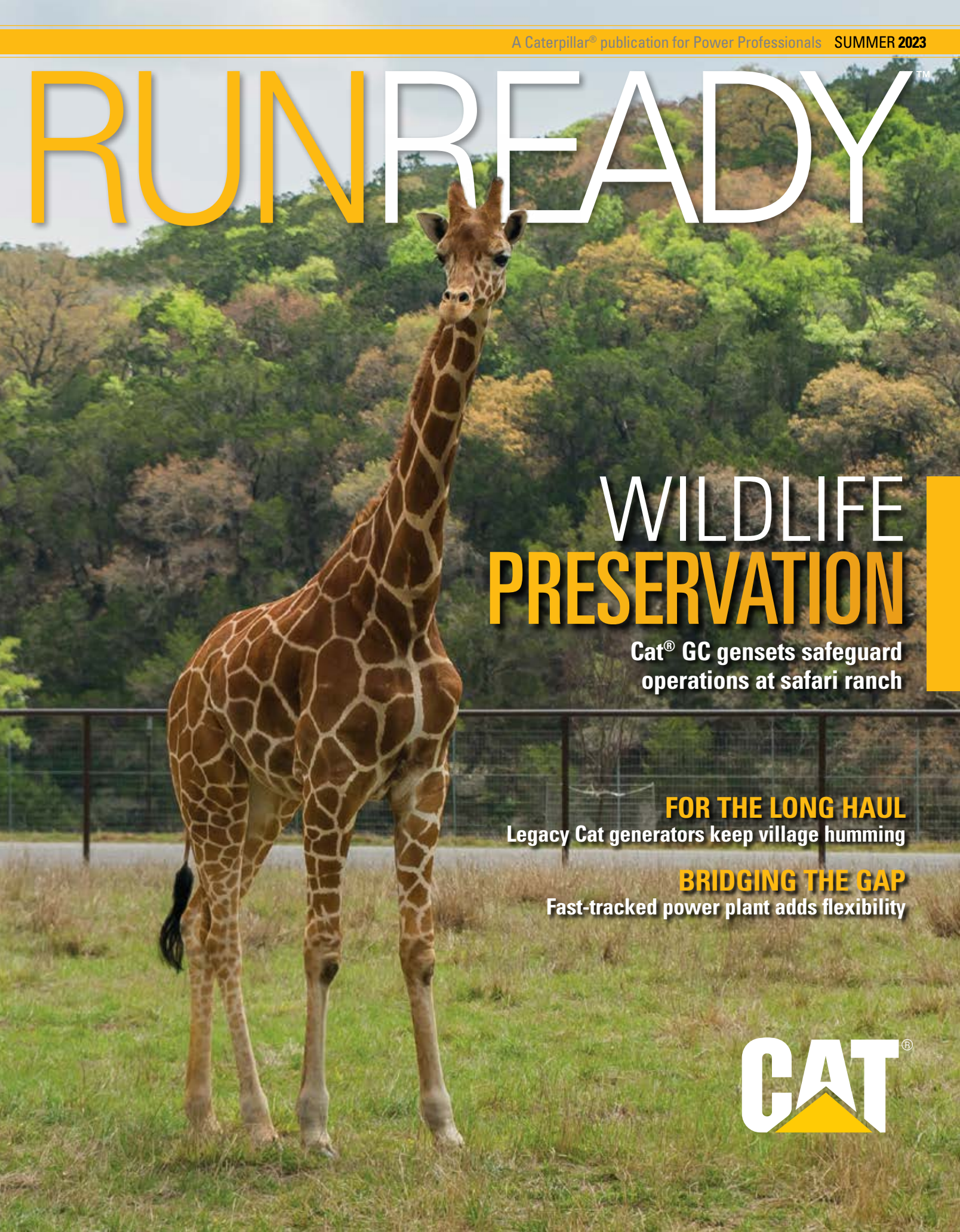
A Caterpillar® publication for Power Professionals SUMMER **2023**

RUNREADY™



WILDLIFE PRESERVATION

Cat® GC gensets safeguard operations at safari ranch

FOR THE LONG HAUL

Legacy Cat generators keep village humming

BRIDGING THE GAP

Fast-tracked power plant adds flexibility

CAT®

Power Play

Temporary power outages, called rolling blackouts, are a tool grid operators/regulators use to manage power grids when supply and demand fall out of balance. Cutting power in a controlled and brief manner protects sensitive equipment from being overloaded and allows utilities to carefully bring systems back into supply-and-demand harmony.

Two-thirds of North America could face power shortages this summer during periods of spiking temperatures and extreme electricity demand, according to the nation's grid reliability monitor.

