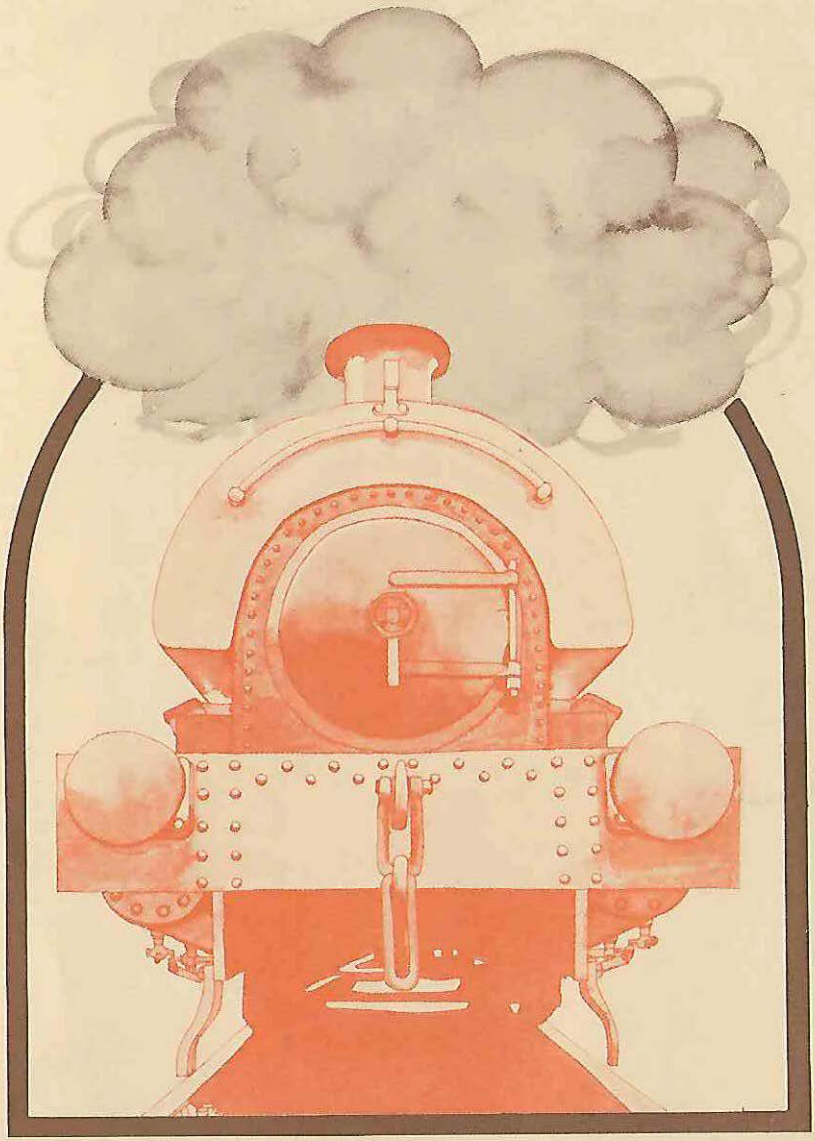


# AGECROFT
## in steam

The 1960's saw a dramatic change in the use of steam locomotion in the North West of England. Within the short space of 8 years the familiar sight of a steam-hauled train vanished completely from British Rail. For a while steam continued to be used at some industrial sites in Lancashire but now only Agecroft Power Station, near Manchester, continues the tradition.

Three power stations (A, B and C) have been developed on the Agecroft site since 1925 and each has used a rail system in its coal handling.

# AGECROFT 'A'

The original 'A' station used a 2' 6" gauge electrified railway to carry coal from the delivery tippler to the power station. The line began in a loop at the tippler and ran over approximately ½ mile of track to either a bucket/elevator conveyor system feeding the power station boilers or to the coal stocking yard.

The locomotives were supplied by the Preston Works of the English Electric Company Limited. They had a strong outside box frame loaded with weights (needed to provide rail adhesion), a small cab at the rear with a trolley pole mounted on top and an open work tower at the front carrying a second pole. They were fitted with dumb buffers and centre link couplings and normally pulled a load of four wagons, each containing 2½ tons of coal.

The 'A' station system was abandoned early in 1947 as construction of 'B' station cooling towers severed the line. Between then and its closure the 'A' station received coal by road.

