

# BRISBANE CITY COUNCIL ELECTRICITY SUPPLY DEPT. SILVER ANNIVERSARY

**M**UNICIPAL Electricity Supply in Brisbane had its origin in 1918 when, at a meeting in Bulimba School or Arts, the local Debating Society discussed the subject of electric light in view of the scarcity of kerosene on account of the war. It was suggested at the meeting that the Local Authority should apply to the Government to be constituted an Electric Authority with power to carry out its own scheme. Details were submitted to the Government, and after a close examination it was agreed that the Balmoral Council should apply to the Government for a loan of £15,000 to carry out the project. To the then Treasurer (Mr. J. A. Fihelly) fell the honour of granting the first loan for the electrification of the suburb.

Balmoral Shire Council embarked on the scheme on 1st January, 1920, and the first agreement for supply was made on 22nd December, 1919.

The "Brisbane Courier" of February 20, 1920, contained the following:

"At the Norman Creek Bridge yesterday afternoon, the Minister for Works (Mr. J. Larcombe) rammed the first pole in connection with the Balmoral Shire Council's electric light and power scheme. The chairman of the Council (Councillor A. Harrison) subsequently proposed the toast of the Queensland Parliament, and said he felt sure the scheme would be a success. It was hoped that a number of small industries would be begun as soon as cheap power was available. In responding, Mr. Larcombe said he was pleased to see that electric work had been undertaken by the Council.

"The health of members of other local authorities was proposed by Councillor C. G. Irish and responded to by the Mayor (Ald. A. Faulkner), and Councillor R. M. King, of Coorparoo"

The scheme having been successfully launched, it was closely followed

by several of the adjoining Local Authorities, and during 1920 Coorparoo, Stephens, and Hamilton areas were also reticulated. At this period an effort was made to co-ordinate the several authorities under one controlling body and the Balmoral and Coorparoo authorities associated themselves in a joint Board. In 1921 the Sherwood Council commenced operations, and in the following year a scheme was submitted by the Balmoral and Coorparoo Board to the Wynnum Town Council, and there was then formed the Balmoral-Coorparoo and Wynnum Joint Board. Operations were commenced in Wynnum late in 1922.

The Taringa Shire Council also came into the field, and early in 1923 operations were commenced in Windsor and Toombul. At this period a

further effort was made to co-ordinate the whole of the authorities, and the Metropolitan Electricity Board was thus formed.

In June, 1923, supply was made available in Windsor, and in December to Toombul. In February, 1924, the Toowong Council, which at that time was being supplied over a portion of the areas by the Brisbane Tramway Trust, decided to complete the scheme over the whole of the area.

Kedron, Enoggera, and Sandgate were connected to the system a little later.

During this period efforts had been made to complete the service in Ithaca, as portion was being supplied by the Tramway Trust, but several difficulties were encountered. However, at this stage the Greater Bris-



bane Council came into being and immediately guaranteed £10,000 to begin operations in Ithaca on a plan involving an approximate expenditure of £50,000.

In July, 1925, Mr. J. H. Hindman, who was at the time general manager of the Metropolitan Electricity Board, was appointed manager of the newly constituted Electricity Supply Department of the Brisbane City Council.

When the Greater Brisbane Council came into operation in 1925 the Electricity Board was co-ordinated and the Electricity Supply Department of the Council was established. Its first function was to introduce a uniform rate over the whole of the consolidated areas. Electricity at that time was purchased in bulk from the City Electric Light Company under a ten years' supply agreement, the reticulation being undertaken by the Board.

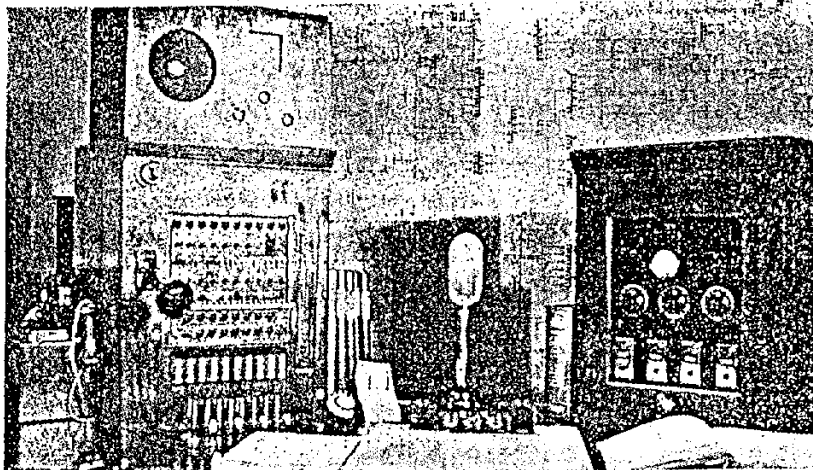
As the agreements with the Company were due to lapse by 1933, and as current for the Tramways was being supplied from three obsolete powerhouses and also purchased from the Company, the Council decided to erect a power-house for the supply of current for the Tramways and for public purposes. The power-house was officially opened in June, 1928.

The operations of the Department have expanded in remarkable fashion since the electricity supply was established in 1919, and the first pole was erected early in the following year. In 1926, the first year of Greater Brisbane, the Department had 24,029 consumers; at the end of 1941-42 there were 65,914 consumers. The Department supplies current for power and lighting throughout the whole of Brisbane, with the exception of the city proper, South Brisbane, New Farm, and Kangaroo Point areas. Supply was satisfactorily maintained during 1941-42, when there were extremely few interruptions. The free service given to consumers was again largely availed of, and the number of calls to premises to render service to installation faults and failure of supply numbered 9440. New consumers showed an increase of 1609. The following appliances were connected to the system during the year: Ranges, 382; water heaters, 401; other appliances, 8383.

The Department has a fleet of 79 vehicles which travelled a distance of 747,340 miles in the twelve months.

A profit of £11,537 was made by the Department of Electricity during the year. In the previous twelve months the profit was £21,456. The position may be considered satisfactory in view of the ever-increasing costs in providing supply, for while increases have taken place in almost every other phase of domestic and industrial life, the charge for electricity to the public has remained stationary. The increased costs, however, have resulted in a lower margin of profit.

The profits for the last eight years are as follows:



Control Desk.—System Control, Brisbane City Council. Showing telephone exchange on left; control panel for transmitter on right; microphone in centre. In the background is the System Diagram Board, showing underground cables to main control substations, and overhead lines radiating to distribution centres.

1934-35 .. ..	£57,354
1935-36 .. ..	53,684
1936-37 .. ..	50,082
1937-38 .. ..	15,652
1938-39 .. ..	26,566
1939-40 .. ..	35,256
1940-41 .. ..	21,456
1941-42 .. ..	11,537

Some idea of the growth of the Council's electricity supply may be gauged by the following comparative figures, 1926-1942. Revenue is three times higher, and the units sold more than twelve times greater. Only one water heater was connected in 1926. To-day 3980 are connected.

	1926	1941-42
Units sold .. .. .	7,231,607	82,440,060
Revenue .. .. .	£163,496	£478,659
Expenditure (Working) .. .. .	£141,646	£467,123
Capital Expenditure .. .. .	£461,692	£1,864,299
Maximum Demand on System .. .. .	3,871 KVA	22,230 KVA
Load Factor on System .. .. .	29%	55.36
Average Units Sold per Consumer .. .. .	253	1,226
Units Sold per £ Invested .. .. .	15.66	44.22
Consumers on System .. .. .	24,029	65,914
Total Load in Kilowatts (Connected) .. .. .	26,441	232,838
Appliances—		
Ranges .. .. .	37	4,284
Water Heaters .. .. .	1	3,980
Other Appliances .. .. .	19,223	129,979
Motors .. .. .	456	5,343
Horse Powers .. .. .	3,797	37,259
Street Lights .. .. .	3,698	8,104
Route Miles of Mains Overhead and Underground	522	1,069

# 25 YEARS PROGRESS

## of MUNICIPAL ELECTRICITY

### REVIEWED

# Electricity Dept. Executive Officers

## Mr. J. H. Hindman

Father Of Municipal Electricity

MR. J. H. HINDMAN, manager Electricity Department, Brisbane City Council, has been associated with municipal electricity from the time, twenty-five years ago, when it was merely an idea, to this day when the idea has become a substantial reality with more than a million pounds of assets, and a revenue of nearly half a million.

Mr. Hindman can look back to the time when service men in the Balmoral area were transported on their rounds by horse and dray. To-day, a fleet of 79 radio-controlled motor trucks speed skilled personnel at a moment's notice to any point of more than 1000 miles of overhead cables.

Such has been the phenomenal growth of the Brisbane City Council's Electricity Department from 1918, when a meeting of the local debating society was held in the Bulimba School of Arts to discuss electricity supply for the district.

Mr. Hindman, who was Power Sales Officer for the City Electric Light Co. Ltd., and a resident of Bulimba at the time, was invited to attend the meeting.

A resolution was carried to request the Government to provide an Order in Council for the City Electric Light Co. Ltd. to supply that area.

The Government decided, however, that it would not grant a franchise to private enterprise, but would encourage municipal electricity control.

Mr. Hindman then advanced the idea that the local authority be considered the electricity authority, and that electricity be purchased in bulk.

Offers were submitted by the Brisbane Tramways and the City Electric Light Co. Ltd., and the latter was successful. An agreement was accordingly entered into with the City Electric Light Co. Ltd.

Then Mr. Hindman approached the Coorparoo Council and suggested the formation of a joint board. The Coorparoo-Balmoral Electricity Board then came into being. While construction was going on in Coorparoo, he approached Wynnum, which came into the scheme.

Meanwhile, a general movement was taking place regarding electricity by suburban local authorities, and efforts were made to co-ordinate the whole of the metropolitan areas. As a result the Metropolitan Electricity Board was constituted, comprising the municipalities of Balmoral, Coorparoo, Wynnum, Toombul, Sandgate, Kedron, Enoggera, Belmont and Ithaca.

Then came the Greater Brisbane scheme, which brought in Hamilton, Windsor, Taringa, Toowong, Sherwood, and Stephens. The Brisbane



Mr. J. H. HINDMAN

City Council's Electricity Supply Department and the New Farm power house followed.

In 1926, the first year of Greater Brisbane, the Electricity Department had 24,029 consumers. At the end of 1942, it has 65,914 consumers. Units sold in 1926 were 7,231,607. In 1942, 82,440,060 units were sold. The Department supplies current for the whole of Brisbane with the exception of the city proper, South Brisbane, New Farm and Kangaroo Point.