The North American Electric Reliability Corp. (NERC) says the number of regions with an elevated risk of power shortages has increased, as temperatures rise and power plants are retired. In a worst-case combination of severe heat and unexpected generation outages, the western United States, most of Texas, and the Carolinas face a heightened risk of rolling power blackouts, the NERC said.

In this issue of *RunReady,* a Midwestern village is taking a proactive approach to the threat of rolling blackouts. The Village of Morton, Illinois is ready to run its fleet of standby generator sets in the event of energy shortages on the grid.

Meanwhile, a Texas safari ranch has responded to unpredictable weather and grid instability by installing Cat® GC generator sets to ensure continued operations at the tourist attraction, while protecting the health of the exotic species that live there.

Also in this issue, a Utah-based cooperative utility is responding to the changing nature of the electric grid by installing its own solar farm, as well as building a new gas-fired plant that can start fast and supply additional energy when the grid needs it.

We hope you enjoy this issue of *RunReady,* and stay cool this summer.

DID YOU KNOW?

One Small Step

Caterpillar's new office near Purdue University's Discovery Park District will be used to conduct research, collaborate with university faculty and give interns the opportunity to help develop new products and manufacturing processes—all while still attending their regular classes.

"Caterpillar and Purdue have collaborated for decades, and Purdue continues to be a great source of next-generation STEM talent for Caterpillar," said Lafayette Vice President of Facility Operations Paul Rivera.

Neil Armstrong, first man on the moon, attended Purdue University. Purdue is one of the most prestigious universities in the world with very strong STEM academic and research capabilities. Armstrong was also accepted to the Massachusetts Institute of Technology (MIT), but chose to attend Purdue after watching a football game between the Purdue Boilermakers and the Ohio State Buckeyes at Ohio Stadium in 1945. Quarterback Bob DeMoss led the Boilermakers to a hard-fought victory over the highly regarded Buckeyes.

Ontario Hospital System ADDS 25 MW of CHP

As a leading healthcare system that serves more than 300,000 patients per year in southwestern Ontario, Hamilton Health Sciences (HHS) demonstrates its commitment to environmental stewardship through numerous efforts to reduce energy consumption, divert waste from landfills, encourage smart commuting, and more.

The healthcare system will utilize 13 Cat® G3516H natural gas generator sets providing a total of 25.5 MW of power output to update its combined heat and power (CHP) capabilities and substantially reduce its carbon footprint at three hospitals in its network.

Cat dealer Toromont is providing systems integration and commissioning the solutions selected to fit within current facility floorspaces at Hamilton General Hospital, Juravinski Hospital and Cancer Centre, and McMaster University Medical Centre, including the McMaster Children's Hospital.

"The cogeneration systems for HHS have been configured to meet specific customer requirements across several dimensions," said Thomas Smith, gas segment manager for Caterpillar's Electric Power division. "While supporting aggressive sustainability goals and reducing energy costs, their high power densities also address ever-increasing energy demands while fitting into current facility footprints, helping to reduce future capital expenditures."

Scheduled to begin operating within the next year, the CHP systems will support a series of initiatives to reduce carbon dioxide emissions across all HHS facilities by 50% this year. They will also help improve the healthcare system's energy independence by contributing to a more than 70% reduction in reliance on the local grid.

"We are taking steps to be at the forefront of responsible energy use and conservation," said Kelly Campbell, vice president of corporate services and capital development for Hamilton Health Sciences. "Minimizing our impact on the environment while ensuring stability in our electrical production and heating system is a wise and sustainable investment in our future and in a greener planet."

