

# CASE STUDY

## Milwaukee County Zoo

MILWAUKEE, WISCONSIN

### CHALLENGE:

Upgrade an existing building-to-building backup power system that wasn't cost effective to a park-wide, streamlined solution.

### SOLUTION:

Generac 2 MW MPS solution consisting of two paralleled 1 MW Gemini™ generators.

### RESULT:

A reliable, redundant and scalable solution that allows the generator system to grow and change as the zoo updates and expands exhibits.



***“The reliability of our generator system is paramount; to keep our animal collection, it is everything.”***

## Streamlined Backup Power Protecting Vulnerable Species

In 1892, the Milwaukee County Zoo began as a miniature mammal and bird display in Milwaukee's Washington Park. As the display grew in popularity, the Zoo grew to over 800 animals on 23 acres of land by the turn of the century. During the next one-hundred years, the Zoo experienced near-constant expansion, moving to a new 190-acre wooded site, now home to over 2,200+ animals and 330 species.

“The Milwaukee County Zoo has really become a jewel of the community and oftentimes, because of what is happening in wild habitats, people don't have the means to see some of these animals, unless they come to the Zoo,” said Jennifer Diliberti-Shea, public relations coordinator, Milwaukee County Zoo. “Visitors make a connection with our animals and they want to conserve those animals for the future.”

With changes over the past century, the Zoo's objective has never wavered. Their mission is to promote an appreciation for all animals and to support conservation of their diverse habitats. The Zoo continually places great emphasis on the care of the animals, staff and visitors.

“There is a huge concentration on animal welfare and to make these animals' lives as best as they possibly can be under human care,” said Diliberti-Shea. “So what we try to do from an animal management standpoint is to give them a full and enriched life. Beyond medical care, we also can improve their psychological needs not only by enlarging exhibits, but by adding different components.”

Not only did the Zoo consider updating their electrical support system due to the increase in power needs from renovations, but zoos and their animals are also particularly vulnerable to natural disasters and power outages. Some animals rely on fresh shipments of food everyday to survive; others need electricity and running water. The Association of Zoos and Aquariums requires all animal care facilities they represent to have preparedness and response plans.

“The Zoo is a unique place with thousands of animals that require so many life support systems, be it heating, cooling, water temperature and other things to that nature,” said Ben Mattson, maintenance manager, Milwaukee County Zoo. “Any lengthy amount of time without power would be detrimental to their survivability.” The Zoo had a backup power system, but they said it wasn't efficient. “We had generators onsite that provided support to individual buildings,” said Mattson. “As we started looking at it, it just wasn't cost-effective to go building-to-building and spend more money on maintenance costs. So that is when we really started to look for something on a park-wide basis.”

In 2019, the Milwaukee County Zoo began the process of streamlining their backup power solution to include the entirety of the Zoo grounds. “We had to make sure that the system met our requirements,” said Mattson. “Our biggest concern was the Aquarium & Reptile Center. Every animal in that building is incredibly sensitive to environmental changes so that was the number one building that needed support because of the intricacies of the life support system.” While the Aquarium &



**APPLICATION:**

Entertainment

**System Configuration:**

2 MW MPS

**MODELS:**

2 x 1 MW Gemini™ diesel generators



Reptile Center was top of mind, many other environments need to be sustained throughout the Zoo. Water pumps are also vitally important not only as they provide drinking water to animals, but there are moats that serve as barriers between visitors and animals where maintaining the water level is critical for safety.

To start the process, the Zoo first got in touch with the utility and reviewed previous electrical usage amounts. That amount became the basis of the design and then they put the project to bid. Mattson said they had certain partners in mind from the start, and one was Wolter Power Systems.

“Wolter Power Systems was called in to consult on the project early on,” said Jason Lelewicz, Wolter Power Systems. “But the proposal was well over budget. The specifying engineer was open to suggestions and we recommended a Generac Modular Power Solution (MPS) as it would offer the redundancy and reliability the Zoo was looking for, while providing a cost savings.”

