisting of four main generating sets of 20,000 kilowatts each, giving a total installation of 80,000 kilowatts, and fifteen boilers, each of a normal capacity of 70,000 lbs. of steam per hour;

(b) a 21,000 volt reticulation system in the Witbank district for transmitting electricity to the Commission's consumers in that district;

(c) a 2200/380/220 volt transmission and distribution system within the Witbank Municipal Area for the supply of electricity to consumers and for street lighting within the Township; and

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The financial results are given in Annexure " E " to this Report. A surplus of revenue over expenditure of £4,977 was realised on the working of the Witbank Undertaking during the year 1928. This surplus has been carried forward to the year 1929, in terms of Section 10 (3) of the Electricity Act, 1922, and allowance has been made therefor in the reduction made in the standard tariff with effect from 1st January, 1929, to which reference is made hereunder.

Extension of Witbank Power Station.

The installation of the fourth 20,000 kilowatt generating set and three additional boilers at the Witbank Power Station, to which reference was made in the Commission's Annual Reports for 1926 and 1927, has been completed, and this set was placed in commercial operation in June, 1929.

Owing to the increased power requirements of The Victoria Falls and Transvaal Power Company, Limited, on the Witwatersrand, and in order to maintain the full output of 80,000 kilowatts from the Witbank Power Station, during periods when one of the four existing 20,000 kilowatt sets is out of commission for overhaul or otherwise, it has been decided to proceed with a further extension of the power station by installing a fifth 20,000 kilowatt set and one additional boiler. This will bring the installation in the Witbank Power Station up to 100,000 kilowatts and sixteen 70,000 lb. boilers.

Preliminary work in connection with this further extension is in hand, and it is anticipated that the installation of the additional plant and equipment will be completed in about twelve to fifteen months' time.

Supplies to Consumers.

The Commission's consumers at Witbank now include nine of the collieries in the Witbank District. Three of the nine collieries have not yet been connected up, but the transmission lines to these collieries are in course of construction, and supplies will be commenced during 1929.

With the development of the load on the Commission's reticulation system in the Witbank district, the Commission made a reduction in the standard tariff to its consumers at Witbank with effect from July, 1928, as mentioned in the Commission's last Annual Report. At the commencement of the year 1929, a further

reduction was made, the standard tariff to the Commission's consumers in the Witbank district, with effect from January, 1929, being as follows :—

(a) a charge of £25 per annum, payable in advance; plus

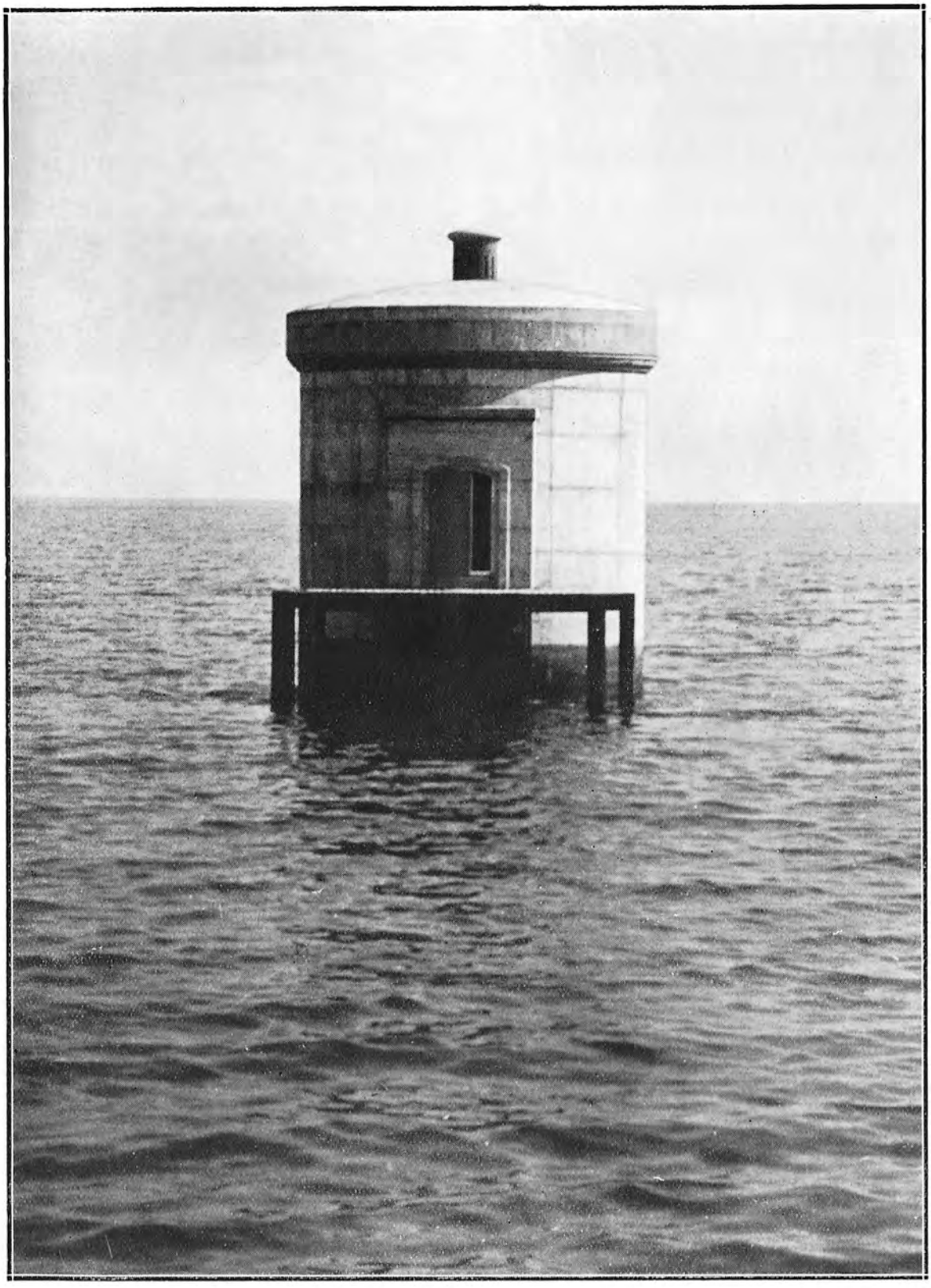
(b) a charge of £5 . 5s. for each kilovolt ampere of the maximum demand supplied in each year; plus

(c) a charge of 0·05d. for each unit supplied.

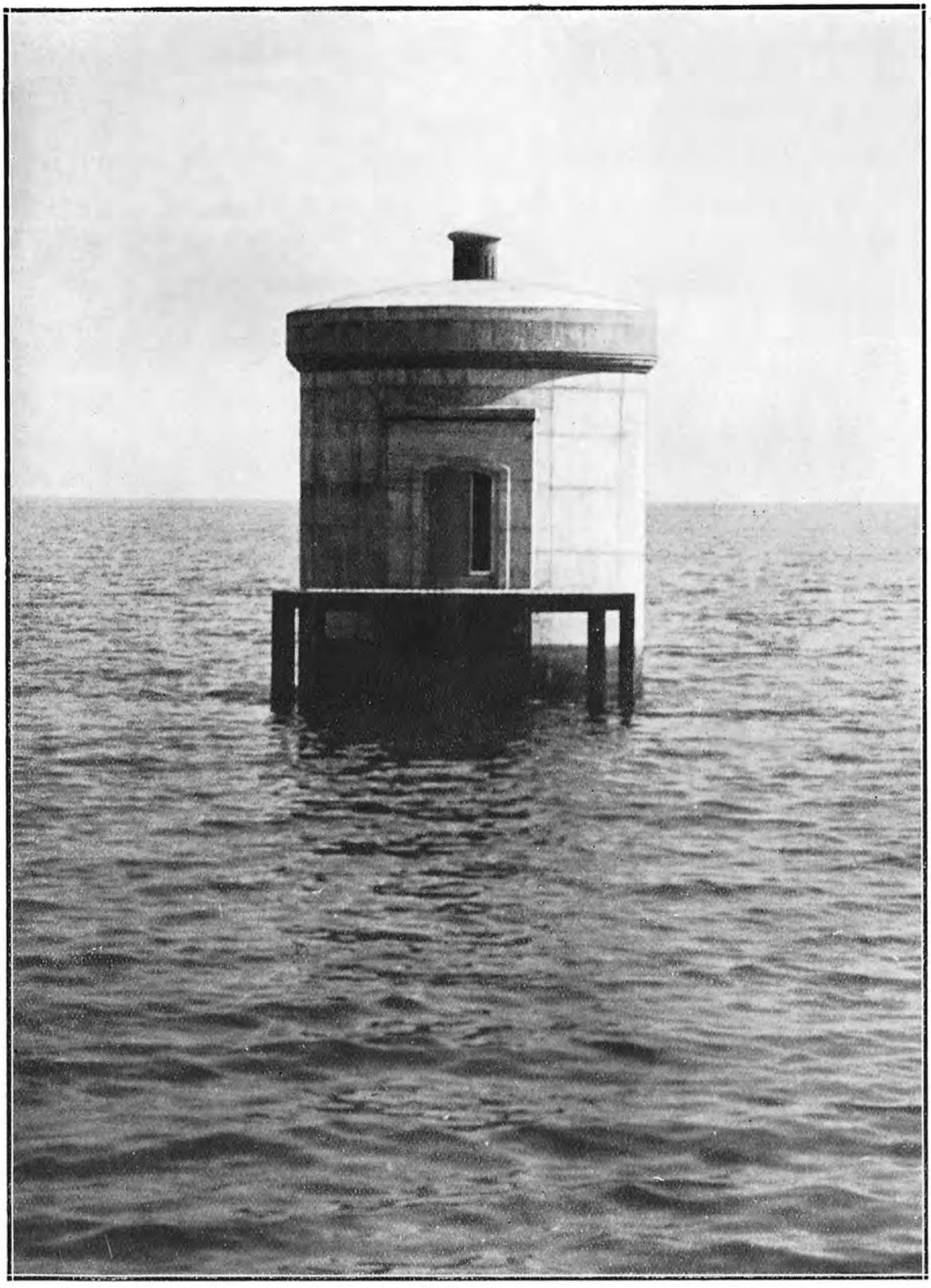
A further reduction in this tariff is being made with effect from July, 1929.

Water Supply to Witbank Municipality.

Reference was made in the Commission's last Annual Report to the arrangements concluded between the Commission and the Witbank Municipality for the supply of water to the Municipality from the Commission's dam on the Great Olifants River. The Municipality's new water scheme was completed towards the end of last year and was formally opened on 9th January, 1929.



Capetown Undertaking—Salt River Power Station—Intake Tower
for Circulating (Sea) Water Supply.



Capetown Undertaking—Salt River Power Station—Intake Tower
for Circulating (Sea) Water Supply.

CAPETOWN UNDERTAKING.

