

Best for the Long Run

Yamaha Motor Corporation Selects the Bi-Fuel Solution



Yamaha Motor Corporation is the recreational products division of Japan's Yamaha Corporation, known worldwide for excellence in product design, manufacturing, and quality. Its office and distribution center in Pleasant Prairie, WI serves the Midwest in support of Yamaha dealers who sell the company's motorcycles, all-terrain vehicles, outboard motors, watercraft and snowmobiles.

Though it is located in a relatively new industrial park and within sight of a We Energies (formerly Wisconsin Electric) generating plant, the Pleasant Prairie facility experienced intermittent electrical outages since it

opened in July of 2003. Because a power interruption brings office activity and product distribution to a standstill, Yamaha wanted to protect its business in order to keep its customers happy and its products moving.

"Disaster recovery and business continuity planning have become a priority at all our facilities," said Jim Smith, the company's information technology (IT) engineering manager. "Being a proactive company, Yamaha initiated a Business Impact Analysis of all its business processes to identify critical functions at each of our locations. It was determined that for financial, customer service, and regulatory reasons, the recovery of mission critical applications had to occur within 24 hours of a disaster. " To safeguard data processing,

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Yamaha's facilities in Cypress, CA, and Kennesaw, GA, back up each other to ensure the continuation of those operations. Both rely upon an integrated UPS and generator system to provide seamless ride-through power.

The inconvenience and expense of the outages at Pleasant Prairie prompted Yamaha management to consider a standby power solution in the fall of 2004, with the goal of having a generator in place by year's end. In consultation with The Casey

Group, specialists in implementing and integrating IT and other business solutions, it was decided to solicit bids for a backup power system. Ultimately, the success of that project led to the purchase of new systems at Cypress and Kennesaw as well.

As the bidding process unfolded, Wolter Power Systems of Brookfield, WI — a Generac Power Systems industrial dealer — got involved and delved deep to determine Yamaha's primary concerns and facility needs. "The unit needed to be large enough to provide emergency power to the entire building and not just for the IT applications," Smith said.

Wolter's sales and engineering team took a personal interest in the project and accepted the challenge of providing a variety of options for The Casey Group and Yamaha to consider. "Although other generator dealers were contacted," Smith noted, "only Wolter Power Systems devoted the time and effort to obtain the requirements, recommend the best configurations to consider, prepare a proposal and

coordinate the installation and successful implementation of the generator."

Wolter's sales engineer Pablo Serrato uncovered not only the project's technical needs, but also addressed concerns regarding the viability and reliability of standby power. In doing so, he supplied a very thorough submittal package to support his recommendations. As a knowledgeable engineer himself, Serrato was able to provide an additional level of expertise that was both reassuring and beneficial to Yamaha executives and their engineering firm.

"The Casey Group was very open to ideas and recommendations," Serrato said, "With Generac's help and its multi-faceted product line, we suggested five core solutions, outlining the distinguishing benefits of each. For projects of this nature, Generac provides plenty of alternatives. Besides single generator solutions, they offer systems that parallel and combine the output of multiple units without expensive switchgear. Four fuel options are available, including diesel, natural gas, liquid propane vapor, or



Caption

bi-fuel, which is a combination of diesel and natural gas. That product versatility gives us tremendous leeway to suggest different kinds of solutions for the client to consider.”

Cost was an important factor, Serrato noted. “Yamaha’s budget allocation was a key consideration, so we offered a variety of options within those parameters. Our primary recommendation was a single 300 kilowatt (kW) bi-fuel genset, which they ultimately selected. In addition to providing detailed site drawings, wiring diagrams, and other supporting documentation, we used images from Generac’s photo library to give Yamaha representatives a clear view of what the system would look like in their own application.”

This fully engineered approach that emphasized redundancy and flexibility was the key to Wolter’s winning the job, according to Jim Smith. “The sales effort of the dealer, the advantages of bi-fuel, and the interconnectivity of the units were the primary factors for our selection of the Generac product,” he said.

Generac’s bi-fuel generator features a diesel engine that is modified to operate on both diesel and natural gas and that costs only about 10 to 15% more than its all-diesel counterpart. It starts up on 100% diesel fuel, then introduces increasing amounts of natural gas to the combustion air stream. As that occurs, the amount of diesel fuel is proportionately reduced until reaching an optimal ratio of 10% diesel and 90% natural gas. This greatly

reduces exhaust emissions and allows the generator to operate up to eight times longer on a tank of

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diesel fuel. Extended run time was important in this application, Jim Smith said. “Given the harsh



Caption

winters in Wisconsin, the bi-fuel genset provides a dual layer of protection in the event that diesel fuel deliveries cannot be made because of the weather.”

Generac’s ability to manufacture and deliver the system promptly was an important benefit, as well. “This was a very fast track project,” Serrato said. “The process began at the end of October and the customer wanted delivery by the end of the year. We were able to meet their deadline.”

Yamaha was so pleased with their Wisconsin experience that they asked Wolter to serve as their advisor in upgrading the standby power systems at the other two facilities. In doing so, Wolter enlisted the Generac dealer network for support, involving Pro Power Solutions in Georgia and Generator Services Company in California to conduct site surveys and make recommendations regarding system sizing and location. Each dealer managed the permitting process, served as a consultant to local contractors during system installation, and handled the startup. In the end, a Modular Power System consisting of two 375 kW bi-fuel units was installed in Georgia and a single 600 kW MPS diesel genset (the first of a potential multiple-unit system) is in the process of being installed in California.

“At Kennesaw, we replaced a small unit with the Modular Power System,” Smith said. “That allowed us to install a complete disaster recovery hot site. One of the two generators

serves the hot site and the second one backs up the facility itself. Normally, the units will load balance during a power outage, but if one ever fails, the other will still provide power for the disaster recovery site as its first priority.” Ironically, not long after the generators were installed — and on a day when Smith himself happened to be visiting — the facility experienced three outages. Each time the system performed as expected.

At Yamaha’s California headquarters, a backup generator already existed to support the corporate data center, but that was all. “During outages our computer department was operational,” Smith explained, “but the rest of our corporate offices were essentially ‘dark’ and all mission criti-

cal business functions ceased. That lost productivity and California’s recent history of power interruptions was enough justification to obtain the 600-kW modular genset to provide emergency power to the entire office.”

Today, Yamaha’s three facilities operate with confidence as a result of these backup power upgrades. Every time an outage occurs, Yamaha’s investment pays new dividends as business operations continue and costly losses are avoided. “After a couple of outages, each of the systems has paid for itself,” Smith said. *e&pm*

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