

Maentwrog Power Station

Client:	Scottish Power Energy Networks (SPEN)
Location:	Maentwrog, Gwynedd, North Wales
Value:	£970k
Duration:	10 Months



In Brief...

This was a live power station/132kV compound where initially, cables had to be diverted to allow access to build the new switchgear building and compound extension. Careful consideration was applied to 'Ivy Bridge' (a 700 year old listed structure) which was adjacent to the site and within a Site of Special Scientific Interest (SSSI).

Construction was phased to allow the customer's electrical contractors on site to install plant and undertake cable connections.

Customer Benefits...

- Built into planning/methodology and site controls, preservation of 'Ivy Bridge' and fauna & flora in SSSI area, to ensure good standing of Customer's branding
- Proactive engagement with Environment Agency and Countryside Council for Wales to gain stakeholders' confidence with environmentally sensitive approach
- Implemented construction techniques that minimised risk of physical harm to heritage bridge and fauna & flora, to ensure customer's custodian responsibilities to environment were maintained
- Undertook cable diversion works, originally to be carried out by another contractor of the customer, to facilitate more concurrent rather than consecutive working. This resulted in time savings and reduced working area/trade discipline interface challenges
- Rigorous 'safety critical' control procedures implemented using a 'Permit' approach to ensure safety of all parties, whilst transmission continued

Technical features...

- Preconstruction survey of existing embankment
- Site clearance, removal & re-erection of store shed, demolition of existing buildings and foundations
- 33kV and 11kV cable diversions
- Dewatering discharge from excavations and surface water run-off from earthworks, was filtered prior to discharge into river, preventing pollution
- Pockets of contamination were initially isolated, for treatment at a later stage in contract.
- Reinforced concrete retaining wall 50m long x 3.5m ht
- Site drainage & interceptor with discharge to river
- Reinforced concrete cable ducting, external cable troughing and MC trench
- Adopted a vibrationless solution to structures foundations due to electrical equipment and Ivy Bridge, by excavating ground, installing manhole rings and filling with concrete
- Switchgear control room, with brick/block walls, pre-cast concrete roof
- R.C. bases constructed for 33kV transformer
- 132kV compound, comprising base slabs and plinths
- Installed high security fencing and gates