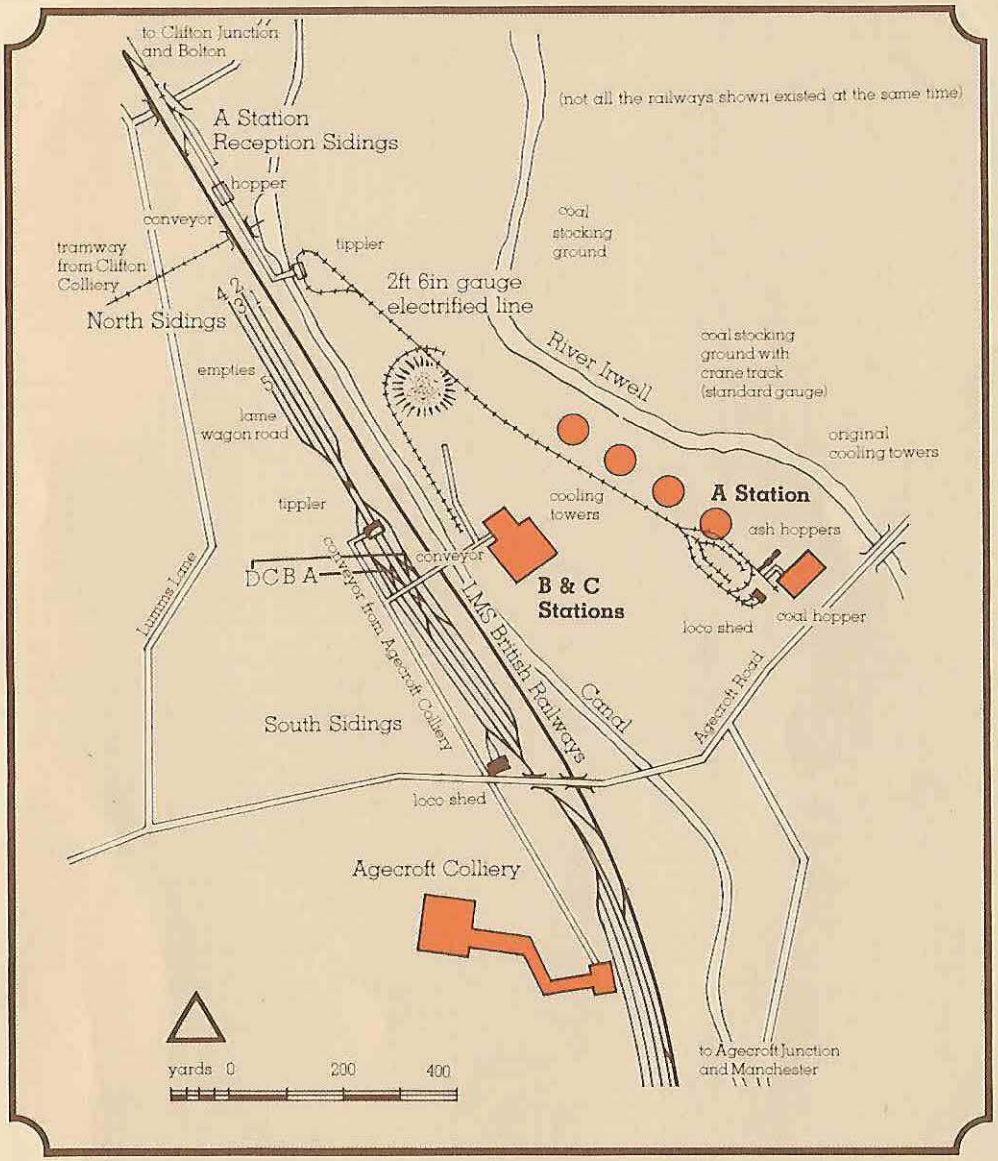
# AGECROFT 'B&C'

A completely new coal-handling system using steam locomotives, was built on a separate site to serve both 'B' and 'C' stations. A series of lines, approximately 1 mile long, was constructed running from the original conveyor to Agecroft Junction. The line passed 2 loco sheds and fanned into wagon sidings which converged to pass through the tippler. A new conveyor was built to take the coal over the British Rail line and the canal to the power station. The section between Agecroft Road and Agecroft Junction provided a loop with connections to British Rail.

