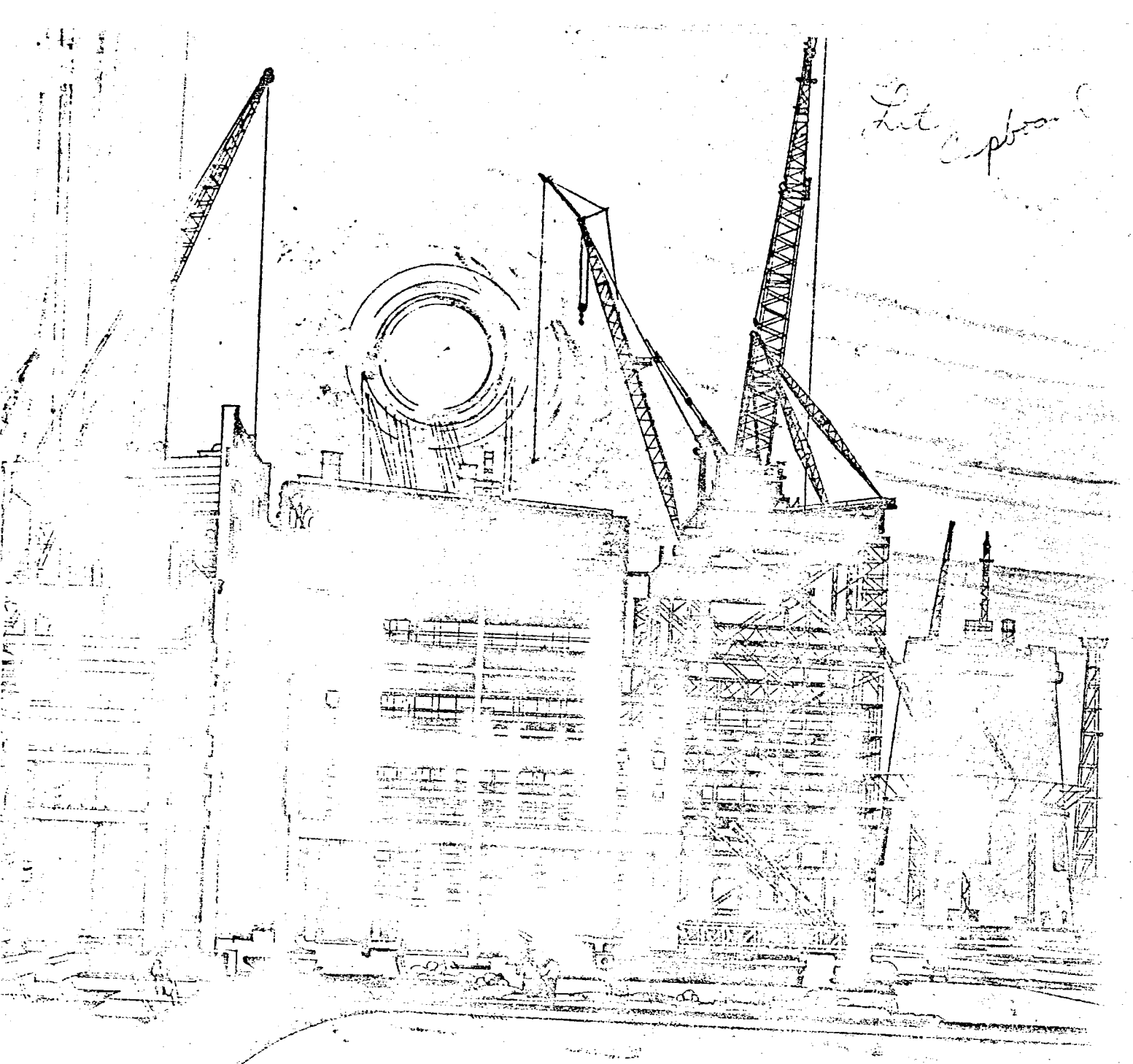


DSW 321864

FOR EUROPE'S LARGEST POWER STATION!

STLCOPCB4073514

ISLE OF GRAIN – Britain's most advanced Power Station

When the Isle of Grain Power Station is completed towards the end of 1979, at a cost of some £230,000,000, it will cover 145 acres and its 800ft high chimney will be a Thames estuary land mark. Its net electrical output will be 3,300 MW, one eighteenth of Britain's total power need, and it will stand as a most impressive witness to the Central Electricity Generating Board's bold policy of technical innovation in countless aspects of this Station's design, planning and construction.

