GE
Water & Process Technologies

Case Study

Transforming Challenging Well Water into High Purity Boiler Feedwater

Challenge

This nuclear station in the midwest United States has exceptionally challenging well water, which is high in bacteria, barium, manganese, and bicarbonate. The well water also has very elevated levels of iron and silica plus high hardness. The station must transform this feedwater into high purity water for its boiler feed.

Solution

For this challenging feedwater, no single technology solution would do. In fact, GE Water & Process Technologies utilized a combination of eight technologies from The GE Toolbox* to produce the required 18 megohm-cm ultrapure water needed for boiler feed.

GE's multi-technology retrofit replaced aged and deteriorated conventional water treatment equipment to yield a higher quality product water for the station's boiler feed needs.

In addition, GE's own and operate approach makes operation and maintenance of the water supply for this nuclear station hassle-free for the end-user.

The power industry can rely on the confidence that comes from The GE Brand and the many choices that GE offers, from the broad range of technologies in The GE Toolbox* to the ease-of-mind that comes from GE's "own, operate and maintain" installations.

Nuclear Station, United States

End-user:	Nebraska Public Power District
Location:	Cooper Nuclear Station, Nebraska
Commissioned:	1997
Application:	High purity water for boiler feed
Feedwater source:	Well water
Feedwater quality:	High in bacteria, high barium and manganese, high bicarbonate, very high iron and high silica. High hardness, 750 ppm TDS.
Product quality:	18 megohm-cm resistivity
Capacity:	60 gpm
Technology:	Multimedia filtration (MF), activated carbon filtration, degasification, ultraviolet (UV), ultrafiltration (UF), reverse osmosis (RO), electrodeionization (EDI), ion-exchange

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