

# Electricity generating stations for public supply in the West Midlands 1888–1977

by D.G. Tucker \*

## Introduction

The purpose of this paper is to present a survey of all the generating stations which have provided a public electricity supply in the West Midlands from the beginning until the present, with exact locations, reports on those which have survived at least as buildings, an outline of their history (and, where necessary, of the undertakings which operated them), and some photographs of surviving early generating stations as they appear now. The core of the paper is therefore in the form of a gazetteer.

The West Midlands region (which is unrelated to the new administrative county of the West Midlands which includes some of the East Midlands and excludes most of the West Midlands) is here defined as the City of Birmingham and the five old counties of Gloucestershire, Herefordshire, Shropshire, Staffordshire and Worcestershire. It is a very diverse region, including some of Britain's most concentrated industrial areas as well as some of her pleasantest and quietest countryside. It shows the contrast of the intense urban electrification of Birmingham and the scattered rural electrical systems of the Shropshire, Worcestershire and Staffordshire Electric Power Co., and also the sturdily-independent local undertakings such as Leek and Malvern which survived until nationalisation in 1948. Fig. 1. shows the location of all the generating stations concerned.

I have in previous papers<sup>1</sup> tried to show in some detail the processes of discussion, advice, decision, design and development by which individual electricity-supply undertakings came into being, and, particularly in the case-study of Gloucestershire, have tried to relate these processes to the national scene. Gloucestershire showed, in its electrical development, the diversity displayed by the whole West Midlands region; municipal and company undertakings, the enterprise of large towns and the conservatism of small ones, the influence of gas companies and of ambitious electrical bulk-supply power companies. There are other good accounts of early developments<sup>2</sup>, and a forthcoming book by Dr. Leslie Hannah describes in detail the evolution of a central authority for electricity supply. Consequently these matters will be described in only the briefest outline here.

## History

The generation of electricity in "central stations" (as opposed to individual private plants in single or small groups of premises) began in the winter 1881–82 and was a direct outcome of the successful development of the incandescent filament lamp by Swan in Britain and Edison in the U.S.A. Hitherto only arc lamps had been available; with individual lamps of over 1000 candle-power they were hardly suitable for general domestic and industrial use. The filament lamp was incredibly successful, and the demand for electricity grew rapidly. In Britain, an inhibitory Electricity Act of 1882 deferred the development of supply systems until it was amended in 1888; the Act of that year gave companies 42 years of security before being liable for compulsory purchase by local authorities, and enabled capital to be raised for the building of generating stations and the provision of distribution systems. After a year or two, some local authorities decided to set up their own electricity undertakings instead of leaving them to company enterprise. Profit was to be made, and why not let it help the rates? By 1894 there were about 100 public-supply schemes in operation in Britain, and already about one-quarter of them were municipal.

Another field for electricity was the tramway system. Street tramways, hitherto horse-powered (occasionally steam-hauled), were ripe for modernisation, electrification, and extension. Electric street tramways had developed in the U.S.A., starting with F.J. Sprague's line in Richmond, Virginia, in 1887–8, and had there spread rapidly. Here development was much slower, and the West Midlands can claim the first effective electric tramway system in Britain that of the South Staffordshire Tramways Co. of 1892.<sup>3</sup> The generating station built by the Co. at Pleck (grid reference SO 994 976) was not only one of the earliest in the West Midlands, but was also one of the most handsome; its facade still exists, and a photograph of it is included in this paper in spite of the fact that it was never used to give a public electricity supply. In general, the generating stations of the tramway companies are excluded from this paper – those of the Black Country have been described in some detail by Price<sup>4</sup> – but that at Smethwick has been included because it also provided a public supply and later assumed some importance in the system of the Shropshire, Worcestershire and Staffordshire Electric Power Co. Some later tramways were municipal undertakings supplied from the municipal generating station; in some other cases, the tramway companies had to buy their electricity from the municipalities through whose territory they passed – e.g. at Dudley and Wolverhampton.

Most, and certainly the larger, of the generating stations dealt with here were based on steam engines: reciprocating engines for the first decade or two, then, in at least the larger stations, steam turbines. Many of the smaller stations used oil (diesel) or gas engines, the latter being fed from a small gas-making plant installed in the station: the use of town gas for the engines was exceptional. There were only four (possibly five) cases of water power being used in our region: very small plants at Blockley, Wickwar and Fladbury, (and possibly at Ludlow) and a sizeable one at Worcester (Powick) which had steam auxiliary power for some years. Thus most of the generating stations had chimney stacks to provide draught and remove smoke and fumes. Most of the stacks of the earlier stations have been demolished even where the buildings survive; it is perhaps ironical that the only one I can recall as still standing is that at Powick, which was an entirely water-powered station after 1903, although the later use of its former boiler house as a laundry (concurrently with electricity-generation) probably accounts for the survival of the chimney.

Coal was the main fuel of generating stations using steam or gas engines, but as refuse disposal by burning in special incinerator or "destructor" plants was coming into vogue in the 1880's onwards, it was natural that municipalities operating or planning their own electricity undertakings should consider whether the waste heat from refuse destructors could be utilised to make steam for the electricity generators. Many combined electricity generation/refuse destructor stations were built and were generally successful. In the early days the whole of the daytime electrical load could sometimes be met without the use of coal, but as loads increased faster than the production of refuse, the proportion of coal to refuse increased and the association of the refuse destructor with electricity generation became less worth while. The system almost died out and became forgotten during the 1950's and 60's, but has recently been re-invented; some large new refuse destructors have been built since 1969, and one of them,

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Fig. 1.

at Edmonton, in London, has been designed as part of an electricity generating station. In the West Midlands there were eight combined generating/destructor stations, all built before World War I; there are now several of the new destructors (post — 1970) but none are used for electricity generation.<sup>5</sup> The refuse destructor building at West Bromwich still stands and is a fair sample, but the generating station with which it was associated has long since gone.

There was for many decades an uncertainty as to whether direct current (d.c.) or alternating current (a.c.) should be generated. Generally when high-voltage generation (e.g. 2000 volts) was used to economise on main cable costs, this was a.c., as transformation to a low voltage for consumers was cheaper; nevertheless there were some high-voltage d.c. systems, as at Wolverhampton and Walsall. For a tramway load, d.c. was required anyway, and this influenced some undertakings to generate d.c.; but others converted a.c. to d.c. in rotary converters. In a.c. systems various frequencies were used, from 25 Hz (i.e. cycles per second) as in Birmingham to 94 Hz at Cheltenham. Eventually, of course, all generation became a.c. at 50 Hz as a national grid system developed after the Electricity (Supply) Act of 1926.<sup>6</sup>

Although up to the turn of the century all undertakings were quite local in character, there grew up mainly after 1900 the idea of bulk supply of electricity, generated by Electric Power companies. Each company, operating over a large region, could have a large central generating station from which electricity could be distributed by overhead lines or cables to industrial users or to municipalities or local electricity companies who could purchase electricity in bulk at a price below what it cost them to generate their own in small and inefficient stations. As the use of steam turbines developed, so the economies of scale became apparent. Many such power companies were formed in Britain, and a large proportion of them were able to get going and operate successfully. In our West Midlands region, three were formed :-

Midland Electric Corporation for Power Distribution, formed in 1897 and operating by 1902 (see Fig. 2);

Gloucestershire Electric Power Co., formed in 1902, but never getting into operation; and

Shropshire and Worcestershire (later Shropshire, Worcestershire and Staffordshire) Electric Power Co., formed in 1903, getting into operation very slowly, but becoming an effective and efficient proponent of rural electrification after World War I, buying up numerous small undertakings (see Fig. 3).

A much later one which got underway quickly was the West Gloucestershire Power Co., formed in 1922.

Adding to, and modifying, this system in the mid-1920's came the Joint Electricity Authorities: an attempt at rationalising the electricity supply system by grouping together a number of power stations (and by building some big new ones) under a single management over a large area. These authorities were, apart from being in public ownership, very much like the Power Companies. There were two in our region :-

The West Midlands Joint Electricity Authority (see Fig. 4), and

The North West Midlands Joint Electricity Authority.

Each took over a number of power stations from local authorities (and in one case — Ocker Hill — from a Power Company) and then sold electricity back to the original owners, and to other undertakers. But the stations became interconnected and the purchasers could also draw on the new stations which the Authorities built.

Thus by 1930 our region was divided thus :-

- i) A number of small undertakings that remained independent, with their own generating stations, but gradually found it necessary to augment their supplies by bulk purchase;
- ii) Three Electric Power Companies and two Joint Electricity Authorities; and
- iii) The City of Birmingham undertaking, which was also exporting power to other areas, and was roughly as large, in terms of electricity produced, as all the other undertakings put together.

Since nearly all the operators were interlinked, there was a sort of regional grid in the West Midlands quite early.

A rather interesting case that did not quite fit into the pattern was that of the Hereford Corporation undertaking. Hereford in the 1920's set up its own rural distribution system and operated as a sort of power company.

It was, however, not successful in this aspect of its undertaking; although the City part of the undertaking made a profit, the rural part made a serious loss and failed to develop its business, so much so that about half of the authorised area (which had been most of Herefordshire) was lost to other, private, undertakings. The City Corporation was severely criticised by its consulting engineer for its bad planning, and as the rural part could not be separately disposed of, the Corporation, in 1929, felt it had to accept an offer of 'purchase' of its whole undertaking by the Shropshire, Worcestershire and Staffordshire Electric Power Co., in order to avoid further loss.<sup>7</sup> The Company no doubt welcomed the opportunity to consolidate its rather tenuous system in the far west.

The independent small undertakings with their own generating stations have been mentioned above, but it is worth pointing out that there were many other small undertakings which never had a generating station, relying on bulk purchase from the beginning. Some of these were municipal (e.g. Cannock, 1922, taking its supply from Wolverhampton Corporation, and Lichfield, 1929, taking its supply from Walsall Corporation), but most were companies (as at Stroud). This type of undertaking does not, of course, appear in the gazetteer below.

Many of the independent companies were more independent in name than in fact. Several of them were effectively controlled by Edwards and Armstrong Ltd. of Stroud, who also controlled electrical companies in other regions. In the West Midlands, J.H. Edwards was a director (usually managing director or chairman) of the companies at Cirencester, Ledbury, Leominster, Ludlow and Tewkesbury in the 1920's, while A.A. Douglas was also a director of all these except Ludlow. Many of the companies owed their formation to John Parker who was for many years, from before 1900, Engineer and Surveyor to the Hereford Corporation (e.g. Ludlow, 1906; Tewkesbury, 1908 and Leominster, 1911) and he remained a director of several of them for more than a decade. The Hereford Corporation gave him permission to act in this way. Eventually many of these companies were taken over or controlled by the Shropshire, Worcestershire and Staffordshire Electric Power Co.