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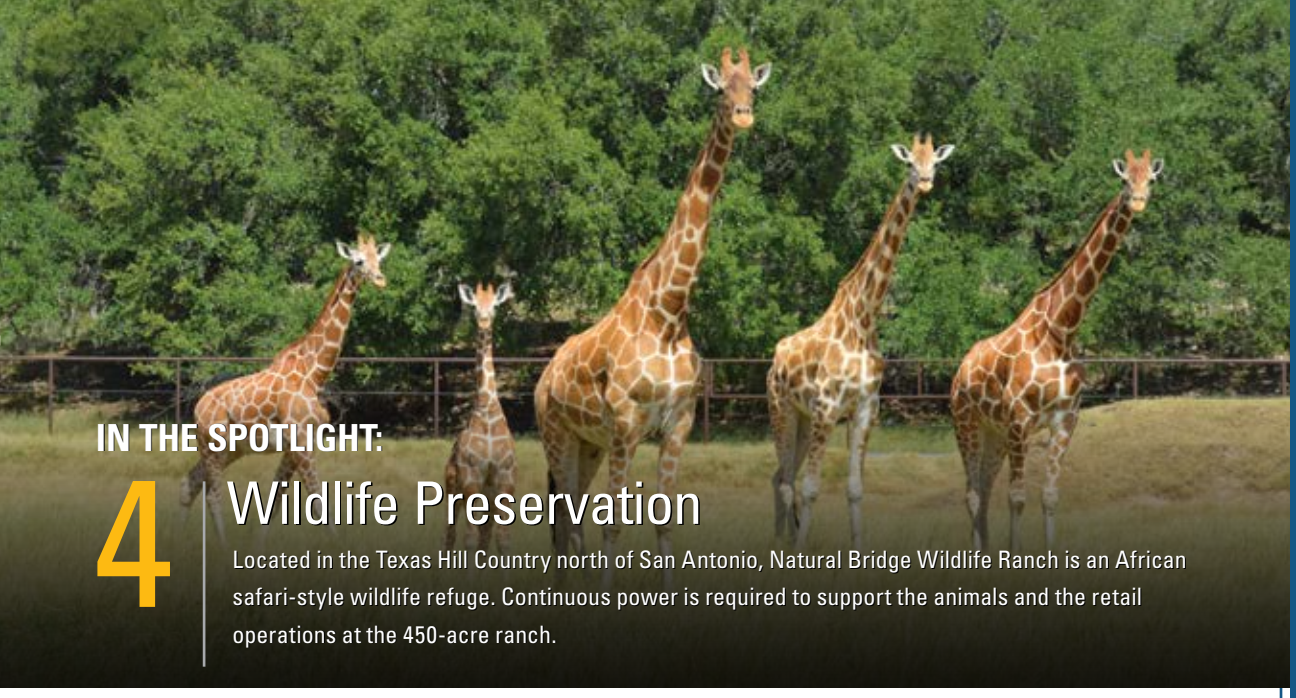

IN THE SPOTLIGHT:

FEATURES

ELECTRIC POWER **LIBRARY**

Whatever your business, you can see data, news, and first-hand stories. Browse through the library to see what's going on in the world of electric power and to find out how operations like yours are utilizing Cat® power. To access this library, search on: Cat EP Library.

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WILDLIFE PRESERVATION

Cat® GC gensets safeguard operations at safari ranch

Located in the Texas Hill Country north of San Antonio, Natural Bridge Wildlife Ranch is an African safari-style wildlife refuge.

Open to the public since 1984, about 450 acres of rolling hills, creek beds, and magnificent oak trees greet visitors along the safari drive-thru. The trek covers over six miles and takes anywhere from one to two hours. Admission permits visitors to take multiple trips through the safari, as every trek provides different adventures in the free-roaming environment. Feeding options are available when tickets are purchased upon arrival.

Riding in a custom-built Safari Rover or Safari Shuttle, visitors can take the guided Safari Adventure tour if they choose not to travel in their own vehicles. Official adventure guides are animal specialists who work in a hands-on environment to oversee the animals' care every day. Safari Adventure Trek Tours provide a venue for enhanced experiences, as guides offer fun and interesting facts about the animals, management and heritage to provide an enhanced perspective on the Texas-style African safari.

Additionally, the Walk-A-Bout area features several bird and primate species, a family of giraffes, the Safari Camp Grill, and the Safari Trading Post gift shop.

Named as one of the Top 10 safari parks in the nation by *USA Today,* Natural Bridge Wildlife Ranch provides habitat for more than 500 animals representing over 40 species from around the world. This includes reticulated giraffes, white rhino, kudu, sable, as well as ostriches and primates.

Owners Ray and Trudy Soechting obtained some animals from zoos, and others were purchased from exotic animal breeders or imported. Over the years, the Texas Land Heritage Property has diversified into a source of both education and conservation of endangered and threatened species.

"Most of the species here are endangered to some degree," says marketing director Tiffany Soechting. "We focus on species that are in need of preservation and protection."

The reticulated giraffe, also known as the Somali giraffe, is a subspecies native to the Horn of Africa. It lives in Somalia, southern Ethiopia, and northern Kenya. There are approximately 8,500 individuals living in the wild. The reticulated giraffe is considered endangered due to an estimated continuing decline of 56 percent over the last 30 years. The decline is most likely attributed to habitat loss, deterioration in habitat quality, and illegal killing/poaching.

One of the star attractions at Natural Bridge Wildlife Ranch is Buddy, a 10-year-old giraffe who made international news when he was born in 2013 as part of only the ninth known set of twins in the last 200 years.

"When it happened, there were stories from Australia to India," Tiffany recalls. "They were featured in Times Square and were on *Good Morning America.*

Continued on page 6

CUSTOMER PROFILE

Natural Bridge Wildlife Ranch

Location: San Antonio, Texas

Application: Standby power

Cat® Equipment: D60 GC, D100, D100 GC, D150 GC gensets

"With twins, the mother (giraffe) could not produce enough milk to raise both of them on her own. So we made the decision to hand-rear Buddy. And as a result, we connected with giraffe caretakers and conservationists all around the world."