The Capetown Undertaking comprises:—

(a) a power station at Salt River consisting of three main generating sets of 10,000 kilowatts each, making a total installation of 30,000 kilowatts, and four boilers, each of a normal capacity of 60,000 lbs. of steam per hour;

(b) a step-up sub-station at the power station site and rotary converter sub-stations at Three Anchor Bay, Milnerton Junction, Claremont, Diep River, Muizenberg and Glencairn;

(c) duplicate 12,000 volt underground cables connecting Salt River Power Station with the Dock Road Power Station, belonging to the Capetown Corporation, and with the Three Anchor Bay and Milnerton Junction sub-stations;

(d) a 33,000 volt underground cable and a 33,000 volt overhead line (the latter belonging to the Railway Administration carried on the track structures between Salt River and Muizenberg) connecting the step-up sub-station with the sub-stations at Claremont, Diep River and Muizenberg, and duplicate 33,000 volt underground cables between Muizenberg and Glencairn sub-stations;

(e) a 12,000 volt underground cable system serving Table Bay Docks;

(f) a distribution system, consisting of 92 miles of 33,000 volt distribution lines with sub-stations, in the Cape Rural Area; and

(g) other miscellaneous buildings and appurtenances.

The capital expenditure on the Capetown Undertaking to 31st December, 1928, was £1,501,367.

Progress of Work.

Construction work at the Salt River Power Station, traction sub-stations and on the transmission system in the Cape Peninsula has been completed. A drawing showing the general arrangement of the sea water intake works at the Salt River Power Station is appended to this Report.

Reference was made in the Commission's last Annual Report to the arrangements made by the Commission, in conjunction with the Capetown Corporation, for the supply of electricity to the Commission's consumers during the first half of the year 1928. The amount of power required, pending the commencement of electric operation on the Wynberg-Simonstown line, did not justify the continuous operation of the Salt River Power Station, arrangements accordingly being made to operate that station for one shift only on week-days with a skeleton staff, the remainder of the requirements during the week and at week-ends being met from the Capetown Corporation's Dock Road Power Station.

With the inauguration of electric operation on the Wynberg-Simonstown line in June-July, 1928, continuous operation was commenced at the Salt River Power Station and arrangements made to take over, in addition to the railway traction and rural supply loads, the supplies to the Salt River Workshops, Capetown Railway Station and Table Bay Docks. The supplies of electricity to the Railway Administration at the three latter points had previously been met by the Capetown Corporation under agreement with the Administration.

The Capetown Undertaking was placed in commercial operation on 1st June, 1929.

Working Results.

The units generated at the Salt River Power Station from February, 1928, when the station was started up, to the end of that year, total 29,080,875. From July, when continuous operation of the station had commenced, to December, 1928, the units generated total 26,105,685. During the latter period, the units sent out from the Power Station total 24,525,558, and the maximum half-hourly demand was 14,540 kilowatts, the load factor being 38 per cent.

The thermal efficiency of the power station for the latter half of 1928, on units sent out, was 13·6 per cent. An improvement in the thermal efficiency of the Salt River Power Station has since been

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obtained by means of adjustments and modifications carried out by the contractors to the boiler and turbine plant as a result of experience during the first few months of operation.

The predominating load on the Salt River Power Station, viz., the supply of electricity to the Railway Administration for traction purposes, is subject to very considerable fluctuations. The output for traction purposes is dependent on the suburban train service in operation, but unfortunately the alterations made from time to time in the train service have not materially affected the peak demands, which do not permit of reducing the number of boilers that has to be kept under steam to deal with the peak loads. The steaming of a spare boiler to take care of peak demands reduces the efficiency and adds to the cost of running the Power Station.

The Sea Point suburban line, for which the Railway Administration was purchasing at the rate of about 4,000,000 units per annum for traction purposes, was closed down by the Administration in April, 1929. This reduction in the output from the Salt River Power Station naturally involves an increase in the average cost per unit to the Railway Administration, and a large portion of the capital invested by the Commission in cables, switchgear and sub-station plant at Three Anchor Bay Sub-station to provide a direct current supply to the Administration for the operation of the Sea Point line is thus rendered idle. Interest and redemption charges on this idle capital necessarily increase the cost of electricity supplied to the Administration for its other services. Exclusive of these charges, however, the price per unit at present being paid by the Administration for electricity supplied is the same as the estimated cost per unit on the basis of which the Administration embarked upon the Cape Suburban Electrification Scheme.

The Commission is pleased to be able to report that the operation of the system at Capetown has been characterised since the outset by the closest co-operation between the operating officers and staffs of the Railway Administration, the Capetown Corporation and the Commission.

Cape Rural Supply Scheme.

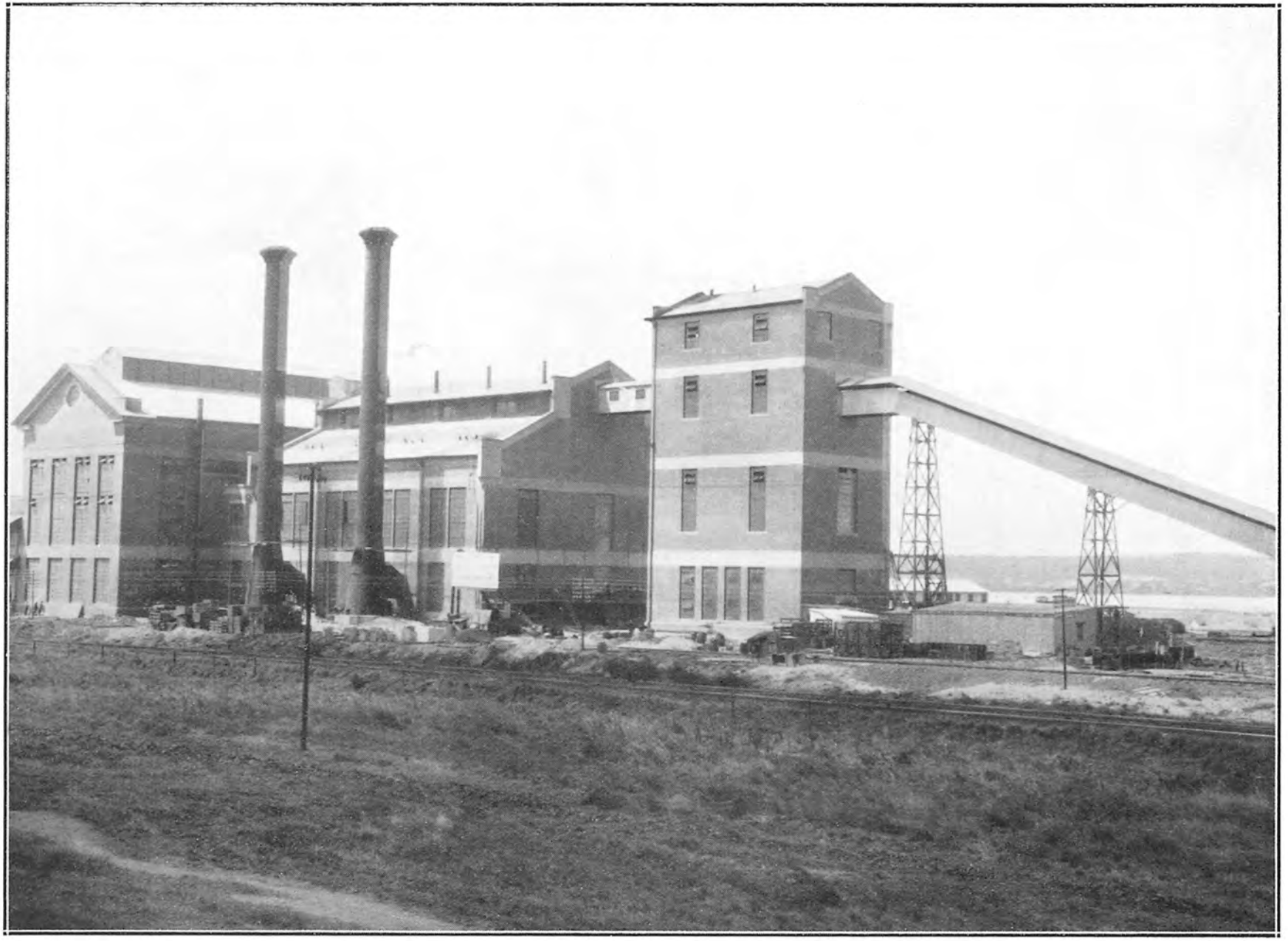
The Commission's 33,000 volt distribution system in the rural area outside the Cape Peninsula has been referred to in previous Reports.

The load on this system is rapidly increasing. The units sold during 1928 total 9,767,699 as compared with 4,690,009 units sold during the previous year, several of the larger consumers having been connected up towards the end of that year.

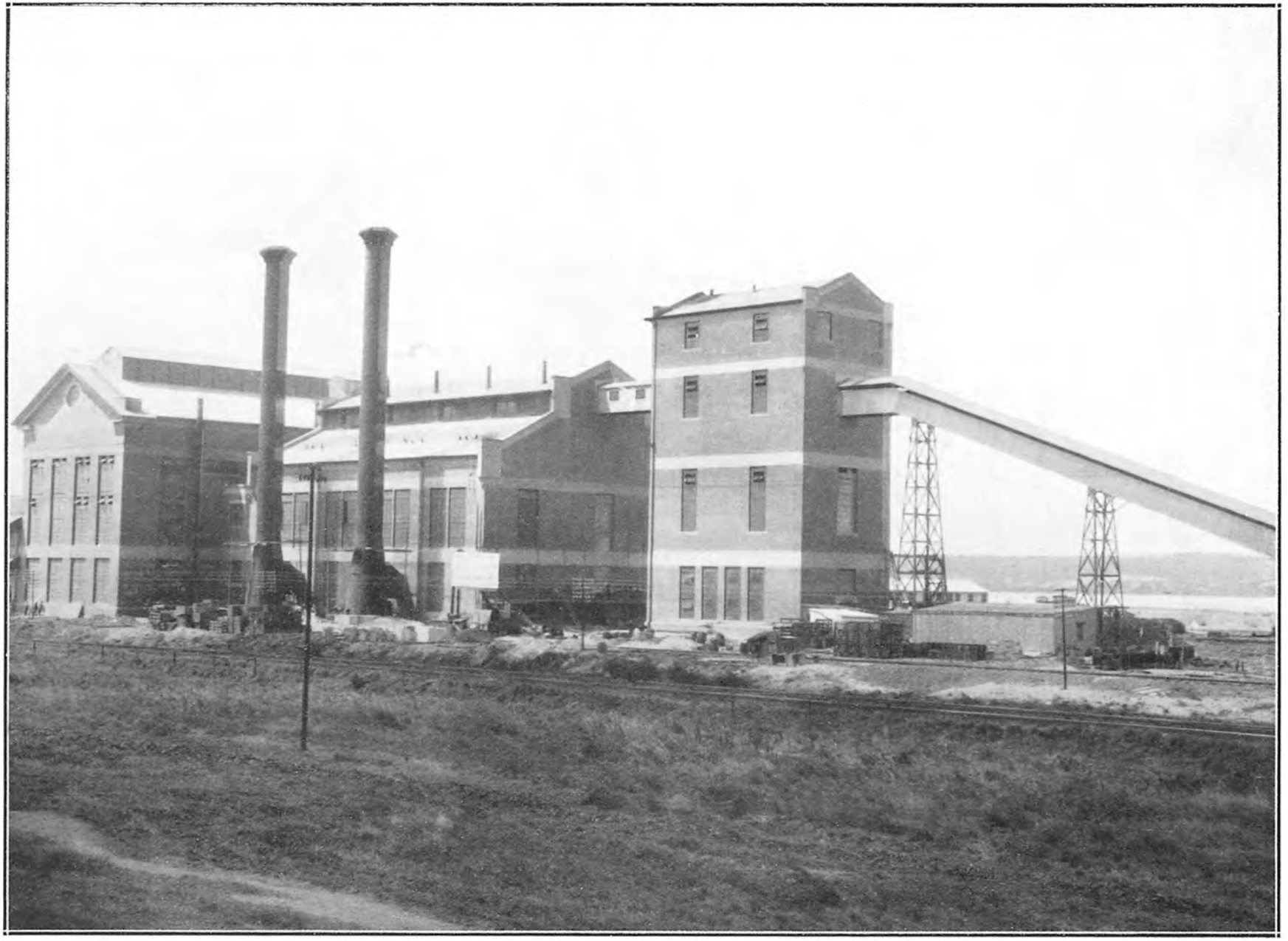
Several extensions of the system to supply new consumers and to afford alternative means of transmitting the supply between various points on the system are in hand. The extension of the transmission lines in this area has gradually brought new consumers within economic range of the system, and, with the potential developments in sight, it is anticipated that, within the next few years, sales in this area will reach about 15,000,000 units per annum.

