Water Technologies & Solutions
case study

E-Series reverse osmosis system helps food producer meet environmental challenges, reduce water consumption, and cut energy use

challenge

A producer of various sausage products in the United States' Midwest was faced with environmental pressure to reduce chloride discharge from its wastewater plant. Salt (sodium chloride) was employed to soften water used in the boiler and for cooling large amounts of blowdown going to the wastewater plant.

While tackling this environmental demand, the company wanted to solve two additional challenges: reducing water use at the plant to cut overall energy costs, and minimizing boiler carryover contamination caused by high alkalinity and conductivity of the feedwater. Carryover resulted in the destruction of several large vacuum pumps (valued at $7,500 each) and also directly affected the quality of the company's finished product.

The company needed a water treatment solution that would help reduce chloride discharge, reduce water use, and prevent carryover conditions, significantly reducing overall plant operating costs.

solution

An E4H Series 60 Hz Reverse Osmosis (RO) system was installed in the boiler, and hard water and anti-scalant were fed into the unit to minimize soft water use. Designed for durable operation, high-quality product water production, and straightforward control, the RO unit can process approximately 16,000 to 43,200 gallons of water per day.

The RO-treated water substantially reduced the need to use salt for water softening and virtually eliminated carryover conditions. In addition, the RO system cut overall water consumption by allowing the boiler to run at higher cycles of concentration, reducing the amount of blowdown required.

results

The RO solution resulted in approximately $91,000 annual customer savings, as follows:

- Energy Savings
  - Reduced energy requirements by 3,833 dekatherms per year, resulting in approximately $23,000 saved annually (at $6/dekatherm)
- Water Savings
  - Cut water use by 5 million gallons of water annually, resulting in about $3,000 yearly savings
- Salt/Chemical Savings
  - Reduced salt needs (for softening/de-alkalizing) by 33.5 tons per year, or about $6,000 annually
  - Reduced the amount of wastewater to be chemically treated each year by 5 million gallons, saving about $28,000 annually
  - Cut the required amount of boiler treatment chemicals by approximately $31,000 per year

Since the installation of the RO system, the customer has not had to replace a single vacuum pump. In addition, product quality issues due to boiler carryover have essentially been eliminated potentially making an additional substantial improvement to the company's bottom line.

Find a contact near you by visiting www.suezwatertechnologies.com and clicking on "Contact Us."