Two standard design outside cylinder 0-4-0 saddle tanks were bought from Robert Stephenson and Hawthorns in 1948 to operate the system. The locos had brass nameplates - Agecroft 1 (7416) and Agecroft 2 (7485). They were stored at Magnesium Elektron Limited, Clifton Junction, sidings until the new sidings and conveyor were brought into action in September 1950. The locos were transferred 'dead' to Agecroft by goods train and were turned to face north at the Agecroft LMS shed. However the tippler arrangements made it desirable to increase driver visibility by turning one loco to face south, so Agecroft No.2 again visited Agecroft Shed in May 1951.

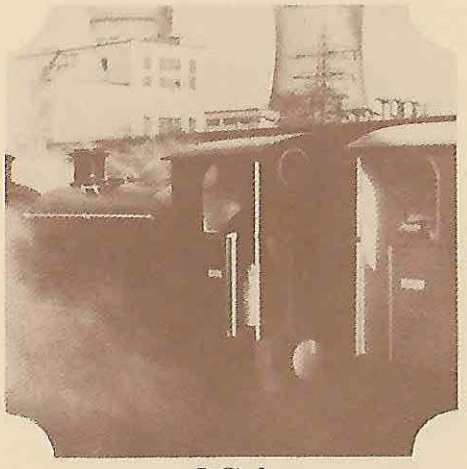
## 'A' Station Locomotives

| | |
|---|---|
| Works numbers 693 and 694 | |
| Weight | 4 tons |
| Wheelbase | 3' 4" |
| Wheel diameter | 1' 4" |
| Master controller | DB1 M1 |
| Traction Motors | DK51, one on each axle driving through single reduction worm gear |
| Tractive effort (at 1 hr. rating and 220 volts dc) | 1,300 lb. |
| Speed | 5-6 mph |
| Minimum Radius Curve negotiable | 17' |




## The Sidings

South sidings Nos. 1-4 are used for wagon storage (fulls and empties). No. 5 is regarded as the running road and is always kept free of stationary wagons. North sidings No. 5 line is regarded as a 'cripple' road into which wagons requiring repairs are shunted.
In the past, when the conveyor has been under repair, power station locos have occasionally run into the colliery yard to collect loaded NCB internal wagons and work them back to the station tippler for unloading. Today during repairs, the wagons are brought to south sidings by one of the colliery's diesel locos.



—AG-1—

A third Robert Stephenson & Hawthorns 14" x 22" 0-4-0 saddle tank (7681 of 1951) was obtained to give increased cover. 7681 was originally ordered for Bolton Power Station. However, the capstan system at Bolton was still operating satisfactorily so the loco was transferred to Chadderton Power Station, Oldham, in 1952. Bolton No.1 arrived at Agecroft by goods train in September 1954. It was repainted unlined blue in November and subsequently became known as Agecroft No.3.

In 1961, to cope with the increased coal demand of 'C' station a direct conveyor link was opened between the re-opened Agecroft Colliery and the power station taking the pressure off the rail system. Later that year, in anticipation of a reduced workload, a diesel locomotive (a Stephenson & Hawthorns 0-6-0, 7746 of 1954) was brought by low loader from Bromborough Power Station. The locomotive was fitted with a Crossley direct reversing six cylinder scavenge pump diesel engine, better suited to trip working locomotives than shunters. Operations involving shunting backwards and forwards were very time consuming with this type of engine. At each change of direction the engine had to be shut off involving laborious starting and direction changing procedures. Having been found unsuitable for the work at Agecroft the diesel was transferred to Whitebirk Power Station at Blackburn in July 1963.

With the re-opening of Agecroft Colliery, the rail system south of Agecroft Road bridge was altered. The CEGB lines were connected and incorporated into the new colliery sidings as a back-up delivery system in the event of conveyor breakdown or maintenance. An experiment in 1971 to make Agecroft Colliery the sole coal supply and to make all deliveries by conveyor was unsuccessful and the Board reverted to the rail system to make up the Agecroft shortfall from collieries in Yorkshire and Leigh.