Natural Bridge Wildlife Ranch is affiliated with organizations such as the Conservation Center for Species Survival and Save the Giraffes. Because of the close contact that visitors to the wildlife ranch experience with the animals, Soechting says they're left with a deeper sense of connection.

"Because the animals are roaming free while our guests are driving through their environment, the animals have the ability to come up and interact with the visitors," she says. "And when they come into close contact with the animals, it fosters a connection on a deeper level. So when they have an up-close interaction with a giraffe, people are more likely to help support the conservation efforts for that species."

"Now that we have that generator system in place, it makes a huge difference knowing that the animals are protected during these weather events—it allows us to sleep at night."

TIFFANY SOECHTING, Marketing Director
Natural Bridge Wildlife Ranch

Reliable power is crucial

Both the animals and the retail operations at Natural Bridge Wildlife Ranch require a continuous source of power, says T. Dexter Soechting, director of animal care and operations.

"For the animals, we have to provide everything from shelter, clean water and feed, and we need a consistent supply of power to maintain these basic necessities," he says. "And power is required in a shelter for heat and to pump water. So, having a reliable source of power is crucial, especially during bad weather."

In January—the coldest month of the year in San Antonio—the average low temperature overnight is 43 degrees, which is sufficient to support the majority of the animals that originate from warm climates. However, when temperatures drop below freezing, the animals can be at risk.

"Three years ago, when we had a bad storm, we didn't have generators for our animal side; we just had propane heaters, so it was very stressful," T. Dexter said. "We had rolling blackouts, and it was hard to sleep at night knowing that the power could just quit at any moment and the animals would lose heat."

Since then, the wildlife ranch has installed four Cat® diesel generator sets to provide backup power to the ranch. It recently added a new Cat D100 GC genset to provide backup power to its pump station, as well as a D150 GC generator, which provides backup power to the Walk-A-Bout area. In the event of a grid outage, Natural Bridge Wildlife Ranch is almost entirely backed by Cat standby power.

"A representative from Holt CAT came out and walked us through everything," T. Dexter said. "We have our own mechanics who service the gensets, and Holt CAT was very helpful in training our service team—they showed us how to do everything. And they programmed the generators so they

start and run automatically every week as part of regular run-ready testing."

Prone to extremes

Recent meteorological events provide evidence that Texas is prone to weather extremes. The extended "Snowmageddon" winter storm that occurred during Valentine's Week 2021 brought not only snow, sleet, and freezing rain to Southeast Texas, but also extreme cold temperatures that lasted for several days and resulted in rolling blackouts and extended power outages.

"We didn't lose power during the storm, so we were very lucky," Tiffany recalls. "But we didn't have the Cat generators, and it was very stressful because basically the entire state was experiencing rolling blackouts. We had to go around and check to make sure that the propane heaters still had fuel, even in the wee hours of the morning. And we had to travel 20 miles in the snow and ice to refill the propane tanks.

"But now that we have that generator system in place, it makes a huge difference knowing that the animals are protected during these weather events—it allows us to sleep at night."

In February 2023, Holt CAT installed Cat Connect remote asset monitoring on all four of the generator sets at Natural Bridge Wildlife Ranch. Remote asset monitoring technology monitors the status of the gensets 24/7, enabling staff to receive:

- Continuous data on engine and electrical parameters
- Real-time alerts and alarms
- Engine or generator faults that signal a potential shutdown or failure to start

Cat Connect monitors essentially an unlimited number of gensets at remote sites and displays them all in a single dashboard view. It can synthesize data across multiple sites and geographic areas and help users compare the performance of sites and individual assets.

Cat Connect remote asset monitoring provides an added layer of security.

"With all the steep hills here on the ranch and the distance we have to cover, if we have an ice storm here, it will be nice to pull up the Cat Connect app on my phone and check the status and fuel levels of our generators," T. Dexter says.

"In an adverse weather event, there are endless things that we're trying to fix and get going. So when it comes to our generators and knowing in real time about their ready-to-run status, having that off our plate is a huge relief."

CAT® COMPACT ESS

NEW BATTERY ENERGY STORAGE SYSTEM

The Cat® Compact ESS is a new mobile battery energy storage system that supplements traditional mobile power solutions to reduce noise and enable deployment of renewable energy sources.

Designed for rapid plug-and-play installation and integration, the Cat Compact ESS module can be used with any combination of diesel, natural gas and renewable energy sources such as solar or wind. The Compact ESS stores surplus power from these energy sources and then discharges from its reserve as needed. It is equipped with an energy control module (ECM), an onboard management system that continuously monitors load levels and automatically switches between generator set power and stored energy as necessary, only using the generator set for recharging or accommodating higher loads.

