
Application Bulletin

LAKOS Solves Sand Dilemma in Desert Cooling System

SYSTEM IDENTIFICATION:

Evaporative cooling system (two York centrifugal chillers and a water injected cooling tower)

SOLIDS/LIQUID:

Sand, dirt and dust particles in water

PROBLEM:

A large southwestern construction company was faced with a challenge to their 500 RT (refrigerated tons) evaporative cooling system. An overabundance of blowing sand, dirt and dust in the desert air led to its accumulation in the condensing water and threatened to damage plastic injector heads on aerators in the water tower chillers and abrade the chillers themselves. The firm knew that filtration was necessary to protect their building's cooling system, but they were unsure which method of filtration would provide the most effective overall solution.

Although their cooling tower came equipped with a mesh screen adequate for trapping large debris such as leaves and paper blown in by "dust devils," it was not designed to keep smaller solid matter out of the system. The resulting build-up of tiny particles led to the installation of a cartridge filter in the by-pass line. The cartridge was able to filter sand in the chilled water loop of the closed system; however, it would have required excessive labor for cleaning and replacement and led to extreme water pressure loss if installed as a filtration measure on the 130 U.S. gpm full-stream flow to the two centrifugal chillers. A sand media filter was considered, but ruled out because of the new set of problems it would have created, namely the excessive water loss, chemical costs and downtime associated with backwashing.

SOLUTION:

A Lakos Separator, equipped with a Lakos compact motorized ball valve for automatic purging, was installed in the supply line to the chillers. As a result, the full-stream filtration needs of the company have been successfully met without the bother of routine maintenance chores, unscheduled shutdowns or cleaning and replacement of screens and filters. In addition, because Lakos Separators contain no moving parts, worry over potential repairs has been eliminated.

The company has been so pleased with this application that plans have been made to install Lakos equipment in their corporate offices, as well as other buildings still on the drawing board.

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AB-181 (Rev. 12/08)