

PURE AQUA, INC.

2007 Case Study

Industrial Double Pass RO: Hawaii Power Plant



INTRODUCTION

In December 2006, Pure Aqua successfully supplied to a major power plant in HI, USA, a water treatment package consisting of twin Multi-Media Filters, model: MLF-48A-F-twin, Pretreatment System, Double Pass Reverse Osmosis Unit System, Electrodeionization System (EDI), Storage System, and RO cleaning system

SYSTEMS & PROCESS

Pre-treatment of the feed water includes filtration using twin multi-media filters to remove sediment down to the 10-20 micron range providing service feed water with a flow rate of 126 GPM at a maximum operational pressure of 100 psi.

Filtration using Activated Carbon Filters with Carbon block cartridges removes chlorine, silt, taste, odor and sediment. The use of antiscalant dosing minimizes the precipitation of sparingly soluble sulfate salts (Calcium and Barium Sulfate) and silica oxide.

The double pass RO unit comes with a high pressure pump to boost the feed pressure, 5-micron cartridge filter to remove the last traces of suspended solids and reduce the feed water SDI to less than 3. The unit also comes equipped with an Advanced Allen Bradley PLC 14" color touch screen control panel, the control panel has an air condition due to the tropical severe weather condition.

Electro-deionization removes ions from aqueous streams to achieve a water quality of 18.6 Mega Ohms then the product pump skid takes the product water from the EDI system to a product storage tank. The RO cleaning system is used to clean the membranes in three pressure vessels at a time.

PERFORMANCE

From a feed TDS of about 300 mg/L at temperature range of 27°C, the power plant produces 60gpm of ultra pure water at 18.6 Mega Ohms. Since the time of its start-up in March 2007, the plant has been running smoothly with minimal trouble-shooting.



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