

POWER PROFILE

Customer: MacAllister Machinery Co.

Location:

Indianapolis, Indiana

Customer Business Issue:

Peak shaving, demonstration unit

Solution:

CG132B-12 generator set

Cat® Dealer:

MacAllister Machinery Co.

POWER NEED

In 2018, Indiana's longtime Cat® dealer, MacAllister Machinery Co., moved into a new headquarters facility on the southeast side of Indianapolis.

The new facility has 360,000 sq. ft. under roof and is situated on a 132-acre site in Indianapolis, just west of I-465 at the I-74 Southeastern Ave. exit. The design harkens back to the American Arts and Crafts style combined with elements of Mission Style from the early 20th century. The main lobby pays homage to the past with historical placards and a floor constructed of pine wood blocks based on the original Caterpillar factory floor in Peoria. Adding to the sense of history, a rustic Cat D7 Dozer circa 1957 looms just steps away from the main reception desk.

The new facility introduces a new concept at MacAllister Machinery—locating its parts, light and heavy equipment rentals, power systems, and retail operations in a 12,490 sq. ft. retail center—making it the only Cat dealer in the world with this type of setup.

Historically, power rates in Indiana have been among the cheapest in the country, which helped support a large industrial manufacturing base. However, due to changes in demands on the power generation sector, delayed construction of new transmission lines and deferred maintenance on existing lines, the state now ranks 32nd in the cost of electricity—compared to its former rank as the fifth cheapest, according to the U.S. Energy Information Administration.

“For a state like Indiana that has a lot of heavy industry, these facilities use a lot of electricity, and they’re hurting right now,” says Chris Cummings, who works in business development for advanced energy at MacAllister Power Systems. “They’re looking for ways to mitigate those higher costs that are being put on them from electric companies, which include high peak demand charges.

“Customers frequently approach us looking for an alternative to accepting continued increases in utility costs,” Cummings continues. “Our

solutions for these customers not only reduce energy and demand costs, they can also integrate a solution using waste heat to provide added savings. For companies wanting to improve their environmental footprint, this can be a cost-effective way to reduce net carbon emissions.”

SOLUTION

As part of its new headquarters, MacAllister opted to produce its own on-site power with the installation of a Cat CG132B-12 generator set fueled by natural gas that runs continuously, providing up to 600 kW of electric power and one million BTUs of thermal energy to the facility.

The heat provides supplemental space heating for the office and retail areas. Including heat recovery, MacAllister's cogeneration system operates up to 70 percent total efficiency.

The generator and CHP system is designed for maximum uptime. The system has built-in intelligence that decides when to turn on and at what level to respond to electrical and heat loads, says Cummings, who was the driving force behind the decision to install the generator.

For MacAllister Power Systems, it's a matter of educating the market and potential players in the industry that an investment such as the one powering the dealership can save them substantial money versus the traditional method of plugging in directly to their local electrical provider.

“Many times, distributed generation is seen as a non-core use of capital in a customer's business, so they're spending money on assets that generate revenue and sometimes overlooking the assets and investments that might save them money over the long-term,” Cummings says.

“The operating experience we have with our Cat natural gas unit will help us educate them that this is a good use of capital.”



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RESULTS

Beginning January 2, when the generator set first started, it ran for 2,000 hours without shutting down until it was due for scheduled preventive maintenance, Cummings said.

Savings for the cogeneration system can be up to \$120,000 per year, which is calculated by adding the anticipated electrical savings plus the fuel that would be used for heating, minus the cost of natural gas to run the generator and regular maintenance.

The payback on the Cat genset is about five to seven years depending on the direction electric rates take, Cummings says.

In addition to energy savings, the generator set serves as an on-site demonstration tool for MacAllister. The CG132B-12 is a leading-edge Caterpillar unit for the new B series, which features a more robust and advanced engine and a new Total Plant and Energy Management (TPEM) system controller. MacAllister has worked closely with the Caterpillar new product introduction teams to make this innovative new product a success.

“Installing this solution at our facility puts us ahead of the game,” Cummings says. “While our payback on the system is good, many other heavy users of power and heat would see an even better return on investment.”

MacAllister Machinery has a long history of providing the equipment that builds the infrastructure that drives Indiana’s economy.

“We’ve sold a broad range of power generation solutions, from very large factories to small craft breweries,” says company principal Chris MacAllister, who assumed the leadership role of the dealership in 1991 when he took over from his dad. “The fact that we have one on site here helps show customers how well the product works.

“We can show customers how it saves us money and could do the same thing for them,” MacAllister says. “It’s nice to practice what you preach and have an installation that customers can come and see and consider for their operation.”



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