Gordons Bay Hydro-Electric Scheme.

In the Commission's Reports for the years 1926 and 1927, reference was made to a proposal under consideration for the establishment of a hydro-electric scheme at Gordons Bay, using for the purpose the surplus water available from the Capetown Corporation's augmented Steenbras Scheme. As a result of a detailed investigation into the scheme on the basis of tender prices, and taking into account the probable quantity of surplus water and the period during which it would be available, it was decided not to proceed with this project.



Durban Undertaking—Congella Power Station.



Durban Undertaking—Congella Power Station.

DURBAN UNDERTAKING.

The Durban Undertaking consists of a power station at Congella, which will have an installation of 36,000 kilowatts in four main generating sets, two of 12,000 kilowatts each and two of 6,000 kilowatts each, together with six boilers, each of a normal capacity of 60,000 lbs. of steam per hour. The boilers are fired entirely by pulverised coal.

The Congella Power Station has been so built as to be capable of easy and inexpensive extension; for example, accommodation is available in the boiler house for two additional boilers and the engine room is large enough to accommodate five main generating sets. Provision has also been made in the circulating water works for handling a quantity of water considerably in excess of immediate requirements. This method of construction is advantageous for meeting a growing demand for electricity economically.

The capital expenditure on the Durban Undertaking to 31st December, 1928, amounted to £699,839.

Progress of Work.

The Durban Undertaking has not yet been placed in commercial service, but the main construction work on the Congella Power Station is completed, the two 12,000 kilowatt generating sets and four boilers being in commission. The two remaining boilers are being erected, and work in connection with the transfer from the Corporation's Alice Street Power Station and installation in the Congella Power Station of the two 6,000 kilowatt generating sets, which the Commission is taking over from the Durban Corporation, is proceeding. The dismantling of the first of these two sets could not be commenced until supply was available from the Congella Power Station to take over a portion of the Corporation's load. The second 6,000 kilowatt set will be transferred as soon as the first is re-erected and is available for service at Congella.

Supply to Consumers.

As explained in previous Reports, the Durban Corporation is, to commence with, the Commission's only consumer at Durban. The supply to the Corporation was commenced in July, 1928. During the first three months, however, while the plant at the Congella Power Station was being tested and adjusted, a partial supply only was available.

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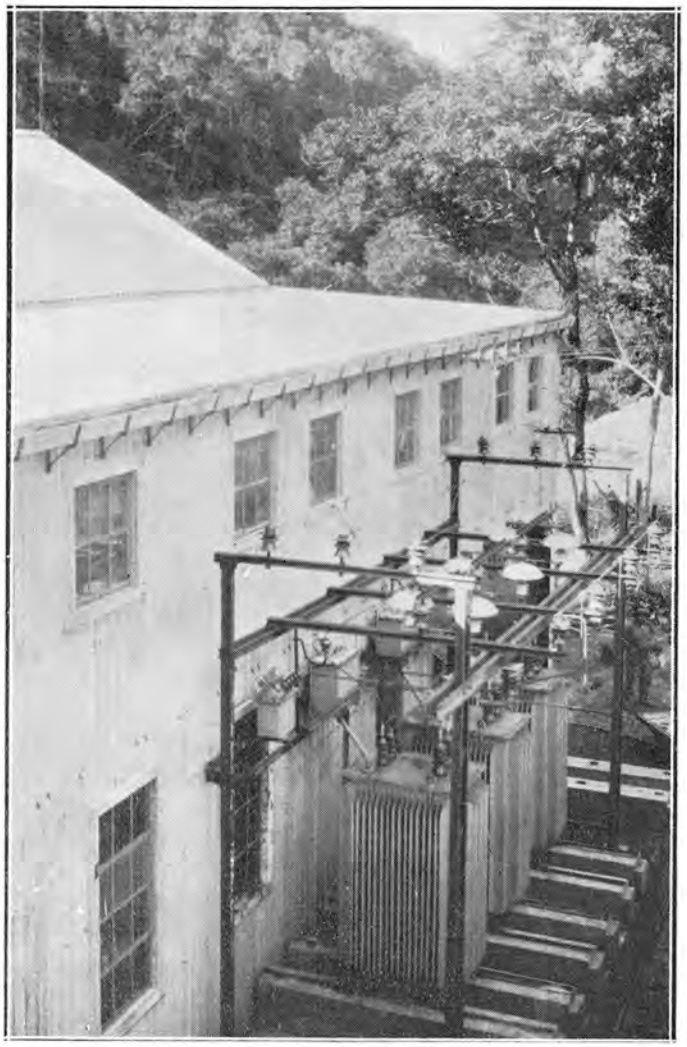
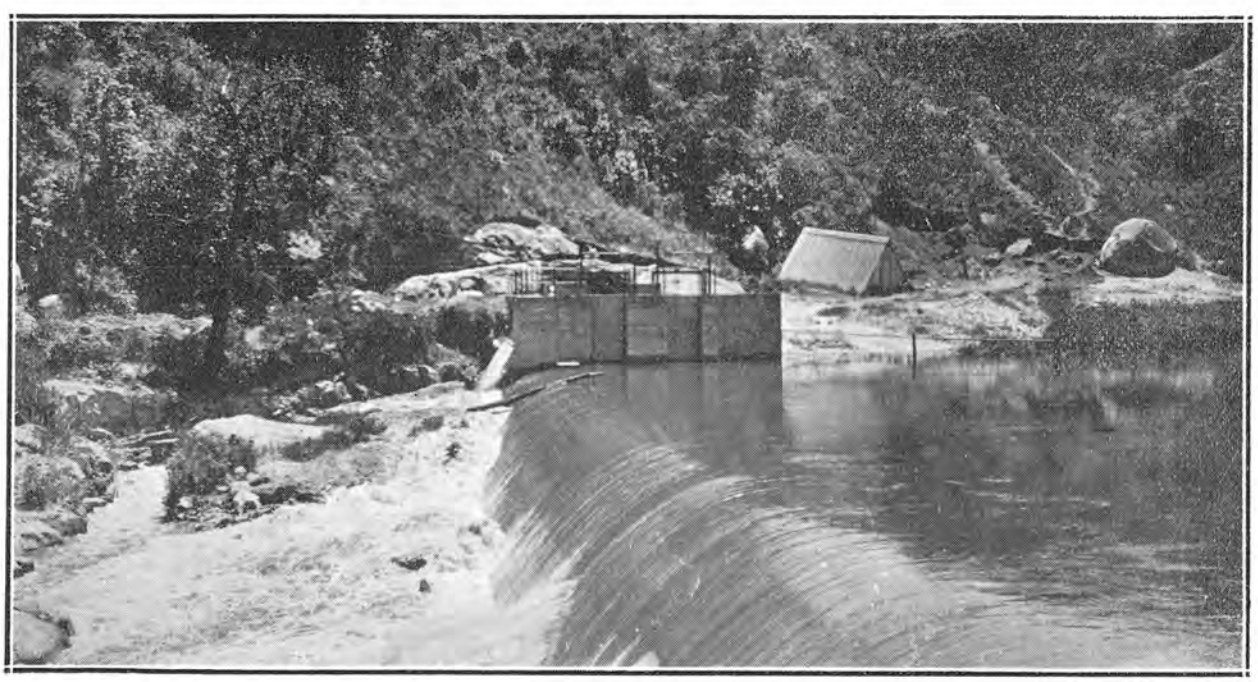


Sabie Undertaking—Step-up Transformers at Sabie Gorge Power Station.

Sabie Undertaking—Settling Basin at Intake Works.



Sabie Undertaking—Diversion Weir.

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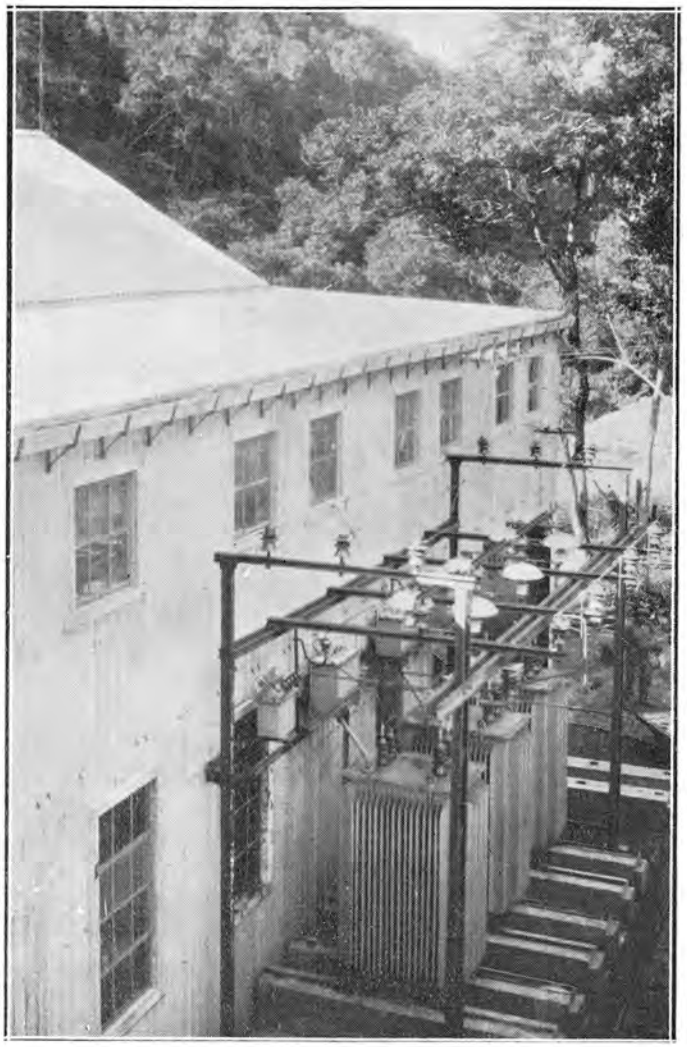
The units sold to the Durban Corporation up to December, 1928, total 15,563,460.