The pattern of electricity supply described above remained substantially unchanged until the far-reaching nationalisation of the whole electricity supply industry in 1948, when the British Electricity Authority (B.E.A.) was set up with a regional organisation. This soon changed its name to the Central Electricity Authority (C.E.A.). Later the organisation changed to put the Central Electricity Generating Board (C.E.G.B.) in control of all generation and main distribution in England and Wales, with regional Electricity Boards to deal with local distribution, marketing, etc., e.g. the Midlands Electricity Board (M.E.B.) in our region.

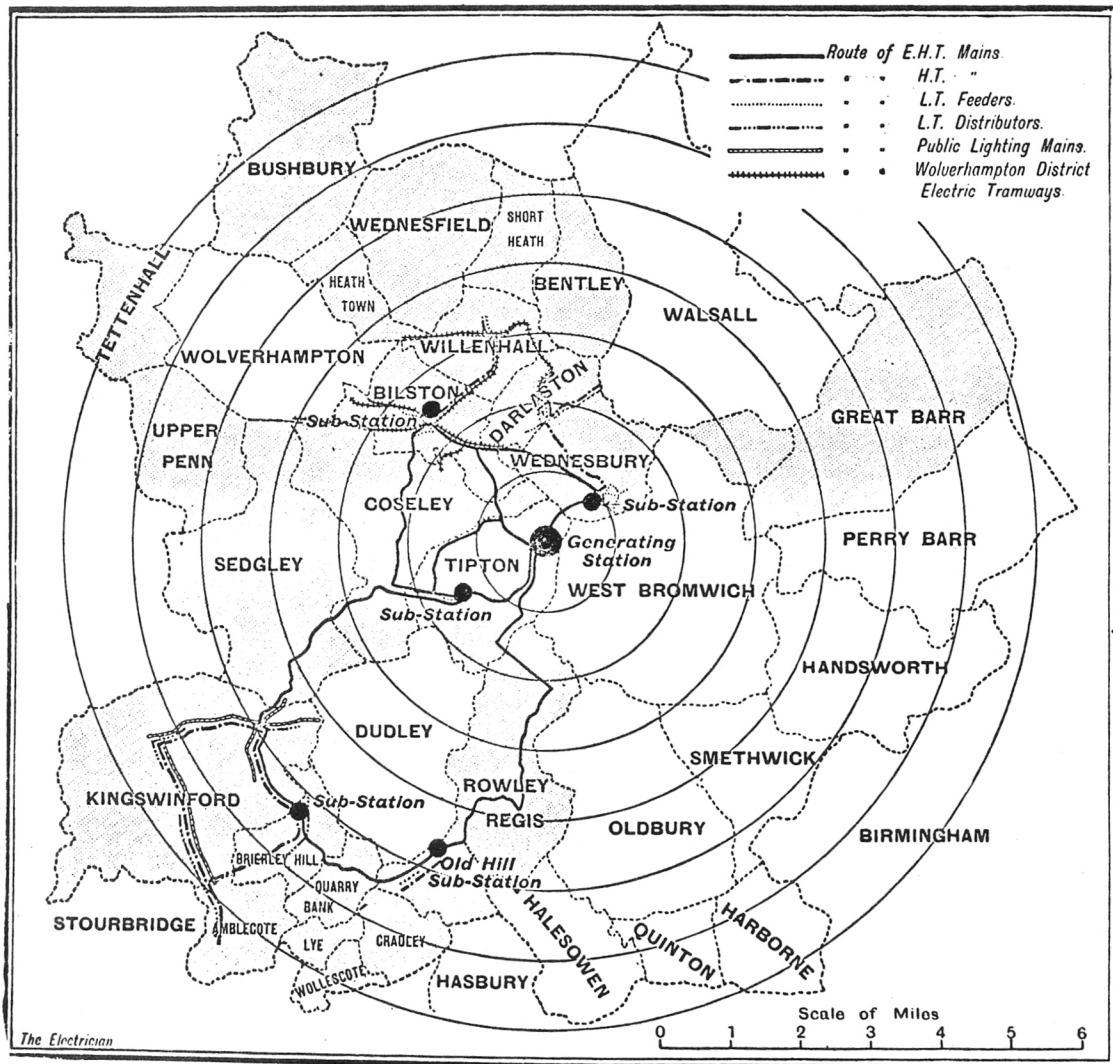


Fig. 2. (From *Electrician*, Vol. 49). Map of the Midland Electric Corporation's District. (1902).  
 (Only the shaded portions of the Map are at present acquired).

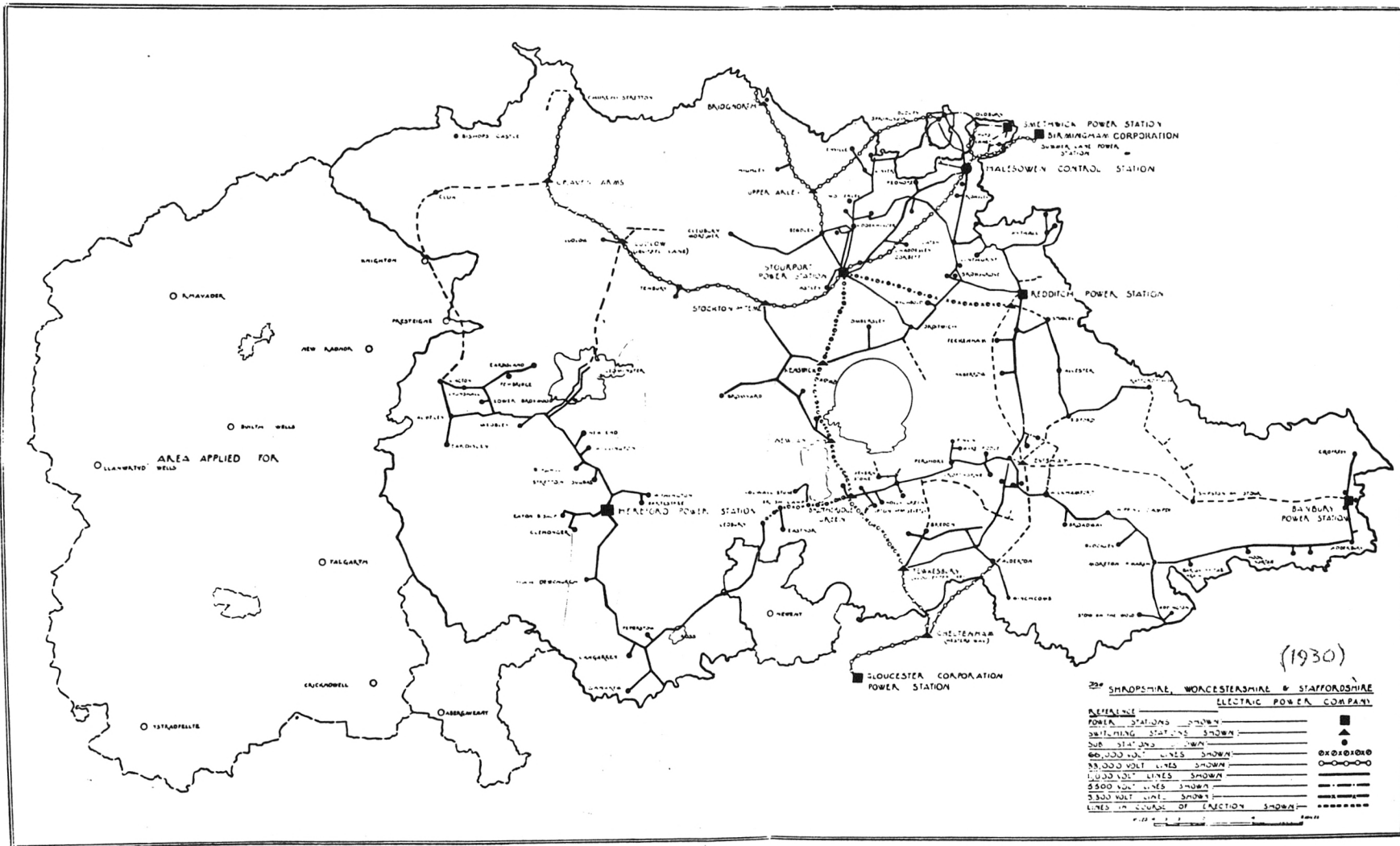


Fig. 3. The systems of the Shropshire, Worcestershire and Staffordshire Electric Power Company, 1930 (From Garcke's Manual, Vol. 34).

# WEST MIDLANDS ELECTRICITY DISTRICT.

Scale of Miles.  
0 1 2 3 4 5 6 7 8 9

Map showing diagrammatically the engineering features of the District.