## 'B' & 'C' Station Locomotives

Agecroft Nos. 1, 2 and 3
Works Nos. 7416, 7485 and 7681

| | |
|---|---|
| Cylinders | 14" x 22" |
| Wheel diameter | 3'6" |
| Wheelbase | 5'6" |
| Heating surface | 621 sq.ft. |
| Grate area | 8.87 sq.ft. |
| Water capacity | 700 gallons |
| Coal capacity | 17 cwt |
| Work Pressure | 165 lb sq.inch |
| Weight | 28 tons |
| Tractive effort at 85% working pressure | 14,400 lb |
| Colour | Green with black lining edged in red and yellow |

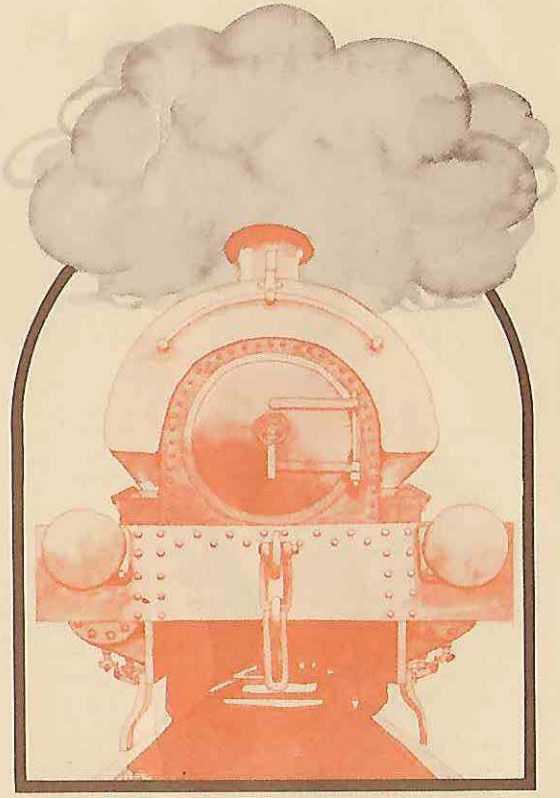
Today locos collect full wagons from the south sidings and propel them to the two tipplers. The tipplers are designed to deal with two rakes of wagons simultaneously but in practice wagons are pushed through one side only and emptied singly. Wagons are then pushed to the north sidings and subsequently hauled back to the south sidings to await collection by the BR loco bringing the next train of fulls.

In 1977 the three locos were renumbered AG-1, AG-2 and AG-3 (by this time Nos. 1 and 2 had lost their nameplates). All three have recently been repainted and can look forward to a secure working future.

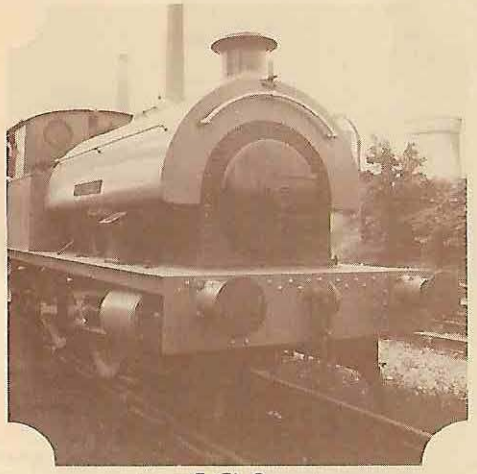
## OVERHAUL

Basic maintenance and overhaul of the Agecroft locos is carried out at the shed. Larger jobs are undertaken by outside contractors, as when No.3 had a new firebox fitted in 1961 and when No.2 had some saddle tank plates renewed at Houghs of Wigan and her wheels retyred elsewhere.

Towards the end of 1972, Agecroft No.2 was given a major overhaul including the fitting of new piston rings, rebushing the piston rod neck and glands, facing up the valves and fitting new metallic packing to the valve rods. In addition the axle boxes were replated, the axle brasses built up, the reversing shaft refitted at the bearings and the brake linkage and hangers rebushed.



Written permission must be obtained before visits can be made to the site.



—AG-2—

—AG-3—

# ELECTRICITY IN ENGLAND AND WALES

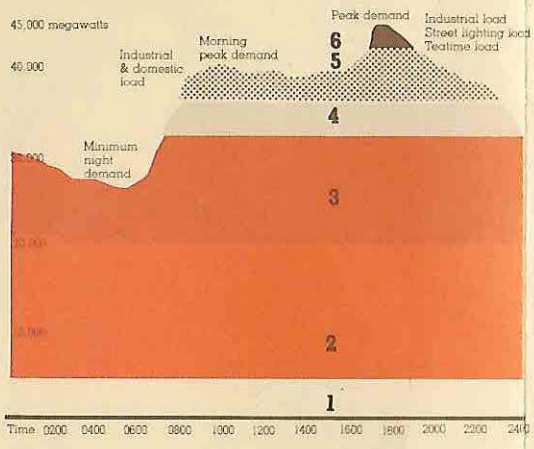
The Central Electricity Generating Board (CEGB) is the 'wholesaler' of the electricity supply industry. It makes, distributes and sells electricity in bulk to twelve independent Area Electricity Boards - the 'retailers' such as MANWEB and NORWEB - which supply 50 million customers.

