CASE STUDY

Demineralization Plant Using Electrodeionization (CEDI) Technology

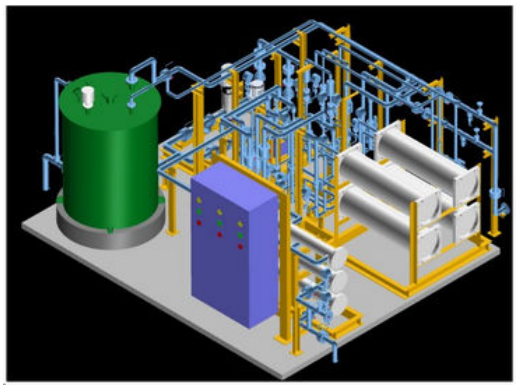
Peerless

END USER: Toray Membrane

PURCHASER: Toray Reverse Osmosis Membrane Manufacturing Facility

LOCATION: Kingdom of Saudi Arabia

PROJECT DESCRIPTION: Skid-Mounted Electrodeionization (CEDI) Unit



SITUATION: Toray Membrane is expanding its membrane manufacturing facility located in the Kingdom of Saudi Arabia. Demineralized water will be required as part of the manufacturing and testing process.

CHALLENGE: The manufacturing facility already has a water treatment plant, including a double pass RO system. However, the available water treatment plant will not be enough to provide the quality of the demineralized water required for the expansion; therefore, an Electrodeionization (CEDI) unit must be added to the water treatment plant to ensure continuous operation and water quality.

SOLUTION: Peerless provided a Skid-Mounted Electrodeionization (CEDI) unit using Evoqua – Ionpure module to reduce the RO permeate water conductivity to the desired level. Reject water from the CEDI modules will be routed back to the RO plant; therefore, no wastewater is expected from the CEDI unit.

PACKAGE:

- 2 x 100% Micron Filtration Housing
- 2 x 100% Electrodeionization (CEDI) Modules
- 2 x 100% Smart DC inverter

ENVIRONMENTAL BENEFITS:

- Peerless chose CEDI technology since it is one of the greenest solutions to produce DM water, as it requires less energy and no chemicals for CEDI module activation.
- CEDI brine water will be routed to the RO unit without causing any environmental impact.

CECO ADVANTAGE: Peerless optimized the design of the Demineralized Water Package using CEDI simulation software before construction. The CEDI module has been selected to achieve the required DM water quality at a very compact footprint.