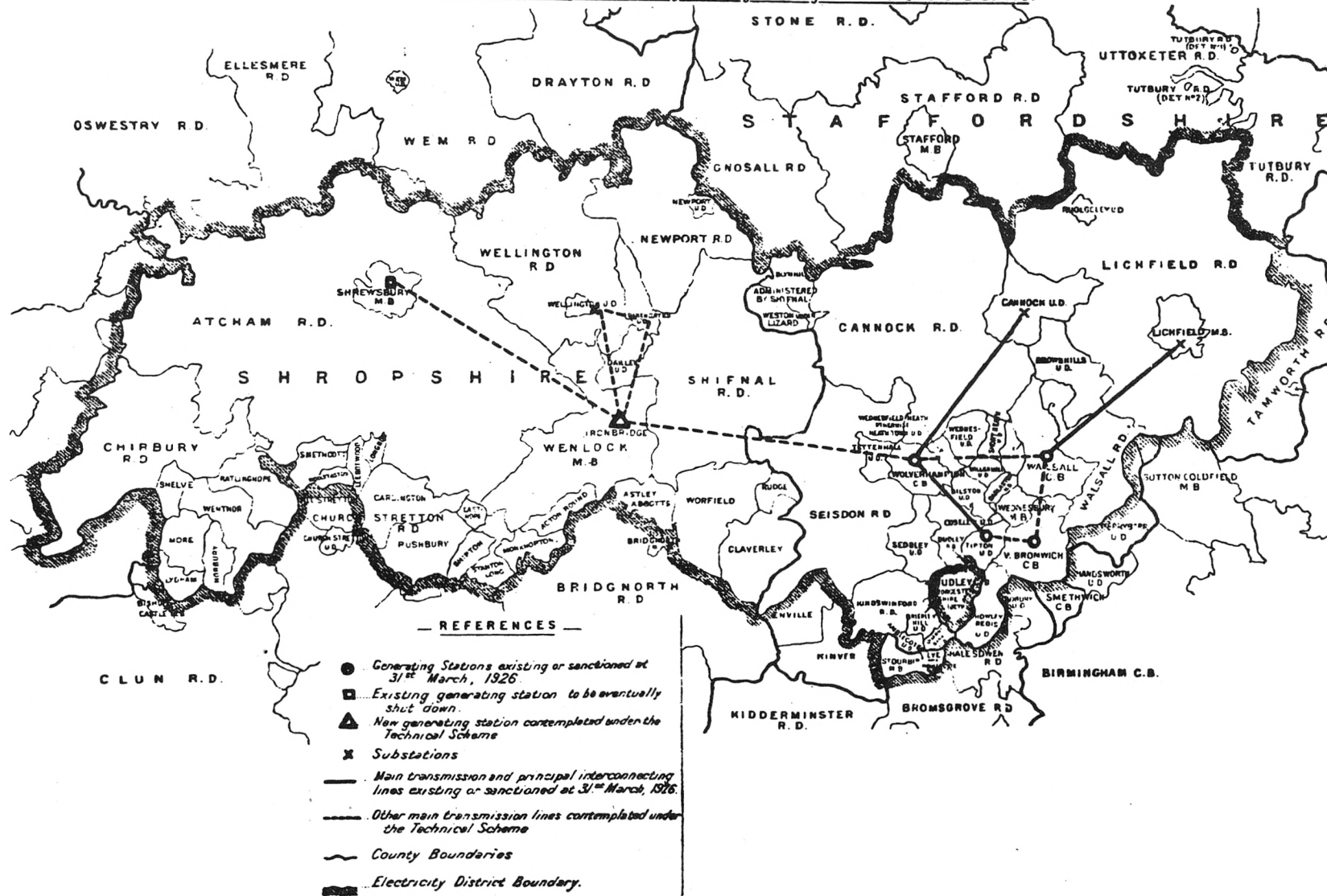


Fig. 4. Territory of the West Midlands Joint Electricity Authority (From Garcke's Manual, Vol. 34).

## The Industrial Archaeology of Electricity Generation

If industrial archaeology is defined as the study of the surviving artefacts of industry in relation to, or as a contribution to, the history of the industry, then both the machinery and the buildings are involved. In the case of electricity supply we have a relatively modern industry which, in comparison with many early industries, is quite well documented; moreover many examples of the equipment and machinery used in its early days have been preserved in museums and the principles of design and construction are well understood because of the large number of textbooks and papers which were published. Thus the industrial archaeology of electricity supply is largely confined to a study of the buildings and can make only a marginal contribution to the history of the industry. However, the buildings are interesting in their own right; one can see how the architecture of power stations gradually developed its own individual characteristics as the units became larger and larger. Probably it is fair to say that some history, as presented here, is necessary to understand the buildings and their siting.

In this paper only those generating stations used for public supply have been included. There were two other groups which might repay research :-

- i. tramway power stations, and
- ii. private industrial power stations, e.g. as at some collieries.

In addition, there is the matter of sub-stations, in which the supply was transformed for local distribution. These became very numerous, but some of the early ones were very large and handsome buildings; two or three examples have been included among the photographs illustrating this paper. Further investigation of these would probably prove worthwhile.

Some appreciation of the size of generating stations for public supply at different places and different periods is desirable. In the early years of this century, at small places such as Ledbury or Leominster, the station would have perhaps only 1000 sq.ft. of floor area (e.g. the building at Ledbury was about 50 ft by 20 ft.) and a site area of perhaps an eighth of an acre. Their total generating capacity might be only 30 kW, enough to satisfy the demands of only half-a-dozen well-to-do households at the present day. Larger towns, such as Worcester and Gloucester, started with capacities of a few hundred kW on sites of about an acre, and the buildings had floor areas of the order of 10,000 sq.ft. The Summer Lane station of the Birmingham Corporation, opened in 1906 with a capacity of 11.5 MW, a floor area of about 70,000 sq.ft., on a site of about 4½ acres. (N.B. 1 MW is 1000 kW). By 1939, few generating stations were being built with under 100 MW capacity and with sites of under 50 acres. Nowadays, modern generating stations are of the order of 1000 MW capacity on sites of several hundred acres.

Two factors have led to this rapid and enormous increase in size. One has been the rapid growth in demand for electricity which has been a matter of public concern and debate in recent years, but which has, of course, been taking place continuously since the very beginning; the other has been the steady reduction in the number of generating stations as the economies of scale have led to the use of gigantic generating units.

Another matter which perhaps the industrial archaeologist should appreciate is that generating stations can have quite a short life, and that some which were opened only 35 years ago are already disused (e.g. Gloucester, Castle Meads).

## Sources of Information

The general history of our subject has been worked out from numerous sources of information, most of which are cited in the list of references and in the gazetteer. Much additional help has been obtained from a Chronology produced by the Electricity Council in 1971, as Reference Paper 3.

My greatest difficulty has been in locating the sites of the early generating stations. As most of them were built after 1902, when for most areas the last edition of the 25-inch Ordnance Survey maps was published, few of them are marked on these maps. The smaller-scale maps do not indicate the smaller power stations anyway. I have had help from local public libraries and from individuals in this matter and I am grateful for it. Books on industrial archaeology and industrial history rarely give any help in this matter, but an exception is Thompson on North Staffordshire.<sup>8</sup>

## References

1. Tucker, D.G., 'The beginnings of electricity supply in Bristol, 1889-1902', **Bristol Industrial Archaeology Soc.J.**, 5, 1972, pp 11-18 'Half a century of hydro-electricity at Monmouth', **Presenting Monmouthshire**, (J.of Mon. Local History Council), 37, Spring 1974, pp 27-38; 'Hydro-electricity for public supply in Britain, 1881-1894', **Industrial Archaeology Rev.**, 1, 1976-7, pp 126-163; and **How Towns got Electric Light and Tramways: A Case Study of Gloucestershire and Neighbouring Towns**, Science Museum, London, in press.
2. Parsons, R.H., **The Early Days of the Power Station Industry**, Cambridge, 1939; Hennessey, R.A.S., **The Electric Revolution**, Newcastle-upon-Tyne, 1971.
3. Webb, J.S., **Black Country Tramways** (2 Vols), Walsall, 1974 and 1976.
4. Price, A.E., 'Power Supplies', in Webb, op.cit., Vol.2, pp 262-7.
5. The whole subject is reviewed in Tucker, D.G., 'Refuse destructors and their use for generating electricity: a century of development', **Industrial Archaeology Rev.**, 2, 1977-8, in press.
6. Hannah, L., 'A pioneer of public enterprise: the Central Electricity Board and the National Grid, 1927-1940,' in B.Supple (ed.) **Essays in British Business History**, Oxford, 1977.
7. The whole sad story can be read in the minute books of the Electricity Committee of the Hereford City Council, 1927-29, Herefordshire County Record Office.
8. Thompson, W.J., **Industrial Archaeology in North Staffordshire**, Hartington, undated.

## Gazetteer of Electricity Generating Stations used for Public Supply in the West Midlands

Entries are in alphabetical order, under the name of each town, and, in the case of non-local undertakings, under the name of the undertaking. Under each entry are given, for each site, the grid reference, address where relevant, date of commencing supply, existence and condition of buildings, outline of history, generating capacity at one or two particular dates, and reference to critical or descriptive publications. Minimal reference are cited; it may be assumed that use has been made of the contemporary technical journals (e.g. **Electrician**, **Electrical Engineer**, etc.) and the annual volumes of Garcke's **Manual of Electrical Undertakings**, together with (for later years) the annual reports of the nationalised electricity authorities.

The alphabetically-ordered titles are coded thus:-

#### CAPITALS:

Stations or undertakings which survived more-or-less in their original form until nationalisation in 1948.

#### ITALIC CAPITALS:

Stations or undertakings which were absorbed into larger undertakings or were closed between August 1914 and nationalisation.

#### *Italic lower-case*

Stations or undertakings which were absorbed or closed before August 1914.

#### *Aston Manor*

SP 082 887, corner Chester Street and Rocky Lane. 1903. Survives, partly used by firm, partly derelict, imposing, now painted grey over brick-work. Started and operated by Aston Manor Corporation; supplied tramways as well as lighting. 7 MW, 1912. Absorbed into Birmingham (q.v.) 1912.

References:- *Electrician*, 51, 1903, pp 764 and 904; *Elect. Engr.*, 30, 1902, p.465.

#### BIRMINGHAM

- (i) Dale End SP 073 871. 1891. Demolished 1960's. 1.5MW, 1906.
- (ii) Water Steet SP 066 873. 1895-6. Survives as sub-station. Very plain building. Became sub-station and ceased generating before 1914. 3.5MW, 1906.
- (iii) Summer Lane SP 069 877. 1906. Part survives as sub-station and depot. Imposing facade, of which only small portion remains. Ceased generating before 1938. 36.5MW, 1913. *Electrician*, 57, 1906, pp 1000-3 and 58, 1906, pp 9-12 and 45-51.
- (iv) Nechells SP 097 893
  - (a) Temporary station. 1915. Demolished mid 1920's. Readily dismantled steel structure. 22 MW about 1917.
  - (b) Prince's Station. 1922. Survives, but derelict. Very plain brick building. Closed 1969. 156MW, 1929. Later known as Nechells A.
  - (c) Nechells B. Approved by CEB 1945, by City 1946, opened early 1950's, Still generating. 224MW.
- (v) Hams Hall Around SP 2092.
  - (a) A Station. 1929. Survives, but virtually out of use since 1975. Pleasing appearance, some decoration, lettering on end face of main block: HAMS HALL POWER STATION. 149MW, 1929.
  - (b) B Station. 1942. Still generating. 330 MW.
  - (c) C Station. 1958. Still generating. 390 MW.
- (vi) Aston Manor SP 082 887. Taken over by Birmingham Corporation in 1912 and soon converted to sub-station.
- (vii) Handsworth SP 051 893. Taken over by Birmingham Corporation in 1912 and soon converted to sub-station.

