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.

<table>
<thead>
<tr>
<th>RESULTS</th>
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<tbody>
<tr>
<td>90-95% Recovery</td>
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<tr>
<td>&lt; 1 µS/cm Product Water Conductivity</td>
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<tr>
<td>&gt; 300,000 GPD (1,135 m³/d) Demineralized Water Produced</td>
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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.