## Mr. JAMES GIBSON Assistant Manager

FOR 19 years Mr. James Gibson has been actively associated with municipal electricity supply in Brisbane. He took charge of the electrification of the town of Windsor in 1923. This was subsequently merged with the municipalities and shires when the Greater Brisbane scheme came into effect in 1925. Mr. Gibson was appointed Assistant Manager of the newly constituted Electricity Department, Brisbane City Council. Much of the construction work in the early days was the responsibility of Mr. Gibson. Of latter years he has seen considerable administrative service. The sound present position of municipal electricity is the fruits of hard work, vision and efficiency over many years. And during this time Mr. Gibson has taken a full share in the work which has brought success to the Brisbane City Council's undertaking.

In its 25 years' history, Brisbane's Municipal electricity supply had the hand of James Hindman at the helm, and to his credit lies the remarkable progress which has taken place.

## A MESSAGE FROM MR. HINDMAN

On the occasion of the Silver Anniversary of Municipal Electricity Supply, it is with pleasure that I give this birthday message.

On looking back over the past 25 years, it gives one a great degree of satisfaction to realise what has been accomplished. At the initiation of the scheme it was not anticipated that it would expand to its present proportions. During the present year the Department will have 67,500 consumers, and consumption of electricity will pass the one hundred million mark.

During the years that have passed an orderly planned policy has been followed, and I think we can with confidence look forward to the future for even greater progress. During latter years co-ordination of effort has taken place as between the City Electric Light Company and the Council with a view to improving the general outlook of this important phase of public service.

Prevailing conditions call for every effort to pursue the present conflict to a successful issue, and when the grand day of Peace arrives our efforts will be directed to the greatest possible utilisation of this most important public commodity.

Looking with every confidence to the future,

J. H. HINDMAN, Manager.

## Mr. A. S. FAULKNER Distribution Engineer

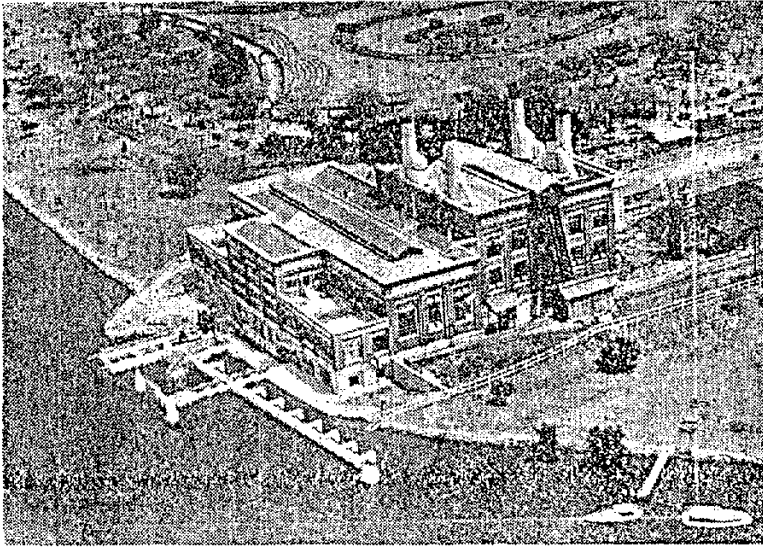
MR. A. S. FAULKNER, Assoc.G.I. Techy., A.M.I.E. Aust., M.Am.I.E.E. (Chartered Engineer), completed his technical education at the Gordon Institute of Technology, Geelong. He received his early training with the Melbourne Electrical Supply Company, and transferred to the City Electric Light Co. Ltd. in 1919. Mr. Faulkner entered the service of the Greater Brisbane Council in 1927 as Distribution Engineer.

During the sixteen years which have followed, Mr. Faulkner has seen municipal electricity grow from an undertaking with 24,029 consumers, £163,496 revenue, 7,231,607 units sold and total load connected 26,441 kilowatts to 232,838 consumers, £478,659 revenue, and 232,838 kilowatts load.

As Distribution Engineer it has been Mr. Faulkner's responsibility to control the design, construction and maintenance of the rapidly growing distribution system.

The present day efficiency of the Brisbane City Council's distribution system is the measure of Mr. Faulkner's success.

# The New Farm Power House



The New Farm Power-house

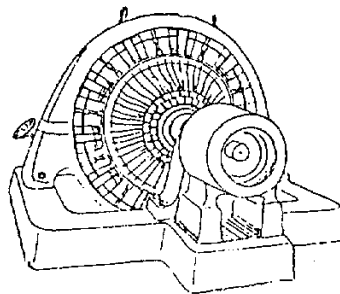
PRIOR to 1928, electric current for the operation of the tramway service was generated in three small power-houses of obsolete design, and the electricity sold by the Council for power and lighting purposes was purchased from the City Electric Light Company, Limited. For some time the Council had been negotiating with the Company for a supply of electricity for tramway and other purposes, but as a satisfactory arrangement could not be agreed upon, the Council decided on 2nd November, 1926, to erect its own power-house to generate supply for the tramways, also power and light for those portions of the Greater Brisbane area for which authority to supply was held. The erection of the power-house was carried out by the officers of the Tramways Department, and on 27th June, 1928, the New Farm power-house was officially opened, the installed plant consisting of two 9375 kw. turbo generators and three boilers.

Between 1930 and 1935 the several ten-year agreements with the City Electric Light Company for bulk purchase of energy to the various suburban districts expired, and on expiry each area was transferred to the Council's own power-house. In addition to this, however, the increase in consumption of electricity in Brisbane was so rapid after the depression of 1930-31 that the power-house output continued to expand, and additional plant was required to meet the new business. In 1930, an 18,750 kw. turbo alternator and three more boilers were installed, and in 1936 a further 18,750 kw. unit went into service. Two larger boilers were added in 1939, bringing the installed capacity of the station up to 56,250 kw., together with the necessary boilers.

The consumption of electric energy continued to increase, and on the ap-

pointment by the Government of a State Electricity Commission for Queensland, an investigation, in conjunction with officers of the Council and the City Electric Light Company, was made of the electricity supply situation of the whole of Brisbane. The Commission issued a report in September, 1938, recommending that the Council's power-house at New Farm and the Company's power-house at Bulimba be inter-connected for emergency purposes, and also that a new turbo generating set with requisite boilers be installed in each power-house as soon as possible.

The recommendations of the Commission, as far as they concerned the Council, were immediately adopted, and steps were taken towards the installation of a fifth turbo generator unit at New Farm, and also to draft an agreement with the Company for an interconnection. The agreement was signed on 23rd June, 1939, and an interconnection of a temporary nature was effected by 29th April, 1940, the events of the war having emphasised the necessity for the measure. Since then, a second 10,000 kva. transformer for interconnection purposes has been installed, and energy has been interchanged on sev-



## A SPLENDID RECORD

Merely an idea in 1918, the Municipal Power-house, administered by the Transport Department of the Council, has, within 25 years, developed into an undertaking with assets exceeding £1,000,000, annual output of 124,846,600 units, and revenue of over £300,000.

Such has been the meteoric rise of Municipal Electricity, to which this special number pays tribute.

eral occasions. The installation of the turbo generator set, which was received from England since war broke out, was completed by September, 1941.

The operation and supervision of the Council's power-house is carried out by the officers and staff of the Council's Department of Transport, but all accounts of the undertaking are kept separate. The power-house sells its output in bulk to the two Departments of Transport and Electricity, the price being adjusted each six months, so that the power-house makes neither profit nor loss. The operating costs, which comprise coal, wages, and maintenance, &c., are divided between the two departments in accordance with the units supplied, whilst the overhead costs, including interest, depreciation, &c., are divided up in proportion to the kva. demand.

At 30th June, 1942, the original value of the fixed assets of the power-house amounted to over £1,000,000.

The output of electricity from the Council's power-house at New Farm during the year was 124,846,600 units, compared with 125,189,500 units for the preceding year. On 3rd September, 1941, the Lord Mayor started up No. 5 turbo generating unit of 18,750 k.w. capacity. The installed capacity of the plant at New Farm now is:

Turbo generators ..	75,000 k.w.
Boilers .. .. .	57,000 k.w.

The interconnection between the power stations of the City Electric Light Company and the Council was used frequently during the year by both parties to provide assistance in emergency or during overhaul and alterations to plant. From the Company to the Council the energy transferred totalled 28,700 units, while 222,300 units were transmitted in the opposite direction.

# Executive Officers

(TRAMWAYS AND POWER HOUSE)

**MR. L. S. QUINN, A.C.I.S.,  
A.M.Inst. T.  
General Manager.**



Mr. S. L. QUINN

**MR. QUINN'S** early experience was obtained with the Queensland Government Railways, in whose service he spent 21 years. Commencing at Ipswich in 1903, he served in various capacities in the traffic branch, including four years as personal assistant to Mr. G. R. Steer, who was then General Traffic Superintendent of the Railways Department. In 1919, Mr. Quinn was appointed as an assistant to the Commissioner for Railways, in which capacity he carried out various investigations and was responsible for a good deal of the organising work of the Department.

In 1923 he followed the example of his former chief, Mr. G. R. Steer, in forsaking the railway for the tramway field, and was appointed Secretary to the Brisbane Tramway Trust. When the tramway undertaking was transferred to the Greater Brisbane Council in 1925, Mr. Quinn became Assistant General Manager under Mr. Steer as General Manager.

The following thirteen years were eventful ones in the history of the Tramways Department, as they included the construction of the Council's New Farm power-house and the installation of a modern system of substations for power supply to the trams, the weathering of a severe business depression in 1931, and the subsequent rapid growth of the tramway system and also of the supply of electrical energy for public use from

the power-house at New Farm. Mr. Quinn took his full share of responsibility in all these matters.

In February, 1939, Mr. Quinn was appointed General Manager of the Department on the retirement of Mr. G. R. Steer, and since then he has been responsible for the administration of the whole of the tramways and power-house activities of the Brisbane City Council, an onerous job in normal times, but made much more so by war conditions.

**Mr. W. ARUNDELL, M.I.E. Aust.,  
M.I.E.E.**

Chief Engineer.

**MR. ARUNDELL** served his five years' apprenticeship to the electrical trade with Messrs. Barton and White, whose firm pioneered the electricity supply industry in Brisbane. On completing his training, Mr. Arundell went into partnership with Mr. R. Wallace as mechanical and electrical engineers, principally engaged on the installation and repair of power and lighting plants in sugar mills and coastal steamers.

In 1902 he joined the staff of the Brisbane Tramways Company as Chief Electrician and took charge of the installation of the electrical generating plant in the Countess Street power-house and later at Light Street and Logan Road.