Electricity supply started on its permanent basis in Birmingham when the Birmingham Electric Supply Co. opened its generating station at Dale End in April 1891 with a capacity equivalent to 2,580 lamps of 16 cp. Demand expanded rapidly as did also the area of supply. By early 1895 the business had increased fivefold, and the Co. had obtained an order to extend westwards; it therefore built the generating station at Water Street and a large sub-station at Parker Street (SP 047 861 : still survives, but derelict). The Company's continued expansion and profit made the City Corporation consider whether it should not show municipal enterprise like other towns and run the electrical undertaking itself. On 7 May 1897, Mr T. Fletcher proposed to the Council that it should try to acquire the Company's undertaking: 'The electric lighting undertaking (assuming it could be secured on reasonable terms) embodied a commercial concern which would prove not only of great public utility, but also a source of profit to the ratepayers.' This proposal was carried unanimously, and negotiations with the Company were completed a year later. The undertaking was purchased for £420,000 and taken over by the Corporation on 1 Jan. 1900, with the Company's Engineer and Managing Director, J.C. Vaudrey, as City Electrical Engineer. He resigned in 1903 and was succeeded by R.A. Chattock who became very eminent and a President of the Institution of Electrical Engineers in 1925.

The demand for electricity doubled in the first six years of the Corporation's management, and the addition of a substantial load due to the acquisition of electric tramways in 1906 meant that the opening of Summer Lane power station in 1906 was only just in time. This station initially increased the Corporation's capacity from 5 to 16.5MW, but as in the next six years the demand quadrupled, the new station had to be increased beyond its originally-planned ultimate capacity of 26.5MW to 36.5MW. Moreover, in 1912 the Corporation, in absorbing into Birmingham the formerly-independent towns of Handsworth and Aston Manor, had acquired responsibility for two other electricity undertakings with large and expanding lighting and tramway loads but with generating stations which were small and relatively inefficient. It was obvious that a new large generating station was needed, and it was planned for the Nechells site. The War of 1914-18 created a demand for electricity in Birmingham that was too urgent to await the planned station, and a temporary one was built in 1915 on a site next to the planned site. The permanent station was not proceeded with until after the War, and additional wartime power was obtained from Dunlop Rubber Company's private generating station.

The permanent station at Nechells was named the Prince's Station because it was opened by the Prince of Wales. It was large, with 156MW capacity, but this was nevertheless inadequate to meet the growth of demand, and a large site acquired at Hams Hall, some nine miles east of the city centre, began to be developed.

At this time the new electricity grid scheme was being introduced, and the Prince's Station and Hams Hall A were 'selected stations' to be connected to the grid. However, the grid was to operate with a frequency of 50 Hz. Now the Birmingham undertaking had been developed, from its original d.c. basis, into an a.c. system working at 25 Hz; d.c. for tramways and other d.c. loads was obtained by conversion at sub-stations. Thus, although the high-voltage a.c. distribution principle was correct, the frequency was wrong for the grid, and an expensive re-equipment and conversion of equipment had to be undertaken.

Expansion continued, with the opening of the still-larger Hams Hall B in 1942 and the start on the large Nechells B. Nationalisation overtook the latter and it was completed by the British Electricity Authority.



The Birmingham Corporation's Electric Supply Department had many claims to fame; by the time of nationalisation it was the largest municipal system in the country, and at the time of completion of Hams Hall B the two stations on the site represented the greatest concentration of generating plant in Europe. In 1947, Hams Hall B showed the highest thermal efficiency in the country.

References :- **Electrician**; **Garacke's Manual**; **Elect. Ccl.RP3**; **History of the Corporation of Birmingham**, Vol.4, by C.A. Vince, 1923; Vol.5, Part 1 by J.T. Jones, 1940; Vol.6, Part 1, by H.J. Black, 1957; **J.C. Vaudrey**, by H.C.Vaudrey, privately printed, Birmingham, 1967; **Souvenir (pamphlet) of opening of Summer Lane Generating Station**, Birmingham Corporation, 1906. Aerial photo of Nechells A and B showing wooden cooling towers of former, **Elect. Times**, 117, 1950, p 941.

#### BISHOPS CASTLE

- (i) SO 323 889. 1915. No trace remains; public library now on site.
- (ii) SO 324 886. 26 Station Road. c1921. Buildings, previously part of gas works, still remains, in commercial use. Paraffin and gas engines were used; own gas plant; 100kW.
- (iii) SO 322 888. Corporation Street. Late 1920's. Building still stands, in commercial use, with small M.E.B. sub-station adjacent.

The Bishops Castle Electric Light and Power Co, Ltd. was registered on 13 March 1914. Site of generating station moved to gasworks site by the Company c 1921. Then, when later taken over by the Shropshire, Worcestershire and Staffordshire Electric Power Co., a replacement generating station was built, presumably as being cheaper than a long extension of their transmission lines. (Documentation for most of this information not found; source was local man, residing near site (ii) for 73 years).

#### BLOCKLEY

SP 165 350, Mill Close. 1888. Building and pond survive; was a silk mill before being used for electricity generation. Hydroelectric plant using original water channels with turbine. Operated by Blockley Electric Lighting and Manufacturing Co., until bought out by Blockley Electrical Engineering Co, Ltd. in 1921. Taken over by Shropshire, Worcestershire and Staffordshire Electric Power Co., in 1931, who soon supplied electricity from their network and closed station. About 20kW, 1923.

References :- A.W. Exell, Appendix X in H.E.M. Iceley, **Blockley through Twelve Centuries**, Roundwood Press, Kington, 1974.

#### BRITISH ELECTRICITY AUTHORITY/CENTRAL ELECTRICITY AUTHORITY/CENTRAL ELECTRICITY GENERATING BOARD

Since nationalisation in 1948 only one new site has been developed in the West Midlands :-

Rugeley, approx. SK 0617. 'A' and 'B' stations of capacity 600 and 1000 MW (approx.) opened in 1960 and 1968 respectively. The dates are approximate dates of first bringing into use; the capacity was built up gradually to the figures quoted.

(N.B. Drakelow, approx. SK 2420, at Burton-on-Trent, with a total capacity in three stations of nearly 2000 MW, is, in fact, not within our area, being on the Derbyshire side of the River Trent.)

#### Burslem

SJ 867 503, Scotia Rd. 1905. Demolished. Site now used by M.E.B. Municipal undertaking throughout. Refuse destructor supplied part of steam used. Taken over by Stoke-on-Trent Corporation (q.v.) when Burslem absorbed in 1908. Ceased generating in late 1920's and probably became sub-station. 1.95 MW, d.c., 1921.

Reference:- **Electrician**, 55,1905,p 845.

#### BURTON-ON-TRENT

SK 254 241, Electric St. 1894. Power station still on site, but doubtful if any significant original buildings remain. Operated by Corporation until nationalisation in 1948. Initially 2000 volt a.c. system; later also supplied tramways. Continued under B.E.A. (later C.E.G.B.) until 1976. 1.7 MW, 1913; 20 MW, 1921; 45 MW, 1947.

References :- **Elect. Engr.**, 13, 1894, pp 663-6; **Electrician**, 33, 1894, pp 123; 52, 1903, p 298.

#### CHELTENHAM

SO 935 233. 1895. No remains of buildings, site cleared. Municipal operation throughout. Refuse destructor provided part of steam used. Generation ceased 1932 and bulk supply taken from Shropshire, Worcestershire and Staffordshire Electric Power Co. 2000 volt a.c., 176 kW, 1895; about 4 MW in 1920's. Very attractive sub-station, dating from 1895, still stands at the corner of St. George's Place and Clarence Street.

References :- D.G. Tucker, **How Towns got Electric Light and Tramways: a Case Study of Gloucestershire and Neighbouring Towns**, Science Museum, London, in press; **Elect.Engr.**, 15, 1895, pp 553-563 and 566-7.

#### CHURCH STRETTON

SO 458 935, Crossways. 1904, Building still remains, in use as M.E.B. store, Unadorned two-bay brick building, single-storey.

The Church Stretton Electric Supply Co, Ltd. was registered 4 May 1904 and ran the undertaking until it was purchased by the Shropshire, Worcestershire and Staffordshire Electric Power Co. (q.v.) about 1929, and the generating station closed. Motive power was gas engines, 100 kW capacity, throughout most of existence.

#### CIRENCESTER

SP 018 024, Barton Lane, 1912. No remains; small factory now on site.

The Cirencester Electric Supply Co. was registered on 15 May 1912 and took over Electric Lighting Order granted to J.H. Edwards; it ran the undertaking until taken over by the Wessex Electricity Co. in 1937. Generation, however, ceased in 1931 when a bulk supply was obtained from the Wessex Electricity Co. Gas engines, 100 kW, 1921; 284 kW, 1924.

References: D.G. Tucker, **How Towns got Electric Light and Tramways: a Case Study of Gloucestershire and Neighbouring Towns**, Science Museum, London, in press.

## Dudley

SO 934 898, Springsmire. 1899. Still stands, good condition, in use as M.E.B. depot. Handsome building with arched windows. Built by Dudley Corporation to provide public supply and power for the Dudley, Stourbridge and District Electric Traction Co., for its lines within the Borough, the latter use being at first the dominant one. Had the interesting feature, unique in the West Midlands, of using thermal storage to absorb energy during slack periods and give it out at times of peak demand. 1.6 MW, 1914.

Purchased (with electricity undertaking) by Shropshire, Worcestershire and Staffordshire Electric Power Co. (q.v.) in Feb.1914. 3 MW, 1921; closed in later 1920's.

Reference :- A.E. Price, in J.S. Webb, **Black Country Tramways**, Vol.2, Walsall, 1976, pp 265-6.

## FLADBURY

SO 997 460, Fladbury Mill. 1900. Mill still stands and turbine still in situ under the extension at back of mill which comprised the generating station. Fladbury Electric Light and Power Company Ltd., registered 25 Oct. 1899, 3 of 4 directors remained throughout.

Operated by water power from river Avon, Low-voltage d.c., about 9 kW. Ceased working about 1925, when Shropshire, Worcestershire and Staffordshire Electric Power Co. took over the area.

References :- **Elect. Engr.**, 25, 1900, p 284; **Electrician**, 44, 1899, p. 64; 53, 1904, p. 208; 57, 1906, p. 600 and 59, 1907, p. 698.

