

# POWERSENSE

## DELIVERING ENERGY SOLUTIONS

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## School Buildings Lead in Energy Efficiency

Several boards of education and individual school facilities lie within Kenergy's service territory. Serving these institutions is a source of pride to Kenergy, and we understand dependable service is a top priority to these member owners.

According to the National Institute for Education Statistics, the majority of school buildings in use today were constructed between 1950 and 1969. Obviously at these ages, schools across the nation are requiring increasing numbers of repair and renovation. Paralleling this need for improvement is the state budget crisis, which dramatically affects school district budgets.

After staffing costs, one of the highest line items in a school's budget is electricity. Of the more than 20 schools served by Kenergy, the average monthly bill for March was nearly \$5,000. Some districts can have 20 or more schools in its territory, plus maintenance facilities, bus garages, portable classrooms and administrative offices. Utilities for these facilities quickly add up to a substantial cost.

Is there anything facility managers, teachers and even students can do to combat this necessary cost? The answer is a resounding yes!

To learn more about emerging technologies in the educational

sector, Kenergy Commercial Account representatives Todd Blackburn and Sharla Austin-Darnell attended the High Performance School Buildings Workshop presented by the Kentucky Department for Energy Development and Independence, Kentucky National Energy Education Development Project and U.S. Department of Energy in Bowling Green. Jim Barr, Energy Manager for Daviess County Public Schools, and James Taylor of Henderson County schools were present as well.

The two-day workshop consisted of speakers from all walks of the energy sector including architects, teachers, continued on page 2 School Buildings

## Kenergy Implements Kaizen

*Turning a problem into a plus*

HENDERSON, Ky. — For three years, Jeff Parks tried to solve a Kenergy problem — thousands of faulty cutouts (a combination of a fuse and a switch on power poles) created unnecessary outages and punched holes in the electric co-op's operations budget.

After years of looking for time-efficient, cost-effective ways to replace failing cutouts, Parks, manager of service technicians, would have scoffed at the suggestion that any team or person could develop a workable plan in less than a week.

That's exactly what happened.

With the help of Kaizen-trained facilitators from Rio Tinto Alcan in Henderson County, Kenergy developed a plan in only three days.

In April, the co-op started replacing nearly 6,000 faulty cutouts. If all goes as planned, the project will take two years, shaving years off the old timetable. Direct costs to replace nearly 6,000 cutouts are estimated at \$500,000, as compared to \$830,050 already spent to replace only 1,575 failed cutouts during the past decade.

When Parks learned Kenergy CEO Sandy Novick had solicited the help of Kaizen facilitators to tackle the cutout dilemma, Parks was skeptical. In private, Parks researched the Japanese continuous-improvement concept.

"I thought (Kaizen) was not what we needed," said Parks, who is now a confirmed Kaizen

continued on page 2 Kaizen



Mark your calendar for this upcoming event designed to educate local businesses, government leaders and citizens on environmental sustainability and enacting change in their communities. Workshops, exhibitors, demonstrations and door prizes are all part of this exciting event co-sponsored by Kenergy. Register

as an attendee or exhibitor and find more information at [www.gradd.com/green](http://www.gradd.com/green).

believer. "I was wrong. ... Teamwork and persistence make the difference."

Kenergy's problem: Electric cutouts, installed between 1989 and 1998 across the eastern part of the co-op's system kept failing. Cracks in the cutouts' porcelain allowed moisture inside and caused arcing. The co-op lost an average of 50 power poles a year because of cutout fires.

In the past, Kenergy waited until a cutout failed to replace it. Up to 66 percent of the work was done on overtime, raising costs. Also, crews criss-crossed the co-op's large 14-county service territory to do the work, adding to driving times and vehicle expenses.

"The (new) plan is to take one area at a time and change all bad cutouts in that area," Parks said. "We will have the cutouts changed in about two years. The old approach would have taken many years."

Under Kenergy's previous plan, an average of three per week were replaced, amounting to only 156 a year. That plan would take many years, and projected costs soared under this plan.

As a second option, the Kaizen study showed it would take more than eight years if cutout replacements became part of the operation department's regular work schedule.

Under another plan, a dedicated team could change up to 50 cutouts a week, converting the nearly 6,000 cutouts in two years.

However, by implementing a combined approach – replacing cutouts as part of the regular work schedule plus dedicating a team to the effort – Kenergy could replace the 6,000 remaining

cutouts in one year and eight months. That was the way co-op officials decided to go.

Novick credits the Kaizen approach for the quick, workable plan to replace faulty cutouts. "The Kaizen process allows employees who do the work to solve



*Kenergy lineman Chris Bennett (in the bucket) working in Lewisport with Mike Barnes.*

the problems and to make things better," Novick said. "I am excited about employee-involved problem solving."

Garrett Addington, Kenergy's new safety director, was involved with Kaizen for up to five years at his previous employer, Delta Faucet Inc. Delta required all managers to be trained in Kaizen.

Addington watched Delta Faucet's facility morph under the continuous-improvement model. Kaizen is an "organized approach to understanding and correcting issues within a company," he said. "It looks at all angles of an issue and helps find the best solution."

Marcel Perreault, who owns Quebec-based LeanCoaching, serves as one of the Kaizen-trained facilitators for Rio Tinto Alcan. He feels departmental silos, or invisible walls that keep employees in various areas from communicating and sharing information, create Kenergy's biggest roadblocks to problem solving.

Communication is one of the keys to any company's success, Perreault said. "Kaizen forces people to talk to each other."

## KW Reduction Rebate

Kenergy will offer its commercial and industrial members a monetary rebate on projects proved to reduce KW demand and promote energy efficiency. The program will run through December 31, 2011.

Approved projects may include lighting, HVAC and equipment upgrades or retrofits. Commercial and industrial members will be eligible for \$350 per KW reduction up to \$10,000 per customer.

A detailed analysis of the project will be required before rebates can be administered. Projects completed before application occurs will not be eligible.

For more information about this rebate program, contact Todd Blackburn (270) 831-4640 or Sharla Austin-Darnell (270) 831-4641.

## School Buildings...

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state coordinators and facility managers. Attendees were also given the opportunity to tour energy-efficient elementary schools. One of these, Richardsville Elementary, is the nation's first net zero public school and uses 75 percent less energy than the average American school. Due to the solar panel array, this building produces as much "clean" energy as it consumes.

Luckily, some schools in our area aren't far behind facilities such as these. With completion of the new West Louisville Elementary school, Daviess County Board of Education (BOE) possesses its seventh Energy Star plaque. Southern Oaks Elementary is rated at 92 on the Energy Star scale with 32k Btu per square foot. Officials expect the West Louisville facility to rank even higher.

As budget constraints move the system to a period of non-construction, Jim Barr says Daviess County BOE will thoroughly assess

all current structures and look for ways to implement energy-efficiency techniques as maintenance projects. The district has been using



*West Louisville Elementary school*

geothermal HVAC on all new buildings since 1993. Retrofitting gym lights to fluorescent rather than metal halide fixtures is under way in many schools, and hot water tanks are being replaced with instantaneous, usually gas-fired, heated water.

Barr said the most impressive element of the Warren County school is the zeal with which staff and students have embraced the facility's net-zero status. "They are learning from their building and most assuredly will take insights into their personal lives."