In 1920, Mr. Arundell was appointed Works Manager for the company, and was responsible under the Chief Engineer, Mr. W. M. Nelson, for the whole of the power-plant, rolling-stock, track maintenance and con-

struction, overhead structure, and workshop management. On the death of Mr. Nelson in 1926, Mr. Arundell was appointed Chief Engineer of the Tramways undertaking which by this time had been taken over by the Greater Brisbane Council.

Since Mr. Arundell became Chief Engineer of the Department its activities have grown considerably. He has been responsible for the installation of a modern system of eleven power substations for supply to the trams and also for the construction and operation of the New Farm power-house, which was built by the Council to supply power for the tramways system and also for the Council's power and lighting requirements.

For ten years Mr. Arundell was a part-time instructor in electrical engineering at the Brisbane Technical College, and he has always taken a prominent part in the activities of the Standards Association and of the Institution of Engineers, Australia. He occupied the position of Chairman of the Brisbane Division of the Institution of Engineers during the year 1932.

## FURTHER IMPORT BAN

Further restrictions on the importation of goods of sterling origin have been announced by the Customs Minister (Senator Keane).

The restrictions announced have been imposed with a view of eliminating the shipment of non-essential commodities and so ensuring that the best possible use be made of available shipping space.

Competition for shipping space between essential and unessential items must be eliminated, said Senator Keane. Included in the list are goods of sterling origin.

Total prohibition of porcelain insulators, hydrochloric, nitric and sulphuric acid has been ordered.

Administrative control will be extended over the following goods:

Certain dynamo electric machines, filament lamps, gas cooking and heating appliances, sprinklers for automatic fire sprinkler systems.

Mathematical instruments, iron and steel, aluminium and nickel, copper, brass, Britannia metal and shellac.

## PERSONAL PARS

Mr. Arthur Lowry, for many years with Norman Bell & Co., and latterly with British General Electric Co., successor to Norman Bell, has left the employment of that company.

Mr. F. Hoe (Edgar V. Hudson) was recently re-appointed an executive officer of the Motion Picture Exhibition Association of Queensland.

Mr. A. Ewing (Trackson Bros.) is back from a brief holiday.



Mr. W. ARUNDELL

## THE HISTORY OF

**Brisbane Tramway's Power Supply**

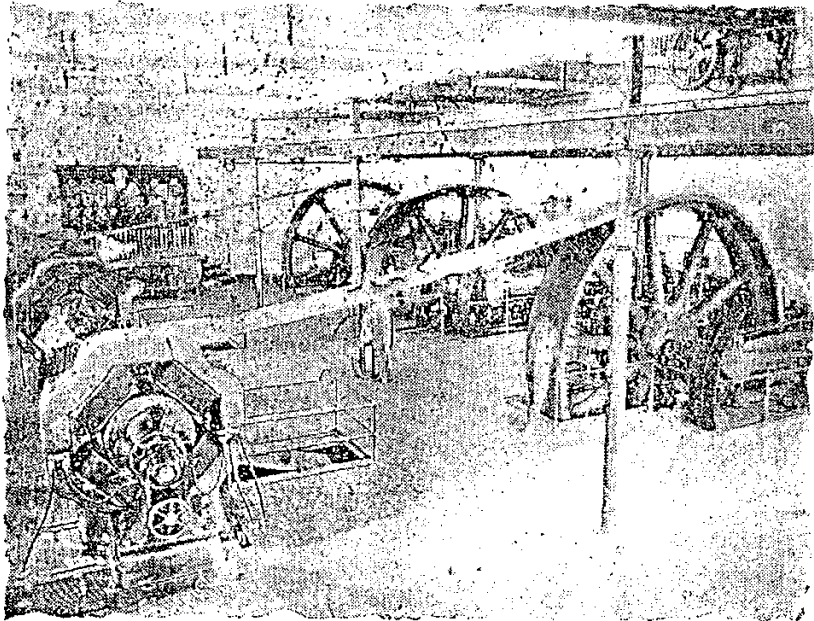
THE beginning of electric tramway power supply in Brisbane dates back to the year 1897, when the original plant at Countess Street was first put into operation on the site where "Puffing Billy" now stands, and electric tramcar No. 1 was put into regular service along Stanley Street, between Logan Road and the city. On June 26, 1897, the number of electric trams in service was increased from one to three. The second line to be converted from horse traction to electric traction was the West End line, which was opened on 8th September, 1897, at which time there were 12 electric cars running on the service. Since that time the number of trams has been gradually increased until at the present day the peak load service requires a total of 400 trams on the road at once.

The original power plant installed at Countess Street power house consisted of three Robey cross compound horizontal steam engines, each driving a 550 volt D.C. generator by means of a 17ft. diameter flywheel and belt, each belt being 3ft. wide and about 90ft. long. Each set had a capacity of 300 KW., and the floor space occupied by each engine and generator would easily accommodate a modern 20,000 KW. turbo-alternator set. Four hand-fired Babcock and Wilcox water tube boilers were installed to supply steam at 150lbs. pressure to the engines. A 150ft. brick chimney was also erected, which was a feature of the landscape for over 30 years.

The first extension of the plant was in 1902, when a 400 KW. McIntosh and Seymour set was installed consisting of a vertical compound engine direct coupled to a D.C. generator, and complete with a surface condenser and cooling tower. Two more boilers were installed, and shortly afterwards a No. 7 boiler was installed with a mechanical chain grate stoker.

By this time the electric trolley wires were spreading out from the city in several directions, and it was natural that the possibilities of taking power and lighting from these wires should be explored. Probably the first supply to be given by the Tramways system to an outside body was to the Railway Department at Roma Street and Central Stations, which were connected up about the year 1900. Two years later, supply was given to the electric crane on the railway wharf at South Brisbane for the purpose of loading coal into ships, and it is noteworthy that this same equipment is still in service after 35 years.

The Brisbane Tramways Company Ltd. had charge of the tramway system in its early days, and under the able direction of the late Mr. J.



The Original Countess Street Power-house in 1897. This reproduction is from a faded and worn print.

S. Badger as General Manager it flourished and grew. During the pre-war years its progress was continuous, the famous "Tramway Strike" of 1912 proving only a very temporary check.

The first major advance in power plant machinery occurred when a Parson's turbine set was put into service just before Christmas in the year 1908. This was originally a 500 KW. set, running at 3000 r.p.m., direct coupled to a high-speed D.C. generator. This generator was later replaced by a 600 r.p.m. generator, and double reduction helical gearing, and at the same time the turbine speed and output were increased to 3500 r.p.m. and 600 KW. This turbine was fitted with a surface condenser, drawing its cooling water through a pipe line about a third of a mile long from a pumping station located on the river bank near where the northern abutment of the Grey Street Bridge now stands.

Power plant extensions now followed each other rapidly. In 1911 the first of three British Thomson-Houston 750 KW. turbo alternators was installed, the six-phase alternator being electrically coupled to a rotary converter, the combination being started up and run as a unit delivering 550 volts D.C. The other two similar units followed in 1913 and 1915 respectively. No. 8 Babcock and Wilcox boiler complete with chain-grate and induced draft fan was installed in 1912, No. 9 boiler in 1914, together with an overhead coal bunker, jib crane,

and conveyor for coal handling. No. 9 boiler, which was the last to be installed, was a three-drum land type Babcock and Wilcox boiler of 6000 sq. ft. heating surface, and complete with chain grate stoker, superheater, and induced draft fan. This boiler was capable of supplying up to 30,000 lbs. steam per hour, and due to its better efficiency and higher steam temperature, carried a large share of the loading during the 14 years of its strenuous life.

Just before the last war the electric tramway system had been spreading out through the suburbs, and it was found that the distances were becoming too great to feed all the energy at 600 volts from the power house at Countess Street. Another power house was set up at Light Street, beyond the Valley Junction, where two large vertical gas engines and a producer plant burning coke were installed. One was a 6-cylinder, 3-crank, 200 r.p.m. engine, driving a 450 KW. generator, and the other an 8-cylinder, 4-crank engine of 870 b.h.p., driving a 600 KW. generator. The first of these sets went into service in July, 1913. At the time of their installation these sets were amongst the largest gas engines in the world, and they gave quite a good account of themselves for 15 years, until they were finally scrapped in 1928.

In order to provide a feeding point for power on the south side of the river, two of the three original Robey engine sets were transferred from Countess Street and re-erected in a

# HISTORICAL

galvanised iron power house building in Logan Road, during the year 1915. These sets were connected up to exhaust to a barometric condenser, supplied with cooling water from a 60ft. x 25ft. wooden cooling tower. Two new B. and W. double drum land type boilers were installed to supply steam, together with chain grates, induced draft fan, and economiser. The generators were fitted at the same time as were commutating poles. These Robey engines ran regularly for over thirty years, until they were finally scrapped in 1928 and a corner of the building housing them was utilised to house a modern rotary convertor installation.

An interesting portion of the history of the tramways power supply is the period during which a public supply for power and lighting was given to the district of South Brisbane. A three-wire 110 volt D.C. supply was first given from a sub-station in Annerley Road by means of motor-generator sets. This was later converted to an alternating current supply obtained from a 400 KW. Richardson-Westgarth steam turbo set installed in Logan Road power house, supplying energy at 5500 volts, and transmitting to a stepdown sub-station near the Ship Inn, in Stanley Street. Two motor alternators driven from the 550 volt tramway supply were installed at Logan Road power house to supplement supply from the turbine set. The whole of this public supply equipment was eventually transferred to the City Electric Light Company about the year 1920.

Public supply was also given for many years from the Countess Street power house to the district of Ithaca, the supply being single phase alternating current at a voltage of 5500, being stepped down to 220 volts by means of local transformers throughout the district. The first supply under this scheme was switched on to the district of Red Hill in July, 1916. This system was finally taken over in the year 1928 by the Electricity Supply Department of the Council, and was reticulated for 3-phase supply at 11,000 volts obtained from the Council's New Farm Power House.

