Chemically Treat Water to Control Problems

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In industrial installations, water plays a major part in the manufacture of goods and control of our environment. Equipment such as cooling towers, water-distribution systems, and wastewater systems must be maintained to ensure long life as well as safe, efficient operation. Proper total water management should be a part of required maintenance practices, according to AmSolv, a provider of water treatment technologies in Waxahachie, Texas.

Naturally occurring impurities in water can subject equipment to fouling, scale, corrosion, rust and growth of microorganisms. Left uncontrolled, any of these conditions will cause a loss of system capacity, reduced energy efficiency and shortened equipment life, according to AmSolv. To educate its customers, the company uses its website to describe the water problems they face.

Amsolv defines the following problems that a good water-management program can control:

- **Scaling.** Water-formed deposits result from naturally occurring minerals precipitating from water to form scale. The most common scales are calcium carbonate, calcium sulfate, and silica or silicates. Scale buildup on surfaces can be extremely hard and difficult to remove. Scaling severely reduces heat transfer capacity and system energy efficiency.

- **Corrosion.** Cooling systems are exposed to many types of corrosion, from general electrochemical corrosion to pitting caused by deposits, electrolysis or microorganisms. Corrosion can reduce equipment lifespan by years, requiring expensive replacement. It can lead to costly equipment repairs and production downtime. Corrosion-related deposits also can result in reduced capacity and wasted energy due to heat transfer efficiency losses.

- **Fouling.** When solid materials form or contribute to the formation of deposits on equipment surfaces, the result is fouling. The deposits are introduced to the system as suspended solids and may enter by the make-up water, from corrosion byproducts, or as airborne materials. Examples include mud, sand, silt, clay, oils, debris, organic material, microbes, etc. These materials adhere to heat transfer surfaces and reduce heat transfer and water flow.

- **Microbial.** Algae, fungi and bacteria cause microbial problems associated with industrial cooling-water systems. They cause plugging, fouling and corrosion, and destruction of wooden cooling tower components. Many different bacteria species may exist in a cooling water system. Some of the problems they cause include severe bacterial slimes and fouling, sulfuric acid, under-deposit corrosion and health hazards.

Using chemicals and related mechanical means to control water-related problems is part of total water management, an important aspect of properly maintaining equipment needed for water to do its job, says the company. For more information, go to www.amsolv.com.