One such innovation is the specification of transformers filled with Pyroclor to supply power to the auxiliary services on the main generator units and for general station requirements such as lighting and ventilation.

What were the key factors influencing the CEGB's choice?

Design flexibility

[illegible] transformers will be located on [illegible] hundred feet above the floor of [illegible] turbine hall.

- [illegible] space
- [illegible] cable runs
- [illegible] safety through Pyroclor fire resistant fluid.

Maximum reliability

[illegible] fluid filled transformers have proven extremely reliable and virtually maintenance free – key factors in view of the elevated location on this site.

Instant readiness for essential services

When power for essential services has to be obtained by bringing in the auxiliary gas turbine generators to complement the main units the transformers may be required to run up to full power in a matter of seconds even though they may have been standing off-load for a considerable period.

The CEGB considered that a transformer filled with Pyroclor best met this need consistent with the requirement for fire safety.

Cost

It is true that transformers filled with Pyroclor are slightly more expensive than conventional units. However, for the higher price the CEGB bought space, safety, reliability and cost saving technical innovation.

Environmental considerations

Pyroclor contains PCBs which, it is now known, are very persistent if allowed to escape into the environment and, while loss of fluid from a hermetically sealed transformer is a relatively rare occurence, the CEGB clearly had to take account of this possibility.

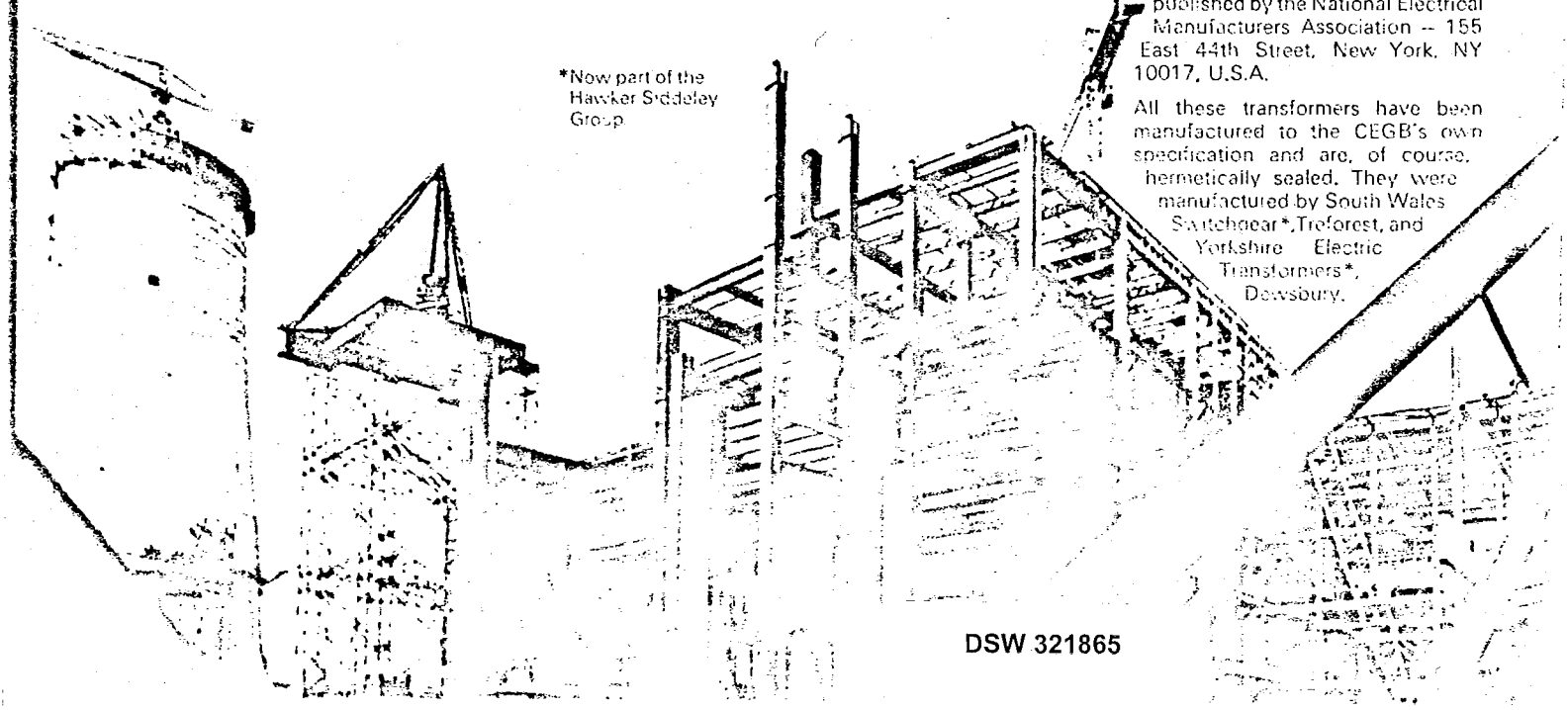
After discussions with Monsanto the CEGB has laid down practical guide lines for its operators at the Isle of Grain and elsewhere to take in the event of accidental spillage.