The CEGB is Britain's biggest business and its system is one of the largest in the world. It is split into five Regions responsible for operating the power stations and transmission systems in their areas.

The CEGB operates over 130 power stations most of which burn coal as a means of raising steam - in fact the CEGB burns over half Britain's coal output. Oil, nuclear fuel and gas provide most of the rest of our electricity. Only a few power stations in mountainous areas use water.

Electricity is distributed over the National Grid transmission system which effectively links every power station with every consumer. The National Grid operates just like a road system ... its high-voltage lines are its motorways (these are the Supergrid lines operated by the CEGB which carry electricity at 400,000 and 275,000 volts), its mid-voltage lines are its A-roads and its low-voltage lines are its minor roads (these are the lines operated by the Area Electricity Boards which serve industry, towns and villages, and the home).

**Typical winter day demand curve and how the CEGB might meet the demand**




1 Nuclear plant - the CEGB's cheapest means of producing electricity (the small amount of hydro electric plant would also come into this category)

2 Modern coal-fired plant - efficient and cheap

3 Older coal-fired plant - not so efficient but relatively cheap fuel

4 Modern oil-fired plant - modern power station but expensive fuel

5 Old coal and oil-fired plant - relatively inefficient plant

6 Gas turbine - an 'instant' means of producing electricity to meet a peak in demand. Pumped storage hydro-electric plant can also be used for this purpose

The National Grid is also used to even out supply; for example by sending surplus electricity from one part of the UK to another part where there is exceptional demand.

The demand for electricity varies widely during any 24-hour period. Electricity is an 'instant' product, it cannot be stored in large quantities at times of low demand, for use later during peak periods.

So the cheapest power stations are making electricity all the time, to meet basic demand. As demand rises, the more expensive stations have to be started up, on the instructions of National and Regional Control Centres. It's also the job of control engineers to plan for sudden increases in demand, for example, at the end of popular TV programmes.

It obviously makes sense to use the most cost-efficient stations to meet basic demand, and to reserve the more expensive stations for peak periods only.

One of the cheapest, safest and most reliable means of producing electricity is by nuclear power. Electricity generated in this way has been flowing into our national grid since Calder Hall was opened in 1956.

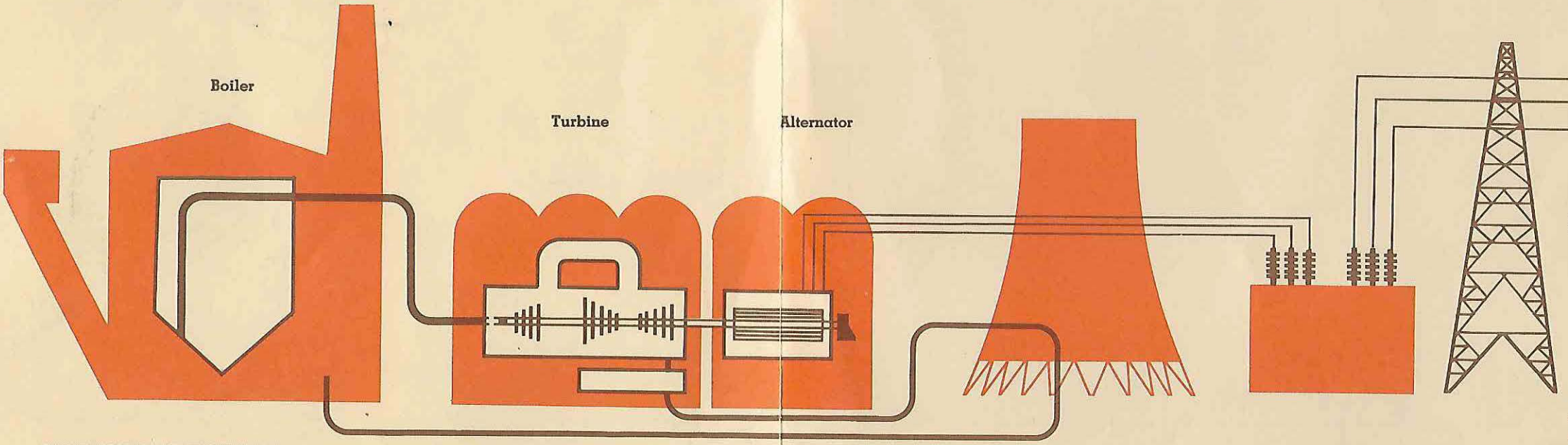
In fact there are already eight CEGB 'magnox' nuclear power stations in England and Wales and another four of a more advanced design (the 'AGR') nearing completion. Soon nuclear power will supply one-fifth of all our electricity requirements.