When the installation of the two 6,000 kilowatt sets at the Congella Power Station has been completed, the Corporation is under agreement to take from the Commission a bulk supply of not less than 60 million units per annum, and a maximum demand of 14,000 kilowatts exclusive of the supplies of electricity taken by the Railway Administration from the Corporation.

The electricity requirements of the Durban Corporation are rapidly increasing, and the supply to the Corporation from the Commission's Power Station during the first half of 1929 was at the rate of over 75 million units per annum.



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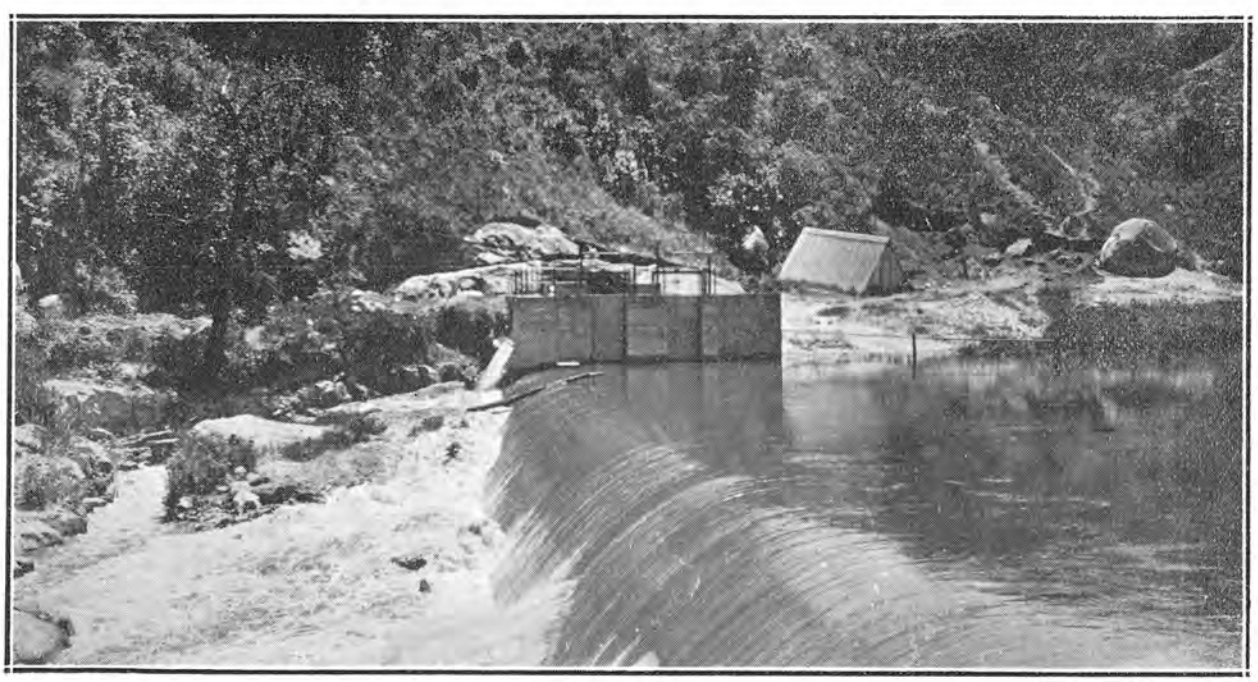

Sabie Undertaking—Diversion Weir.

SABIE UNDERTAKING.

The Sabie Undertaking consists of :—

(a) a hydro-electric power station in the Sabie River Gorge having an installed capacity of 1,350 kilowatts, made up of three generating sets of 450 kilowatts each ;

(b) a 22,000 volt transmission line from the power station to a distribution sub-station near Sabie Township ; and

(c) a 3,300 volt distribution line from the distribution sub-station for the supply of electricity to consumers in the Golden Valley area.

The Sabie Undertaking was placed in commercial operation in April, 1928, and the capital expenditure on the Undertaking to 31st December, 1928, was £107,138.

Supply to Consumers.

Electricity supplied to the three mining consumers during the year under review amounted to 2,829,888 units.

Working Results.

The units generated at the Sabie Gorge Power Station during 1928 total 3,044,000. The units sent out from the Power Station total 2,999,300 and the maximum demand was 650 kilowatts, the load factor being 52·5 per cent. The output of the Undertaking during 1928 shows an improvement as compared with the previous year, but is still somewhat less than the requirements estimated for by consumers.

The operation of the Undertaking throughout the year 1928 has been satisfactory. Two exceptionally severe hailstorms were experienced during last summer, causing considerable damage to the buildings at the Sabie Gorge Power Station and, in one instance, an involuntary shut-down of the power station due to the quantity of debris washed down the canal.

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MUNICIPAL SCHEMES.

Up to 31st December, 1928, 145 municipal schemes have been reported on by the Commission in terms of Section 38 of the Electricity Act, 1922, and supplementary reports upon tenders have been submitted in respect of 64 schemes.

During the year 1928 the following 28 schemes, of which 8 were new schemes, were reported upon by the Commission :—

CAPE.

*Aliwal North	Matatiele
*Calvinia	*Steynsburg
East London	*Stutterheim
*Grahamstown	*Tulbagh
*Hermanus	*Upington
Kokstad	*Villiersdorp
Knysna	*Worcester

TRANSVAAL.

Barberton	Nylstroom
Daspoort	Pietersburg
Elsburg	Volksrust
Lydenburg	

ORANGE FREE STATE.

Bloemfontein	Springfontein
Ladybrand	*Zastron

NATAL.

Glencoe	Umkomaas
Mooi River	

(* Tenders only.)

Of the total of 145 municipal electricity schemes reported upon by the Commission up to the end of the year 1928, no less than 69 were new schemes.

The following table shows the total number of Local Authorities in the respective Provinces in the Union and in South-West Africa,

and the numbers in each case which have established, or are in course of establishing, electricity supply schemes :—

LOCAL AUTHORITIES IN UNION AND S.W. AFRICA.

	Province.					
	Cape.	Transvaal.	O.F.S.	Natal.	S.-W. Africa.	Total.
No. of Municipalities	129	24	61	9	7	**230**
No. of Other Local Authorities	105	62	5	26	7	**205**
Total ...	**234**	**86**	**66**	**35**	**14**	**435**
Local Authorities with Electricity Supply Schemes.						
Local Authorities generating and distributing electricity—						
Established	51	13	24	6	2	**96**
Under construction	4	2	—	1	—	**7**
Total ...	**55**	**15**	**24**	**7**	**2**	**103**
Local Authorities purchasing bulk supplies and carrying out their own distribution—						
Established	10	17	1	5	—	**33**
Under construction	—	2	—	2	—	**4**
Total ...	**10**	**19**	**1**	**7**	**—**	**37**
Cases in which supply and distribution of electricity undertaken by third parties—						
Established	4	4	—	8	3	**19**
Under construction	3	—	—	—	—	**3**
Total ...	**7**	**4**	**—**	**8**	**3**	**22**
Total Schemes Established	65	34	25	19	5	**148**
Total Schemes under Construction ...	7	4	—	3	—	**14**
Grand Total ...	**72**	**38**	**25**	**22**	**5**	**162**

A feature of the development of Municipal Electricity Undertakings during the last few years has been the increase in the number of municipalities obtaining supplies of electricity from larger neighbouring municipalities or other electricity undertakers in preference to erecting, or continuing to operate, their own power stations.

The scope for co-ordination of electricity production in South Africa on these lines is limited owing to the distances separating main centres of production and the scattered situation of the smaller towns. In and around the larger centres, however, the progress is significant.

As will be seen from the foregoing table, out of a total of 162 Local Authorities with electricity supply schemes, 59, or over one-third, do not undertake local generation but obtain supplies of electricity either in bulk or retailed from existing power stations or systems.

GENERAL.

In terms of Section 14 of the Electricity Act, 1922, the Commission submits for the year 1928 :—

As Annexure " A " :

The Report of the Auditors.

As Annexure " B " :

Balance Sheet, duly audited.

As Annexure " C " :

Schedule of Expenditure on Capital Account.

As Annexures " D," " E " and " F."

Revenue and Expenditure Accounts in respect of :—

(i) Natal Central Undertaking.

(ii) Witbank Undertaking.

(iii) Sabie Undertaking.

As Annexure " G " :

Statement showing the price or rent of any land or rights or interest in or over land or any other property acquired or hired by the Commission.

I have the honour to be,

Sir,

Your obedient servant,

CHAIRMAN.

ANNEXURE "A": ACCOUNTS.

The Report of the Auditors.

Balance Sheet, duly audited.

Schedule of Expenditure on Capital Account.

Revenue and Expenditure Accounts in respect of:—

(1) Natal Central Undertaking.

(2) Witbank Undertaking.

(3) Sabie Undertaking.

(4) Capetown Undertaking.

THE REPORT OF THE AUDITORS.

Johannesburg,
16th June, 1930.

The Chairman and Members,
Electricity Supply Commission,
Johannesburg,

GENTLEMEN,

We have completed the audit of the Books and Accounts of the Commission for the year ended December 31st, 1929, and have to report as follows:—

(1) As in previous years the general principle has been followed of fixing a date from which a complete Undertaking or portion of an Undertaking is deemed to come into commercial operation.

During the preliminary period of working and before an Undertaking is in full operation all revenue from sales of electricity or otherwise less cost of production is applied in reduction of the capital cost of the Undertaking. From the date of coming into commercial operation revenue accounts are prepared and provision made for repayment of moneys borrowed and reserve fund in terms of the Electricity Act.

The actual position of the various Undertakings in connection with commercial operation during the year 1929 has been as follows:—

The Natal Central, Witbank and Sabie Undertakings have been in commercial operation during the whole of the year.

The Capetown Undertaking was brought into commercial operation as from June 1st, 1929.

