

Large university benefits from utility demand program

Siemens energy monitoring



Challenge

A large Northeastern university was faced with a yearly electrical bill of approximately \$10.5M and was looking for ways to reduce this cost. Their peak demand usage was 14 mega watts.

The campus has a 4 MW CoGen system that generates electricity during the colder months to make steam, but they wanted to save on their electrical utility bills throughout the year, so they approached the local utility for ideas. The utilities management company suggested a demand response program (DRP). This program will save them 2 to 3 cents per KWH by having a system that could shed load from the utility and utilize the onsite generated power within 30 minutes of a phone call from the utility.

Solution

Siemens engineers worked with university engineers and consultants to define what the existing Siemens WinPM.Net system could do to help them with the solution.

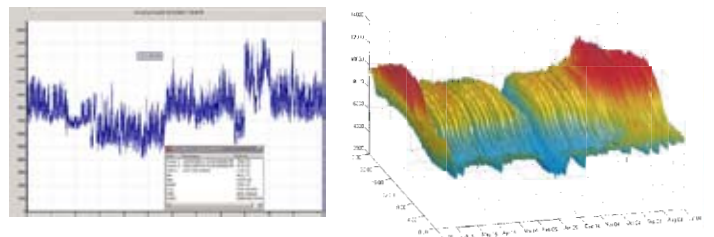
The solution was to install new closed transfer switches, and some additional generator sets at the university. The new and existing generator sets and transfer switches would be tied to the Siemens WinPM.Net system for manual control of the utility to on-site generation.

There was also a need to send generated kw data to the existing BAS system, via staged dry contact closures at 25%, 50%, 75% and 90% loading to shed load in various buildings to reduce HVAC loads during peak summer and winter months. The BAS to WinPM.Net link was also set up with email alarming if any communications was lost between the electrical generator panel. If the system failed or lost communications, the generator system would fail in "safe mode".

Results

The existing WinPM.Net system was designed to not only monitor the entire campuses energy usage, but now provide the means to manually initiate the source change from the utility to on-site generation once a signal was received from the utility to shed load.

Calculated results show that savings are resulting in a 2.0 year payback for the project, making the university management very pleased!



Trended Energy Usage Screen and Cogeneration profile.

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