

2005-2006 History Paper
Mississippi Chapter ASHRAE

“Heating Chilled Water”

This paper is about a system that uses an electric heater to heat chilled water in order to keep a chiller running so that heating water can be recovered for zone heat control.

You're probably thinking to yourself, after reading that first statement, that this is crazy. Well, it certainly seems so on the surface. However, at Grand Gulf Nuclear Power Plant in Grand Guld, MS, electricity is pretty easy to come by and pretty inexpensive. Therefore, the 30 year old administration building uses a centrifugal chiller with a heat recovery bundle that heats the heating water system supplied to the VAV boxes in the building. This serves as a great energy savings in the summer when the chiller is loaded but still some reheat is needed. However, during the mild seasons of the year and in the winter when there isn't much cooling load, the chiller doesn't reject much heat. Hence the In-Line Electric Chilled Water Heater. This heater warms the return chilled water, which, in turn, causes the chiller to be falsely loaded but allows for heat to be rejected to the heating water system. Why not just use a conventional heating system? The expenditure of energy would be the same one would think. That may be a question for the engineer of record. Maybe they saved some first cost on a boiler and some controls. We may never know.