

HVDC Light for Australia

HQI Australia Limited Partnership and Emmlink Pty Ltd has awarded a contract to ABB Power Systems AB and ABB High Voltage Cables AB, both of Sweden, to install a 65-km HVDC Light transmission link. The cable link, between Queensland and New South Wales, will add about 180 MW of energy to the Queensland power system.

HVDC Light (see *ABB Review 1/98*) allows high-voltage DC transmission systems to be built economically even for just a few MW and short distances. Besides improving the quality of supply in AC power grids, it requires only a small site.

ABB Power Systems AB will deliver the converter stations and ABB High Voltage Cables AB the cables. HVDC Light technology allows the cable to be buried over its full length of 65 km (41 miles). This has considerable environmental advantages and helps to speed up approval procedures. The new link is scheduled to begin operating in January 2000.

ABB to build a 90-MW gas turbine power plant in Japan

ABB Power Generation, Switzerland, and Kawasaki Heavy Industries have received an order from *Kawasaki Steel Corporation* of Japan to build a 90-MW gas turbine power plant operated on blast furnace gas. The value of the contract is approximately US\$ 30 million.

The power plant will be built in Mizushima in the district of Okoyama, and will meet about 18% of *Kawasaki Steel's* electrical energy demand.

ABB Power Generation deliveries include a GT11N2 gas turbine, the associated generator and the overall power plant control system. The new power station is due to begin operating in February 2001.

288-MW gas turbine power plant and 225-kV transmission system for the Ivory Coast

Cinergy S.A., the largest independent power producer in West Africa, has signed a contract with ABB for the delivery of a 288-MW gas turbine power plant and a 225-kV transmission system for the Ivory Coast. The orders are valued at US\$ 150 million.

The power plant will be located in Azito, a village on the outskirts of the country's largest city, Abidjan. The first unit is expected to go into commercial operation this year, with completion of the plant scheduled for January 2000.

Cinergy S.A. is a joint venture between ABB, Industrial Promotion Services (Ivory Coast) – an affiliate of the Aga Khan Fund for Economic Development – and Electricité de France International. The project is being developed on a Build-Own-Operate-Transfer (BOOT) basis with a 24-year power purchase agreement granted by the Ivory Coast government. ABB led the development of the project and acted as financial advisor. The company will also participate in an operation and maintenance joint venture.

Modernization of a US hydropower plant

ABB Power Generation, Switzerland, and ABB Power Generation, USA, have won an order from the *Tennessee Valley Authority* (TVA) for the modernization of the Raccoon Mountain pumped storage plant. The order sum is approximately US\$ 24 million.

The contract is for the rehabilitation of four water-cooled 428-MVA motor-generator units that have been in operation for approximately 20 years. The modernization will increase the output by about 12%. It is expected that the work will be completed in April 2004.

In addition, TVA has placed an order worth approximately US\$ 38 million with ABB for the delivery of power transformers over the next seven years.

Extension of the Fort George diesel power station on Mauritius

The Mauritian electric utility, *CEB*, has signed a contract with Hyundai Heavy Industries / ABB Generación SA, Spain, for delivery of the 5th and last 30-MW diesel-generator set for the Fort George power station. The approximate value of the order is US\$ 21.5 million.

ABB Generación SA will supply the generator and all of the electrical auxiliaries. The 4th unit, which was ordered in 1998, is due to go into operation this summer, and the 5th unit in June 2000.

New silicon carbide Powerchips from ABB

ABB has developed a new technology for the commercial manufacture of Powerchips – silicon carbide semiconductors with high power ratings. Tests indicate that the Powerchips will probably be able to handle voltages up to 10 times and working temperatures several hundreds of degrees higher than traditional chips based on silicon.

Powerchips are likely to play an important role in power electronics in the future since they allow major reductions in the size and cost of all kinds of electrical equipment and machinery. Areas in which they will have an impact include HVDC transmission systems, static var compensators, converters and electric drives.

A pilot production line for Powerchips capable of handling power ratings of 3.5 kV and 100 to 200 A has already started up. Some of these chips will shortly be installed in an HVDC transmission link in Sweden.