## GLOUCESTER

- (i) SO 829 185, Ladybellegate Street/ Commercial Road. 1900. Buildings still stand, either derelict or in use for other purposes.

The generating station is tucked away behind other buildings, and no good view can be obtained; some of it was attractive, but much was very utilitarian. A refuse destructor was associated from 1902 and the combined operation was very efficient in the early days. Municipal undertaking throughout. 450 kW, 1900; 6.3 MW, 1930. Closed during second World War after opening of Castle Meads station.

- (ii) SO 824 184, Castle Meads. 1942. Still stands, but closed down 1976. Utilitarian Wartime architecture. Municipal operation until nationalisation in 1948. 40 MW throughout.

References:- D.G. Tucker, **How Towns got Electric Light and Tramways: a Case Study of Gloucestershire and Neighbouring Towns**, Science Museum, London, in press; **Elect. Engr.**, 26, 1900, pp. 75-85.

## Handsworth

SP 051 893, Piers Road. 1905. Survives as sub-station. Handsome building with twin towers. Started and operated by Handsworth U.D.C.; supplied tramways as well as lighting. 1.05 MW, 1910. Absorbed into Birmingham (q.v.) 1912.

References:- **Electrician**, 55, 1905, p. 969; **Elect. Engr.**, 36, 1905, p. 501.

## Hanley

SJ 886 466, Bethesda Road. 1894. Original block survives in private use, later buildings which formed the Stoke-on-Trent power station now demolished. Simple municipal architecture. Municipal undertaking throughout, taken over by Stoke-on-Trent Corporation (q.v.) when Hanley absorbed in 1908. 2 MW, 2 kV, a.c., 1910.

References:- **Electrical Engineer**, 14, 1894, pp. 118-121.

## HEREFORD

SO 510 403, Widemarsh St. 1899. No remains of station, site used by M.E.B. for sub-station and car park. Mr John Parker, who later ran several small electric light and power companies in the South West Midlands, was Borough Engineer and Surveyor at the time of opening and was responsible for the electrical undertaking.

Expansion was rapid, from about 100 kW on opening, to 810 kW in 1913 and 4.6 MW by 1921. The generation of a.c. at 3300 volts, 50 Hz had begun, and Hereford was supplying a large rural area by means of overhead transmission lines.

Hereford Corporation had indeed begun to act as a power company, and being unsuccessful in this role, sold its undertaking to the Shropshire, Worcestershire and Staffordshire Electric Power Company (q.v.) in 1929. Generation at the station ceased in 1939.

Reference:- **Electrician**, 44, 1899, pp. 254-5.

## IRONBRIDGE

SJ 6504. 1932. 'A' and 'B' stations still operating. See West Midlands Joint Electricity Authority.

## KIDDERMINSTER

SO 830 761, New Road. 1898/1900. No remains of power station or of the tram depot to which it was attached. There is now a C.E.G.B. transformer/switching station on the site.

The Kidderminster and District Electric Lighting and Traction Co, Ltd. (in which British Traction Co., had the controlling interest) acquired the Kidderminster and Stourport Electric Tramway Co., in December 1898. The latter had opened its tramway in May 1898, and the K & D.E.L. & T.Co., expanded the tramway company's generating station to provide the power for the public electricity supply, which was started in August 1900 and distributed from a sub-station in Vicar Street. (SO 833 765, still standing as unoccupied commercial premises). The station was sold to the Shropshire, Worcestershire and Staffordshire Electric Power Co., (q.v.) in 1919, who also took over the management of the undertaking. 1.4 MW, 1913; 3.0 MW, 1925. Generation ceased in late 1920's.

References:- **Electrician**, 41, 1898, pp. 121-4; 47, 1901, p.159; J.S. Webb, **Black Country Tramways**, Vol.2, Part 2.

## LEDBURY

SO 708 378, Bye Street. 1913. Building still stands, used as small M.E.B. depot. Utilitarian rectangular single-storey brick structure.

The Ledbury Electric Supply Co,Ltd., was registered on 20 Nov. 1913. The Shropshire, Worcestershire and Staffordshire Electric Power Co., (q.v.) acquired the controlling interest in the Company, and closed the generating station in Aug. 1930. Gas engines, 35 kW initially, latterly 70 kW with oil engine as well.

Reference:- **Electrician**, 72, 1914, p.545.

## LEEK

SJ 980 562, Station Street. 1904. Generating station building survives, now in commercial use. Municipal operation throughout. Up to about 1925 the address was given as Cruso Street. The site is in the angle of Station Street/Cruso Street, and the present building is the original, with extensions, so that much of it does date from 1904.

Gas and diesel engines used. 645 kW, 1921; 2.235 MW, 1930; 860 kW, 1948. Taken over by B.E.A. in 1948, but ceased generation in 1951.

Reference:- **Leek Post**, 11 June 1904, p.5; 11 Oct., 1924, p.4.

#### LEOMINSTER

SO 495 591, West Street. 1912. Building still stands, used as M.E.B. sub-station. Former ironfoundry; utilitarian brick structure in back-yard.

The Leominster Electric Supply Co., Ltd., was registered on 11 Oct., 1911, acquired the Electric Lighting Order granted to J.H. Edwards in 1911, and ran the undertaking until the Second World War. However, it ceased generation in 1922 when it began to purchase electricity in bulk from Hereford Corporation (q.v.), and from the Shropshire, Worcestershire and Staffordshire Electric Power Co., (q.v.) when that company purchased the Hereford undertaking in 1929. Gas engines, 60 kW throughout.

#### Longton

SJ 907 435, on gasworks site, at Brook Street. (now Murdoch Street) 1901. Demolished. Municipal undertaking throughout, taken over by Stoke-on-Trent Corporation (q.v.) when Longton absorbed in 1908. Ceased generating about 1920 and became sub-station. 600 kW, d.c. 1910.

Reference:- **Electrical Engineer**, 28, 1901, p.464.

#### LUDLOW

i) SO 513 749, Portcullis Lane. 1906. Building survives, probably considerably altered, part as District Council depot and part as M.E.B. property. Utility building of brick with corrugated iron and asbestos. Gas engines, 35 kW, 1906; 70 kW in 1920's.

ii) SO 507 745, below Castle. Reputed hydro-electric generating station, operated in association with above; now no building remains; swimming bath on site. Weir still on R. Teme. (No documentation found for this and dates not known; information given by elderly local man.)

The Ludlow Electric Light Co., Ltd., was registered on 17 March 1906, and was purchased by the Shropshire, Worcestershire and Staffordshire Electric Power Co., c1927, when the generating stations were closed.

Reference: **Elect. Engr.**, 38, 1906, pp.840-2.

#### LYDNEY

SO 629 043. 1923. Operated by West Gloucestershire Power Co., q.v.

#### MALVERN

SO 789 462, Pickersleigh Road. 1904. Buildings still stand and in use as Council depot. Generating station was municipally-operated throughout, and was combined with refuse destructor throughout its career; at first refuse was the only fuel used under normal conditions. Single-phase a.c. at 50 Hz. Initial capacity 200 kW, expanded to 400 kW by 1921 and remaining unchanged until closure soon after nationalisation in 1948. During most of the period Malvern purchased electricity in bulk from Worcester; by 1948 the number of units purchased was about 15 times the number generated.

References:- **Electrician**, 52, 1904, p. 933; **Elect. Engr.**, 33, 1904, pp. 395 and 549.

#### MARKET DRAYTON

SJ 677 340, Great Hales Street. 1902. Building still stands, but in damaged condition due to fire in Sept. 1976. Large brick structure, probably not all used by generating station, and probably not built for it. Until c1974 used by M.E.B.

The Market Drayton Electric Light and Power Co., Ltd. (subsidiary of Edmundson's Electrical Corporation) was the operator right up to nationalisation in 1948. Low-voltage d.c. system, steam engines, 90 kW in 1910, rising to peak of 260 kW generating capacity in 1931, 88 kW in 1947. Generation ceased about 1954. Bulk supplies had been taken from the North West Midlands Joint Electricity Authority since about 1930.

#### MEAFORD

SJ 888 365. 1947. 'A' station closed, 'B' station still operating. See North West Midlands Joint Electricity Authority.

#### MIDLAND ELECTRIC CORPORATION FOR POWER DISTRIBUTION

Registered in 1897 to carry on business as an electricity supply company, obtaining Electric Lighting Orders for numerous districts in the West Midlands and negotiating bulk supply agreements with local authorities and others. Area covered shown in Fig.2. The Corporation built one generating station :-

i) Ocker Hill, Tipton, SO 975 938. Station, much expanded, still stands and is still in partial operation, it is doubtful if any of the original buildings survive. Varied styles of architecture according to period of extension.

Original installation 3.1 MW capacity, 7.5 kW, 2-phase, 50 Hz. Taken over by the West Midlands Joint Electricity Authority in 1928, who then sold electricity in bulk to Midland Electric Corporation. 39 MW, 2-phase, 1930. Still 2-phase 1947.

Station reconstructed and enlarged 1947-9, taken over by British Electricity Authority (later C.E.G.B.) in 1948, capacity 120 MW, 3-phase, remaining almost unaltered until 1976.

The Corporation also, in 1918, purchased the generating station :-

ii) Wednesbury (q.v.) but is believed to have closed it down immediately.

References:- **Electrician**, 49, 1902, pp. 936-942 and 986-990; 142, 1949, p. 1705.

#### NEWCASTLE-UNDER-LYME

SJ 849 456, on gasworks site in Friarswood Road. Building still stands in other use. Simple municipal architecture. Municipal operation throughout. Diesel engines used. 650 kW, d.c., 1921. (Bulk supplies also purchased from Stoke-on-Trent from 1920, and later from the North West Midlands Joint Electricity Authority.) After nationalisation in 1948, it was used only as a peak-load station during the winter, and generation ceased in the mid 1950's.

Reference:- **Electrician**, 53, 1904, p. 376.

#### NORTH WEST MIDLANDS JOINT ELECTRICITY AUTHORITY

Formed in 1928 to generate and supply electricity in a large area of about 620 sq.miles which included the northern part of the West Midlands as defined here. It took over the following generating stations in the West Midlands :-

- (i) Stoke-on-Trent (Central) (q.v.). SJ 886 466. 1913.
- (ii) Stafford (q.v.). SJ 920 235. 1895.

and built the following:-

(iii) Meaford A. SJ 888 365. 1947. Still stands, but closed since 1976. 120 MW throughout its life. No provision was made for extension, but the site was planned for a second station of twice the capacity to be built nearby. (Meaford B was indeed built during the 1950's and is still operating.)

