Foyers Glen Liath Portal Works

Client :
Scottish & Southern Energy

Location :
Foyers, near Inverness

Date :
2008

Foyers Power Station is situated on the banks of Loch Ness approximately 20 miles from Inverness. The station comprises two vertical shaft reversible turbine generators, each rated at 150MW generating capacity. Loch Mhor forms the upper storage reservoir, the hydro tunnel connecting Loch Mhor to the station is approximately 5,000m long. The original Foyers pumped storage scheme was built between 1969 and 1975 with BAM Nuttall as the main civil engineering contractor.

In January 2008 Scottish and Southern Energy awarded BAM Nuttall the contract to undertake repairs to the tunnel immediately upstream of the Glen Liath pipe bridge crossing to resolve problems with leakage.

The scheme

The contract involved the construction of a heavily reinforced, 5.95m internal diameter concrete lining within the existing 6.3m by 6.9m D-shaped tunnel, over a length of 85m. The client specified that the lining was to be constructed in full-circumference pours, i.e. no longitudinal joints, and that steel formwork fitted with external concrete vibrators should be used.

The principal challenge for BAM Nuttall's formwork department was to design a formwork system, 5.95m in diameter and 10m long, which would fit through a 1.8m by 1.8m adit door opening, the only available access into the tunnel.

Temporary works solution

The solution was a 40T formwork traveller designed to be assembled within the confines of the tunnel using a pair of lifting gantries and a small forklift truck.

As the works progressed, the project team achieved a turn round time of under seven days per 10m pour by using the formwork traveller.

BAM Nuttall Ltd
St James House, Knoll Road,
Camberley, Surrey. GU15 3XW

Tel: 01276 63484
E-mail: headoffice@bamnuttall.co.uk
www.bamnuttall.co.uk