Customer Success Story

Location: Australia

AMI system produces high-quality demineralized water for critical PowerGen operations

Demineralized water is essential for the energy sector to comply with regulations and improve operations.

Challenge

A major energy company operates in electricity generation, natural gas production, solar, retail energy services, and renewable energy projects.

The company plays a significant role in Australia's energy sector. One of its development facilities processes gas from offshore gas fields.

The facility needed a water treatment solution to produce demineralized water for various processes including boiler feedwater, cooling systems, chemical processes, and steam turbines for energy operations. Demineralized water is important to prevent scaling and corrosion of costly equipment in addition to providing high-quality water for energy production.

Feedwater contains impurities including silica (SiO_2), oxygen (O_2), carbon dioxide (CO_2), with a feed conductivity of 20 µS/cm.

Product conductivity required: Less than 0.1 µS/cm.

Applied Membranes was selected for the project.

Solution

Applied Membranes designed, built, and commissioned a custom state-of-the-art Reverse Osmosis-Degassifier-Electrodeionization (RO-Degas-EDI) system producing **20 GPM (5 m3/h)** of high-quality demineralized water.

The AMI water treatment solution consists of three (3) skids – pretreatment, RO, and degassifier/EDI – all housed inside a climate-controlled, rugged 20-foot container. Pretreatment skid includes media filter and water softener.

System also includes 3 contactors in series arranged as a single train with vacuum pump to draw compressed N2 through the contactors.

Key Components:

- Media filter
- Water softener
- Antiscalant
- Clean-in-place system
- Programmable Logic Controller (PLC)

Results

AMI system was successfully installed and provides a reliable, consistent supply of high-quality demineralized water for PowerGen operations.

Custom engineered: The complete AMI solution is thoughtfully engineered to fit within the client's footprint, achieve the desired water quality, and is easy to operate and maintain.

High quality: AMI system achieves 1 ppb O_2 and <0.5 ppm CO_2 product water quality, with quality less than 0.1 µS/cm.

Technical service and support: Applied Membranes provided training, technical service, and support to ensure the system was installed properly and operated seamlessly.

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