Reference:- **Electrician**, 139, 1947, pp. 1209-10.

#### OCKER HILL

SO 975 938, Tipton. 1902. See Midland Electric Corporation for Power Distribution.

#### OSWESTRY

SJ 292 296, Coney Green. 1895. Still stands, as sub-station of Merseyside and North Wales Electricity Board. Two small plain brick buildings.

The Oswestry Electric Light and Power Co., Ltd., was registered on 2 March 1893. 230 kW, 1911; 400 kW, 1930. The undertaking was acquired by Oswestry Corporation on 1 Oct. 1929, and generation ceased in 1936, bulk supplies having been taken from the North Wales Power Co., for some years.

Reference:- **Electrician**, 35, 1895, p.503.

#### REDDITCH

SP 043 673, Smallwood Street and Summer Street. 1899. Most of station, including offices, still standing, in use as municipal depot. Utilitarian brick construction. Date 1898 on office block.

Initially 2000 volt, 1-phase, 70 Hz, with gas engines; 744 kW capacity by 1913, with steam engines replacing gas engines. Supply was unsatisfactory due to inadequacy of plant, and major rebuilding took place; 2.5 MW by 1921.

A refuse destructor was associated with generating station to provide some of steam required from 1908 onwards, but for how long this association continued is not known.

The generating station, along with the whole Redditch undertaking, was taken over by the Shropshire, Worcestershire and Staffordshire Electric Power Company (q.v.) around 1923, expanded to a peak of about 4.5 MW, and is believed to have been closed in the early 1930's.

References: **Electrical Engineer**, 47, 1911, p.679; **Electrician**, 67, 1911, p.479; 68, 1911, p. 324; 72, 1913, p.31; 73, 1914, pp. 155-6 & 167; W.F. Goodrich, **The Utilisation of Low Grade and Waste Fuels**, 1924, p. 103.

#### ROSS-ON-WYE

SO 601 243, Brookend (now Broad) Street. 1902. No remains; M.E.B. sub-station and a Post Office engineering depot now on site.

The Ross Electric Light and Power Company was registered on 16 Nov. 1900, and ran the undertaking until acquired by the Shropshire, Worcestershire and Staffordshire Electric Power Co., (q.v.) in the 1930's. Steam engines, 100 kW in 1921, continued generating into 1930's, but additional electricity purchased in bulk from Hereford from 1927, and from S.W.S.E.P. Co., from 1929.

#### RUGELEY

Approx. SK 0617. 1960. See B.E.A./C.E.A./C.E.G.B.

#### SHREWSBURY

SJ 492 127, Roushill. 1895. Entirely demolished, site now occupied by modern M.E.B. sub-station. Started in 1895 by Shropshire Electric Light and Power Co. In 1897 the Town Council decided to negotiate for the purchase of the undertaking, and being successful in making a satisfactory arrangement, took it over on 1 Jan. 1899. They developed it to a maximum capacity of over 2 MW in 1930. It was taken over by the West Midlands Joint Electricity Authority (q.v.) on 1 Oct. 1938, and then by the B.E.A. on nationalisation, the capacity being reduced to about 1 MW. It was closed around 1956. The main motive power was diesel engines in later years, although it had started with steam.

References :- **Electrician**, 36, 1895, pp. 206 & 240; 39, 1897, pp. 695 & 839; 41, 1898, p. 862.

#### SHROPSHIRE, WORCESTERSHIRE AND STAFFORDSHIRE ELECTRIC POWER COMPANY

Began by Act of Parliament in 1903 as Shropshire and Worcestershire Electric Power Co., present name taken in 1905. Expansion into Staffordshire did not materialise, however, and company's area instead expanded into Herefordshire, Gloucestershire, Oxfordshire and beyond (see map in Fig.3.).

Although the Company had intended to build its own generating stations, it did not do so for some decades, instead purchasing the existing stations of other undertakings, as follows:-

- (i) Smethwick, (q.v.), SP 028 891, purchased 1908.
- (ii) Dudley, (q.v.), SO 934 898, purchased 1914.
- (iii) Kidderminster, (q.v.), SO 830 761, purchased 1919.
- (iv) Redditch, (q.v.) SP 043 673, purchased mid 1920's.
- (v) Hereford, (q.v.), SO 510 403, purchased 1929.

These it operated to feed its ever-growing penetration into rural areas (over 2,300 miles of line by 1938), but Dudley, Kidderminster and Redditch were closed in the 1930's as the full power of the Company's specially-built generating station became available:-

- (vi) Stourport A, SO 815 708, opened 1927. 146 MW, 1939; still operating, but partially closed 1976. (Stourport B was built nearby and opened 1950; 120 MW throughout).

In addition, the Company built a new small generating station at Bishops Castle (q.v.) for local use only, c1930.

The Company purchased or obtained controlling interests in numerous small electricity undertakings which had their own generating stations, but, apart from those mentioned, closed the stations down immediately as bulk supply could be provided from its network. Such cases included the following (q.v.) in the West Midlands:-

Blockley, Church Stretton, Fladbury, Ledbury, Ludlow, Ross-on-Wye and Tewkesbury,

In addition, the Company supplied electricity in bulk to other undertakings, such as Cheltenham Corporation (q.v.) and to the Leominster Electric Supply Co., Ltd., (q.v.) which had closed its own generating station, probably as early as 1922, when it started to purchase electricity in bulk from Hereford Corporation.

The Company was a notable pioneer of rural electrification.

References:- R.A.S. Hennessey, **The Electric Revolution**, Newcastle-upon-Tyne, 1971, pp. 135-6. For Stourport 'A':- **Electrician**, 98, 1927, pp.644-5. For Stourport 'B':- **Elect. Times**, 117, 1950, pp. 1025-30 and 118, 1950, p.528.

## Smethwick

SP 028 891, Downing Street. 1904. Engine-room and office block remain, former surrounded by much more modern buildings. Built by Birmingham and Midland Tramways Ltd. to provide public supply in addition to power for tramways. Sold to their newly-acquired subsidiary, the Shropshire, Worcestershire and Staffordshire Electric Power Co. (q.v.) in 1908. 6.4 MW, 1910; about 30 MW, 1921-1949. Taken over by B.E.A. on nationalisation, closed 1949. Reference :- A.E. Price., in J.S.Webb, **Black Country Tramways**, Vol.2, Walsall, 1976, p.266.

## STAFFORD

SJ 920 235. Corner Foregate Street/Glover Street. 1895. Still stands, some bays of old building remain with the striking and handsome 1939 extension dominating. Still labelled 'Stafford Power Station', but now only a sub-station. Built as a municipal undertaking adjacent to gasworks, with low-voltage d.c., 565 kW in 1913. Expansion during World War I led to 4 MW by 1921, then 9.6 MW by 1930. Taken over in 1930 by North West Midlands Joint Electricity Authority (q.v.) from whom Stafford Corporation then purchased electricity in bulk. Transferred to B.E.A. (later C.E.A.) in 1948 and operated at 6 MW until closure in about 1960. Extensive re-equipping in 1925 and 1951 fails to explain why the new extension bears the date 1939. Reference:- **Elect. Engineer**, 16, 1895, pp 414-427.

## STOKE-ON-TRENT

In 1908 the boroughs of Burslem, Hanley, Longton and Stoke-on-Trent, together with the urban districts of Fenton and Tunstall, were combined into the new county borough of Stoke-on-Trent. The new authority therefore took over four power stations, and integrated the service as from 1 April 1914.

- (i) Hanley (q.v.) SJ 886 466. 1894
- (ii) Longton (q.v.) SJ 907 435. 1901
- (iii) Stoke-on-Trent. SJ 877 447, Bagnall Street. (now Yeaman St.), 1904

Associated refuse destructor supplied part of steam used. Buildings still stand, generating station now an M.E.B. depot, refuse destructor now a Corporation depot. Simple municipal architecture: lettering above main door 'AD 1904 ELECTRICITY WORKS'. Ceased generating in late 1920's and probably became sub-station, 1.5 MW, d.c. 1921.

Reference:- **Electrician**, 54, 1904, pp 84-5.

- (iv) Burslem (q.v.) SJ 867 503. 1905.  
In the integrated service, Burslem became the Northern Area, Hanley the Central Area, Longton the South Eastern Area, and Stoke the South Western Area. As part of the new service, a new generating station was built :-
- (v) Stoke-on-Trent Central. SJ 886 466, adjacent to the former Hanley generating station. 1913. Generation ceased in 1966. Now demolished. 9 MW, 1921; 37 MW, 1948. This station was transferred on 1 April 1930 to the North West Midlands Joint Electricity Authority (q.v.), from whom thereafter Stoke Corporation purchased in bulk, generating no electricity themselves.

## STOURPORT

SO 815 708. 'A' and 'B' stations still operating. See Shropshire, Worcestershire and Staffordshire Electric Power Co.

## TEWKESBURY

SO 891 326. St Mary's Lane. 1909. Building, almost certainly the old generating station, still stands; very nondescript, utilitarian, and small; in use for commercial purposes.

The Tewkesbury Electric Light Co., was formed in 1908 and the Town Council's Electric Lighting Order was transferred to it. The Shropshire, Worcestershire and Staffordshire Electric Power Co. (q.v.) acquired the controlling interest in the 1930's, but generation had ceased and electricity purchased in bulk from the S.W.S.E.P.Co., before 1930.

Gas engines, 30 kW, 1909; 85 kW, 1921.

Reference: D.G. Tucker, **How Towns got Electric Light and Tramways: a Case Study of Gloucestershire and Neighbouring Towns**, Science Museum, London, in press.

## WALSALL

- (i) SP 006 987, Wolverhampton Street. 1895. Site now cleared. Opened as a 2000-volt d.c. system, as at Wolverhampton (q.v.); municipal operation throughout. 2.6 MW, 1913. Closed in 1917 except for emergency use.
- (ii) SP 003 998, Birchills. 1917. Building still stands, derelict. Simple architecture, lettering WALSALL CORPORATION ELECTRICITY WORKS, but first two words have been chipped out. 13 MW, 1921; 28 MW, 1930. A.c., 50 Hz, throughout. Transferred to West Midlands Joint Electricity Authority 1928 and to British Electricity Authority (later C.E.G.B.) 1948. Closed 1967.
- (iii) SP 002 998, Birchills. 1949. Still in operation. 180 MW. Project started by W.M.J.E.A., transferred to B.E.A. 1948.  
References: **Electrical Engineer**, 16, 1895, pp 701-713; **Electrician**, 78, 1917, p. 727; 143, 1949, pp 1055-8 and 1164.