The Durban Undertaking was brought into commercial operation as from January 1st, 1930.

NATAL CENTRAL UNDERTAKING.

(2) Consumers other than the South African Railways have been charged on a tariff basis under agreements between them and the Commission. The Railways have been charged for the current supplied to them on the basis of the cost of working the Undertaking, including administration and capital charges, less revenue derived from other consumers.

The capital cost of the Undertaking as taken over from the South African Railways was finally agreed during the year under review and the necessary adjustments of capital charges have been made.

WITBANK UNDERTAKING.

(3) The Power Station is operated by the Victoria Falls and Transvaal Power Co., Ltd., under agreement with the Commission. This agreement lays down *inter alia* the method of calculating the cost of electricity payable by the Company. The charges made by the Commission to the other consumers notwithstanding reductions made in the tariff, have resulted in a surplus

as shown by the Revenue Account which together with a similar amount from the previous year is being carried forward for the benefit of consumers other than the Victoria Falls Company, Limited.

The cost of operating the station incurred by the Victoria Falls Company is in accordance with statements rendered by that Company, which, together with the disbursements made by that Company on Capital Account during the year have been verified by the Internal Auditor of the Commission.

SABIE UNDERTAKING.

(4) Consumers have been charged on a basis which covers cost of production, interest, provision for repayment of moneys borrowed and an appropriation of £1,576 16s. 11d. to Reserve Fund.

In the case of one consumer special extended credit has been given in respect of sums aggregating £600. The recovery of this amount which still remains outstanding is not free from doubt.

CAPETOWN UNDERTAKING.

(5) Consumers other than the South African Railways have been charged for the whole year on a tariff basis in terms of agreements with them.

For the first five months of the year the South African Railways have been charged for energy supplied to them at fixed prices subject to adjustment to the actual working cost of the Undertaking. This working cost is exclusive of provision for repayment of moneys borrowed for the Power Station section of the Undertaking but inclusive of interest and appropriation for Reserve Fund and has received the benefit of revenue derived from the sale of electricity to other consumers.

From June 1st, 1929, from which date the Undertaking came into commercial operation, the South African Railways have been charged a fixed price which is subject to periodical revision. The operations from June to December 1929 have resulted in a loss of £1,166 11s. 2d., which falls to be made good by the South African Railways by adjustment of tariff or otherwise.

The Sea Point Railway being closed, by arrangement a special charge is made to the South African Railways for capital charges on the Commission's expenditure thereon.

DURBAN UNDERTAKING.

(6) This Station was producing power during the whole of 1929 but was not brought into commercial operation as construction had not been completed. The only consumer of the Undertaking was the Durban Corporation to whom power has been sold under special arrangements. No contribution has been made by this Undertaking to Reserve Fund or Provision for repayment of Moneys Borrowed as the Undertaking was not in commercial operation.

The revenue derived from the station less the cost of production (including interest) has been applied in reduction of the capital cost of the Undertaking.

HEAD OFFICE ADMINISTRATION AND ENGINEERING.

(7) As contemplated in Section 11 (2) of the Electricity Act the Commission, has as previously, made an allocation of overhead and administration charges as between the various Undertakings.

PENSION FUND.

(8) During the year a sum equal to 3 per cent. on the white salaries and wages paid has continued to be contributed towards forming the nucleus of a Pension Fund. This provision has been increased by a suitable interest credit and at the end of 1929 amounted to £12,270 13s. 9d., but no separate investment has been made in respect thereof.

A Pension Scheme on a non contributory basis has now been formulated and is receiving the consideration of the Commission.

PROVISION FOR REPAYMENT OF MONEYS BORROWED.

(9) The whole of the funds borrowed by the Commission to December 31st, 1929, have been in the form of advances by the Union Treasury and are subject to interest and cost of raising charges. During the year 1929 by mutual agreement between the Commission and the Treasury the total amount of the advances was fixed at £8,000,000. This arrangement has now been sanctioned by Parliament under the Financial Adjustments Act 1930 which provides that the amount shall be consolidated into two loans of £3,000,000 to be redeemed not later than December 31st 1954 and £5,000,000 to be redeemed not later than December 31st 1979, the interest thereon to run at the rate of 5·018 per cent per annum.

In the Accounts under review in the case of Undertakings or portions of Undertakings in commercial operation the Commission has provided such sums as, on the basis of interest at the rate of 3½ per cent. per annum compounded, will amortise the capital invested in each Undertaking, having regard to the special circumstances of each Undertaking but in no case exceeding a period of 30 years from the date of coming into commercial operation.

In the case of Undertakings under construction and not as yet in commercial operation no amount has been set aside for the repayment of the moneys invested therein, but any surplus over cost of production derived from electricity sold during construction has been applied in reduction of Capital Cost.

In view of the position as stated above we consider that adequate provision has been made for the repayment of the capital invested in the Undertakings or portions of Undertakings in commercial operation.

RESERVE FUND.

(10) During the financial year ended 31st December, 1929, sums aggregating £61,537 4s. 5d. have been set aside by the Commission to Reserve Fund, in terms of Section 9 of the Electricity Act, 1922, in respect of the Natal Central, Witbank, Sabie and Capetown Undertakings.

No appropriation to Reserve Fund has been made during the year in respect of the Durban Undertaking, this Undertaking not then being in commercial operation.

GENERAL.

(11) As the result of our audit of the Books and Accounts of the Commission for the year 1929, and, subject to the foregoing remarks and in terms of Clause 13 (4) of the Electricity Act, 1922, we certify as follows:—

(a) We have found the Accounts of the Commission to be in order.

(b) The Accounts issued present a true and correct view of the financial position of the Commission and of its transactions and of the results of trading.

(c) Due provision has been made for the redemption and repayment of moneys borrowed in view of the circumstances as explained in Paragraph (9) of this Report.

(d) The value of the assets of the Commission is correctly stated.

(e) Sums fixed by the Commission have been set aside to the Reserve Fund under Section 9 as prescribed.

(f) All our requirements and recommendations as Auditors have been complied with and carried out.

Yours faithfully,

B. HALSEY.

ALEX. AIKEN & CARTER

Electricity Supply

Incorporated under the

BALANCE SHEET at

LIABILITIES.

Treasury of the Union of South Africa Advance Account ...			£8,000,000 0 0
Balance at 31st December, 1928	£7,830,214 9 6		
Interest	394,638 6 10		
	8,224,852 16 4		
Less—Interest paid during 1929	224,852 16 4		
Sundry Creditors and Credit Balances			134,955 16 3
Provision for Pensions			12,270 13 9
Surplus, being Excess of Assets over Liabilities			480,421 11 9
Made up as follows:—			
Provision for repayment of moneys borrowed ...	328,423 4 7		
Reserve Fund	145,517 19 3		
Balance on Revenue Accounts	6,480 7 11		
Witbank Undertaking	£7,646 19 1		
Less—Capetown Undertaking ...	1,166 11 2		

Note.—In addition to the Liabilities shown above, the Commission has approved of Expenditure amounting to approximately £355,256 in connection with the completion and extension of the Undertakings, also £1,024 expenditure chargeable against Reserve Fund.

£8,627,648 1 9

H. J. VAN DER BIJL, Chairman.

A. E. HARTE, C.A. (S.A.), Chief Accountant.

Johannesburg,
24th April, 1930.

Electricity Supply Commission.

SCHEDULE OF EXPENDITURE ON CAPITAL ACCOUNT to 31st December, 1929.

Expenditure in connection with Electricity Undertakings.	Amount Expended to 31st Dec., 1928.	Amount Expended during 1929.	Totals to 31st Dec., 1929.
NATAL CENTRAL UNDERTAKING:			
Land	£16,844 4 9	£221 11 0	£17,065 15 9
Buildings and other Civil Engineering Works ...	752,767 7 11	Cr. 2,209 5 8	750,558 2 3
Machinery and Plant	2,453,472 9 9	26,952 6 7	2,480,424 16 4
Miscellaneous Equipment	6,320 6 7	393 6 3	6,713 12 10
General Expenditure	18,894 1 5	19 1 5	18,913 2 10
Interest during Construction and Cost of Raising Money	103,083 4 5	6,401 14 4	109,484 18 9
	£3,351,381 14 10	£31,778 13 11	£3,383,160 8 9
Less—Net Revenue during Construction ...	2,163 1 0	116 9 6	2,279 10 6
	£3,349,218 13 10	**£31,662 4 5**	**£3,380,880 18 3**
WITBANK UNDERTAKING:			
Land	£6,377 9 4	£687 6 3	£7,064 15 7
Buildings and other Civil Engineering Works ...	405,138 6 9	28,560 14 3	433,699 1 0
Machinery and Plant	1,011,562 17 8	113,788 6 10	1,125,351 4 6
Miscellaneous Equipment	14,433 10 9	Cr. 236 4 2	14,197 6 7
General Expenditure	154,892 3 11	13,784 3 7	168,676 7 6
Interest during Construction and Cost of Raising Money	171,465 10 7	10,637 7 3	182,102 17 10
	£1,763,869 19 0	£167,221 14 0	£1,931,091 13 0
Less—Net Revenue during Construction ...	102,052 15 9	1,395 19 2	103,448 14 11
	£1,661,817 3 3	**£165,825 14 10**	**£1,827,642 18 1**
SABIE UNDERTAKING:			
Land	£510 0 0	—	£510 0 0
Buildings and other Civil Engineering Works ...	43,909 9 11	£22,042 18 6	65,952 8 5
Machinery and Plant	40,209 5 4	Cr. 2,051 6 1	38,157 19 3
Miscellaneous Equipment	1,915 3 10	601 17 1	2,517 0 11
General Expenditure	15,700 3 0	Cr. 15,700 3 0	—
Interest during Construction and Cost of Raising Money	4,894 9 8	Cr. 4,894 9 8	—
	£107,138 11 9	Cr. £1 3 2	£107,137 8 7
Less—Net Revenue during Construction ...	9,124 15 10	—	9,124 15 10
	£98,013 15 11	**Cr. £1 3 2**	**£98,012 12 9**
CAPETOWN UNDERTAKING:			
Land	£19,431 16 8	£554 11 4	£19,986 8 0
Buildings and other Civil Engineering Works ...	478,553 18 1	19,712 8 2	498,266 6 3
Machinery and Plant	702,584 18 5	71,526 10 0	774,111 8 5
Miscellaneous Equipment	4,971 18 9	2,376 6 4	7,348 5 1
General Expenditure	173,066 7 4	Cr. 4,048 14 10	169,017 12 6
Interest during Construction and Cost of Raising Money	122,757 17 9	4,729 9 4	127,487 7 1
	£1,501,366 17 0	£94,850 10 4	£1,596,217 7 4
Less—Net Revenue during Construction ...	17,512 16 11	2,182 19 11	19,695 16 10
	£1,483,854 0 1	**£92,667 10 5**	**£1,576,521 10 6**
DURBAN UNDERTAKING:			
Land	£28,526 19 6	£1,123 11 0	£29,650 10 6
Buildings and other Civil Engineering Works ...	228,526 9 5	8,350 8 0	236,876 17 5
Machinery and Plant	306,751 12 5	70,567 12 4	377,319 4 9
General Expenditure	2,858 11 8	1,030 8 1	3,889 19 4
Interest during Construction and Cost of Raising Money	83,049 17 9	3,102 6 5	86,152 4 2
	50,124 13 2	3,732 18 6	53,857 11 8
	£699,839 3 6	£87,907 4 4	£787,746 7 10
Less—Net Revenue during Construction ..	1,717 11 5	14,046 19 5	15,764 10 10
	£698,121 12 1	**£73,860 4 11**	**£771,981 17 0**

Johannesburg,
24th April, 1930.

