Client: NNB **Value: £55m**

Project title: HPC Switch Room **Duration: 4 years**

Key Facts

1. Approximately 100 million hours worked by 40 personnel over 4 years

2. Zero LTIs / Number of incidents

3. Delivered on time

4. Delivered on budget

Challenge

As part of Hinkley Point C two new nuclear reactors are being built, the first in a new generation of nuclear power stations in the UK providing low-carbon electricity for around six million homes. As a team we have been on HPC for four years, installing the HV network as part of the Construction Electrical Supplies (CES).

Marking a significant milestone in the revitalisation of our nuclear power industry, Hinkley Point C will make a major contribution to the UK's move to reduce carbon emissions. The electricity generated by its two reactors will offset 9 million tonnes of carbon dioxide emissions a year over its 60-year lifespan.

Approach and innovation

The scope was to bring electrical supplies onto the HPC construction site from the National Grid 275kV Substation on Hinkley Point A (HPA).

These works included the erection of two number bases which housed the 275/11kV transformers (Tx) (transformer installed by CG Power) and all 11kV terminations and cabling from the transformers to separate Intermediate Switch Houses for each Tx.

Within the National Grid compound we installed ducting and cabling for the HV, LV & control circuits, during this installation we encountered over 300 services with a vast majority of these not being recorded on site records and all were safely worked around. This earned us the HPC Award for "Best Safety Performance" for a Tier 1 Contractor.

The cabling route from National Grid had to pass through Hinkley Point B land and was therefore governed by a fully operational nuclear site. The works on HPB was to excavate across their main access road and install a duct bank, a barrier joint pit and the installation of eighteen number 630mm single cores, to the CES switch room on HPC.

Outcome

Within the HPC site we installed the HV switch room consisting of two number switch panels with twelve circuits each (including the lighting, small power & fire alarm system), to date we have supplied, installed and energised 22 package substations, over 8,000 mtrs of HV cable, approx. 60 terminations & circa 50 cable joints.

All of these works have been completed within the HPA, HPB, HPC & N/G Safety Rules and there

hasn’t been this cross site collaboration in over 40 years and was final commissioned in house, with all handover documentation completed prior to energisation.

We have in addition to this installed 20 LV feeder pillars and four number temporary office accommodations, which including cabling, terminations and again handed over to NNB with full hand back documentation.

Figure 1: Work in progress during Hinkley Point C

Due to the more than 60 year lift time of operation the project was innovative from the beginning, the quality aspect of the works was at the top of the list of requirements from the client, but due to the client not fully comprehending what they required we produced lots of the documentation that they are still using with other contractors on site now.

We all had a learning curve as this type of project had not been completed for over 50 years and they had started the project from the start under Nuclear licence. Which meant lots of protocols had to be adhered to even though it in theory was just a building site as no nuclear equipment was on site and will not be for another 4 or 5 years.

Delivery and collaboration

We are proud to be able to state that we have the best safety record of any Tier 1 on site and have not encountered any LTI’s in over half a million man hours and we brought this attitude to the Hinkley point C, ensuring a safe delivery, in collaboration with all stakeholders involved in the project.

By using our collaborative approach to ISO 44001, we have also been able to developing relationships with the client and stakeholders to respond to queries throughout the consultancy period, which continued into project delivery.