

# Chemical Product Eliminates Chlorine from Cooling Towers, Keeps Storm System Clean

## Challenge

Among its many functions, the energy plant at Auburn University provides chilled water to various campus buildings for cooling purposes. As part of its routine maintenance, personnel at the plant drain the cooling towers that hold the water once every quarter.

When these cooling towers were designed they were not piped to sanitary sewers. Instead, they drain into a nearby storm water system. Unfortunately, the drained cooling water, along with the water that is used to wash down the inside of the towers, contains high levels of chlorine. Even more chlorine is used as a disinfectant measure, so the residual amount of the chemical expelled into the storm system was substantial.

Needless to say, the Alabama Department of Environmental Management (ADEM) has strict rules and regulations about what - and how much of it - can be released into the local water supplies. In fact, if the situation were to continue, there was the very real possibility that the university would require permits from ADEM, which would not only be expensive but would require strict monitoring procedures every time the cleanings were undertaken.

There were plans in place to reconfigure the drain systems from the cooling towers in order to dump the chlorine-rich water into a sanitary sewer. However, completing the project quickly on an "emergency" basis would have raised the cost significantly. Until the sewer project is completed, Auburn needed a stopgap measure to eliminate or at least substantially reduce the amount of chlorine released into the storm system.

## Solution

Auburn looked to GE Water & Process Technologies for help with its chlorine problem. GE provided the university with a product called Spectrus DT1404. Once injected into the water, the product acts rapidly, scavenging the chlorine from the cooling towers' discharged water. Auburn is using the product in two of the large cooling systems, Chilled Water Plant I and Chilled Water Plant II.

To supplement the use of Spectrus DT1404, GE developed a testing program for the university to monitor the water while it is being discharged into the storm system. This helps to ensure that the product is working properly and no residual chlorine is being produced. If any is found, additional Spectrus DT1404 is added and the water is tested again before it is discharged.

## Results

Since March 2004, six cleanings have been performed using Spectrus DT1404. Tests on each cleaning confirm that the chlorine is being effectively removed from the cooling water. This has satisfied ADEM and has allowed the university to avoid the expense of acquiring permits. Ultimately, it has proven to be a very effective temporary measure until the completion of the sewer project in 2006. The solution has proven so effective, in fact, that the university will be using Spectrus DT1404 in its two swimming pools, which are drained into the same storm system yearly.



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