A. E. HARTE, C.A. (S.A.),
Chief Accountant.

Electricity Supply

NATAL CENTRAL

Dr. **Revenue Account for the Year**

Generation of Electricity.		
To Operation—		
Fuel	£42,165 11 4	
Water, Oil, Waste and Stores	1,567 4 6	
Salaries and Wages	16,199 7 2	
Other Expenses	190 12 11	
,, Maintenance—		
Stores	4,783 8 8	
Salaries and Wages	10,601 3 7	
Other Expenses	362 5 8	
		£75,869 13 10
Distribution of Electricity.		
,, Operation and Maintenance—		
Stores	2,653 15 7	
Salaries and Wages	13,258 5 7	
Other Expenses	6,208 17 8	
		22,120 18 10
General Expenses.		
,, Local Management and General Expenses	14,647 10 4	
,, Head Office Administration and General Expenses	9,173 14 3	
,, Engineering Expenses	4,805 5 0	
		28,626 9 7
Capital Charges.		
,, Interest	166,642 15 11	
,, Provision for Repayment of Moneys borrowed	63,301 3 6	
,, Reserve Fund	23,401 16 7	
		253,345 16 0
		£379,962 18 3

A. E. HARTE, C.A. (S.A.), Chief Accountant.

Johannesburg,
24th April, 1930.

Electricity Supply

WITBANK

Dr. **Revenue Account for the Year**

	Generation of Electricity.		
To Operation—			
Fuel	£49,099 7 4		
Water, Oil, Waste and Stores	2,382 2 11		
Salaries and Wages	19,620 17 1		
Other Expenses	1,018 13 10		
,, Maintenance—			
Stores	4,939 15 0		
Salaries and Wages	9,126 0 2		
Other Expenses	3,769 1 5		
		£90,005 17 9	
	Distribution of Electricity.		
,, Operation and Maintenance—			
Stores	687 13 9		
Salaries and Wages	1,619 4 3		
Other Expenses	2,026 0 2		
		4,332 18 2	
	General Expenses.		
,, Local Management and General Expenses	9,573 17 11		
,, Administration, Engineering and General Expenses of operating party (The Victoria Falls and Transvaal Power Co., Ltd.)	6,291 13 4		
,, Head Office Administration and General Expenses	2,508 11 4		
,, Engineering Expenses	1,480 9 8		
		19,854 12 3	
	Capital Charges.		
,, Interest	83,197 15 1		
,, Provision for Repayment of Moneys borrowed	42,444 2 8		
,, Reserve Fund	21,228 0 11		
		146,869 18 8	
,, Balance, being excess of Revenue over Expenditure for the Year carried down		2,670 1 6	
		£263,733 8 4	
To Balance as per Balance Sheet		7,646 19 1	
		£7,646 19 1	

A. E. HARTE, C.A. (S.A.), Chief Accountant.

Johannesburg,
24th April, 1930.

Electricity Supply

SABIE

Dr. **Revenue Account for the Year**

Generation of Electricity.		
To Operation—		
Water, Oil, Waste and Stores	£51 2 8	
Salaries and Wages	1,109 1 10	
,, Maintenance—		
Stores	623 9 1	
		1,783 13 7
Distribution of Electricity.		
,, Operation and Maintenance—		
Stores	56 3 7	
Salaries and Wages	374 13 8	
Other Expenses	30 2 9	
		461 0 0
General Expenses.		
,, Local Management and General Expenses	352 14 4	
,, Head Office Administration and General Expenses	743 16 3	
,, Engineering Expenses	389 12 4	
		1,486 2 11
Capital Charges.		
,, Interest	4,970 2 4	
,, Provision for Repayment of Moneys borrowed	3,493 11 4	
,, Reserve Fund	1,576 16 11	
		10,040 10 7
		£13,771 7 1

A. E. HARTE, C.A. (S.A.), Chief Accountant.

Johannesburg,
24th April, 1930.

Electricity Supply

CAPETOWN

Dr. **Revenue Account for the Seven Months**

Generation of Electricity.		
To Operation—		
Fuel	£28,657 2 6	
Water, Oil, Waste and Stores	832 15 9	
Salaries and Wages	5,065 5 4	
Other Expenses	97 0 3	
,, Maintenance—		
Stores	474 0 7	
Salaries and Wages	2,421 14 11	
Other Expenses	360 8 6	
		£37,908 7 10
Distribution of Electricity.		
,, Operation and Maintenance—		
Stores	387 16 2	
Salaries and Wages	5,119 8 5	
Other Expenses	858 13 9	
		6,365 18 4
General Expenses.		
,, Local Management and General Expenses	7,817 15 5	
,, Head Office Administration and General Expenses	4,125 7 6	
,, Engineering Expenses	2,160 18 0	
		14,104 0 11
Capital Charges.		
,, Interest	44,641 10 0	
,, Provision for Repayment of Moneys borrowed	17,784 1 3	
,, Reserve Fund	8,876 7 3	
		71,301 18 6
		£129,680 5 7

A. E. HARTE, C.A. (S.A.), Chief Accountant.

Johannesburg,
24th April, 1930.

ANNEXURE "B"

Commission.

Electricity Act, 1922.

31st DECEMBER, 1928.

ASSETS.

Expenditure on Capital Account			£7,291,025 5 2
Natal Central Undertaking	£3,351,381 14 10		
Witbank Undertaking	1,763,869 19 0		
Sabie Undertaking	107,138 11 9		
Capetown Undertaking	1,501,366 17 0		
Durban Undertaking	699,839 3 6		
	7,423,596 6 1		
Less—Net Revenue derived from Sales of Energy and Water during construction	132,571 0 11		
Stores and Materials			95,858 8 7
Sundry Debtors and Debit Balances			123,844 11 7
Cash			614,311 7 3
On deposit at interest	580,000 0 0		
On current account and on hand	34,311 7 3		
Investment of Provision for Repayment of Moneys borrowed ...			189,516 16 6
£78,710 Union of South Africa 5% (10-year) Loan (1935) ...	78,611 12 3		
£76,000 Union of South Africa 4½% Local Registered Stock, 1953	71,345 0 0		
£37,000 Town Council of Johannesburg 5% Local Inscribed Stock, 1948/58	36,564 18 7		
Amount due by General Fund (contra)	600 18 1		
Interest accrued	2,394 7 7		
Investment of Reserve Fund			95,888 4 0
Amount invested in Municipal and Union of South Africa Local Stocks	74,817 8 0		
Amount due by General Fund (contra)	20,052 11 1		
Interest accrued	1,018 4 11		
			£8,411,444 13 1

Referred to in our Report of 10th July, 1929.

ALEX. AIKEN & CARTER,
B. HALSEY,
} Auditors.

Electricity Supply

Incorporated under the

BALANCE SHEET at

LIABILITIES.

Treasury of the Union of South Africa Advance Account			£7,830,214 9 6
Balance at 31st December, 1927	£6,319,666 4 0		
Advances during 1928, including Cost of Raising	1,375,285 15 10		
Interest	369,306 8 1		
	8,064,258 7 11		
Less—Interest paid during 1928	234,043 18 5		
Sundry Creditors and Credit Balances			261,837 6 10
Provision for Pensions			8,357 9 6
Amounts due by General Fund to—			
Provision for repayment of moneys borrowed (contra) ...	600 18 1		
Reserve Fund (contra)	20,052 11 1		
			20,653 9 2
Surplus, being Excess of Assets over Liabilities			290,381 18 1
Made up as follows:			
Provision for repayment of moneys borrowed	189,516 16 6		
Reserve Fund	95,888 4 0		
Balance on Revenue Account—			
Witbank Undertaking, Account No. 2	4,976 17 7		

NOTE.—In addition to the liabilities shown above, the Commission has approved of expenditure amounting to approximately £441,816 in connection with the completion and extension of its Undertakings, also £3,272, expenditure chargeable against Reserve Fund.

£8,411,444 13 1

Johannesburg,
23rd May, 1929.

H. J. VAN DER BYL, Chairman.
A. E. HARTE, C.A. (S.A.), Chief Accountant.

Electricity Supply

NATAL CENTRAL

Dr. **Revenue Account for the Year**

Generation of Electricity.		
To Fuel	£38,642 4 10	
,, Water, Oil, Waste and Stores	1,856 9 6	
,, Salaries and Wages	16,940 1 10	
,, Other Expenses	289 9 2	
,, Maintenance—		
Buildings and Other Civil Engineering Works	834 4 8	
Machinery and Plant	10,947 9 9	
Miscellaneous Equipment	472 19 5	
		£69,982 19 2
Distribution of Electricity.		
,, Stores	2,280 12 10	
,, Salaries and Wages	12,362 17 9	
,, Other Expenses	2,181 12 6	
		16,825 3 1
General Expenses.		
,, Maintenance of Quarters	1,054 0 10	
,, Stores Expenses	1,563 16 6	
,, General Expenses, including management and administration ...	25,776 17 4	
		28,394 14 8
Capital Charges.		
,, Interest	163,477 12 9	
,, Provision for Repayment of Moneys borrowed	63,892 7 3	
,, Reserve Fund	33,007 14 7	
		260,377 14 7
		£375,580 11 6

A. E. HARTE, C.A. (S.A.),
Chief Accountant.

Johannesburg,
23rd May, 1929.

ANNEXURE "C."

Electricity Supply Commission.

SCHEDULE OF EXPENDITURE ON CAPITAL ACCOUNT to 31st December, 1928.

