

Managing a Valuable Resource - Water

Effective management of process water will lower operating costs by reducing the consumption of water, energy and cleaning chemicals. In addition plant hygiene will be improved and pollution reduced to establish better public relations. A&B Process Systems offers a program that focuses upon several critical aspects of water management, including the training of plant personnel, a water audit and the implementation of current recycling and regeneration technologies. A first step could be as simple as the completion of a comprehensive water audit by A&B's trained engineers that will provide recommendations for effective water and wastewater management.

The definition of the consumption of water in any given process requires details of the supply and use of that water and the amount of wastewater produced. In effect this is a water audit, a detailed accounting of the water in the plant. A&B Process Systems considers such an audit to be a critical first step towards effective water management in any large-scale process, whether in the chemical, pharmaceutical, dairy or food and beverage industries.

Water may be supplied to the plant by a municipality or from a well source and this supply can be augmented by condensate from boilers, air-conditioners and evaporators. The water is used in several ways – cooling/heating, lubrication, cleaning and sanitizing operations and irrigation. A consequence of the process is wastewater from the products and by-products, from de-sludging processes and from the CIP/SIP units. This wastewater may be recycled or discharged from the plant. The volume and the composition of the wastewater in terms of inorganic and organic compounds as dissolved solids and particulates will determine the costs for recycling or disposal. In the program offered by A&B Process Systems, these aspects of the supply and use of the water in the plant are discussed in detail.

CIP/SIP units utilize aqueous solutions of cleaning chemicals, e.g., acids, caustic soda and detergents. These solutions can be treated to regenerate the chemicals and to recycle the water. Various physical and chemical processes have been defined to realize efficiencies as high as 90% for the recovery of the acid and caustic soda used in the cleaning operations. The USDA and FDA have approved the reagents used in the regeneration reactions. A&B Process Systems designs, fabricates and installs CIP/SIP units and emphasizes the advantages of incorporating current recycling and regeneration technologies. The company can provide a fully integrated system, based upon multi-pass cleaning concepts, that includes the CIP unit and a chemical/water recovery system, including pre-coated rotary vacuum filters.

The recovery of clean water represents a significant contribution to effective water management and therefore to the reduction of operating costs in the plant. The clean water from RO units (RO or reverse osmosis units remove dissolved solids from wastewater), cooling towers, refrigeration units, etc. can be used in several areas of the plant, e.g., liquid ring vacuum pumps, boiler

make-up, irrigation. Again in the program developed by A&B Process Systems the various technologies that enable the recovery of clean water are highlighted.

A&B Process Systems recognizes the importance of the awareness of the plant personnel to these aspects of water management. The appropriate training of personnel is critical to the success of the program and A&B includes this in their approach to effective water management.

The reduction in total water consumption that is achieved through the implementation of recycling, re-use and regeneration processes also results in a reduction in the consumption of chemicals and energy. The plant hygiene is improved and the discharge of pollutants to the outside environment is reduced, thereby improving public relations. The overall result of proper water management is a reduction in the operating costs for the plant. A first step towards this end result would be the completion of a comprehensive water audit by A&B's engineers that will provide recommendations for improved water and wastewater management.

Contact A&B Process Systems at 888-258-2789 to take the first step towards... a better process, a better plant, a better environment.