

CONTAINERIZED ELECTRODEIONIZATION FOR HIGH-PRESSURE BOILER FEED

Continuous Deionization as a Replacement to Mixed Bed Ion Exchange



Overview

Valleyview Generation Station recently contracted with WesTech to replace its portable mixed-bed ion exchange demineralization systems with continuous [electrodeionization \(EDI\)](#) technology. To meet this gas-fired powerplant's requirements, we designed a containerized system with two independently operated EDI trains. Both trains reside in a single, insulated high-cube container with HVAC and lighting. All systems controls were factory tested, pre-assembled, and pre-wired.

The containerized system requires only one power feed, with a power distribution panel located inside to service the EDI trains and the associated equipment. Permeate from the plant's existing double-pass reverse osmosis (RO) system feeds the EDI system via a common container feed header, which distributes the permeate to one or both EDI skids, depending on the required demineralized-water capacity. ■

RESULTS

90-95%

Recovery

> 300,000 GPD

(1,135 m³/d)

Demineralized Water Produced

< 1 μ S/cm

Product Water Conductivity

Project Summary

Valleyview
Generation Station

Location:

Alberta, Canada

Application:

Industrial Demineralization

Process:

Double Pass Reverse Osmosis ►
Electrodeionization

Net Capacity:

240 gpm (54.5 m³/h)

Configuration:

2x50-Percent Trains

Highlights

- The containerized design includes two electrodeionization trains in a single container.
- The system requires no chemical or off-site regeneration.
- Only minimal on-site installation labor was required.