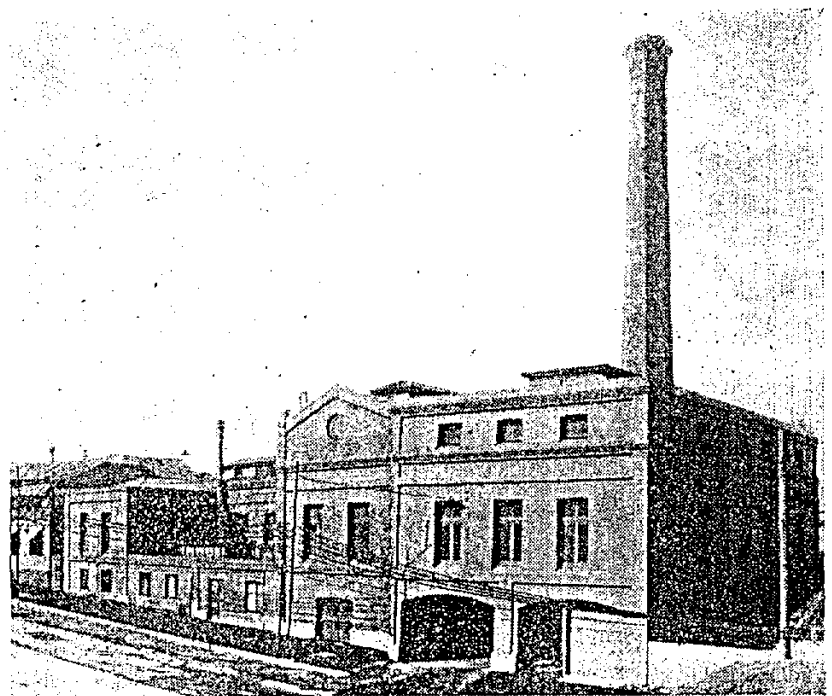
Other outside power supply given by the Tramways Department included the former railway cold stores plant in Roma Street, many butchers' shops, and other power users located alongside the tram lines in various districts, and also an 1100 volt A.C. supply to Roma Street and Central Railway Stations, together with some of the other smaller railway supplies. The Tramways Department still supplies A.C. power and lighting to these two main railway stations.

The growth of the tramway system after the last war necessitated arrangements for further power supply, and an agreement was made with the City Electric Light Company, Ltd., for a 550 volt D.C. supply for tramways purposes from two rotary convertors located in their Boundary Street sub-station. Between the years 1920 and 1926, therefore, the power supply for operating the trams was taken from four different sources, all operated in parallel, viz.: Countess Street with 3500 KW. of plant, Logan Road with 600 KW, Light Street with 1000 KW., and the C.E.L. Company's convertors at Boundary Street with approximately 1000 KW. available, a total of about 6000 KW. of plant, distributed over 12 separate machines. The operation of this system, as can be imagined, was very complicated, and many unrehearsed incidents occurred calling for ingenuity and quick thinking on the part of the operating staff. It was finally scrapped in the year 1928.

An important milestone in the history of the Tramways was the taking over control of the system from the Tramways Company by the Brisbane Tramway Trust on 1st January, 1923. The Trust remained in control until 1st December, 1925, when the newly-formed Greater Brisbane Council took over the whole system, which since then has been administered by the Tramways Department (now the

Transport Department) under Mr. G. R. Steer, M.V.O., as General Manager, followed by Mr. S. L. Quinn. Mr. W. M. Nelson, M.I.E.E., was followed by Mr. W. Arundell, M.I.E.E., as Chief Engineer. The Tramway Trust had been previously considering ways and means of increasing the power supply system, and on the system being taken over by the Council the question of an adequate power supply to the Tramways and to the Council's power and lighting areas was fully investigated. These investigations resulted in a decision by the Council to build a modern power-house to supply the whole of the Council's requirements and the Tramways Department of the Council was authorised to build and operate the plant.

New Farm Power House, which was built as a result of this decision, went into service in June, 1928, with two 9375 K.W. steam turbo-alternator sets, and three Babcock and Wilcox boilers, steam being generated at 300 lbs. per square inch and 700 degrees F. Electrical energy is generated at a voltage of 11,000 volts and is fed through underground cables at this voltage to the various tramway sub-stations, where it is stepped down and converted to 600 volts D.C. for use by the trams. Supply is similarly given to the various sub-stations of the Council's Electricity Supply Department for distribution as power and lighting for industrial, domestic and commercial purposes.



View of Countess Street Power-house, Dismantled in 1929.

# STATISTICAL REVIEW

## POWER-HOUSE STATISTICS

	1929.	1930.	1931. (6 Months.)	1931-32.	1932-33.	1933-34.	1934-35.
Total units output ..	23,236,370	27,776,546	14,835,500	33,829,855	39,517,715	48,797,850	60,170,710
Units sold to Tramways Department ..	20,734,276	19,963,551	9,711,680	19,376,700	20,312,500	20,672,000	21,957,900
Units sold to Electricity Department ..	2,502,094	7,812,995	5,123,820	14,453,155	19,205,215	28,125,850	38,213,410
Station maximum demand k.W. ..	7,400	9,400	9,400	11,700	12,500	15,700	18,100
Tons coal burnt ..	21,853	24,915	12,645	28,323	31,002	36,355	44,633
Calorific value of coal ..	12,350	12,300	12,300	12,100	12,000	12,050	11,990
Lbs. per unit sent out ..	2.10	2.01	1.91	1.87	1.76	1.67	1.66
Fixed assets at depreciated value ..	£414,469	£454,170	£460,934	£427,754	£401,408	£379,295	£420,555
Operating costs ..	£43,352	£32,608	£24,093	£50,733	£56,450	£61,709	£73,467
Operating cost per unit (in pence) ..	.448	.455	.390	.360	.343	.304	.292
Overhead charges ..	£37,843	£50,186	£31,548	£71,090	£64,980	£54,011	£55,538
Total annual cost ..	£81,195	£102,794	£55,641	£121,821	£121,430	£115,720	£128,905
Total cost per unit (in pence) ..	.839	.889	.900	.862	.738	.570	.514

	1935-36.	1936-37.	1937-38.	1938-39.	1939-40.	1940-41.	1941-42.
Total units output ..	71,920,230	84,454,800	97,971,000	108,429,200	117,339,500	125,189,500	125,040,400
Units sold to Tramways Department ..	24,229,400	25,999,400	27,629,600	28,946,600	29,714,200	31,038,700	33,279,500
Units sold to Electricity Department ..	47,690,830	58,455,400	70,341,400	79,482,600	87,625,300	94,150,800	91,507,100
Station maximum demand k.W. ..	20,900	24,600	27,600	29,600	31,200	32,600	33,600
Tons coal burnt ..	51,857	59,207	69,767	79,514	87,128	94,330	92,802
Calorific value of coal ..	11,970	11,890	11,680	11,710	11,550	11,200	10,900
Lbs. per unit sent out ..	1.62	1.57	1.595	1.642	1.664	1.698	1.662
Fixed assets at depreciated value ..	£492,930	£512,091	£535,516	£542,575	£545,223	£588,348	£573,007
Operating costs ..	£90,014	£101,091	£120,260	£143,618	£160,405	£176,653	£191,972
Operating cost per unit (in pence) ..	.301	.287	.295	.318	.328	.339	.369
Overhead charges ..	£62,283	£72,981	£84,329	£87,053	£93,322	£93,596	£104,985
Total annual cost ..	£152,297	£174,072	£204,589	£230,671	£253,727	£270,249	£296,937
Total cost per unit (in pence) ..	.509	.495	.501	.511	.519	.518	.571

## KILOWATT HOURS SOLD PLUS TRANSMISSION LOSSES Showing Distribution and Percentage of Total Kilowatt Hours Used for Different Purposes

Year.	One Meter Rate.	%	Domestic Lighting.	%	Commercial and Industrial Lighting.	%	Domestic Power.	%	Commercial and Industrial Power.	%	Rural Supply.	%	Public Lighting.	%	Transmission Losses.
1926 ..	..	..	4,701,280	56.8	..	..	..	..	1,320,718	15.8	..	..	1,149,600	13.7	13.7
1927 ..	..	..	5,622,641	49.1	..	..	..	..	2,060,902	23.2	..	..	1,160,335	10.1	17.6
1928 ..	..	..	6,575,256	49.7	..	..	..	..	3,087,222	23.3	..	..	1,264,727	9.0	17.4
1929 ..	..	..	7,371,578	45.6	..	..	1,407,959	8.7	3,519,395	21.8	..	..	1,383,977	8.6	15.8
1930 ..	..	..	7,813,269	40.8	..	..	2,250,673	11.8	4,688,058	24.5	..	..	1,465,616	7.6	15.3
1931-1932 ..	..	..	7,599,767	30.6	..	..	3,549,381	14.3	8,327,927	33.6	..	..	1,398,230	5.6	15.9
1932-1933 ..	..	..	7,542,235	25.3	..	..	4,429,855	14.9	11,088,926	39.2	..	..	1,333,403	4.5	10.1
1933-1934 ..	1,980,351	5.9	6,141,678	18.6	..	..	4,683,985	14.2	13,438,845	40.7	..	..	1,355,933	4.1	10.5
1934-1935 ..	4,520,318	11.2	3,006,026	7.7	1,753,766	4.3	5,661,727	14	17,814,308	44	..	..	1,470,982	3.7	13.1
1935-1936 ..	6,990,521	14.6	3,068,366	6.4	2,047,538	4.3	5,648,945	11.8	21,660,065	45.1	..	..	1,701,512	3.5	14.3
1936-1937 ..	10,271,491	17.5	2,921,810	4.9	2,275,439	3.9	5,828,557	9.0	28,418,947	48.3	..	..	1,800,001	3.1	12.4
1937-1938 ..	18,572,603	26.3	1,013,578	1.4	2,615,083	3.7	2,651,644	3.7	35,811,142	50.6	..	..	1,823,368	2.6	11.7
1938-1939 ..	22,102,199	27.7	1,069,228	1.3	3,230,270	4	3,058,471	3.8	39,624,640	49.8	..	..	1,949,240	2.4	10.8
1939-1940 ..	24,004,133	28.3	873,617	1	3,492,651	4	3,192,828	3.6	43,738,086	49.6	..	..	2,075,433	2.4	10.9
1940-1941 ..	27,881,471	29.5	730,803	.8	4,006,407	4.2	3,366,431	3.5	46,557,175	49.3	60,875	1	2,198,214	2.3	10.3
1941-1942 ..	30,474,953	33.2	555,979	.6	4,517,302	4.9	3,444,024	3.8	41,570,543	45.2	200,928	.2	1,646,331	1.8	10.3

One Meter Rate Inaugurated in 1933-1934.  
Kilowatt Hours Sold for Commercial and Industrial Lighting prior to 1934-1935 are included in Domestic Lighting.

