
ZURICH, SWITZERLAND, MARCH 22, 2021

ABB technology to power world's largest seawater desalination project

Technology from ABB is being used to build the world's largest desalination plant in Taweelah, Abu Dhabi, United Arab Emirates, while separately, ABB has won a contract to modernize the City of Nashville's water infrastructure. On today's World Water Day, both projects underline ABB's long-standing expertise in water solutions and services.

Approximately 45 kilometers north of Abu Dhabi city, the Taweelah project will be the first reverse osmosis independent water project in Abu Dhabi which will desalinate seawater for supply to local communities and industry in the area. It will also set new benchmarks for its size, efficiency and cost by utilizing the lowest amount of energy per cubic meter of water produced.

The USD 500 million development will have the capacity to process over 900,000 cubic meters of seawater per day, enough to meet the demands of over 350,000 households and is scheduled to become fully operational in the fourth quarter of 2022. The plant will play a critical role in meeting the region's peak water demand, which is projected to rise by 11% between 2017 and 2024.

ABB is working with SEPCOIII, the EPC contractor of the plant to ensure power supply continuity, boost system operational efficiency and reduce maintenance costs. Challenged to provide safe, reliable and stable power supply to the operation of the seawater desalination equipment, ABB is delivering 30 panels of medium-voltage switchgear and 250 panels of low-voltage switchgear with digital capabilities. Financial details of the contract were not disclosed.

In an electric power system, switchgear is used to control, protect and isolate electrical equipment, in order to ensure uninterrupted power supply. To optimize operations, the low-voltage switchgear delivered has incorporated intelligent devices with a data interface to enable remote operation monitoring and condition-based maintenance of the switchgear.

ABB has also delivered a wide range of low and medium voltage motors and variable speed drives to ensure reliable and energy efficient pumping in the plant. The medium voltage drives match the speed and torque of the motors to the pumping demand for maximum energy savings.

"We are very proud that ABB technology will be used at the Taweelah plant, which will contribute to the UAE's goals of building a more sustainable, self-reliant and efficient water and energy sector in the country. When commissioned it is estimated this plant will meet water demand from more than 350,000 households. Water is obviously a critical element to a country's prosperity and growth, and today on World Water Day, we are happy to contribute to building a safe, smart and sustainable future," said Loay Dajani, Managing Director, ABB Electrification, Middle East and Africa.

Integrated ABB solution drives water availability for City of Nashville's growing population

McLean Technology Group (MTG) has employed ABB to deliver automation, electrification, and instrumentation solutions at Nashville's Central Wastewater Treatment facility, managed by Metro Water Services (MWS), as it looks to address the needs of a population, expected to increase by 50 percent by 2045.

Serving over 250,000 customers, MWS currently treats approximately 186 million gallons of water per day at its wastewater treatment facilities.

The project will see the implementation of ABB Ability's control system at a new headworks, a screening and grit removal facility being built as part of the Central Wastewater Treatment Plant Optimization Project. The Central facility, once optimized, will have a maximum hydraulic capacity of 440 million gallons per day and will utilize ultraviolet light to disinfect the treated wastewater, incorporating heavy duty and fine screens to reduce clogging. Works will also include improvements to conveyance piping, upgrades to the aeration system, and additional capture and treatment of odor sources.

ABB's automation and control system will give operators complete visibility over the plant operation in real time, enabling more accurate decision making. In doing so, the number of interfaces operators must manage has been reduced, minimizing risk and condensing troubleshooting time during the startup and commissioning process.

Additionally, ABB will provide control system optimization via a second control system that will standardize all MWS water and wastewater plant operations. The scope includes an upgrade to all drives, instrumentation, and electrical components within the plant in a bid to drive efficiency, increase productivity and reduce the total cost of ownership via one integrated solution.

World Water Day, held on 22 March every year since 1993, celebrates water and raises awareness of the 2.2 billion people living without access to safe water. Across the globe ABB solutions are being used to increase access to safe, clean drinking water and sanitation as well as drive more sustainable use of water across industry, in agriculture and in cities. For example, end-to-end solutions from ABB will help local water authorities track, measure and optimize water use in the drought-stricken region of Koppal in southwest India; ABB has improved the production capacity of the Al Ghubra seawater desalination plant in Oman, and ABB automation systems are being used to modernize an aging water distribution system in Ho Chi Minh City, Vietnam.

Further details on ABB's Water Solutions and Services and its World Water Campaign are available [here](#).

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