Compact ESS modules are designed for applications requiring long periods of low loads, such as night-time loads, around-the-clock low loads, and time periods when a silent supply of energy is required. When used in these applications, the Cat Compact ESS modules can increase power efficiency, resulting in decreased fuel usage, reduced greenhouse gas (GHG) emissions and lower maintenance costs over time.

Based on expected power needs, the Compact ESS modules are ideal for equipment charging stations, offices, auxiliary buildings and security systems at construction, mining, oilfield, and pipeline worksites. Also, remote agricultural operations such as irrigation; outdoor concerts, golf tournaments and other special events; and emergency response and other temporary power applications.

Two models of the Compact ESS module are available, with configurations for 50 Hz or 60 Hz applications. The XES60 provides up to 56.8 kWh of capacity, while the XES120 delivers up to 127.9 kWh of capacity.

Ready for Today's Worksites

Enabling full recharging in as little as four hours, Compact ESS modules feature advanced lithium-ion batteries to provide thermal stability, high discharge/recharge efficiency, and high cycle life. They have simple, straightforward connections to generator sets and other energy sources, enabling quick and smooth worksite deployment.

Users of the Compact ESS module can subscribe to advanced data collection, visualization reporting and alert capabilities. Through an easy-to-use web interface, this technology helps track and manage system operation in real time, confirms desired cost savings, flags potential problems, performs remote troubleshooting, provides long-term archives of site performance history, and identifies opportunities for operational and system enhancements.

Cat Compact ESS modules are packaged in weather- and debris-resistant enclosures for deployment in rugged working conditions, and they can easily be mounted on towed trailers to simplify transport and repositioning around a jobsite.

They are available now from Cat dealers in North America, Europe and Australia, with other territories to follow throughout the year.

To learn more, contact our dealership or visit cat.com.

FOR THE LONG HAUL

LEGACY CAT® GENERATORS KEEP VILLAGE HUMMING

Morton (pop. 17,117) is a village in central Illinois that is home to a large Caterpillar parts distribution facility and a Libby's pumpkin cannery.

Located in the middle of America's heartland just southeast of Peoria, the community claims that 82 percent of the world's canned pumpkin is produced at the Libby's plant, earning Morton the designation "Pumpkin Capital of the World." The annual four-day Morton Pumpkin Festival is held during the second week of September, attracting approximately 75,000 visitors from Illinois and surrounding states.

With a property tax rate of 6.82 percent and no public debt, Morton puts its resources where they will best benefit its citizens. The village has a history of making forward-looking investments in equipment and infrastructure, such as a recently completed $11 million upgrade to its water treatment plant. Another part of Morton's vision includes having substantial backup power generating capacity at its public works facilities in order to avoid any service interruptions.

As Director of Public Works, Craig Loudermilk's wide-ranging departmental responsibilities include water distribution, wastewater treatment, stormwater, natural gas, streets, and pretty much everything else involving public works.

The village has 12 Cat® standby gensets installed at its facilities, with the largest being at the wastewater (725 kW) and water treatment plants (455 kW). Cat gensets also provide backup power at the police (125 kW) and fire (150 kW) stations. All but one of the generators run on diesel fuel. The lone gas generator is installed at the fire station.

Many of the Cat backup generator sets installed at Morton facilities pre-date Loudermilk's arrival 12 years ago. Some of the generators date back as far as 1988.

