



Modular FEDI® System Powers High-Purity Water Supply at Sabine Pass LNG Terminal

Client: LNG Refinery, USA

Number of Streams: 6 x 465 gpm (6 x 105 m³/hr)

Background:

Sabine Pass, one of the largest LNG refineries in the United States, required a membrane desalination solution to cater to its extensive process water needs in order to produce a large amount of liquefied natural gas for export. The water is used for injection for compressor turbines for methane, propane and ethylene, wash water for gas turbines and other utility make-up uses. The feed water to the terminal comes from a local utility and the water requires further treatment to produce high-purity water with low conductivity and silica content for the plant's uses. The customer decided that a reverse osmosis (RO) desalination solution, followed by a demineralization step, would best suit their intended system designed to operate on single pass RO feed water. Since single pass RO water is a challenging application for conventional EDI systems, the customer carefully evaluated options for RO permeate polishing. QUA's FEDI was chosen due to its design advantages that include reduced hardness scaling.

QUA's Solution:

QUA provided its Fractional Electrodeionization (FEDI) technology for the RO permeate polishing and demineralization component of this project. When completed, this project will serve as one of the largest electrodeionization references in the world. The FEDI system is designed to treat 4 MGD of challenging single pass RO feed water to be used for the plant's production purposes. Due to the FEDI's enhanced dual-voltage design, water containing lower silica and conductivity levels will be produced than could be produced by conventional technologies. The water treatment system is key to the long-term success of the terminal's liquefaction process. QUA's FEDI successfully delivered a reliable electrodeionization solution, coupled with a modular design, that allows for easy expansion for future growth as the plant plans to expand its capacity.