## REVENUE RECEIVED ALL SOURCES AND PERCENTAGE OF TOTAL

Year.	Total Revenue.	One Meter Rate.	%	Domestic Lighting.	%	Commercial and Industrial Lighting.	%	Domestic Power.	%	Commercial and Industrial Power.	%	Rural Supply.	%	Public Lighting.	%	Meter and Motor Rents.	
1926 ..	£ 183,496	..	..	£ 107,172	65.6	..	..	..	..	£ 13,681	8.4	..	..	£ 18,080	11.4	£ 11,678	7.1
1927 ..	193,987	..	..	126,108	65	..	..	..	..	23,813	12.3	..	..	19,312	10	13,307	6.8
1928 ..	220,710	..	..	145,959	66.1	..	..	..	..	26,188	11.8	..	..	20,223	9.2	11,852	5.4
1929 ..	283,633	..	..	160,091	60.7	..	..	11,920	4.5	26,284	10	..	..	22,102	8.4	12,283	4.7
1930 ..	255,579	..	..	170,050	66.5	..	..	18,303	7.2	29,998	11.7	..	..	24,686	9.7	11,791	4.6
1931-32 ..	262,551	..	..	160,621	61.2	..	..	24,568	9.3	40,086	15.3	..	..	25,359	9.7	8,759	3.3
1932-33 ..	295,495	..	..	169,950	57.5	..	..	37,470	12.7	51,933	17.6	..	..	25,080	8.5	8,524	2.8
1933-34 ..	290,817	36,517	12.5	133,524	45.9	..	..	38,813	13.4	58,039	19.9	..	..	20,171	6.9	1,677	.6
1934-35 ..	303,887	85,473	28.12	60,969	19.8	28,555	9.42	38,892	12.8	68,481	22.52	..	..	20,747	6.8	258	.08
1935-36 ..	320,254	92,234	28.8	60,584	18.92	29,483	9.21	38,413	12	76,442	23.87	..	..	21,014	6.50	199	.06
1936-37 ..	355,904	112,316	31.56	54,882	15.42	31,248	8.78	38,397	10.79	96,817	27.2	..	..	21,063	5.92	210	.06
1937-38 ..	374,915	168,007	44.83	19,949	5.08	34,072	9.08	15,462	4.12	116,029	30.94	..	..	21,151	5.64	244	.06
1938-39 ..	422,943	193,093	45.65	18,959	4.48	40,087	9.48	12,943	3.03	129,414	30.6	..	..	22,086	5.22	242	.06
1939-40 ..	463,120	219,259	47.43	16,411	3.54	43,229	9.34	16,034	3.46	140,261	30.29	..	..	23,879	5.16	156	.03
1940-41 ..	471,103	218,313	46.31	13,724	2.91	46,557	10.31	14,062	2.98	145,653	30.92	413	.09	24,401	5.11	202	.06
1941-42 ..	478,659	237,745	49.67	11,412	2.38	48,031	10.05	12,891	2.69	136,280	28.47	1,262	.26	24,451	5.11	290	.06

# STATISTICAL REVIEW

INDUSTRIAL MOTOR LOAD CONNECTED TO SYSTEM

MAINTENANCE COST PER SERVICE ON DISTRIBUTION SYSTEM

Year.	Number of Motors Installed.		Total Horse Power.		Total Number of Services.	Total Expenditure.	Expenditure per Service in Shillings.
	Motors.	Yearly Increase.	Horse Power.	Yearly Increase.			
1926	456	163	3,797	1,262	24,029	£ 7,634	6-353
1927	632	176	4,625	828	29,510	10,641	7-212
1928	867	235	5,878	1,253	33,689	9,774	5-802
1929	1,219	352	7,717	1,839	37,014	10,649	5-754
1930	1,472	253	9,160	1,443	39,844	9,782	4-91
1931-1932	2,024	552	15,345	6,155	42,157	10,486	4-97
1932-1933	2,236	212	16,010	665	43,019	11,189	5-13
1933-1934	2,457	221	17,451	1,441	45,399	10,093	7-089
1934-1935	2,716	259	19,112	1,661	47,027	20,017	8-353
1935-1936	3,009	293	22,851	4,739	50,605	25,060	9-904
1936-1937	3,307	298	26,282	4,431	53,436	27,236	10-193
1937-1938	3,612	305	29,665	3,383	56,061	32,210	11-491
1938-1939	3,908	296	31,906	2,301	58,563	39,180	13-38
1939-1940	4,126	218	31,500	- 466	60,742	43,415	14-29
1940-1941	4,551	425	34,595	3,095	62,923	47,082	14-96
1941-1942	5,343	792	37,299	2,644	64,472	45,516	14-13

SUMMARY OF DIFFERENT SIZES OF PUBLIC LIGHTS IN SERVICE  
Electricity Department

TOTAL PUBLIC LIGHTS ERECTED IN GREATER BRISBANE AREA

Year.	M.V. 250 W.	M.V. 400 W.	Sodium Vapour 100 W.	400 C.P.	300 C.P.	200 C.P.	100 C.P.	50 C.P.	Electricity Department.		Other Authorities.		Totals.	
									Lamps.	Increase.	Lamps.	Increase.	Lamps.	Increase.
									1926	..	..	..	67	366
1927	..	..	..	15	66	483	1,930	1,391	3,885	187	2,286	32	6,171	219
1928	..	..	..	19	74	493	2,174	1,469	4,249	304	2,321	35	6,570	399
1929	..	..	..	21	69	586	2,371	1,900	4,947	698	2,348	17	7,295	725
1930	..	..	..	22	50	600	2,318	2,281	5,271	324	2,366	28	7,637	342
1931-32	..	..	..	22	22	572	1,842	2,828	5,285	14	2,363	3	7,648	11
1932-33	..	..	..	22	23	615	1,939	2,906	5,290	5	2,361	- 2	7,651	3
1933-34	..	..	..	24	23	685	2,355	3,063	5,505	215	2,367	6	7,872	221
1934-35	..	..	..	25	24	734	2,601	3,334	6,150	645	2,377	10	8,527	655
1935-36	..	..	..	27	28	769	2,825	3,545	6,718	568	2,383	6	9,101	574
1936-37	..	..	..	6	24	718	2,835	3,570	7,194	476	2,419	36	9,613	512
1937-38	..	100	..	14	24	783	3,123	3,553	7,253	59	2,478	59	9,731	118
1938-39	..	100	19	25	25	872	3,182	3,537	7,617	394	2,506	28	10,123	392
1939-40	..	9	103	19	34	30	1,091	3,216	7,772	155	2,511	5	10,283	160
1940-41	..	10	101	19	..	..	..	..	7,971	199	2,631	120	10,602	319
1941-42	..	..	..	..	..	..	..	..	8,101	133	2,757	156	10,891	289

† 0.252 lights not operating owing to National Security regulations.

TOTAL ROUTE MILEAGE OVERHEAD DISTRIBUTION CABLES

TOTAL ROUTE MILEAGE 11,000 UNDERGROUND TRANSMISSION SYSTEM

Year.	Route Miles Erected to end of Year.		Yearly Increase.		Percentage Increase.	Route and Lineal Miles laid to end of Year.		Yearly Increase.		Percentage Increase.	
	Miles.	Chains.	Miles.	Chains.		Route Miles.	Lineal Miles.	Route Miles.	Lineal Miles.	Route Miles.	Lineal Miles.
	1927	519	17	..	70	11.14	3.22	10.2	8.9	16.99	..
1928	577	7	57	..	10.12	12.12	27.19	5.4	7.5	44.55	27.58
1929	612	34	35	27	6.12	17.52	34.69	4.7	6.3	26.83	18.16
1930	653	38	41	4	6.7	22.22	40.99	..	..	..	..
1931-1932	680	6	26	48	4.08	22.31	41.27	..	..	..	..
1932-1933	695	72	15	66	2.33	33.23	42.51	..	..	..	..
1933-1934	722	68	26	36	3.8	34.23	44.41	1.0	1.9	1.24	3.0
1934-1935	779	67	57	39	7.96	27.62	52.67	3.39	8.26	13.99	18.6
1935-1936	912	27	132	40	17	20.72	55.0	2.1	3.23	7.0	6.13
1936-1937	986	4	73	57	3.05	35.91	71.88	6.10	15.08	20.82	28.50
1937-1938	1,019	29	33	25	3.35	40.72	79.75	4.81	7.87	13.30	10.95
1938-1939	1,046	2	26	53	2.62	42.96	83.26	2.24	3.51	5.5	4.4
*1939-1940	992	50	- 53	32	- 5.11	44.30	91.63	1.43	8.37	3.33	10.05
1940-1941	1,009	35	17	5	1.72	47.40	96.03	3.1	4.4	6.98	4.8
1941-1942	1,020	..	10	25	1.02	48.74	97.67	1.25	1.64	2.63	1.71

\* Reduction in figures due to sale of Stanley River Dam Transmission Line.

# STATISTICAL REVIEW

COMPARATIVE EXPENDITURE AND COST PER KILOWATT HOURS OF DIFFERENT ITEMS OF EXPENDITURE AND PERCENTAGE WHICH ITEMS ARE OF TOTAL COST

Year.	Total Expenditure.	Purchase of Electricity	%	Distribution of Electricity	%	Administration and Management.	%	Interest and Depreciation.	%	Miscellaneous including Exchange.	%
	£	£		£		£		£		£	
1926	141,646	61,097	43	11,272	8	17,405	12	40,839	29	11,033	8
1927	174,648	83,151	47.6	14,939	8.5	24,295	13.9	41,514	23.8	10,749	6.2
1928	202,066	92,803	45.9	15,062	7.5	24,978	12.4	53,379	26.4	15,844	7.8
1929	248,074	105,126	42.4	16,282	6.6	29,311	11.8	65,763	26.5	31,592	12.7
1930	241,734	113,034	46.8	15,682	6.5	30,647	12.6	75,419	31.2	6,952	2.9
1931-1932	269,370	126,765	47.1	16,151	6	22,909	8.5	81,865	30.4	21,680	8
1932-1933	277,114	133,413	48.1	16,902	6.1	23,778	8.6	83,072	30.2	19,349	7
1933-1934	243,007	101,751	41.9	22,230	9.1	26,417	10.9	84,344	34.7	8,265	3.4
1934-1935	246,582	97,492	39.5	25,649	10.4	27,878	11.3	87,743	35.6	7,770	3.2
1935-1936	266,570	103,122	38.7	32,547	12.2	31,742	11.9	90,988	34.1	8,171	3.1
1936-1937	305,822	122,028	39.9	38,552	12.6	35,316	11.6	101,006	33	8,860	2.9
1937-1938	359,263	141,625	39.25	43,595	12.13	44,512	12.39	121,895	33.93	8,236	2.3
1938-1939	396,377	163,045	41.13	51,432	12.98	43,162	10.89	128,592	32.44	10,156	2.56
1939-1940	427,863	182,750	42.71	62,254	14.55	48,161	11.26	120,699	28.21	13,999	3.27
1940-1941	449,648	194,627	43.28	67,561	15.03	47,086	10.47	126,481	28.11	13,893	3.09
1941-1942	467,123	203,148	44.56	61,302	13.12	47,714	10.22	129,993	27.83	19,966	4.27

AVERAGE KILOWATT HOURS SOLD PER CONSUMER CONNECTED (EXCLUSIVE OF PUBLIC LIGHTING)