The North West Region of the CEGB has been in the forefront of this nuclear power programme. The Region's first 'magnox' reactors, at Trawsfynydd in North Wales, began supplying electricity in 1965. In 1972, the Region's - and the country's - largest nuclear power station at Wylfa on Anglesey came into operation.

Planning for the future, the Region has a construction programme which will provide it with two of the more advanced nuclear power stations - the AGR's. The first is almost complete on the site at Heysham in Lancashire whilst work on the second has just begun.

Besides nuclear plant, the Region's construction programme includes a new oil fired power station at Ince and the largest construction programme in Europe - the Dinorwic pumped storage scheme.

These new stations will replace older, less efficient plant and so help keep the cost of electricity as low as possible.

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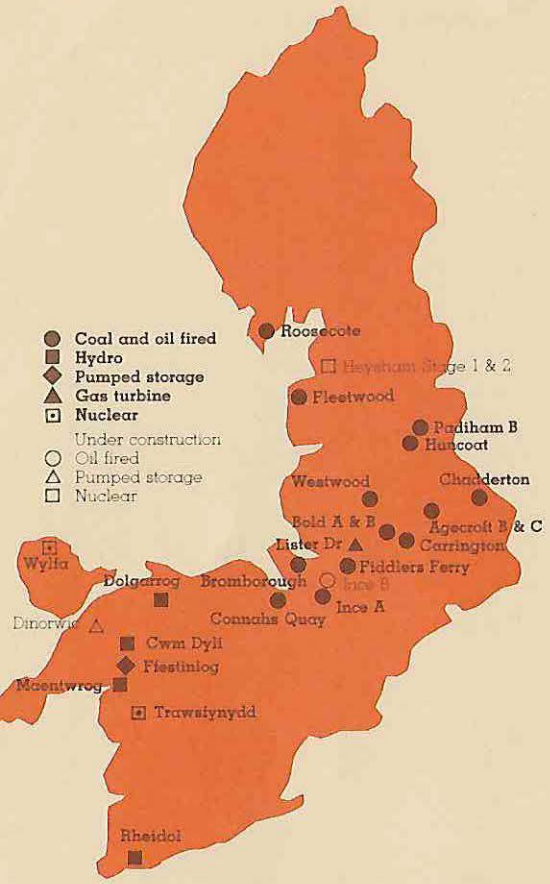
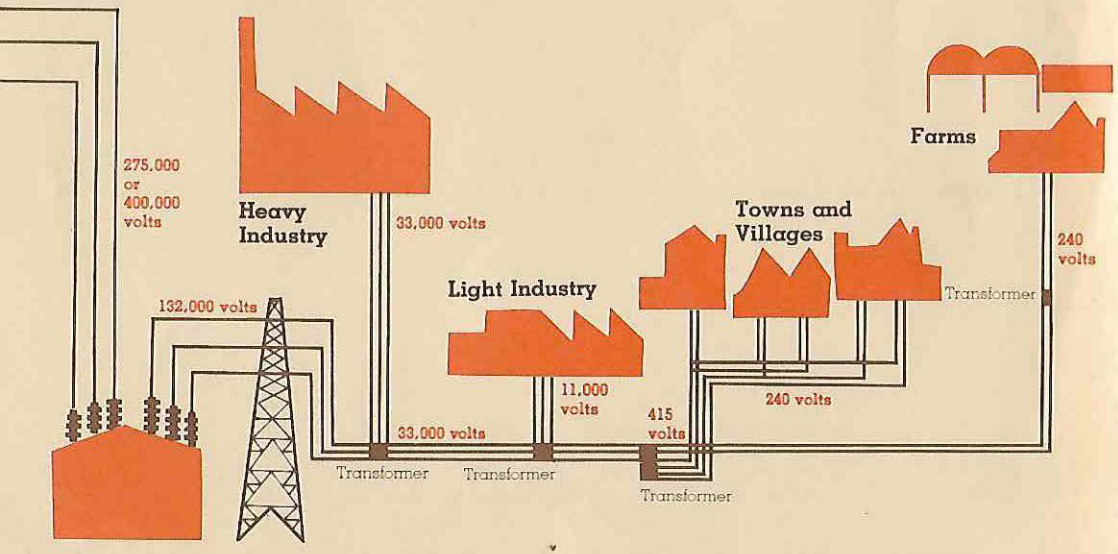
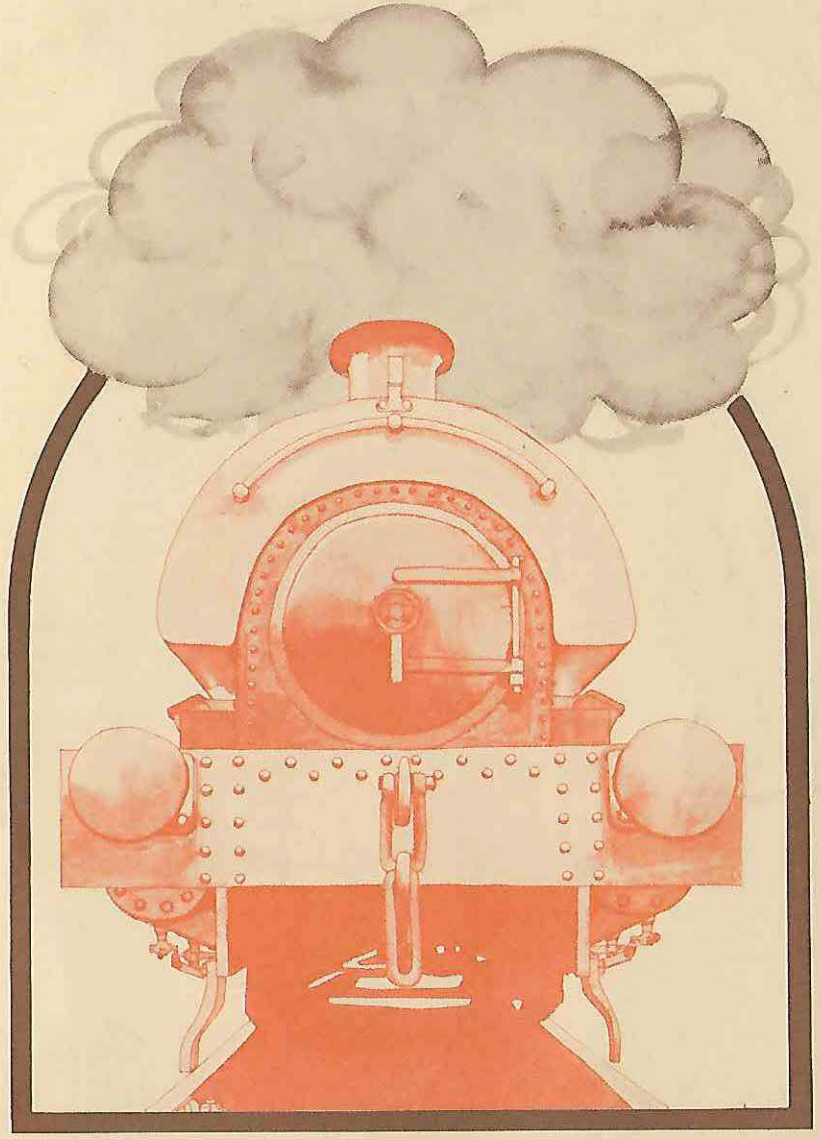



The CEGB's North West Region covers the 26,000 square kilometres west of the Pennines, from Carlisle in the north to Aberystwyth in the south. Its 24 power stations give it the widest range of power producing plant of any of the five Regions in England and Wales - coal, oil, gas turbine, nuclear, pumped storage and hydro electric. These power stations together can produce enough power to meet the instant needs of over 7 million people.

The Region's largest coal fired power station, Fiddler's Ferry, Warrington, can supply about five per cent of the nation's peak electricity demand at any one time.

The North West also has the country's first hydro electric pumped storage power station at Ffestiniog, Gwynedd.



# AGECROFT
## in steam