



Green Star Engineering LLC (GSE) is an engineering firm (Texas F-16075) with expertise in energy efficiency, energy cost management, and energy systems project development. We apply a methodical and team-oriented approach derived from years of experience analyzing, designing, implementing, and verifying energy cost reduction measures in a wide variety of facilities and systems including the most complex central plant systems. We have the expertise to assist you with your facility-wide search for energy efficiency and cost reduction opportunities as well as help you solve your most elusive operational problems.

THERMAL ENERGY STORAGE CASE STUDY



SITUATION

Designed prior to deregulation of the Texas electricity markets, this 535,000 square foot Houston-area high school was equipped with a chilled water thermal storage tank designed to take advantage of then-current incentives offered by the regulated utility for shifting electrical demand from peak hours to off-peak hours. Since original commissioning in 2000, the system had been operated using the same load shifting strategy called for by the original design. The school district Energy Manager wanted to take advantage of this unique energy asset to minimize operating costs under the new deregulated market pricing structure. The opportunity was identified through a retro-commissioning study previously performed but the district did not have the engineering staff to perform the modifications in-house.

SOLUTION

Under a separate professional services agreement for engineering services and a subcontract for the control system modifications, the control sequence for the chilled water thermal storage tank was re-written and the control system was modified to achieve demand-limiting using real-time electricity demand information. The system modifications allow for flexible operation of the thermal storage system to minimize operating cost to the district under today's rate structure and as electricity consumption and demand cost structures change going forward.

For more information about how your existing thermal storage system can benefit you in today's market or for a thermal storage feasibility study, please contact:

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Or visit our web page and click on the "Contact Us" tab to send us a message describing your situation and we will work with you to find the right solution.

// RESULTS

Electricity demand cost reduced
Operational sequence simplified
Flexibility for rate changes achieved