AVERAGE KILOWATT HOURS SOLD PER KILOWATT CONNECTED (INCLUDING PUBLIC LIGHTING)

Year.	Kilowatt Hours Sold.	Consumers Connected.	Average K.W. Hours Sold per Consumer Connected.	Kilowatt Hours Sold.	Kilowatts Connected.	Average K.W. Hours Sold per Kilowatt Connected.
1926	6,082,007	24,929	253	7,231,007	26,441	273
1927	8,283,543	29,510	280	9,443,877	33,861	279
1928	9,662,478	33,689	287	10,927,205	41,451	263
1929	12,299,432	37,014	332	13,683,499	54,161	252
1930	14,752,000	39,844	370	16,217,616	67,543	240
1931-1932	19,477,075	40,505	481	20,875,305	80,465	259
1932-1933	23,661,016	42,210	561	24,994,419	89,538	279
1933-1934	26,244,857	44,305	592	27,600,790	99,311	277
1934-1935	32,846,145	47,295	694	34,323,127	112,018	306
1935-1936	39,415,435	50,496	780	41,116,947	129,172	318
1936-1937	49,716,244	53,639	926	51,516,245	145,655	354
1937-1938	60,664,050	59,928	1,066	62,487,418	162,107	385
1938-1939	69,377,790	58,983	1,170	71,327,036	181,727	392
1939-1940	76,464,991	61,883	1,236	78,540,414	197,009	399
1940-1941	82,603,162	64,305	1,285	84,801,376	215,753	393
1941-1942	80,793,729	65,914	1,226	82,440,060	232,838	354

NUMBER OF CONSUMERS AND AVERAGE KILOWATTS CONNECTED PER CONSUMER (EXCLUSIVE OF STREET LIGHTING)

DOMESTIC APPLIANCES CONNECTED TO SYSTEM

Year.	Consumers Connected.	Yearly Increase.	Kilowatts Connected.	Average Kilowatts Connected per Consume	Ranges.		Water Heaters.		Other Appliances.	
					Total.	Increase.	Total.	Increase.	Total.	Increase.
1926	24,029	4,097	26,120	1.087	37	32	1	..	19,223	4,338
1927	29,510	5,481	33,573	1.138	94	57	1	..	24,256	5,023
1928	33,689	4,179	41,151	1.221	175	81	46	45	29,565	5,309
1929	37,014	3,325	53,802	1.453	418	243	445	..	34,553	4,988
1930	39,844	2,830	67,176	1.680	777	359	742	297	39,346	4,793
1931-1932	40,505	661	80,123	1.978	1,125	348	936	194	45,617	6,271
1932-1933	42,210	1,705	89,196	2.113	1,263	138	1,024	88	51,315	6,698
1933-1934	44,305	2,095	98,937	2.233	1,374	111	1,098	72	58,275	6,980
1934-1935	47,295	2,990	111,011	2.359	1,559	185	1,202	106	66,690	8,321
1935-1936	50,496	3,201	128,729	2.549	1,870	311	1,420	218	74,659	8,048
1936-1937	53,639	3,143	145,180	2.706	2,239	369	1,761	331	83,253	8,644
1937-1938	58,928	3,289	161,641	2.839	2,590	351	2,121	370	91,315	8,032
1938-1939	59,983	2,055	181,230	3.073	3,034	444	2,617	490	102,120	10,814
1939-1940	61,883	2,900	196,482	3.175	3,465	431	3,110	493	111,757	9,928
1940-1941	64,305	2,422	215,195	3.346	3,962	437	3,579	460	121,556	8,899
1941-1942	65,914	1,609	232,754	3.531	4,284	382	3,950	401	129,979	8,383

# The Electrical Industry Geared for War Work

THE capacity peace-time industry to effect a complete change over to the production of munitions of war is one of the major factors in the attainment of victory.

Throughout the British Empire, the General Electric Co. Ltd. of England has made a gigantic effort to accelerate this change over, and to cope with the unlimited demands for power, lighting, and communication equipment.

Here in Australia the British General Electric Co. Pty. Ltd., the sole Australian agents of The General Electric Co. Ltd. of England, are supplying equipment of amazing variety ranging from torch batteries to dynamos, from the smallest light switches to the heaviest cables.

The foundations of Australia's manufacturing activities were laid well before September, 1939, but war has required an enormous industrial structure to be built calling for engineering planning, adaptability, and achievement of the highest order.

It is indeed true that the availability of electric power is a factor which determines the limits of industrial expansion, and, therefore, a consideration of prime importance has been to increase power station capacity. Generating units up to 50,000 K.W. have been commissioned in larger power stations, but more generators are required and provision is being made for their installation.

To provide against loss of industrial output due to damage to a particular station, interconnection has been completed so that other centres can supply the load in such an emergency.

The interconnection of power stations has presented to the electrical engineer some complicated problems involving the economic employment and best disposition of switchgear, transformers, overhead transmission lines, and underground cables such as are required for the interchange of large blocks of power.

In the design of modern switchgear special attention has been directed towards the reduction of fire risk and also towards protection from incendiary bombs.

The latest types of switch units require very small quantities of oil as compared with older designs, and condenser type busbars have now replaced those in which the busbars were encased in large quantities of inflammable compound.

Some measure of protection from fire caused by incendiary bombs is afforded by enclosing the switch units in steel plates, which are easily removable for maintenance and inspection purposes.

On interconnected systems it is desirable to provide transformers the

voltage ratios of which can be changed without interrupting the power supply.

In addition to the enormously increased demand for electric power, there has been an equally insistent pressure to obtain "Osram" and "Osira" industrial lighting installations so that urgent war production can continue round the clock.

Munition plants and annexes, as well as many huge outdoor war projects, have called for the solution of a variety of problems in maintaining daylight visibility throughout possible blackout conditions.

In the solution of all the problems connected with the change-over to war-time production here in Australia, the British General Electric Company Pty. Ltd. has had the advantage of the experience of the parent company in England, where the change-over was on a vaster scale, and particularly in the crucial year, 1940, was forced at a pace unprecedented in industrial history. The whole of the vast organisation of The General Electric Company Limited of England has been devoted to the solving of its share of the numerous problems which have, from time to time, confronted the British Government during the last three years of the "Battle for Britain." Magnificently equipped research and experimental laboratories have greatly contributed to the speeding up of munitions of every conceivable type, aeroplane parts, wireless and telephone equipment, and all classes of electrical equipment for the Navy, the Army, and the Air Force.

In spite of this priority of the national war effort, the G.E.C. has proved capable of supplying a wide variety of electrical equipment of all descriptions for export to branches and customers overseas.

In both England and Australia, these problems, which have played a vital part in the war production capacity of each country have been successfully solved.

The head office of British General Electric Co. Pty. Ltd. is situated at Magnet House, 104-114 Clarence Street, Sydney. Other branches and agencies throughout the Commonwealth are as follows: Newcastle: 28 King Street. Victoria: Magnet House, 388 Bourke Street, Melbourne. Queensland: British General Electric Co. (Qld.) Pty. Ltd., 403 Adelaide Street, Brisbane. South Australia: A. G. Healing Ltd., 151-159 Pirie Street, Adelaide. Western Australia: Magnet House, 393 Murray Street, Perth. Tasmania: Magnet House, 55 Elizabeth Street, Hobart; 167 Charles Street, Launceston.

## Electrical Employees' Wage Increase

An increase in pay of 4/- a week or £10 a year has been granted by the Industrial Court to electrical employees of the Brisbane City Council and the City Electric Light Company Limited.

The Electrical Trades Union (Queensland Branch) sought an increase in wage rates of 10/- a week or £26 a year for the employees concerned.

Mr. Bryan, for the union, tendered awards from other States showing that wages paid in Queensland were now lower than those paid to similar workers in New South Wales. This, he claimed, was causing discontent amongst employees of those undertakings.

The Court stated in its judgment that a comparison of the rates paid in Queensland with those paid in New South Wales for exactly similar work disclosed that the difference was greater than was warranted by the difference in living costs.

Subject to the approval of the Minister for Labour and National Service the wage increase will take effect as from April 1.

## Block & Gerber Profit, £7990

After providing £11,000 for income tax (almost double last year's), Block and Gerber's profit for the year ended January 31 last is £7990. This is £2150 greater than last year.

## Airzone (1931) Ltd. Dividend Deferred

Airzone (1931) Ltd. have deferred payment of an interim dividend on ordinary shares for the half-year ended December 31. Uncertainties caused by defence contracts, particularly those on a cost plus basis is the reason advanced by the directors. Last year an interim 3½ per cent and final 3 per cent was paid on ordinary shares.

## CITY ELECTRIC LIGHT CO. LTD.

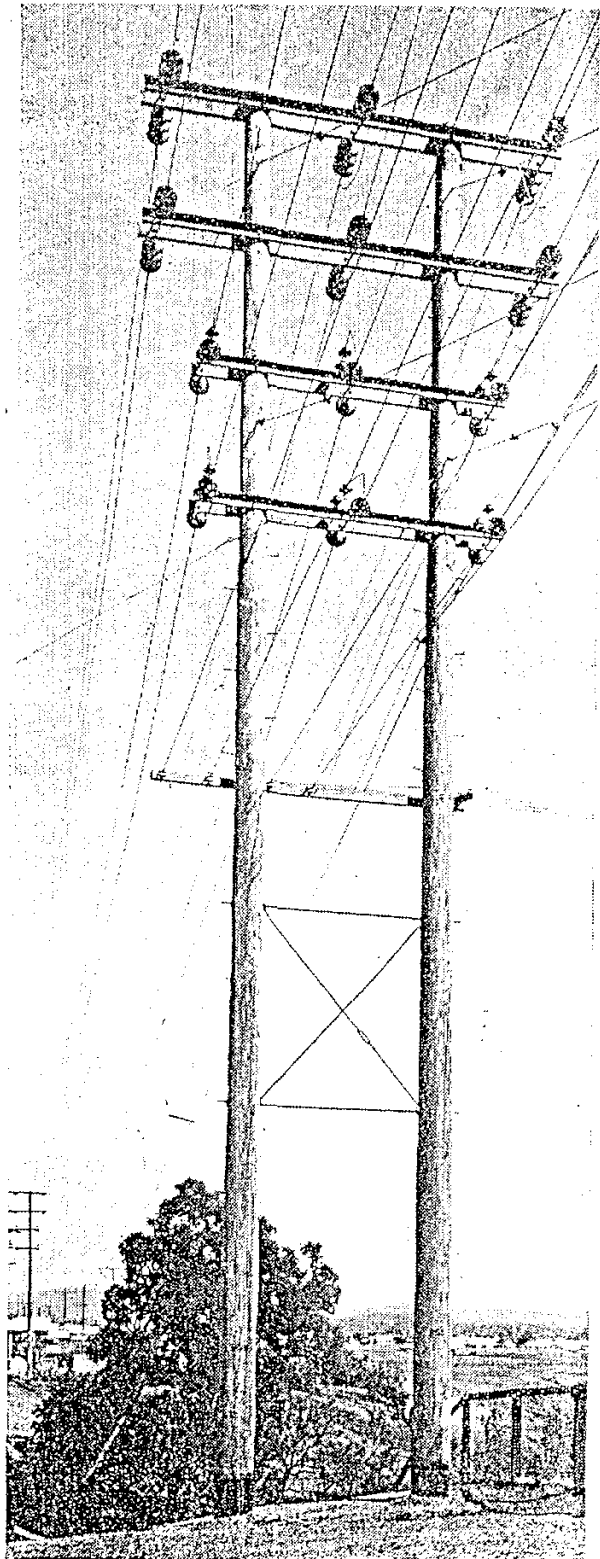
### Annual General Meeting

AT the annual general meeting of the City Electric Light Co. Ltd., on April 6, the chairman, Mr. J. Harvy Holmes, paid a tribute to Mr. E. G. C. Barton, who died in England on June 14 last. Fifty-six years ago, Mr. Barton, with Mr. C. F. White, started the first public supply electricity undertaking in Australia. That small enterprise has developed into the City Electric Light Co. Ltd., with nearly five million pounds of assets.

