

Mobile Water System Used by Progress Energy to Meet Power Demands

Challenge

Fresh water supplies are scarce in central Florida where Progress Energy built its combustion turbine peaking power plant. Demineralized water is needed primarily for injection into the turbine exhaust for emissions control. From the beginning, the plant was designed to operate without impacting the local drinking water supply sources.

Solution

By using the wastewater discharge from a local municipality for its production needs, the plant conserved precious supplies of drinking water. GE's Water & Process Technologies supplied an integrated mobile system that enabled treatment and reuse of the challenging wastewater, producing high purity water for power production. The GE system uses a two-pass multimedia filter system as pretreatment to reverse osmosis, and mobile demineralizers provide final polishing to the specifications for injection water. It is regenerated as required at GE facilities.

The 400 gpm (1.51 m³/minute) mobile demineralizer system was also chosen in order to comply with regulations that prevented the discharge of chemical regenerant waste at the plant site.

Results

The mobile system produces demineralized water for power production, enabling the plant to operate in a geographic area where fresh water is scarce – yet population growth is accelerating the demand for electric power.