These include the containing of the Pyroclor, by absorbent materials which are then disposed of by carefully controlled high temperature incineration.

Any potential user of Pyroclor is strongly recommended to discuss the procedures for dealing with accidental spillages and for ultimate disposal of the units with Monsanto and/or [illegible] read the guide lines recently published by the National Electrical Manufacturers Association -- 155 East 44th Street, New York, NY 10017, U.S.A.

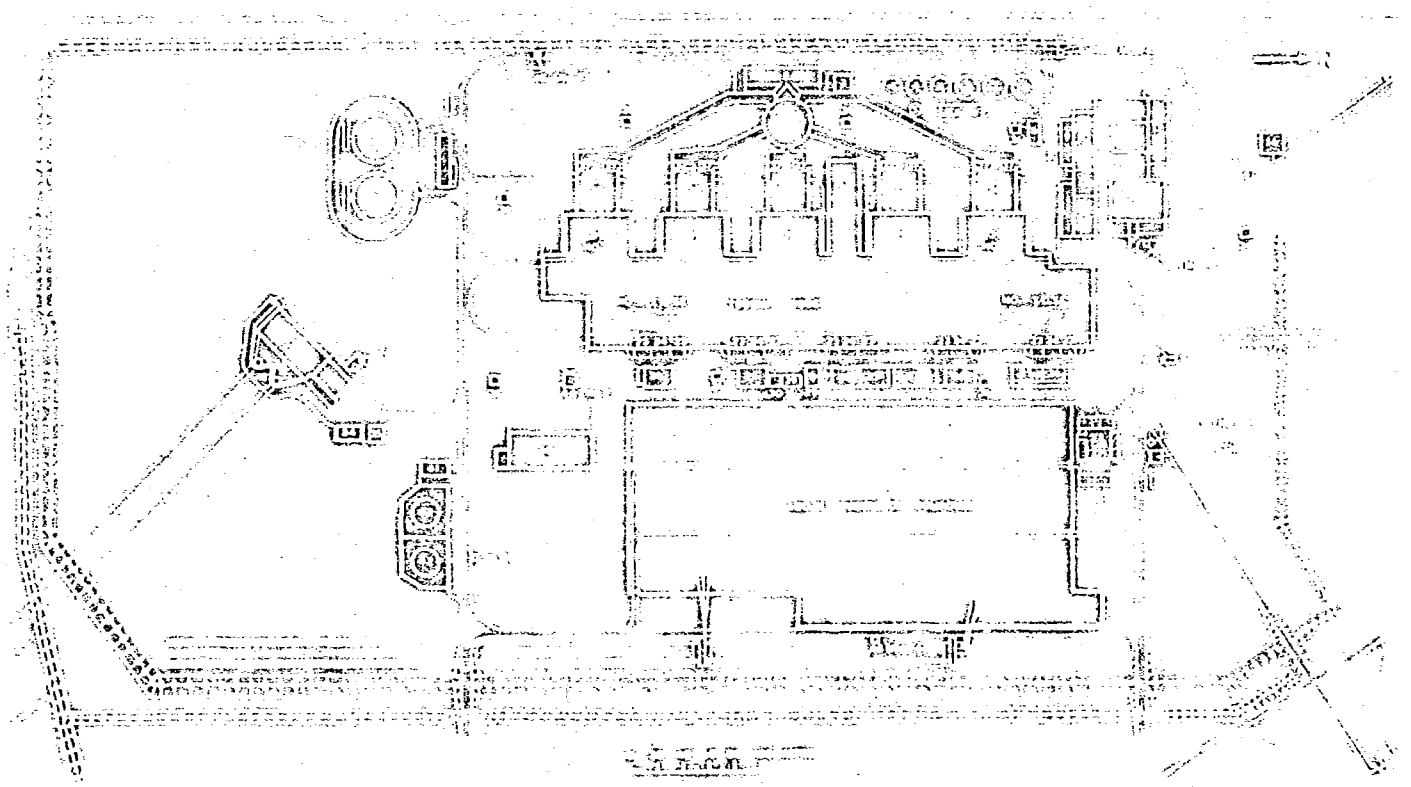
All these transformers have been manufactured to the CEGB's own specification and are, of course, hermetically sealed. They were manufactured by South Wales Switchgear*, Treforest, and Yorkshire Electric Transformers*, Dewsbury.