## WEDNESBURY

SO 987 948. Junction of Camp Street/The Shambles. 1910. Building still exists, part M.E.B. sub-station, part derelict.

Wednesbury Corporation set up an electricity supply undertaking in 1904, but purchased its electricity in bulk from the Midland Electric Corporation for Power Distribution, having only a sub-station in Wednesbury. The system was not a financial success, and in 1909 the Corporation completed complicated negotiations to enable it to generate its own electricity. The generating station used gas engines, and was initially of 250 kW capacity; but the Corporation could still not make the system pay, and in 1918 sold its whole undertaking to the Midland Electric Corporation for £75,000. It is believed that generation ceased almost immediately and the building became a sub-station.

References :- **Electrician**, 51, 1903, p.307; 56, 1905, pp 149-150; 61, 1908, pp 887 & 928; J.F. Ede., **The History of Wednesbury**, 1962, pp 365, 379-180, 386.

## WEST BROMWICH

SO 996 926, Black Lake. 1901. No remains of generating station, but associated refuse destructor still stands, in use as Corporation Depot. Modern transformer station now on site.

Corporation undertaking; refuse destructor built 1909-10 to supply steam to generating station. Taken over by West Midlands Joint Electricity Authority 1928. 1.55 MW, 1910; 6.65 MW, 1921. Closed except for emergency use.

References:- **Electrical Engineer**, 30, 1902, pp 479-83 and 513; 42, 1908, p. 707.

#### WEST GLOUCESTERSHIRE POWER CO.,

The Norchard Syndicate was registered on 23 March 1922, changing its name as above in Sept. 1922. Object to supply electricity to an area of 300 sq.miles in West Gloucestershire, including Stroud. Built one power station and acquired no others:-

Lydney, SO 629 043. 1923. Demolished. 17.5 MW capacity throughout. Operated by company until nationalisation in 1948. Closed 1967.

Reference:- C.E. Hart., **The Industrial History of Dean**, Newton Abbot, 1971.

#### WEST MIDLANDS JOINT ELECTRICITY AUTHORITY

Formed in 1915 to generate and supply electricity in a large area (approximately 1000 square miles) of the West Midlands as shown on the map Fig. 4. It took over, in 1928, the following generating stations :-

- (i) Ocker Hill, Tipton, SO 975 938, previously operated by the Midland Electric Corporation for Power Distribution (q.v.)
- (ii) Wolverhampton, Commercial Road (q.v.) SO 923 982.
- (iii) Walsall (Birchills) (q.v.) SP 003 998.
- (iv) West Bromwich (q.v.) SO 996 926. This station was kept in reserve for emergency use only.

The Authority almost immediately undertook the construction of a new generating station :-

- (v) Ironbridge A. SJ 654 043. 1932. Still stands, but now operating at reduced capacity. 200 MW, 1947.

(The adjacent Ironbridge B Station was opened in sections from 1968 to 1971 and has a capacity of nearly 1000 MW.)

The Authority's stations were interlinked by a system of mains at 33 kV. In 1938, the Authority took over the following generating station :-

- (vi) Shrewsbury (q.v.). SJ 492 127. 1895.

References: (for Ironbridge A and operations of W.M.J.E.A.) :-

**Electrician**, 108, 1932, pp 147-8, and 109, 1932, pp 442-3 & 500-501; **Electrical Times**, 79, 1931, pp 47-54 & 91-95, and 82, 1932, pp 319-321.

#### WICKWAR

ST 726 890. 1888. No trace now of electricity works as such, but the brewery building (then Arnold Perret and Co., Ltd.) in which they were housed still stands, in varied industrial use. Originally powered by water-wheel, but by 1920's was steam-driven, 30 kW. Overhead low-voltage d.c. distribution; original wooden poles with finials remain, carrying street lights as in 1888. Closed in late 1920's.

References:- D.G. Tucker., 'Hydro-electricity for public supply in Britain, 1881-1894,' **Industrial Archaeology Rev.**, 1, 1977, pp 126-163.

#### WOLVERHAMPTON

- (i) SO 923 982, Commercial Road. 1895. Still stands, with some of original buildings still discernible, red brick, decorated with terracotta tiles, words WOLVERHAMPTON MUNICIPAL ELECTRIC LIGHT & POWER STATION engraved on stone. Initially used 2000-volt d.c. system, following its apparent success at Oxford, with motor-generator sets to convert to low-voltage at sub-stations. This was not a great success, however, as development proceeded, and the introduction of a tramway load in 1902 precipitated the expansion and re-equipment of the station on a low-voltage d.c. basis. (In passing, it is worth noting that the tramways used the Lorain surface-contact system of current collection.) By 1913, however, d.c. generation had expanded only from its 1902 level of 1.5 MW to about 3 MW, while a.c. generation at 6 kV, 3-phase, 50 Hz had been introduced and had already exceeded 4 MW.

The station was transferred to the West Midlands Joint Electricity Authority in 1928, and to the British Electricity Authority (later C.E.G.B.) in 1948. It was closed in 1976. Capacity 30 MW through throughout most of this period, 45 MW for part of it. For about 35 years, until closure, the station was unusual in having a Brush-Ljungstrom counter-rotation turbo-generator set of 30 MW capacity.

- (ii) SO 916 999, Crown Street. 1904. Site re-developed with modern refuse destructor. This small generating station was combined with a refuse destructor to enable steam provided from the latter to be economically utilised. It started with 250 kW capacity, 750 kW by 1913, 1 MW by 1921. Probably closed about 1928.

References: **Electrician**, 37, 1896, pp 201-8; 49, 1902, pp 215-8, (tramway system pp 174-8); 53, 1904, pp 367 and 654. 'Oxford' system described in **Electrician**, 29, 1892, pp 195-6 and 254-7.

#### WORCESTER

- (i) SO 835 525, Powick. 1894. Buildings still stand, including chimney, virtually intact; earlier in use by a laundry, now by an engineering firm. Handsome architecture. Municipal undertaking. Still carries wording CITY OF WORCESTER ELECTRICITY WORKS. 1894. Used water power of River Teme, with steam auxiliary until 1903; continued as hydro-electric generating station until just after nationalisation. About 350 kW hydro power throughout; 2000-volt a.c. using oil-filled cables. For many years was Britain's largest hydro-electric station used for public supply.
- (ii) SO 844 548, Hylton Road. 1903. Still stands, much expanded and modernised, but original works-office block still in original form and very handsome. Originally generated d.c. for tramway load. 4.7 MW, 1921; 37.5 MW, 1975. Closed down 1976.

References:- D.G. Tucker., 'Hydro-Electricity for Public supply in Britain, 1881-1894', **Industrial Archaeology Rev.**, 1, 1977, pp 126-163; **Elect. Engr.**, 14, 1894, pp 418-434; **Electrician**, 33, 1894, pp 669-672; 51, 1903, pp 197-200.



Photo 1. Facade of generating station of South Staffordshire Tramways Company, 1892. Pleck, near Walsall. SO 994 976.



Photo 2. Prince's Station (Nechells A), Birmingham 1922, SP 097 893.  
(Chimneys belong to later station, behind).

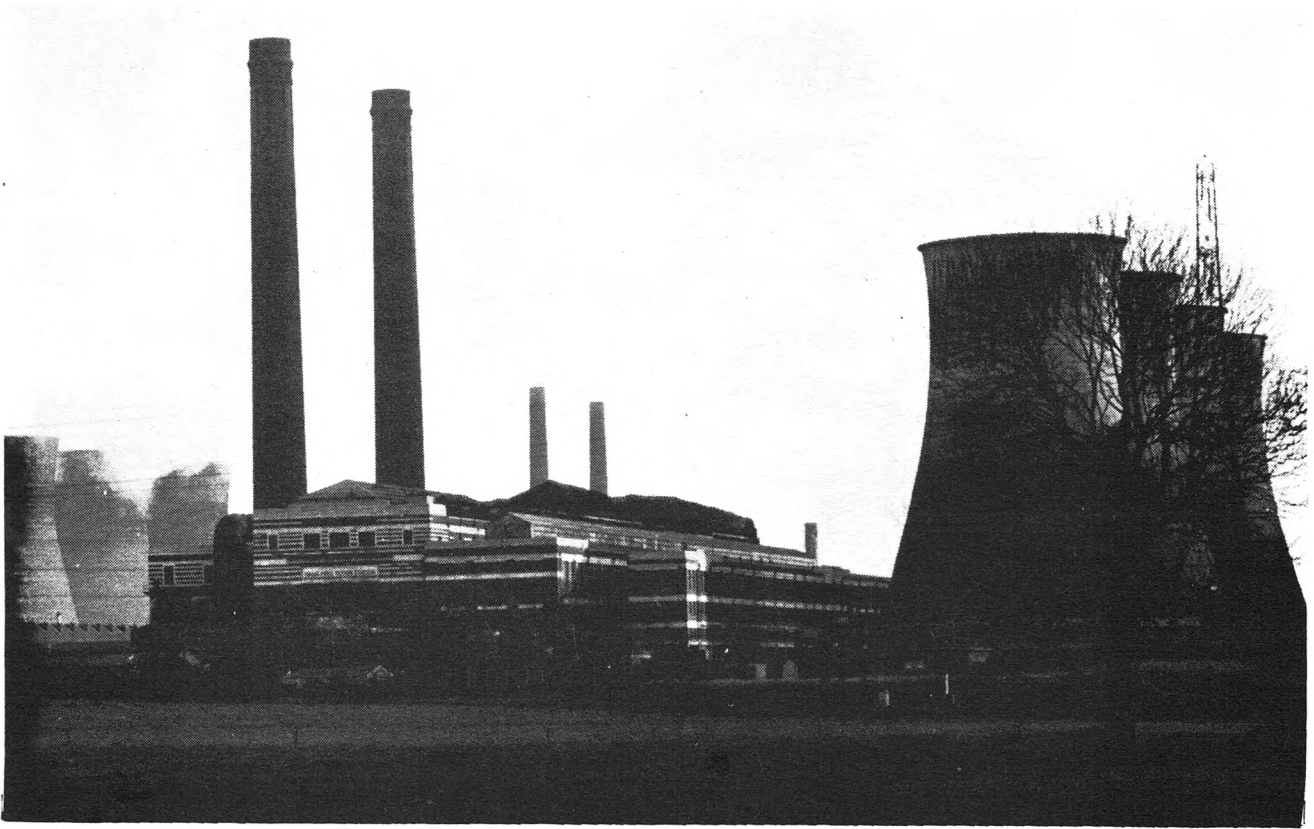


Photo 3. Hams Hall A, Birmingham, 1929. SP 193 919. (Cooling towers on left, and more distant chimneys, belong to later station, behind).

