

Businesses demonstrating the Power of One®—with effective energy choices

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“Customer drivers for investment in energy efficiency vary but are typically a combination of economic, environmental and social objectives. This certainly rings true for the aquarium. Our collaboration to date has been commendable, and we hope to build upon it in the weeks and months ahead.”

*Tina Koecher, Manager of
Billing & Energy Efficiency,
Minnesota Power*

Aquarium Immersed in Energy Efficiency

The water wall at Great Lakes Aquarium is nearly impossible to miss. The cascading display dominates the aquarium’s lobby and invites visitors to explore the global significance of water through etched glass symbols and icons from around the world.

It also is awash in dramatic light, generated by an innovative, light emitting diode (LED) system that recently was installed with funding and design support from Minnesota Power’s Power of One® Business energy conservation program. The utility plans to study LED technology in this unique public setting, while showcasing its versatility and energy-saving benefits.

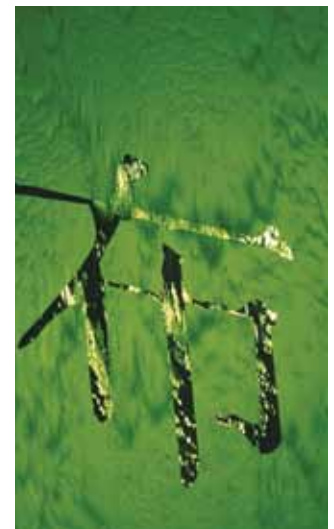
“We brought this technology to the aquarium in part to raise public awareness and educate customers about LEDs and where this lighting technology is headed,” said Tim Gallagher, program manager, Minnesota Power. “LEDs have many properties that can be mixed and matched. We also wanted to study the importance of designing systems so lighting components work together to produce desired results.”

“Minnesota Power brings a knowledge base to the table that we don’t have in-house. Its experts see things we would miss.”

*Jay Walker
Director of Operations/Assistant Director
Great Lakes Aquarium*

The new, ceiling-mounted LED system is far more energy efficient than the metal halide footlights it replaced and allows aquarium officials to change the water wall’s scenery, patterns and color schemes to achieve many eye-catching effects.

“Minnesota Power looked at how the water wall was being lit and demonstrated that an LED system would use less power, save money and provide more control,” said Jay Walker, director of operations/assistant director, Great Lakes Aquarium. “The exhibit looks great, and Minnesota Power has a platform to highlight LEDs and study the technology.”



Left Side Bar: Variable speed drives improve the efficiency of pumps that move water through the aquarium’s aquatic exhibits and filtering system. **Above Left:** The planned Discovery Center expansion will integrate energy-efficient lighting and other systems. **Above Right:** LED lights on the water wall demonstrate dramatic energy savings and versatility.



Energy team members include: (left to right) Matt Haley, Energy Insight, Inc.; Craig Kedrowski, Minnesota Power; Jay Walker, Great Lakes Aquarium; and Tim Gallagher, Minnesota Power.

For more information:

Take the first steps toward managing energy use and costs at your business. Learn more about Power of One®, Minnesota Power's commercial, agricultural and industrial energy conservation program, and fill out your free online pre-application form.

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This project emerged through an onsite commercial energy team, created to help the aquarium meet a benchmark priority in its Strategic Plan for “evaluation and implementation of an energy conservation plan.” Minnesota Power and aquarium representatives meet on a regular basis to discuss energy-saving opportunities, identify potential projects, and bring them to completion.

“Minnesota Power is happy to offer its expertise and program services to help the aquarium hit its benchmark and deliver on that goal,” said Tina Koecher, manager of billing and energy efficiency, Minnesota Power, who serves on the aquarium’s board of directors. “This involves taking a good, hard look at technologies, such as lighting and mechanical features and identifying areas for improvement.”



Great Lakes Aquarium is working with Minnesota Power to conserve energy, lower operating costs, and demonstrate environmental stewardship through energy efficiency.

The energy team developed and prioritized a list of potential improvements, some of which are already completed or underway. Most are not as glamorous or visible as the water wall lighting, but will bring significant energy and/or cost savings.

For example, the aquarium had been paying a penalty due to the facility’s poor power factor conditions. This was identified during an initial building analysis and was resolved by installing a capacitor bank, which improved the conditions and reduced monthly charges.

The aquarium also is installing energy-efficient, variable speed drives on pumps that move water through its tanks and filtration systems. There are plans to upgrade lighting to LED throughout the building, starting with the lobby and gift shop and then moving onto the exhibit floor.

As projects are completed, Power of One® rebates from Minnesota Power will be deposited into an energy-efficiency fund to help pay for future energy-saving upgrades.

“We provide an additional incentive for those customers who establish an energy-efficiency fund. This is to encourage customers to keep energy conservation in the forefront,” said Craig Kedrowski, energy analyst, Minnesota Power. “Not only do customers get a higher rebate, but they have dollars to reinvest in future energy-efficiency projects.”

That money will come in handy as Great Lakes Aquarium plans a major renovation that will relocate and expand its environmental education space. The Discovery Center project will add three flexible classrooms, a teacher resource center and enhanced capacity for interactive distance learning. The Minnesota Power Foundation is a major funder of the project.

“It will be great to have Minnesota Power’s input into how those rooms are built and what lighting, heating systems and infrastructure we should put in place for energy efficiency,” Walker said. “One of our roles in this facility is stewardship of the environment. Energy conservation aligns very well with our mission and goals.”