

Wylfa Power Station, LC28 Strengthening of Blockwork



The power station is located in Anglesey



Gun applying the bedding mortar



Laying in the stainless steel Helibar



Pointing up the repair



Plant rooms required careful dust control

Cracked blockwork walls in operational nuclear power station repaired and secured against future movement using thin diameter stainless steel rebar set into coursing.

Client	BNFL Magnox
Principal Contractor	Balvac
Contract Value	£170,000
Programme	3 phases of 5 weeks
Completion	May 2004

Wylfa power station started generating electricity in 1971. Situated on the remote Isle of Anglesey, it is BNFL's largest reactor and supplies enough electricity to provide two cities the size of Liverpool and Manchester with all their needs.

Areas of 215 mm thick blockwork wall within the turbine hall had cracked during the commissioning of the power station. Although the cracks had remained stable for a long time, client BNFL Magnox decided to carry out repairs to place the integrity of the walls beyond doubt. The Helibar system of thin diameter stainless steel bars was chosen to bridge the cracks and tie adjacent blocks together.

The mortar bedding either side of a crack was removed to a depth of 35 mm using a twin blade diamond tipped wall chaser. The chaser was fitted with vacuum extraction equipment to contain dust in the sensitive plant and battery rooms bounded by the blockwork walls. A modified cementitious bedding mortar was then gun applied to the back of the chase, the 6 mm diameter Helibar laid into the mortar, then covered over with a 2nd layer. The chase was finally pointed up with Thoro Dry Joint and the repaired areas repainted to match existing. In total over 1,000 m of Helibar was installed, typically using a 1.2 m length across a crack on every other block course.

Balvac additionally carried out concrete repair works to the lower external walls of the reactor building. In total over 2 m³ of delaminated concrete was broken out to depths of up to 100 mm, then replaced with a combination of pourable and hand applied repair mortars.

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