Expenditure in connection with Electricity Undertakings.	Amount Expended to 31st Dec., 1927.	Amount Expended during 1928.	Totals to 31st Dec., 1928.
NATAL CENTRAL UNDERTAKING:			
Capital Cost of Power Station, Transmission Lines, Sub-Stations and other Works in operation including Land, Buildings, Machinery and Plant, General Expenditure, Interest during Construction and Cost of Raising Money	£3,201,198 15 3	£227 19 9	£3,201,426 15 0
Works under Construction:			
Including Land, Buildings, Machinery and Plant, etc.	38,721 13 6	111,233 6 4	149,954 19 10
	£3,239,920 8 9	£111,461 6 1	£3,351,381 14 10
Less—Net Revenue during Construction ...	858 8 8	1,304 12 4	2,163 1 0
	£3,239,062 0 1	**£110,156 13 9**	**£3,349,218 13 10**
WITBANK UNDERTAKING:			
Capital Cost of Power Station, Transmission Lines, Sub-Stations and other Works in operation including Land, Buildings, Machinery and Plant, General Expenditure, Interest during Construction and Cost of Raising Money	£1,458,233 17 3	£103,833 14 3	£1,562,067 11 6
Works under Construction:			
Including Land, Buildings, Machinery and Plant, etc.	56,023 10 2	145,778 17 4	201,802 7 6
	£1,514,257 7 5	£249,612 11 7	£1,763,869 19 0
Less—Net Revenue during Construction ...	101,646 1 6	406 14 3	102,052 15 9
	£1,412,611 5 11	**£249,205 17 4**	**£1,661,817 3 3**
SABIE UNDERTAKING:			
Land	£510 0 0	—	£510 0 0
Buildings and other Civil Engineering Works ...	43,909 3 6	£0 6 5	43,909 9 11
Machinery and Plant	43,139 10 9	Cr. 1,015 1 7	42,124 9 2
General Expenditure	15,359 2 7	341 0 5	15,700 3 0
Interest during Construction and Cost of Raising Money	6,062 13 10	Cr. 1,168 4 2	4,894 9 8
	£108,980 10 8	Cr. £1,841 18 11	£107,138 11 9
Less—Net Revenue during Construction ...	8,942 12 6	182 3 4	9,124 15 10
	£100,037 18 2	**Cr. £2,024 2 3**	**£98,013 15 11**
CAPETOWN UNDERTAKING:			
Land	£17,792 0 3	£1,639 16 5	£19,431 16 8
Buildings and other Civil Engineering Works ...	406,098 13 7	72,455 4 6	478,553 18 1
Machinery and Plant	596,565 5 0	110,991 12 2	707,556 17 2
General Expenditure	143,127 4 7	29,939 2 9	173,066 7 4
Interest during Construction and Cost of Raising Money	83,426 11 5	39,331 6 4	122,757 17 9
	£1,247,009 14 10	£254,357 2 2	£1,501,366 17 0
Less—Net Revenue during Construction ...	7,314 5 5	10,198 11 6	17,512 16 11
	£1,239,695 9 5	**£244,158 10 8**	**£1,483,854 0 1**
DURBAN UNDERTAKING:			
Land	£28,123 0 0	£403 19 6	£28,526 19 6
Buildings and other Civil Engineering Works ...	154,774 4 9	73,752 4 8	228,526 9 5
Machinery and Plant	230,298 6 6	79,312 17 2	309,611 3 8
General Expenditure	59,518 18 3	23,530 19 6	83,049 17 9
Interest during Construction and Cost of Raising Money	22,151 14 0	27,972 19 2	50,124 13 2
	£494,866 3 6	£204,973 0 0	£699,839 3 6
Less—Net Revenue during Construction ...	—	1,717 11 5	1,717 11 5
	£494,866 3 6	**£203,255 8 7**	**£698,121 12 1**

Johannesburg,
23rd May, 1929.

A. E. HARTE, C.A. (S.A.),
Chief Accountant.

ANNEXURE "D."

Account No. 1.

Commission.

UNDERTAKING.

ended 31st December, 1928. Cr.

By Sales of Electricity—			
Traction Supplies	£351,419 2 11		
Bulk Supplies	14,463 14 6		
Industrial Supplies	7,107 19 4		
Domestic Supplies	723 13 8		
Street Lighting	150 0 0		
	373,864 10 5		
Less—Proportion applied against Capital Cost of part of Undertaking not in commercial operation	1,043 7 9		
		£372,821 2 8	
,, Other Revenue		2,759 8 10	
		£375,580 11 6	

Referred to in our Report of 10th July, 1929.

ALEX. AIKEN & CARTER,
B. HALSEY,
} Auditors.

Electricity Supply

NATAL CENTRAL

Dr. **Revenue Account for the Year**

Generation of Electricity.			
To Fuel	£38,642	4 10	
,, Water, Oil, Waste and Stores	1,856	9 6	
,, Salaries and Wages	16,940	1 10	
,, Other Expenses	289	9 2	
,, Maintenance—			
Buildings and Other Civil Engineering Works	834	4 8	
Machinery and Plant	10,947	9 9	
Miscellaneous Equipment	472	19 5	
			£69,982 19 2
Distribution of Electricity.			
,, Stores	2,280	12 10	
,, Salaries and Wages	12,362	17 9	
,, Other Expenses	2,181	12 6	
			16,825 3 1
General Expenses.			
,, Maintenance of Quarters	1,054	0 10	
,, Stores Expenses	1,563	16 6	
,, General Expenses, including management and administration ...	25,776	17 4	
			28,394 14 8
Capital Charges.			
,, Interest	163,477	12 9	
,, Provision for Repayment of Moneys borrowed	63,892	7 3	
,, Reserve Fund	33,007	14 7	
			260,377 14 7
			£375,580 11 6

A. E. HARTE, C.A. (S.A.),
Chief Accountant.

Johannesburg,
23rd May, 1929.

ANNEXURE "E."

Account No. 2.

Commission.

UNDERTAKING.

ended 31st December, 1928. Cr.

By Sales of Electricity—			
Bulk Supplies	£186,723 13 2		
Industrial Supplies	28,537 7 5		
Domestic Supplies	2,556 1 5		
Street Lighting	523 5 0		
	218,340 7 0		
Less—Proportion applied against Capital Cost of part of Undertaking not in commercial operation	1,004 2 4		
		217,336 4 8	
,, Other Revenue		4,215 19 11	
		£221,552 4 7	

Referred to in our Report of 10th July, 1929.

ALEX. AIKEN & CARTER,
B. HALSEY, } Auditors.

Electricity Supply

WITBANK

Dr. **Revenue Account for the Year**

Generation of Electricity.			
To Fuel	£40,283 4 3		
,, Water, Oil, Waste and Stores	1,796 14 5		
,, Salaries and Wages	18,910 0 4		
,, Other Expenses	1,106 16 6		
,, Maintenance—			
Buildings and Other Civil Engineering Works	2,019 17 1		
Machinery and Plant	13,579 16 11		
Miscellaneous Equipment	598 10 3		
		£78,294	19 9
Distribution of Electricity.			
,, Stores	289 0 7		
,, Salaries and Wages	896 7 7		
,, Other Expenses	1,046 14 9		
		2,232	2 11
General Expenses.			
,, Maintenance of Quarters	776 6 10		
,, Stores Expenses	1,239 15 11		
,, General Expenses, including management and administration ...	14,923 5 0		
		16,939	7 9
Capital Charges.			
,, Interest	73,171 10 0		
,, Provision for Repayment of Moneys borrowed	37,324 3 1		
,, Reserve Fund	8,613 3 6		
		119,108	16 7
,, **Balance,** being excess of Revenue over Expenditure for the year		4,976	17 7
		£221,552	4 7

A. E. HARTE, C.A. (S.A.),
Chief Accountant.

Johannesburg,
23rd May, 1929.

ANNEXURE "F."

Account No. 3.

Commission.

UNDERTAKING.

ended 31st December, 1928. Cr.

By Sales of Electricity—	
Industrial Supplies	£10,446 16 1
	£10,446 16 1

Referred to in our Report of 10th July, 1929.

ALEX. AIKEN & CARTER,
B. HALSEY, } Auditors.

Electricity Supply

SABIE

Dr. **Revenue Account for the Nine Months**

Generation of Electricity.		
To Water, Oil, Waste and Stores	£23 12 1	
,, Salaries and Wages	583 3 4	
,, Maintenance—		
Buildings and Other Civil Engineering Works	34 10 5	
Machinery and Plant	203 18 11	
Miscellaneous Equipment	3 7 0	
		£848 11 9
Distribution of Electricity.		
,, Stores	11 4 5	
,, Salaries and Wages	377 14 0	
		388 18 5
General Expenses.		
,, Maintenance of Quarters	27 9 1	
,, General Expenses, including management and administration ...	1,348 7 8	
		1,375 16 9
Capital Charges.		
,, Interest	3,713 17 6	
,, Provision for Repayment of Moneys borrowed	2,624 18 11	
,, Reserve Fund	1,494 12 9	
		7,833 9 2
		£10,446 16 1

A. E. HARTE, C.A. (S.A.),
Chief Accountant.

Johannesburg,
23rd May, 1929.

ANNEXURE "G."

Electricity Supply Commission.

STATEMENT SHOWING THE PRICE OR RENT OF ANY LAND OR RIGHTS OR INTERESTS IN OR OVER LAND OR ANY OTHER PROPERTY ACQUIRED OR HIRED BY THE COMMISSION AT 31st DECEMBER, 1928.