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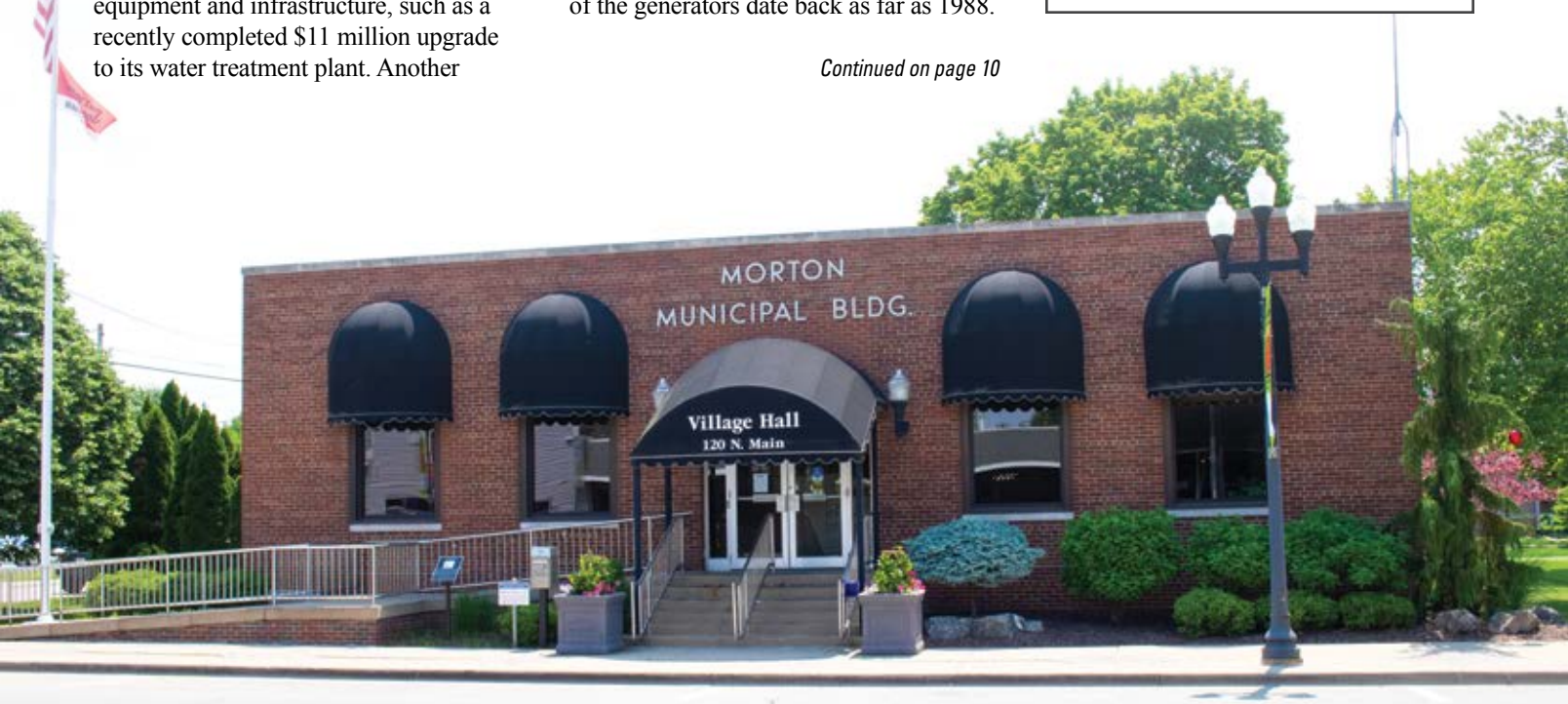
CUSTOMER PROFILE

Department of Public Works

Location: Morton, Illinois

Application: Standby power

Cat® Equipment: 11 diesel gensets and one gas genset



"Morton has always been ahead of the curve when it comes to these types of things," Loudermilk says. "The village forefathers saw the need to invest in backup generation at all of our public works facilities. So, I'm very fortunate in my position that we can continue to provide uninterrupted service to the community, particularly at our water treatment and wastewater plants.

"For example, if we're not running our wastewater plant during a large storm event when it's at maximum capacity, you can have some bad things happen such as an overflow where sewage is backing up into people's basements," Loudermilk adds. "So, without standby power, that could happen very easily."

The fire and police departments rely on communication systems in order to provide a fast response at all times.

"The last thing you want to have is electricity down and then it coincides with some crazy event," Loudermilk says. "Recently there was a lockdown at the school because they had a shooting at nearby Dunlap, and the suspect ended up in Morton. So they locked down all the schools. You would hate to lose power at the same time that a community emergency is happening."

"The bottom line is, our generators cannot fail. They have to be ready to run every single day, every single hour. And we know that Altorfer has our back."

CRAIG LOUDERMILK, Director of Public Works
Village of Morton, Illinois

Demand response

Earlier this year, the Midcontinent Independent System Operator (MISO) announced a 1.2 gigawatt energy shortage, which means higher electricity bills and a risk of blackouts. In addition, a large amount of generation is expected to come offline in 2023, putting additional strain on the grid and likely increasing power prices.

As a result, the village signed a voluntary agreement to supply its own power during periods of peak demand on the grid. Known as demand response, it is a resource used by grid operators and utilities to prevent blackouts and reduce electricity costs. Demand response program providers such as Voltus pay users to conserve energy when the grid needs more power. Commercial and industrial energy users participate to support their communities and earn additional cash to offset electricity costs.

"With the continued influx of renewables on the grid and the loss of traditional sources of power generation, we've been told that there's a strong possibility of rolling blackouts this summer," Loudermilk says. "We have no way of knowing the timing and extent of these blackouts. Are they going to turn off the whole town? I assume there's different levels of blackouts, but having

the ability to generate our own power lessens the potential impact.

"So, if it's a hot summer day and there's not enough electricity on the grid, Voltus will notify us and we have the option to start our generators and run during those peak demand periods. Not only will we get money back to help the whole grid, it also ensures that we keep providing vital services to the community."