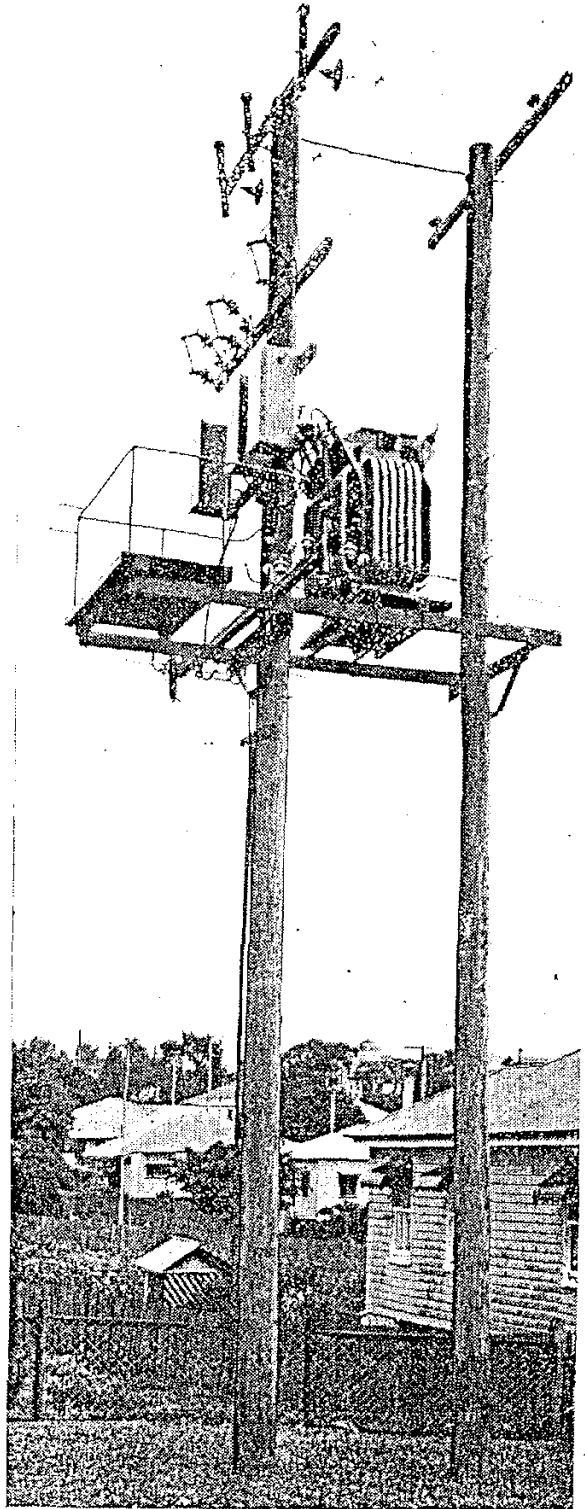
Points from Mr. Holmes' address are as follows: 168 employees have been released to the services, out of a total staff of 643 (including 110 females) in all age groups.

