

"During the installation process there was absolutely no negative impact to production thanks to the wireless technology that was utilized."

Bert Pires, Director of Engineering

Case Study: Amy's Kitchen



Powerit's Financial and Conservational Impact:



150kW average billed kW reduction (appx. 10%)*



580kW available for auto demand response reduction (appx. 44%)*



ROI: **6 months***

* Savings are estimated for first 6-9 months of system operation due to fluctuations in production run-time.



Amy's Kitchen is the nation's leading source of natural and organic convenience food. Its products are available nationally in natural foods stores, most supermarkets, select warehouse club stores, as well as internationally.

Amy's uses certified organic ingredients, including vegetables, grains and fruits grown without pesticides. Fats are used sparingly and selectively; all dairy ingredients are made with pasteurized rBST hormone free milk and do not contain animal enzymes or rennet. No dishes contain meat, fish, poultry, or eggs. Amy's products are non-GMO and do not contain hydrogenated fats or oils.

Amy's Kitchen, Santa Rosa, CA

Optimized Loads:

- Blast Freezers
- Freezers
- Coolers
- Evaporators
- Glycol Chillers
- Battery Chargers
- Blowers
- Pumps
- Spiral Freezer Compressor

Powerit Solutions Installed:

- Energy Management Hardware and Software
- PG&E Auto Demand Response CLIR Box
- Konnekt™ Wireless I/O
- Energy Monitoring and Reporting
- Temperature Monitoring and Reporting



A Powerful Need

During a hot day in the summer of 2008 one of the two main breakers failed at Amy's Santa Rosa, CA facility. Amy's learned the extreme heat that day drew too much power from their coolers causing a load issue. This was a serious problem that would need to be addressed if they hoped to avoid future failures. A procedure was developed whereby on hot days Amy's would temporarily shut down some of the refrigeration units by hand and then turn them back on later in the day. Temperatures were monitored to ensure that food safety and quality requirements were maintained. While they were successful in preventing failures the process was very time- and labor-intensive and could not be fine-tuned in any way. It was then that Bert Pires, Director of Engineering, went looking for a better solution.

A Powerful Solution

One option was to upgrade the main transformer, but that was a costly and disruptive proposition so Pires turned to Powerit Solutions. A Powerit sales engineer worked with Amy's to understand their processes, tolerances, and goals in order to develop an appropriate energy management solution.

Powerit proposed a system not only including demand control capabilities, but auto demand response as well. As it turned out Amy's was already signed up for a demand response program, but had never participated in it. According to Pires, "We were never able to do anything because we didn't have a way to measure information and we couldn't make the necessary changes manually."

Powerit educated Amy's on how they could deploy demand response automatically in addition to demand control, which Pires noted "added quite a bit to our savings. In fact, when factoring in incentives demand response is probably the largest component." Powerit researched the various incentives available from PG&E, Amy's utility company, and was able to secure a rebate for 88% of the cost of the system.

Auto demand response means that when a demand response event occurs the system reacts to it

automatically. A signal is received directly from the utility company and loads are manipulated in accordance with pre-defined rules. No human intervention is required. What had previously been impossible for Amy's was now not only doable and financially rewarding, but effortless as well. In initial tests the system produced a 580kW reduction, significantly more than the goal of 418kW.

The auto demand response program is a partnership between PG&E, Lawrence Berkley Labs, which measures and verifies the results, and GEP, which acts as administrator of the program.

In order to meet the rebate deadline the system was implemented in just 10 weeks. This fast turn-around was due in part to the use of wireless technology that reduced the amount of conduit that needed to be pulled eliminating the need to shut down food production during installation.

Once the system was up and running Amy's gained additional benefits from the system's extensive record-keeping capabilities. Amy's now collects information that allows them to review past history, optimize the system, and troubleshoot. And because the system integrates with their existing PLC it is now possible to take real-time temperature readings of all connected equipment and post that data to the Internet where QA and other internal teams can access it from anywhere at any time.

Monitoring is also done on the compressors of two spiral freezers. Before installation of the Powerit system the only way Amy's would know of a compressor failure would be through production output – soft product. It could be thirty minutes or more before the problem was identified. Now detection is immediate.

The system has proved to be an affordable solution to a variety of needs including cost-savings, energy management, and monitoring that will produce benefits for years to come.