New installation

To support a new gas and water department building under construction in Morton, the village plans to install a Cat natural gas generator set.

"If I'm in a gas company, why wouldn't I utilize natural gas?" Loudermilk says, adding that Morton is the largest municipally owned gas company in the state of Illinois. "If there's a bad storm and it's hard to deliver diesel fuel, then it just makes sense to use our own natural gas."

The village monitors the status of its generator fleet via a SCADA system. Public works staff handles routine generator maintenance, and tests them weekly. For emergency repairs and technical support, it relies on its Cat dealer, Altorfer Power Systems.

"There's obviously some things we encounter that are above and beyond our level of expertise," Loudermilk says. "In those instances, we rely on Altorfer. It's a quick call from our mechanic, and they are here in a relatively short amount of time.

Based on discussions Loudermilk has had with his staff, he is acutely aware that public works directors can lose their jobs when standby generators don't start in critical situations.

"The bottom line is, our generators cannot fail," he says. "They have to be ready to run every single day, every single hour. And we know that Altorfer has our back."

BRIDGING THE GAP

FAST-TRACKED POWER PLANT ADDS FLEXIBILITY

With corporate offices in South Jordan, Utah, Deseret Power is a regional generation and transmission cooperative that owns 223 miles of transmission lines and 550 MW of generating capacity.

As a cooperative, Deseret is owned by its five member systems: Bridger Valley Electric, Dixie Power, Garkane Energy, Moon Lake Electric, and Mt. Wheeler Power. It also sells surplus power to municipalities, power marketers and other wholesale electric systems in five states.

Deseret Power's cooperative organization, combined with its vertically integrated structure, enables it to provide member/owners, partners and customers of all sizes with reliable power and stable rates.

CUSTOMER PROFILE

Deseret Power

Location: South Jordan, Utah

Application: Grid firming

Cat® Equipment: G3520H gensets (6), 12,470V Switchgear

DESERET POWER
ELECTRIC COOPERATIVE

New flexible power plant

Deseret's generation portfolio includes a new 15 MW power plant in St. George, Utah fueled by six Cat® G3520H generator sets that run on natural gas. Commissioned in early July 2022, Solomon Station is designed to provide fast, flexible power in a volatile energy market.

According to Shane Minor, a utility and governmental sales representative with Cat dealer Wheeler Power Systems—which supplied the generator sets and assisted with design and construction—the power plant serves three primary purposes:

- When weather conditions change, wholesale power prices react due to the decrease of renewable energy sources available on the grid. "A plant like this can be brought online quickly and help mitigate those changes in market pricing," Minor says. "System operators watch the market, and they're able to bring the plant up at the appropriate times."

- The second way the plant is utilized is in a reserve or ancillary market where the plant is viewed as a virtual, non-spinning reserve. A larger, investor-owned utility can work in tandem with Deseret to dispatch the plant when they see an overarching problem developing on the grid.

- The plant can also serve as an emergency power source when transmission goes down in the St. George area. A plant like Solomon Station is designed to fire up quickly in a black-start scenario.

"The utility industry is currently undergoing a transition from traditional sources of energy," Minor says. "And distributed power generation has become very important to bridge the gap between traditional technology and the recent emergence of more renewable sources of energy."

As the demand for energy increases, Deseret realized that it had a need for additional generating capacity that could come online quickly, says Eric Olsen, the utility's chief operating officer.

"Solomon Station was built to help bridge that gap by providing a needed resource," Olsen says.

"The benefit of a plant like Solomon is to provide a quick response when more energy is needed on the grid."

Diversifying with solar

As part of a strategy to diversify its generating portfolio, Deseret Power broke ground last fall on a 15 MW solar project in Uintah County that will provide low-cost electricity to its rural cooperative customers throughout the state of Utah and the West.

"Deseret Power is a leader in affordable, reliable energy for our members," said Deseret Power CEO Dave Crabtree. "While solar energy does not provide 24/7 electricity, we were able to balance this project's output with our other energy resources to continue to provide reliable and affordable energy to our members."

The new solar project can power the equivalent of 10,000 homes when the sun is shining. This new resource will complement Deseret Power's existing supply of affordable electricity. Utah is a leader in low-cost energy, and was ranked number one among U.S. states for electric affordability, according to the annual Citizens Utility Board report.

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Virtual power plant

A virtual power plant is a collection of small-scale energy resources which, when aggregated together and coordinated with grid operations, can provide the same kind of reliability and economic value to the grid as traditional power plants. As a largely unmanned facility, Solomon Station is operated remotely from more than 400 miles away at Deseret Power's primary generating facility in Vernal, Utah.

