Mott MacDonald, in a joint venture with Coyne et Bellier of France, will be design engineers for the 4th extension project at Tarbela Dam adding 960 MW of hydropower to the Pakistani power system.

The contract was awarded by the Water and Power Development Authority (WAPDA) of Pakistan.

The hydropower dam extension project, with finance arranged by the World Bank, will extend the power generation facilities at Tarbela Dam which is situated on the Indus River, 100 km northwest of Islamabad. The project is due for completion around 2016 and has an estimated capital value of approximately US$500 million.

The 148 metre high, 3000 metre long hydropower dam has two gated spillways with a combined discharge capacity of approximately 42,000 cumecs (m3/s) and five tunnels that provide irrigation releases and power generation.

The hydropower dam forms a lake with a surface area of 230 km2, a current gross storage capacity of 9.8 billion m3 and a live storage capacity of 8.4 billion m3 that can be released for irrigation and power generation during the low flow season.

Mott MacDonald has been appointed on the development of existing tunnel 4 which is to be used for power generation and is likely to add two units of 480 MW each to the hydropower scheme.

Mott MacDonald will carry out a detailed feasibility study to manage the implementation of the 4th extension so that it does not affect the irrigation release and sediment management. This will also include the modification of intake structure, the construction of a power house and the penstock between the outlet of the tunnel and the new powerhouse.

Francis Griffin, Mott MacDonald's Project Director says: "Tarbela currently supplies 20% of Pakistan's electricity and Mott MacDonald will have to overcome the challenge of keeping the impact on the existing tunnels to a minimum to ensure that the country does not suffer from power cuts."