

Future-proofing power security for Telehouse



London's Docklands

As a data centre and ICT provider with a campus in London's Dockland housing the IT infrastructure of around 500 major international organisations, Telehouse takes power supply continuity and security seriously. In 2010, it selected ABB to supply and install the electrical equipment for a new substation to be energised within 18 months, in time for the London Olympic Games.

The need

Previously, the site was supplied by four separate 11 kV power systems on separate grids for maximum redundancy and reliability levels of 99.999% and the peak maximum demand stood at around 15 megavoltamperes (MVA). But with the construction of a new data centre building and natural growth in demand, Telehouse wanted to upgrade to a maximum demand of 40 MVA.

This, alongside the desire for even greater levels of redundancy protection, prompted Telehouse's decision to invest in a direct 132 kV connection and substation as the most cost-effective route to providing more power for its campus site.

Telehouse appointed consultant Arcadis to lead a fast track turnkey project to build the new substation and ABB won the contract to design, supply, install and commission the electrical network.



01 UniGear switchgear | 02 Transformer | 03 ELK-04-735 Gas Insulated Switchgear

ABB's solution

As one of a select group of companies that are accredited contractors under the National Electricity Registration Scheme, ABB was able to liaise closely with UK Power Networks on both the contestable and non-contestable connection elements of the project.

To create the new connection, ABB tapped into the existing UK Power Networks 132 kV circuits. These have been linked by two diverse 500 metre underground cable circuits feeding through the new indoor substation within the Telehouse campus.

The new 132 kV substation included ABB's ELK-04-735 GIS, which passed UK Power Networks' rigorous approval procedure as part of the specification process. It was installed together with ABB 33/50 MVA 132/11 kV grid transformers and ABB also designed, supplied and installed the substation protection and control equipment. The compact size of the GIS meant that it was possible to build the substation on a small footprint, allowing Telehouse to make the most of its Docklands real estate.

On the secondary distribution side, ABB installed its UniGear 2500 A, 11 kV switchgear, auxiliary transformers, earthing resistors, substation earthing, batteries and battery chargers, SCADA interface and 415 V switchgear.

The central London location and proximity to the major businesses in Docklands threw up challenges of keeping noise and disruption to a minimum and ABB mitigated this with careful planning and scheduling of deliveries and civil works.

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