

# PROJECT PROFILE

## DALLAS, TX

SEMI-CONDUCTOR CHIP MANUFACTURER

2.7 MG AND 5.2 MG

THERMAL ENERGY STORAGE TANKS



In 1989, (a large semi-conductor chip manufacturer) contracted Natgun Corporation to construct a partially buried 2.7 MG thermal energy storage (TES) tank for the purpose of saving energy costs by taking advantage of the time-of-use electric rates. The TES system was designed to shift the electric load of the chillers and associated cooling equipment

from the on-peak periods (daytime), to the off-peak periods (night time). Then in 1993, (this same large semi-conductor chip manufacturer) contracted Natgun to construct a second TES tank. This second tank was much larger, 5.2 MG, and was constructed fully buried beneath a parking lot.

Engineers on staff at the chip manufacturer designed both TES systems. The first tank was designed for a useable thermal energy storage capacity of 24,500 ton-hrs. The second tank was designed for a usable thermal energy storage capacity of 58,500 ton-hrs. Each TES tank was integrated into their respective campus chilled water distribution systems that serve manufacturing, laboratory, and office areas.

In 2000, the electric utility market in Texas was deregulated and the typical time-of-use electric rate was no longer available. Despite the fact that the electric rate has changed, the need to utilize these TES tanks did not diminish. The plant engineers and operators at both campuses operate the tanks on a daily basis to ensure that the electric demand does not exceed a contracted level. In addition, the TES tanks give the engineering and maintenance staff the flexibility to take chillers off-line for several hours to perform emergency and routine service without interrupting the chilled water requirements of the manufacturing facility.

Figure 1 Electric Load Profile

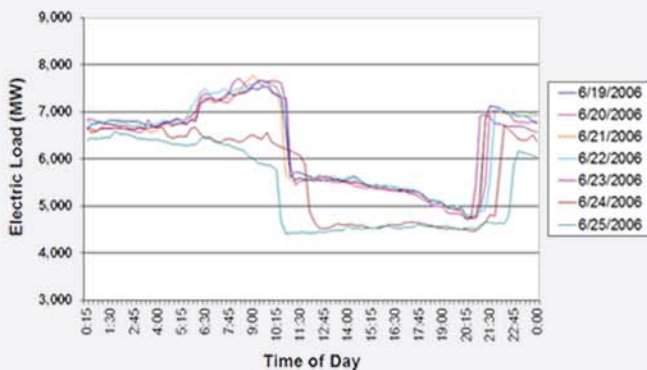


Figure 1 illustrates the electric load profile of the smaller central utility plant during a typical day of operation in June of 2006. One can observe the dramatic electric load reduction when the chillers and associated equipment are shutdown, and the TES tanks called upon to provide the chilled water for the campus.

The TES Tanks serving the facilities of this large semi-conductor manufacturer in Dallas, TX area have been in operation for decades providing numerous benefits to the owner including: energy cost savings, plants and reliability in the form of spare cooling capacity for the chilled water system during periods of planned and unplanned downtime of the central plant equipment.

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