Lelewicz also recommended paralleling, which provides added protection to critical facilities. Instead of relying on a single generator during an emergency, if one generator is taken offline for maintenance, the other units would still supply power to required loads should an outage occur.

Wolter Power Systems specified the solution of two, 1 MW Generac Gemini diesel generators. One Gemini MPS Twin Pack houses two 500 kW generators within a single enclosure. Each unit provides 1000 kW of power in a footprint that is 20 percent smaller compared to a single large genset. In total, the redundant solution provides 2 MW of power. Up to seven Gemini gensets can be paralleled without additional switchgear, so as the Zoo continues to expand its exhibits and facilities, there will be round-the-clock support and increased safety for all.

In addition to reliability and redundancy, scalability was also a key factor in the Zoo’s decision to go with Generac. “Things are always changing and growing and we are redoing exhibits all the time,” said Theodore White, master electrician, Milwaukee County Zoo. “With the new generator set up, we are able to add on to it later making it easy to build and grow if need be.”

Zoo representatives noted a smooth transition to the new system. “We had to make sure that we went without a power interruption when making the transfer to the generators,” said White. “We coordinated with our Zoo staff in order to make sure that a mild interruption would not be a problem for them. And when it came to testing, it was very thorough, we went through and made sure the

generators were able to handle all the load that we needed to and everything went pretty seamlessly.”

From start to finish, the Zoo said Generac and Wolter Power Systems were great to work with and would recommend their services. “The staff was incredible, very helpful along the way,” said Mattson. “The reliability of our generator system is paramount; to keep our animal collection it is everything.”

“The Zoo is an iconic staple in the Milwaukee area that sees a lot of traffic,” said Lelewicz. “Even the location of the generators next to I-94 shows all of Milwaukee that the Zoo trusts Generac to take care of the animals.” When supplying backup power to their customers, Lelewicz said he always recommends Generac. “It’s a locally made product by a company that has been around for over 60 years,” he said. “Being the leader in MPS solutions, they have built a bulletproof system designed to be flexible and with built-in redundancy, customers enjoy the peace of mind that comes with the purchase of a Generac product.”



### Ben Mattson

Trades and Maintenance Manager, Milwaukee County Zoo



Ben has been an electrician for 21 years. As the Zoo's Trades and Maintenance Manager, he oversees the Building Trades and Maintenance departments that service the entire almost 200 acres of Zoo property. He works in partnership with outside contractors and vendors and oversees the work they perform for the Zoo as well. He assists with capital building projects when needed. Prior to the Zoo, Ben worked for multiple electrical contractors that serviced accounts throughout the Milwaukee area.

### Jason Lelewicz

Strategic Accounts Manager, Wolter Power Systems



Jason is well versed in the standby power & generator realm, having begun his career with Generac in 2004 working in Industrial Inside Sales. He then moved up to the National Account Group where he supported large customers such as Verizon Wireless and AT&T. In 2007, he transitioned to working with Wolter Power Systems, again with national accounts, and providing his customers with industrial power solutions through the Generac Industrial Power product lines. Jason holds a strong commitment to each of his customers, with the key focus of them powered, safe and productive.

### Jennifer Diliberti-Shea

Public Relations Coordinator, Milwaukee County Zoo



Jennifer has worked at the Zoo for 23 years, serving as the Public Relations Coordinator. Her responsibilities include writing the Zoo's marketing and promotional pieces, updating and responding to inquiries through the Zoo's website, responding to all media inquiries, securing positive media coverage and serving as the spokesperson when appropriate. Prior to working at the Zoo, Jennifer worked in public relations for Bader Rutter and the Milwaukee Public Museum

### Theodore White

Master Electrician, Milwaukee County Zoo



Theodore works as the Master Electrician for the Zoo, overseeing and maintaining the electrical systems and equipment throughout the grounds. Prior to his position at the Zoo, Theodore worked with Milwaukee County Facilities Management, serving the Behavioral Health Department, Children's Court Center, the Milwaukee County Courthouse, and several other Milwaukee County facilities. Before his tenure at Milwaukee County, he worked for an electrical contractor serving southeast Wisconsin for 12.5 years.