



Progressive Water Treatment, Inc.

Building relationships first, and equipment that lasts.

PRESS RELEASE

PROGRESSIVE WATER TREATMENT BUILDS UF/RO/EDI EQUIPMENT FOR POWER PLANTS IN TEXAS

Progressive Water, in 2008, was awarded two separate projects for a long time power customer in Texas. Both projects entailed the use of UF (Ultra-Filtration), Double Pass RO (Reverse Osmosis), and EDI (Electrodeionization) technologies. Each system was designed to treat city or municipal water, and to produce high quality boiler feed water (Water Quality Requirements in Table 1).

Each system was designed using Dow UF modules, Dow RO membranes, and Dow EDI modules. Each system consisted of the following major components:

- (2) 100% UF Systems each to include:
 - (2) 100% 130 um SST Back washable Screen Filters
 - (2) 100% UF Systems with UF modules, valves, piping, Controls, and skid mounting
 - (1) 100% CEB skid with (2) 100% Chemical Feed Systems for BW injection
 - (2) 100% UF Back wash Pumps
- (1) 100% UF Filtrate Storage Tank
- (2) 100% RO Supply Pumps
- (1) 100% Double Pass RO Skid to include:
 - (2) 100%/ 316 SS Cartridge Filters
 - Chemical Scale Inhibitor injection system
 - Chemical Sodium Bisulfite injection system
 - Chemical Caustic injection system
 - (2) High pressure RO pumps and motors (one for each pass)
 - (Lot) Required pressure vessels and membranes for each pass
 - (1) Lot SS/PVC Piping, valves, and fittings as required
 - (1) Lot Controls and instrumentation to include a single PLC for automated operation as required, as well as a HMI for each unit.
- (1) 100% Membrane Clean In Place (CIP) Skid
- (1) 100% RO Storage Tank
- (2) 100% EDI Feed Pumps
- (1) 100% EDI System

The systems shipped to their respective sites in December of 2008, and have been in the installation phase (beginning in April of 2009) up until September of this year, where the first system was commissioned.

The initial operating results are provided in Table II below. You will see that the Silica, the more critical of the water quality requirements, was at 8 ppb out of the second pass RO unit alone (after 24 hours of operation), prior to being treated by the EDI system.



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Table 1: Water Quality Requirements

Parameter	Performance
Net Production	75 gpm
Total Dissolved Solids	<0.05 ppm
Silica	<10 ppb as SiO ₂
Total Hardness	<0.1 ppm
Conductivity	<0.1 uS/cm
Sodium as Na	<5 ppb
Chloride as Cl	<3 ppb
Total Organic Carbon	<100 ppb
Sulfate as SO ₄	<3 ppb

Table 2: Water Quality Produced (after 24 hours operation)

SDI (effluent of UF)	<2
Turbidity (effluent of UF)	0.2 NTU
Net Production (EDI product)	75 GPM
Resistivity (EDI product)	15 megohm
Silica (EDI product)	3 ppb
Silica (Pass 2 RO product)	8 ppb

The benefits of the UF and EDI processes used here are detailed in the links below to the Dow website.

http://www.dow.com/liquidseps/prod/uf_index.htm (Hollow Fiber UF Technology)

http://www.dow.com/PublishedLiterature/dh_006c/0901b8038006cc4b.pdf?

[filepath=liquidseps/pdfs/noreg/609-00225.pdf&fromPage=GetDoc](http://www.dow.com/liquidseps/pdfs/noreg/609-00225.pdf&fromPage=GetDoc) (Reverse Osmosis Technology)

http://www.dow.com/liquidseps/prod/edi_index.htm (Spiral Wound EDI Technology)

If you have any questions, or would like to look into this type of equipment for your facility, please give Progressive Water a call.

Sincerely,

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