*Now part of the Hawker Siddeley Group

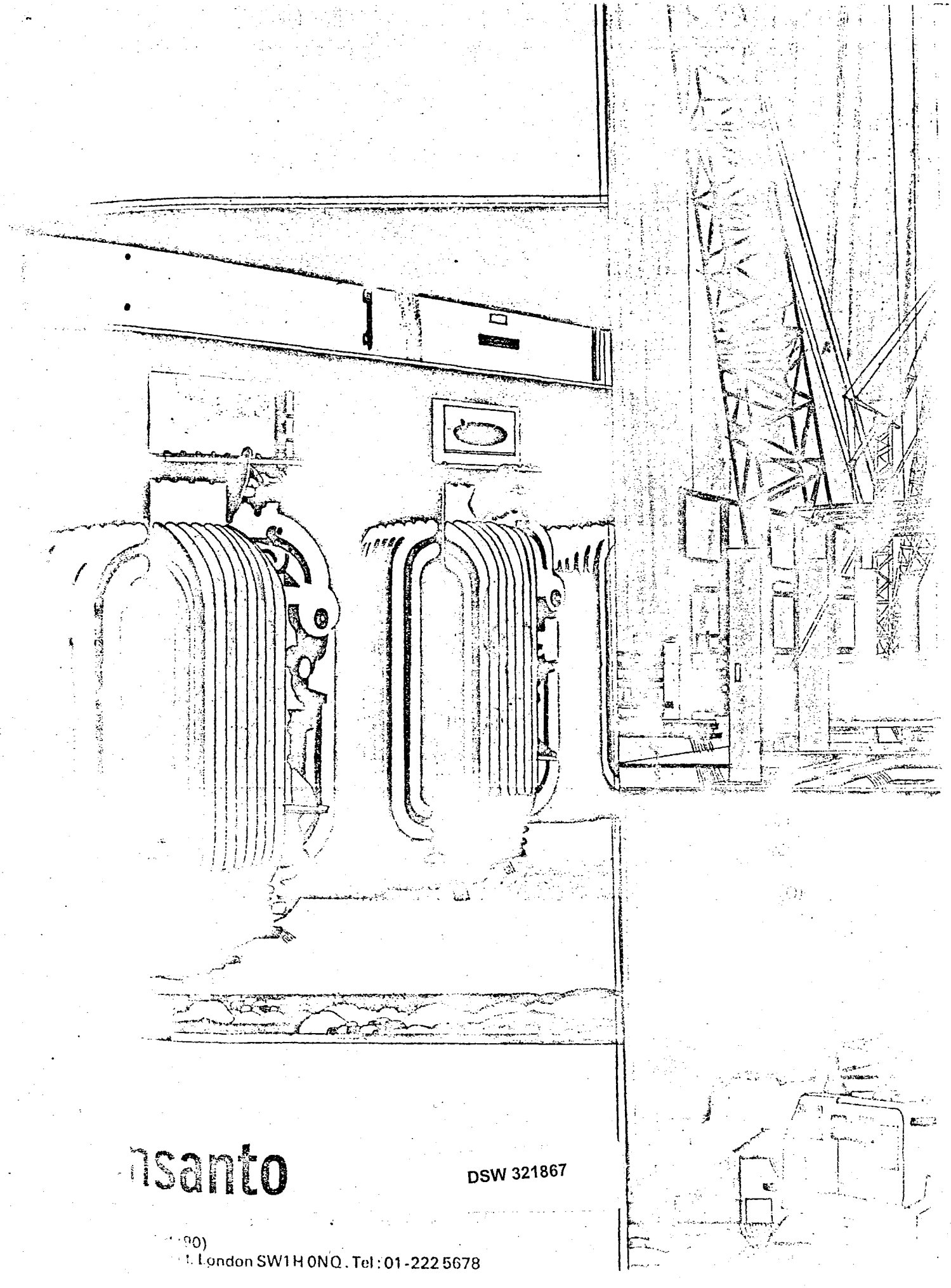


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