Case Example

Southern Company: Conserving Thousands of Gallons, Saving Millions of Dollars at an Alabama Steam Plant

Individual subsidiaries of Southern Company, one of the largest electricity producers in the U.S., rely on water in the production of power. In turn, individual employees drive innovations that lead to water reuse and recycling.

At Southern Company's Gadsden Steam Plant in Alabama, Compliance and Support Team Leader Gene Phifer conceived of a system and Plant Engineer Bill Zemo led a project that combined environmental protection and cost reduction. It was a new ash lake water discharge recycling system (reusing gray water) for use in the water treatment plant, in critical equipment cooling systems and for general house service needs. The system, which went into continuous operation in 2002, was designed to avoid or reduce the use of chemicals in the water pretreatment process and for water runoff treatment.

The innovative system today recycles approximately one million gallons of water per day that otherwise would have been discharged into the Coosa River. This will help conserve and protect this valuable natural resource while reducing plant operations and maintenance expenses conservatively by over $200,000 (USD) annually. The system will be used for the remaining life of this plant and could be adopted at other generating facilities. The benefits include:

- Avoiding the use of municipal potable water. A typical monthly winter bill was reduced approximately $20,000, with other months being reduced somewhat less based on usage.
- Reducing the quantity of chemicals needed to make water and treat discharge water.
- Reducing the labor, and possible overtime cost associated with making and treating water.
- Reducing the frequency that equipment coolers have to be cleaned, thus allowing that labor to be used on other critical activities.
- Extending the life of water treatment plant equipment, such as pumps and the reverse osmosis membranes.
- Reducing the number of regenerations so mix bed resins replacement is required less frequently.
- Reducing the disposal cost of the mixed bed resins when replaced.
- Reducing the frequency of cleanings for the reverse osmosis membranes.