Area. Acres.	Roods.	Perches	Farm or Lot.	District.	Title.	Purchase Price or Rental	Acquired From.	Purpose For Which Required.
NATAL CENTRAL UNDERTAKING.								
				NATAL	Water Rights (Tugela River)		Water Court, District No. 16 Pietermaritzburg	Power Station, Colenso.
234	2	24	Town Lands, Colenso Tugela Drift, No. 1062 Labuschagnes Kraal, No. 1229	Weenen	Formal Transfer effected in May, 1929, by Railways and Harbours Administration.			Power Station, Colenso.
1	0	9	M.G.E. of Roseneu No. 3212	Klip River				Sub-station, Glencoe Junction.
2	0	19	N.R.C. of Kleinfontein No. 1262	Klip River				Sub-Station, Wessels Nek.
2	1	20	Town Lands of Ladysmith	Klip River				Sub-Station, Daimana.
1	2	0	Frere Township of Plessis Laager, No. 1331	Weenen				Sub-station, Frere.
3	0	16	N.G.R. 6 of Town Lands, Estcourt	Weenen				Sub-station, Estcourt.
1	1	5	Weltevreden, No 1903	Weenen	Formal Transfer effected in January, 1929, by Railways and Harbours Administration.			Sub-station, Willbrook.
2	1	17	Farend Farm of Langewacht, No. 2168 Grantleigh, No. 2177	Weenen				Sub-station, New Leigh.
0	3	5	Gowrie No. 1930	Pietermaritzburg				Sub-station, Nottingham Road.
1	3	37	Riet Vallei No. 1206	Pietermaritzburg				Sub-station, Lidgetton.
0	3	27	Driefontein No. 952	Pietermaritzburg				Sub-station, Cedara.
1	1	5	Ordnance Land No. 1686	Pietermaritzburg				Sub-station, Pietermaritzburg.
					Lease in Perpetuity for Rights-of-Way in course of completion			Electric Transmission Lines, including 88,000-volt Overhead Transmission Lines between Glencoe Junction and Pietermaritzburg.
WITBANK UNDERTAKING.								
Morgen.	Sq. Roods.	Sq. Feet.						
67	26	—	Witbank No. 61, Portion R	TRANSVAAL Witbank	Quitrent, excluding all Rights to Coal	£271 10 0	Witbank Colliery, Ltd.	Power Station Site.
44	369	—	Jonbertsrust No. 16, Portions J and M	Witbank	Quitrent, excluding all Rights to Coal			
			Jonbertsrust No. 16, Witbank No. 61 Blesboklaagte No. 29	Witbank	Servitudes and Rights-of-Way		Witbank Colliery, Ltd.	Railway Sidings and Loops, Open Drains, Power Conductors, Reservoir Site, and Access.
11	248	—	Doornpoort No. 58, Portion S.2	Witbank	Servitude in Perpetuity			Dam and Works.
277	243	—	Doornpoort No. 58, Portion S.1	Witbank	Servitudes of Storage in Perpetuity	2,850 0 0	Transvaal and Delagoa Bay Investment Co., Ltd.	Submerged Ground.
—	42	—	Doornpoort No. 58, Portion S.3	Witbank	Servitude in Perpetuity			Gauging Weir.
			Doornpoort No. 58,	Witbank	Right-of-Way			Access.
7	505	—	Zeekoewater No. 14, Portion S.1 of Portion A Zeekoewater No. 14, Portion A	Witbank	Servitudes of Storage in Perpetuity Right-of-Way in Perpetuity	150 0 0	J. P. Reyneke	Submerged Ground.
			Zeekoewater No. 14, Portion A	Witbank	Servitude of Right-of-Way in Perpetuity	50 0 0	J. P. Reyneke	Road giving access to Dam.
			Zeekoewater No. 14, Portion A	Witbank	Servitude of Right-of-Way in Perpetuity	250 0 0	J. P. Reyneke	Power Conductors, Water Pipeline.
			Zeekoewater No. 14, Portion B	Witbank	Servitude of Right-of-Way in Perpetuity	600 0 0	P. J. D. Steenkamp	Power Conductors, Water Pipeline.
			Klipfontein No. 60	Witbank	Servitude of Right-of-Way in Perpetuity		S.A. Coal Estates (Witbank), Ltd.	Railway Siding and Loop.
			Blesboklaagte No. 29	Witbank	Servitude of Right-of-Way in Perpetuity	60 0 0	M. C. Pretorius	Underground Cable.
			Blesboklaagte No. 29	Witbank	Servitude of Right-of-Way in Perpetuity		Witbank Municipality	Underground Cable.
			Blaawkraans No. 62	Witbank	Servitudes of Right-of-Way in Perpetuity	162 0 0	P. J. de Wet	Power Conductors.
			Portion B of Portion D of Nooitgedacht No. 12	Witbank	Servitude of Right-of-Way in Perpetuity	29 0 0	M. A. Brecht	Power Conductors.
			Portion C of Portion D of Nooitgedacht No. 12	Witbank	Servitude of Right-of-Way in Perpetuity	12 0 0	P. F. Roux	Power Conductors.
			Portion A of Nooitgedacht No. 12	Witbank	Servitude of Right-of-Way in Perpetuity.	35 0 0	J. C. O. Forssman	Power Conductors.
			Hartebeestspruit No. 9	Witbank	Servitude of Right-of-Way in	60 0 0	M. Scher	Power Conductors.
			Leeuwpoort N. 27	Witbank	Servitude of Right-of-Way in Perpetuity			Power Conductor
			Driefontein No. 28 Blesboklaagte No. 29	Witbank	Servitude of Right-of-Way in Perpetuity Servitude of Right-of-Way in Perpetuity		Transvaal and Delagoa Bay Investment Co., Ltd.	Power Conductors.
			Groenfontein No. 73	Witbank	Servitude of Right-of-Way in Perpetuity	10 0 0	J. P. du Preez	Power Conductors.
CAPETOWN UNDERTAKING.								
9	210	—	Lot P.12	CAPE Paarden Island	Freehold	15,567 3 2	Capetown Corporation	
8	383	105	Lot Super Power Station	Salt River Mouth	Government Grant	100 0 0	Government of Union of South Africa	Power Station Site.
—	477	52	Lot A	Huguenot	Freehold	350 0 0	P. Goldberg	Sub-station Site.
—	274	37		Diep River	Freehold	250 0 0	C. D. B. Stiles	Sub-station Site.
				Three Anchor Bay	Leasehold	£1 per annum	Capetown Corporation	Sub-station Site.
—	76	128	Lot 3B	Bellville	Freehold	180 0 0	E. C. Edwards	
—	8	79	Lot C	Ronde Vlei	Freehold	60 0 0	J. L. Berkeley	Sub-station and Depôt Site.
—	561	140		Bellville	Government Grant	75 0 0	Government of Union of South Africa	
—	95	103		Glencairn	Government Grant	25 0 0	Government of Union of South Africa	Sub-station Site.
—	118	35	Lot RB, Portion of Lot Railway B	Muizenberg	Government Grant	210 0 0	Government of Union of South Africa	Sub-station Site.
—	33	48	Lot ELEC, Part of Lots 1 to 12	Wellington	Freehold	250 0 0	H. & J. Roup	Sub-station Site.
—	158	112	Lot EC, Bennetsville, Portion of Groenfontein	Paarl	Freehold	75 0 0	J. A. Ward	Linesman's Cottage, Klapmuts.
—	24	130	Lot EC part of RY and					
—	75	42	Lot ESC part of Lot A2. of Lot 92. Bromwell Estate	Woodstock	Freehold	890 0 0	Government of Union of South Africa	Sub-station Site.
—	68	93	Lot 73 and 74 of Lot A of Roodebloem Estate	Woodstock	Freehold	275 0 0	T. N. Roberts	Inspector's Residence.
—	99	119	Lot 11 of Claremont Estate	Claremont	Freehold	300 0 0	P. A. Molteno	Inspector's Residence.
			Lot G.H.1. of Rust-en-Werk	Paarl	Servitude of Right-of-Way in Perpetuity	£1 per annum	G. J. Hugo	Power Conductors.
			Lot J.H.2. of Rust-en Werk	Paarl	Servitude of Right-of-Way in Perpetuity	£1 per annum	J. D. Hugo	Power Conductors.
			Lot C of Joostenberg's Vlakte	Paarl	Servitude of Right-of-Way in Perpetuity	£1 per annum	R. W. Boyes	Power Conductors.
			Lot E of Zandgat		Servitude of Right-of-Way in Perpetuity	£1 per annum	Village Management Board of Glen Lily, Fairfield and Parow	Power Conductors.
			Portion B of Lot C of Joostenberg's Vlakte	Paarl	Servitude of Right-of-Way in Perpetuity	£1 per annum	D. J. van Niekerk	Power Conductors.
DURBAN UNDERTAKING.								
Acres.	Roods.	Perches						
20	0	3	Bay Foreshore No. 5350 Lot C.3 of Crown Lands	NATAL Durban	Formal Transfer not yet obtained from Railways and Harbours Administration.			Power Station, Congella.
SABIE UNDERTAKING.								
			Bergvliet No. 397	TRANSVAAL Pilgrims Rest	Water Right (Sabie River)		Water Court, District No. 22, Transvaal Department of Mines	Hydro-electric Power Station.
			Trecormath No. 322	Pilgrims Rest	Water Right (Sabie River)			
			Bergvliet No. 397	Pilgrims Rest	Servitudes of Abutment, Aqueduct, Storage, Right-of-Way etc.	500 0 0	S. H. Coetzee	Dam, Water Race, Pipeline, Power Station and Auxiliary Works.
			Grootfontein No. 29	Pilgrims Rest	Surface Right Permit		Department of Mines	Overhead Power Line and Sub-station.
			Rietfontein No. 84	Pilgrims Rest	Surface Right Permits		Department of Mines	Overhead Power Line and Roadways.
			Grootfontein No. 29 and Sheba No. 503	Pilgrims Rest	Surface Right Permit		Department of Mines	Overhead Power Line.

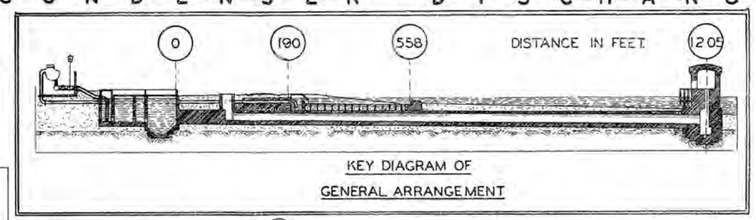
—E. S. C.—

CAPETOWN UNDERTAKING

SALT RIVER POWER STATION.

—CONDENSING WATER INTAKE WORKS—

F. C. Wauthack
M. Inst. C. E.
Consulting Engineer



KEY DIAGRAM OF GENERAL ARRANGEMENT

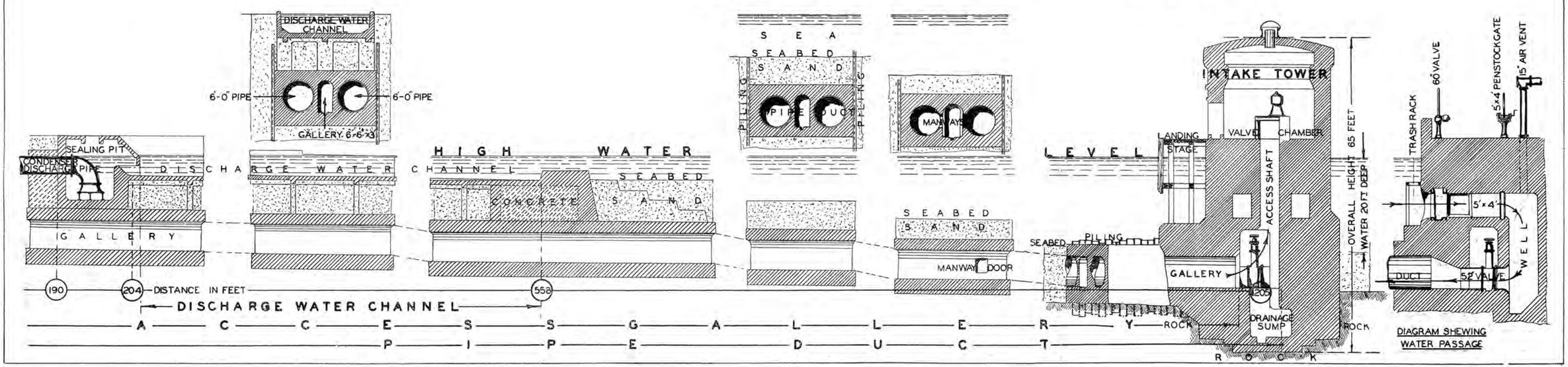


DIAGRAM SHEWING WATER PASSAGE