Libya consists mostly of desert terrain. Only the narrow coastal strip receives sufficient rainfall to make it suitable for agriculture and it is where 90% of the population resides and where the capital Tripoli is situated. Rapid development of coastal areas has placed a severe strain on the coastal water supply.

The existence of vast fossil aquifers in the south and south-east areas of the country has prompted the building of a huge system to convey water to the coastal areas. The Great Man-Made River is the largest underground network of pipes and aqueducts in the world. It consists of more than 1300 wells, most more than 500m deep, and supplies 6.5 million m$^3$ of freshwater daily to the cities of Tripoli, Benghazi, Sirt and agricultural projects.

This Benghazi conveyance pumping station (BCPS) 319 and the conveyance and distribution system supplies the reservoir at AKNE, 18kms away, with water, and stores water for irrigating the farm land between the BCPS and AKNE reservoir.

ABB has supplied the state-of-the-art control systems for this project. The system is operated and monitored from a common master control system in the Benghazi Regional Control Centre (BRCC). Data from the control system is transmitted by means of a glass-fibre cable network (SCADA) or, in an emergency, by radio transmission.

The project was awarded to a consortium. ABB Germany was the consortium partner responsible for the complete electrical works.

Enduser: Great Man-Made River Utilisation Authority (GMMRUA) Benghazi, Libya.

The project was completed in December 2008.
Technical Specification / ABB Scope

Benghazi Conveyance Pump Station 319

– 7x 2.4MW 11kV vertical motors
– 12x 11kV switchgear cubicles
– 2x 500kVA auxiliary transformers
– 10x LV switchgear cubicles
– 16x sub-distribution panels
– 1x 200kVA diesel generator set
– DC/UPS system
– Control system and telemetry
– Instrumentation
– Earthing system
– Lightning protection
– Complete pump station cabling works (MV, LV, I&C)
– SCADA system
– Rural radio and telephone system
– Fibre optic cables
– Erection works
– Commissioning works

Note:
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