

DI SYSTEMS

The DI system is essential to a beverage can manufacturing plant because the final rinse for the containers must meet critical specifications. This plant has two separate two-column DI systems, which alternate operation to insure adequate DI supply.

The systems are circa 1990 EDC dual column units with down-flow service and up-flow regeneration. The units hold 90 cubic feet of anion and cation resin respectively, with HCl acid and NaOH as the regeneration chemicals.

Design flow characteristics for the units from the installation guides indicate that the units under optimum conditions would operate at 80 gpm and produce 750,000 gallons of water between regenerations. This water would meet a specification of less than or equal to, 0.35 microhms of conductivity, over the length of the service run.

SUMMARY

In September, 2005, the SST 60 cation and A-300 anion resins were installed in the DI system of a beverage container manufacturing company. Before and after baselines were taken from the plants daily log sheets.

SST-60/A-300 increased the length of run time for the system from an average 565,000 gallons to current levels at 950,000 gallons in unit A and 1,000,500 in unit B.

SST-60/A-300 increased the days of operation from 5.8 to 11 days per cycle.

SST-60/A-300 decreased the average conductivity to 0.13 through the entire length of the service run. Averaging 0.23 microhms.

COST SAVINGS

Cost reduction of chemicals is realized by the increase of DI water production with reduced regenerations. Over the life of the SST-60 resin 30% less regeneration would be required. This would save \$473.00 per regeneration per DI system, realizing an annual savings of \$17,000 with a payback of seven months. Total savings over the life of the SST-60 for both systems would be over \$85,000.

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