It was necessary to draw upon Reserve Fund to the extent of £634. Al-

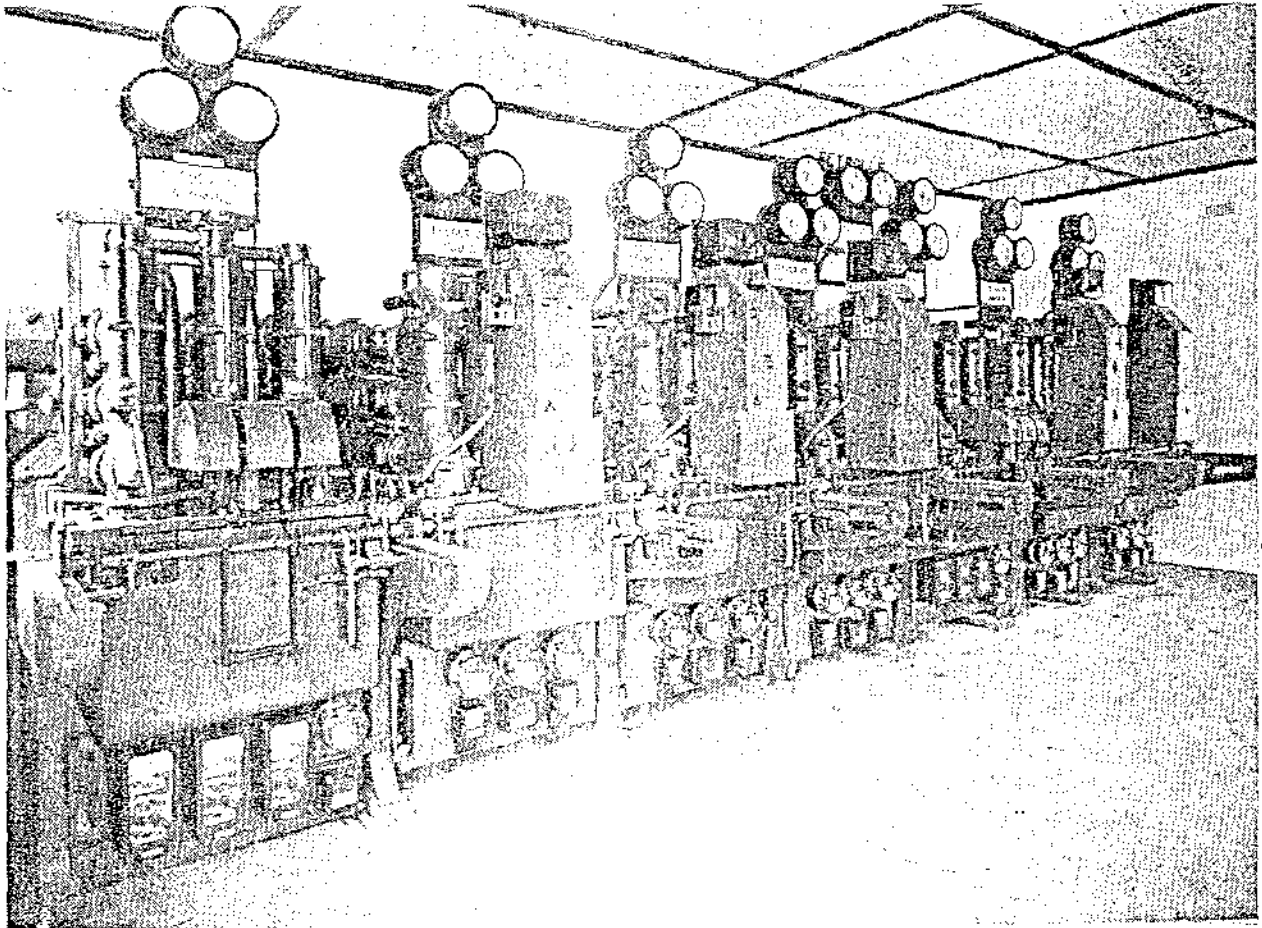
# A Pictorial Record



OXLEY CREEK (33 K.V. AND 11 K.V.) CROSSING;  
SPAN, 512 FEET

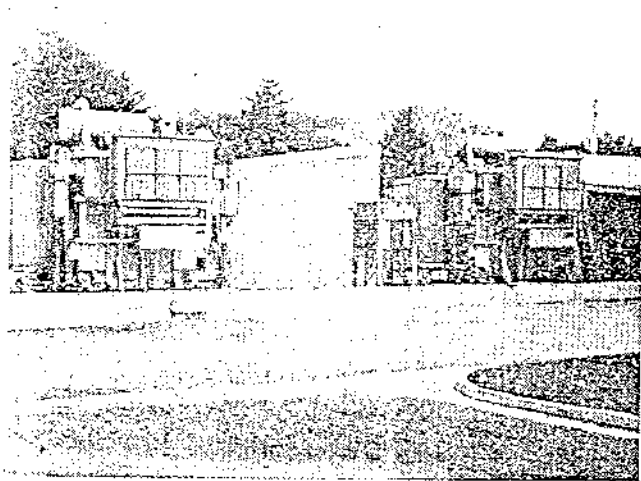
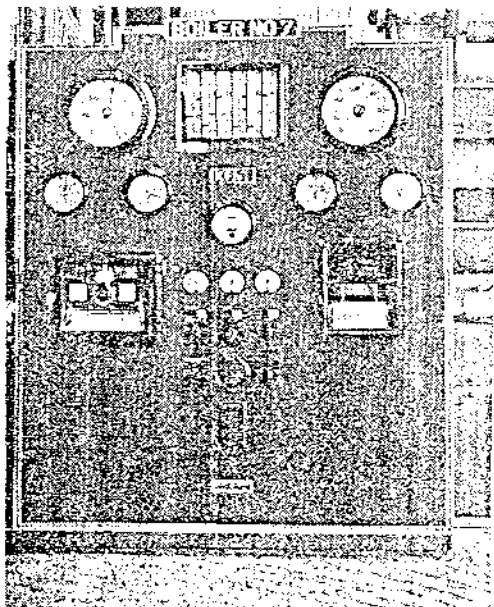
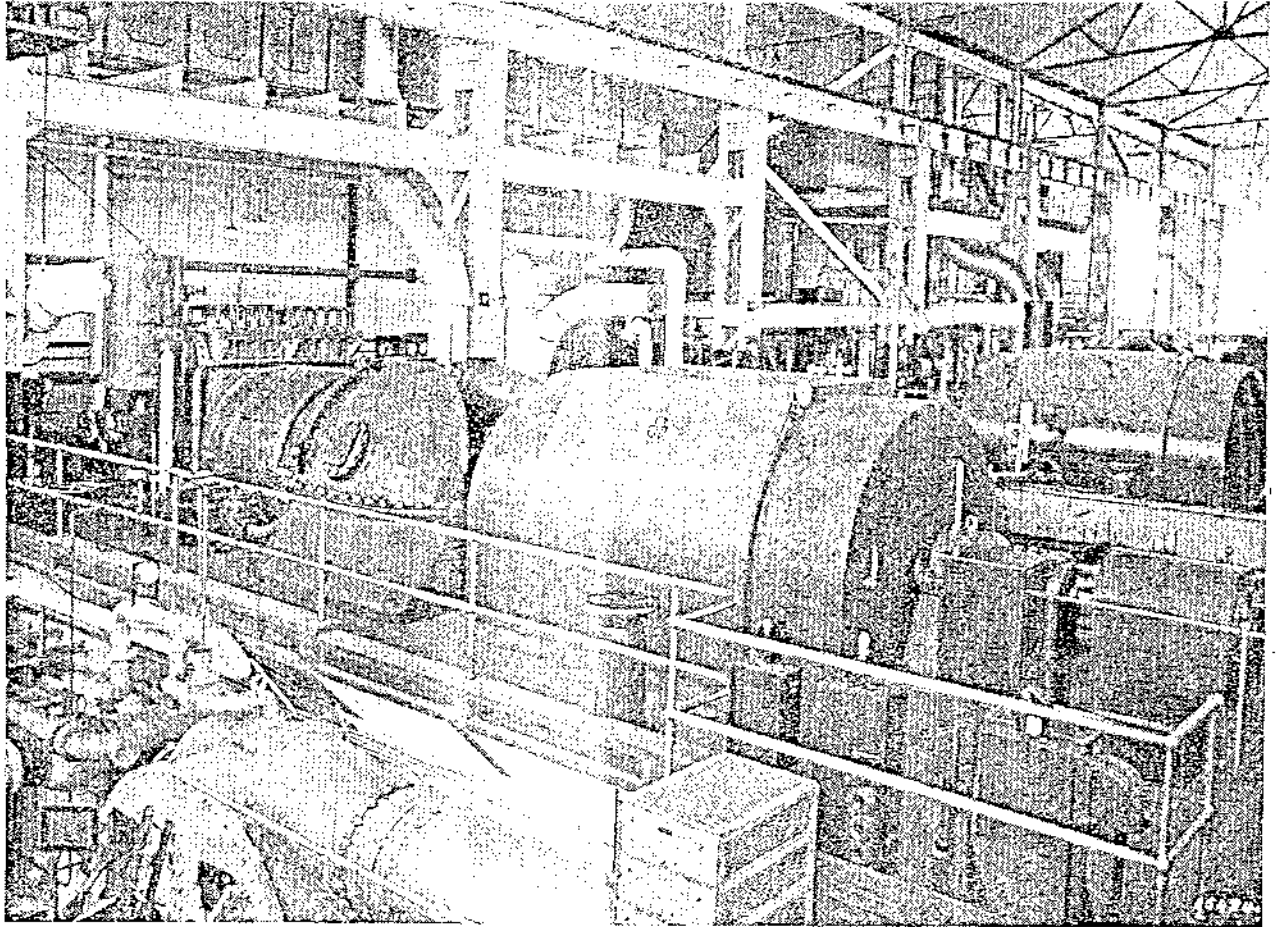


200 K.V.A. POLE TRANSFORMER STATION



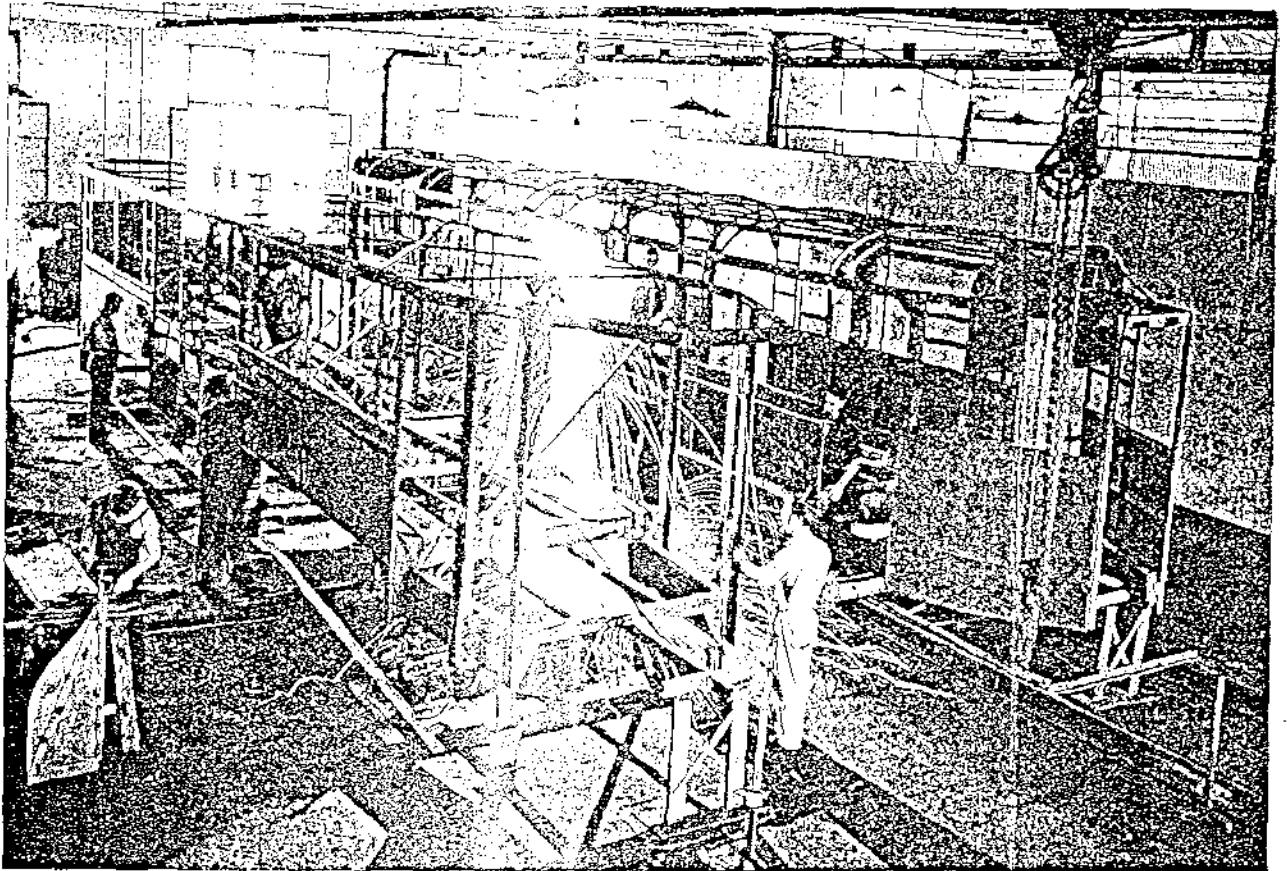
TOP PICTURE:—B.C.C. Substation seven-panel room and switchboard; 11,000-volt, 800-amp., 2,560,000 K.V.A.-rupturing capacity.  
BOTTOM PICTURE:—B.C.C. Substation containing 200 M.V.A. switchgear divided into two fireproof rooms

# The New Farm Power House

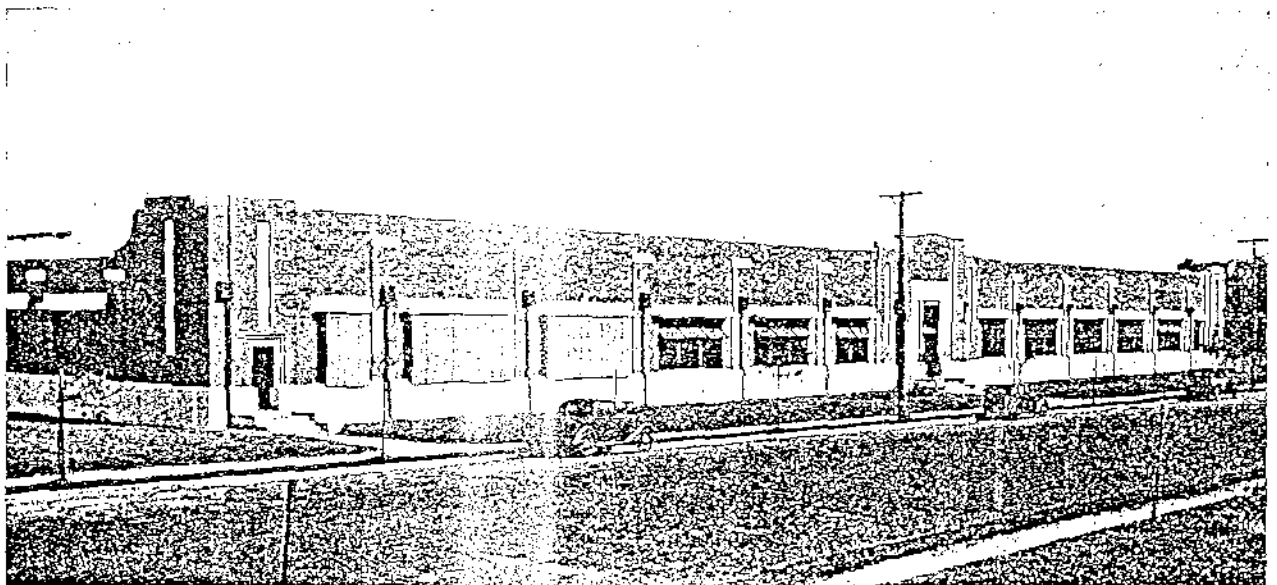


TOP PICTURE:—Interior New Farm Power-house, showing the newly installed No. 5 Turbo-Alternator set  
BOTTOM LEFT:—Boiler instrument and control board  
BOTTOM RIGHT:—The two inter-connection transformers at New Farm Power-house

# A Pictorial Record



STEEL BODIES FOR TRAM LINKER CONSTRUCTION AT THE TRAMWAY WORKSHOPS



BRISBANE CITY COUNCIL ELECTRICITY DEPT. WORKSHOP AT ABBOTSFORD ROAD, MAYNE JUNCTION