

PROJECT PROFILE

SAN ANTONIO, TX

SAN ANTONIO AIRPORT

0.5 MG THERMAL ENERGY STORAGE TANK

In 1982, the San Antonio Airport contracted Natgun Corporation to construct a 0.5 MG thermal energy storage (TES) tank for the purpose of saving energy costs, and also to defer the capital expenditures associated with adding additional chiller plant equipment. The tank was originally designed for a maximum of 4,500 ton-hours of useable thermal energy storage capacity. The exterior of the tank is insulated to prevent heat loss.



Marmon Mok was the engineer of record for the design of the chilled water system improvements that included a stratified chilled water thermal energy storage tank. The TES system was designed to shift the operation of the operation of the chillers and associated cooling equipment from the daytime, to the nighttime, thereby, allowing the chiller equipment to run more efficiently during the cooler ambient conditions. This chilled water reservoir offsets the need to install a new chiller, and associated pumps, piping, valves, cooling tower and controls, that would have been required to keep up with an upcoming expansion of the airport terminal. Per Marmon Mok, the tank also provided the added benefit of acting as an “expansion tank” for the district cooling system.

Since being commissioned over two decades ago, this TES tank has been operating daily requiring no routine maintenance. Also, the tank provides the additional daytime cooling capacity essential during the summer months. According to the HVAC Technician Supervisor, Tuat Nguyen, during the winter months the TES system allows them to de-energize the largest cooling equipment in the plant, a 950-ton Trane Centravac chiller (Figure 1).

Figure 1 950-ton Trane Centravac Chiller



The TES tank at the San Antonio Airport has been operating continuously since it was installed in 1982, providing energy cost savings, and serving as a reliable cooling source for the airport terminals' air conditioning system. This is Natgun's oldest thermal energy storage tank and represents the longevity associated with the construction of a high quality concrete tank.

Natgun TES tanks are built watertight and maintenance-free ensuring owners decades of continuous service.

*Reference: Tuat Nguyen, HVAC Technician Supervisor
City of San Antonio Aviation Department
San Antonio, Texas | Office: 210-207-3437*

THERMAL ENERGY STORAGE AND BIOFUEL TANKS
1-800-837-6133 | www.DNTANKS.COM