"It's an unmanned plant; the only time we have people come in is to do inspections or periodic maintenance," Minor says. "The beauty of it is, there's a very well-designed Human Machine Interface (HMI) screen on the Cat Switchgear, which is located in a room adjacent to the generators. The graphical interface shows the layout electrically, which makes it very comfortable for the customer to interface with it.

"Solomon Station was built to help bridge that gap by providing a needed resource. The benefit of a plant like Solomon is to provide a quick response when more energy is needed on the grid."

ERIC OLSEN, COO, Deseret Power

"Everything that a plant operator can do at the plant in St. George can be done seven hours away by a remote operator who is looking at an identical screen. And that's the primary means of operating this power plant."

The need for the new plant was driven, in part, by long-term drought conditions in the West, which resulted in curtailment of hydroelectric power available from the Upper Colorado River Basin and accelerated the need for additional generation.

"Deseret needed to add a source of generation that could help fill that void," Minor said. "As we talked with them, a natural gas engine power plant was determined to be the best option, so we went to work in designing and putting together a project that made sense."

THE POWER OF ONE

Plant named after chief engineer

A 15 MW power plant in St. George, Utah was commissioned in record time based on a collaboration between Phillip Solomon, a former chief engineer with Deseret Power, and Jason Soares, a site project manager at Wheeler Power Systems. Working together, they built the plant in half the time it would normally take.

"We typically plan for 18 months to two years to complete a project of this size," said Shane Minor, a sales rep with Wheeler Power Systems. "To finish this up and have generating capacity online in nine months was a feat. Working hand-in-hand with Phil Solomon and Deseret Power, both teams worked as hard as they could to make that happen."

Tragically, Solomon died last August at age 64 from injuries sustained in a bicycling accident. The new power plant had only been in operation for a month at the time of the accident.

"It would not have been possible for the St. George power plant to be built in the timeframe it was without Phil Solomon's dedication," said Eric Olsen, chief operating officer for Deseret Power. "Phil was adventuresome and a friend to everybody. If there was somewhere to go, something to be done, Phil was there, and he made you feel like you were just as important as anybody else."

After a 30-year career working for the City of St. George, Solomon retired in 2014. But not long after, he returned to work as vice president and chief engineer at Deseret Power where he was involved in numerous power generation projects serving rural communities and power cooperatives in the area.

In honor of Solomon's many achievements, the new power plant was named Solomon Generating Station.

"Phil was an amazing person—he was just a go-getter," Minor recalls. "He applied tremendous initiative, and we shared a lot of the same interests. He enjoyed the outdoors, cycling and fly fishing. We worked together developing this plant in record time. He was just an outstanding person to work with."

From initial construction to final commissioning, Solomon Station came online in nine months, representing the fastest construction turnaround to date by Wheeler Power Systems, which has sited a growing number of distributed energy plants for utility cooperatives in Utah and elsewhere.


HMI screen on Cat® switchgear

Distributed energy solutions

As electric utilities experience the transition from traditional generation to renewable generation, Caterpillar is well positioned with distributed generation solutions that bridge the gap.

"The market is currently trending toward renewable energy, but traditional energy resources such as natural gas still provide a much-needed backstop when those renewable resources are not available," Minor says. "Caterpillar is well positioned to fill that gap with fuel sources such as natural gas, hydrogen, percentages of hydrogen that can be blended with natural gas, and also renewable biogas."

The G3520H generators run at 44 percent efficiency, meaning that if they are fueled by 100 BTUs of natural gas, 44 percent of that amount is converted to electrical power. The G3520H is designed for maximum performance on low-pressure pipeline natural gas.

"Because natural gas can be utilized at a much lower cost and is a cleaner source of fuel, it becomes an asset that's very valuable to the utility," Minor says. "We're also able to apply emissions reduction equipment that cuts engine emissions by another 93 percent as it relates to NO_X and CO_2, and a 70- to 80 percent reduction of formaldehyde."

Caterpillar fast-response natural gas generators operate similar to a traditional diesel generator where a quick response is required, whether that be in a standby capacity or in peak shaving and utility applications where they are able to start fast and load very quickly.

"In a reserve market, the fast-response natural gas engines are another great asset," Minor says. "This technology is innovative—we didn't think we would see natural gas engines respond the way diesel engines do. Over the last few years, Caterpillar has developed that technology, and we're very excited about it."

CAT® GENERATORS CAN RUN ON RENEWABLE BIOFUELS

Hydrotreated Vegetable Oil (HVO) is a simple drop-in replacement for diesel

Helps reduce lifecycle greenhouse gas (GHG) emissions (HVO and biodiesel do not significantly reduce CO_2 emissions at the tailpipe)

Similar genset performance to diesel

Scan QR code to view our new HVO animation