CONTAINERISED AIR INSULTED SWITCHGEAR (CAIS)

Customer : Network Rail

EPS is a founding member of a Joint Venture (SSA) supplying 25kV containerised air insulated switchgear (CAIS) to Network Rail CP5 projects. EPS designed, manufactured and supplied the HV equipment and has recently been involved in the supply of the associated P&C and S&T equipment. Substations types including TSS, ATS, SATS, MPATS and ATFS have been delivered to Network Rail.

Process:
Substation single line diagrams (SLD's), at NR Grip stage 4, were provided to the design team and early engagement of the Project Wise BIM system was adopted. EPS managed the interface to the client, helping both the client and the supply chain to deliver to the client's requirements.

Solution Proposed:
As there were 8 substations to manufacture, designs were broken up into generic module designs that were common across all sites, and then into site-specific designs which were individual for the substation.
Each design element was subject to regular review from the concept stages through to 'Approved for Construction' (AFC), and then 'As Built' stage. The designs were done in collaboration with the civil engineering designs to ensure that the associated plinths and cable routes were matched to the delivered substation.

Manufacturing of the complete substations was carried out and the client was invited to witness and approve the factory acceptance test (FAT) prior to delivery. The delivery route of each substation was planned to ensure no obstacles prevented successful delivery of the substation to site. This process enabled the main contractor to prepare the substation site, and clear it, ready for delivery of the substation, which typically took less than 48 hours from lift to drop on site.

Commissioning typically commences 2 weeks after delivery.

Summary:
EPS successfully designed, manufactured and delivered completed medium voltage substations to the rail industry and is a key part of SSA.