

HEATHROW - WEST INTAKE SUBSTATION



BACKGROUND

The West Intake substation at Heathrow is one of a series of 33kV intakes that were originally constructed in the 1960s; an upper level was built years later. The 33/11kV transformers and 33kV feeder cables, owned and maintained by Heathrow Airport, had reached the end of their operational life and required replacement.

UK Power Networks Services was contracted to design, procure and install replacement 33/11kV transformers and 33kV feeder cables.



SCOPE

The scope of works included the following civil works and cable containment systems:

- Construction (demolition and build) of two new 33kV transformer compounds to achieve a 50-year design life
- Removal of three existing oil storage tanks and associated pipework and controls
- Conversion of the bunded foundation 'tank' for the old oil tanks into a bunded compound for the new transformer compounds and associated equipment
- Construction of two new cable gantries to and from the new transformer compounds
- Design and construction of a 12-way pit and duct system from the gantry linking the new transformer compounds to the point of connection to the replaced section of 33kV supply cables
- Maintaining access to Heathrow cargo area
- Directional drilling under fuel mains and the Twin Rivers and all associated civil engineering works

CHALLENGES

A major challenge was to minimise the impact of the works on Heathrow operations as the site was very close to the operational highway. Through meticulous planning we overcame this challenge by reducing the traffic using the Southern Perimeter Road.

ACHIEVEMENTS

Through a robust programme, we successfully delivered the project which ultimately reduced Heathrow Airport's operating expenditure (OPEX) costs. Through careful design and planning, the project succeeded in replacing ageing infrastructure with a new facility incorporating the latest standards in design and construction.

Due to effective collaboration with stakeholders we were able to deliver the works without affecting the operational capability of the airport and its surrounding roads.

Also, through our environmentally aware approach to the works delivery, we were able to ensure there was no environmental impact on the adjacent protected waterways, the 'Twin Rivers' - the Duke of Northumberland's River and the Longford River.

KEY STATS



Reduced client's OPEX costs

NO IMPACT

to operation of airport and its surrounding infrastructure

£1.4
million project

CONTACT

SIMON LOCKWOOD
AIRPORT MANAGER, HEATHROW

ENQUIRIES@UKPOWERNETWORKS.CO.UK