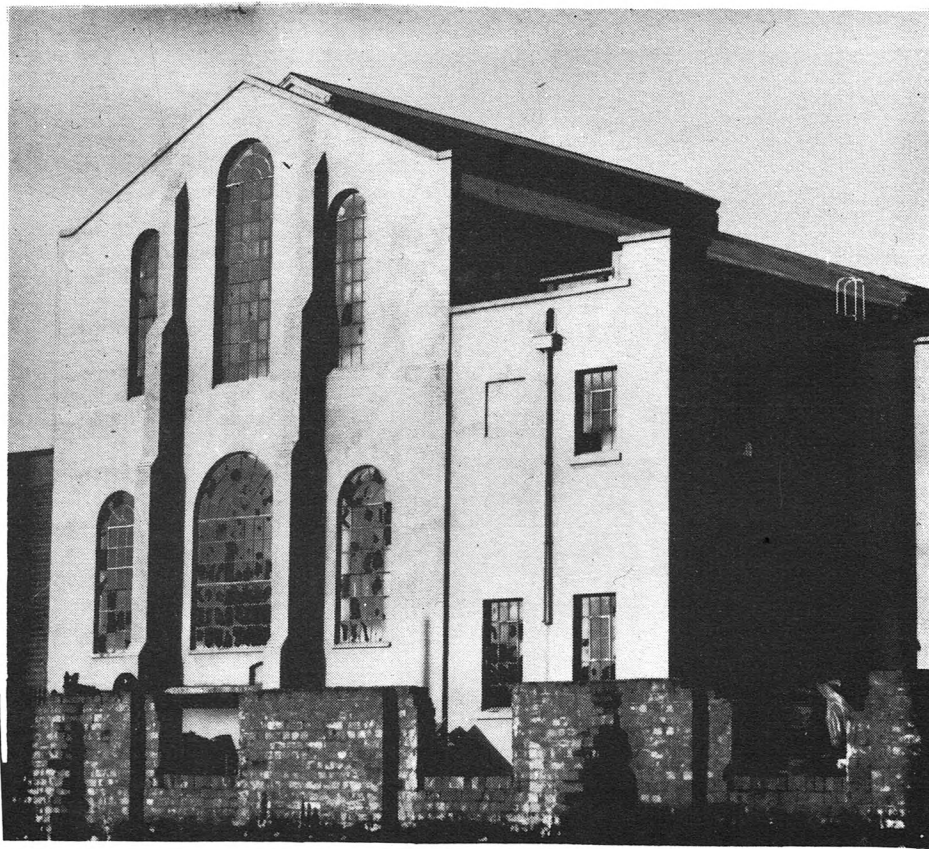


Photo 4. Aston Manor, 1903. SP 082 887.



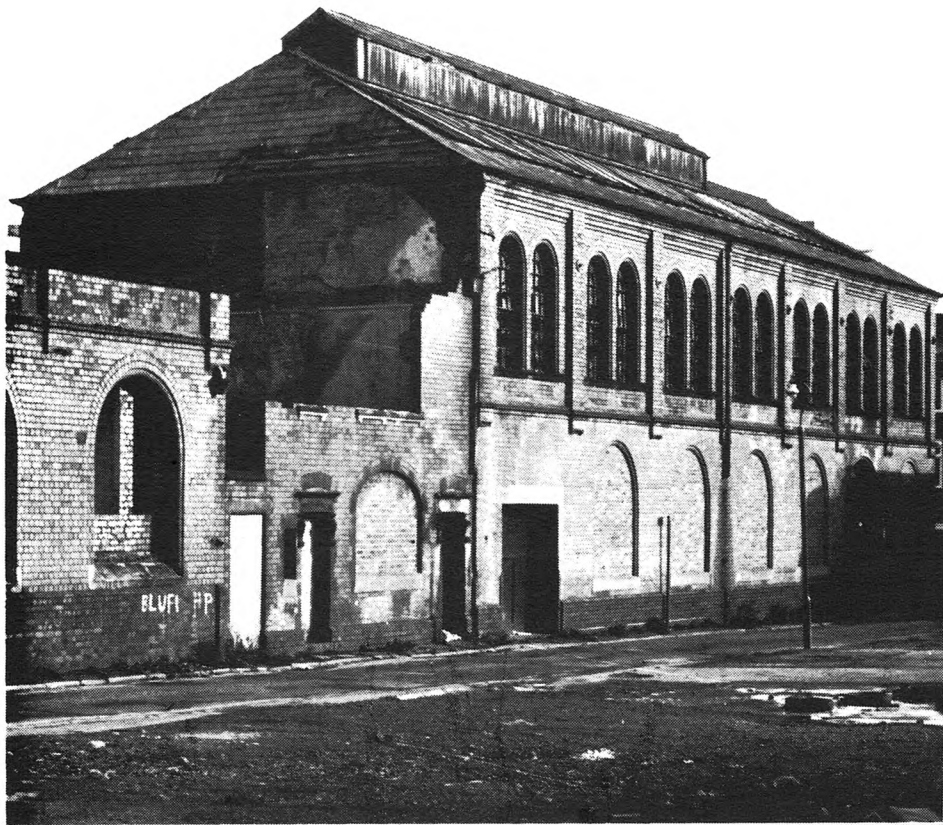


Photo 5. Sub-Station at Parker Street, Birmingham, 1895-6. SP 923 982.



Photo 6. Sub-Station at Cheltenham, 1895. SO 948 225.



Photo 7. Dudley, 1899. SO 934 898.



Photo 8. Redditch, 1898-9, with later extension. SP 043 673.



Photo 9. Stafford, originally 1895, showing mainly 1939 block on left.  
SJ 920 235.



Photo 10. Stoke-on-Trent, Yeman Street, 1904. SJ 877 447. (Refuse  
destructor on right, offices on left, engine house behind).

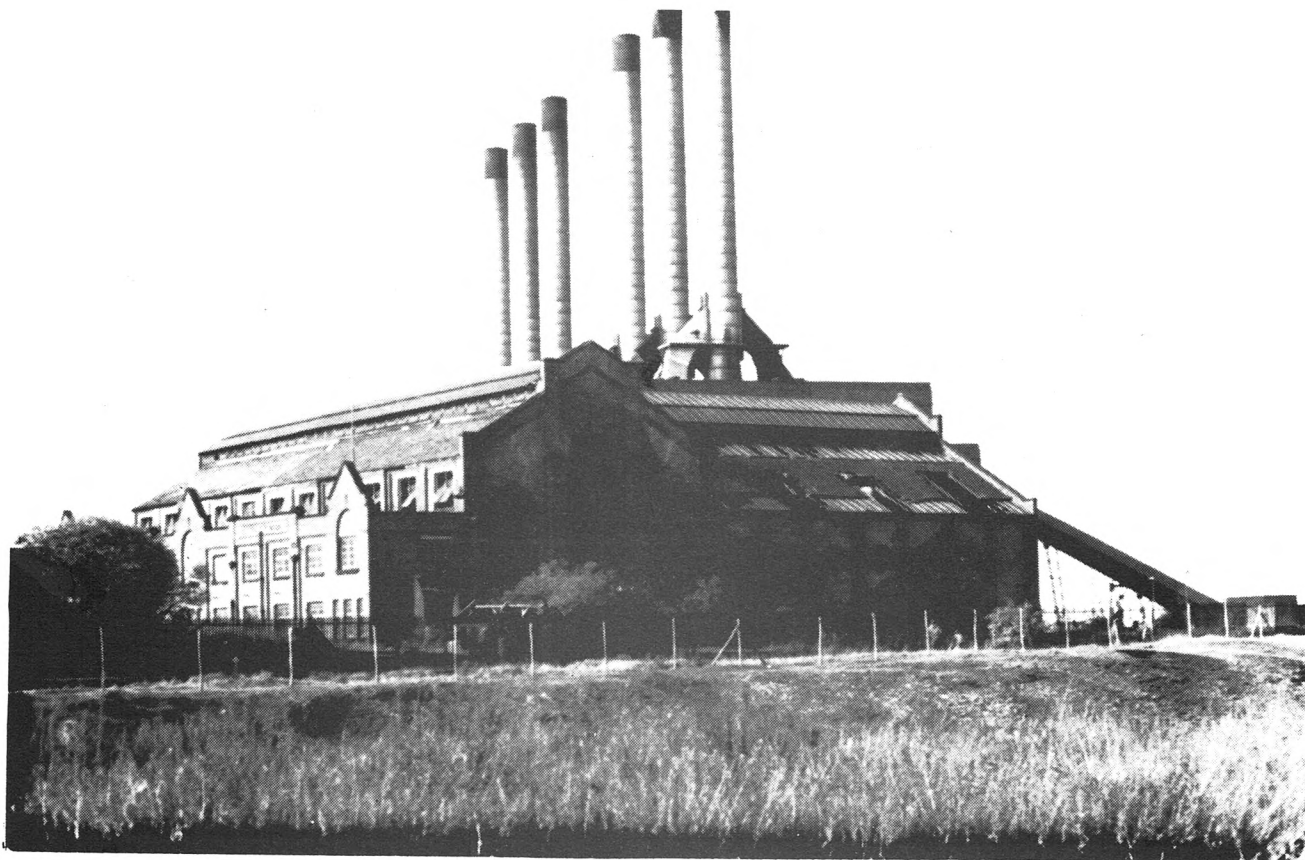


Photo 11. Birchills, Walsall, 1917. SP 003 998.



Photo 12. Ornamentation at Wolverhampton, Commercial Road, 1895. SO 923 982



Photo 13. Office block at Worchester, Hylton Road, 1903. SO 844 548.



Sub-station at Court Road, Birmingham, 1906. SP 973 845.