

POWER PROFILE

Customer: The Mustique Company, Grenadine Islands

Location:

Mustique, St. Vincent

Customer Business Issue:

Electric power generation source needed to supply prime power to island residents and guests

Solution:

One Cat® C175-16 generator set
Four Cat 3516 generator sets
One Cat C175-20 generator set

Cat® Dealer:

RIMCO



The island of Mustique serves as a remote, luxury getaway for celebrities and royalty, who expect continuous, uninterrupted power.

POWER NEED

Providing power to a mainland community presents challenges for any company, but ensuring power to an island community takes the commitment of a strong company and the most reliable equipment available. Such is the case with the Mustique Company.

The island of Mustique is approximately 2.2 square miles (5.7 square kilometers) in size and is located 20 miles south of St. Vincent in the Grenadine Islands. A world-renowned vacation destination, its remoteness offers a backdrop of elegance, luxury and privacy. Once owned by British royalty, the island is now home to over 90 villas housing many notable celebrities and dignitaries. The homeowners, in turn, own the Mustique Company, a limited private company on a long-term lease from the St. Vincent and Grenadine government. It provides day-to-day services including utilities and power generation.

Mustique's tourism industry is the mainstay of the island's economy, and demands reliable power during its peak season from December to April, averaging 3.3 MW at any given time. The off-season averages between 1,400 eKW and 1.3 MW – a load that must be maintained for residents and businesses to survive. The clientele of the island has invested their money in the Mustique Company and, in turn, has high expectations for 24/7 power.

For over 40 years, the Mustique Company has utilized Cat generator sets to provide power services to the island. By 2007, they were interested in updating their equipment to not only meet their power requirements, but also to increase their efficiency and overall revenue. Mustique representatives contacted Barbados-based dealer RIMCO for a solution that would meet their needs.

SOLUTION

In 2007, an evaluation from RIMCO determined that a Cat C175-16 generator set would best suit the Mustique Company's power needs. Its size and design fit the existing area that was being used to house the 3516 generator sets. In addition, the C175-16 would require

less insulation and fewer accessories while providing the same power output as the older units.

Installation proved to be the biggest challenge of the project, and innovative techniques were called into play to transport the C175-16 to its new location at the Mustique Company power plant. After being shipped from St. Vincent, the equipment was delivered by tractor trailer and unloaded by crane but this is where the use of heavy equipment ended. An innovative system consisting of jacks, pipes and scaffolding was put into play, as the C175-16 was moved by hand to its final resting place at the power plant.

"Once the C175-16 reached the plant, the rest of the installation was done by hand," said Mustique Company Technical Manager Justin Providence. "Getting the C175-16 to the power station took about a week with our team working every day."

While the new generator set met the power plant size requirements, additional modifications needed to be made to the plant before its operation. The facility's louvers were expanded to accommodate the C175-16's radiator and new mufflers were installed to the exhaust system. In-house workers handled all aspects of the installation, including welding. The entire process took approximately three weeks.

The C175-16 runs continuously, providing the island with 1.3 to 2 MW of power. The island's peak power need of 3.3 MW is met with the addition of one of the 3516 generator sets. Generally, the two 3516 generator sets are used during routine maintenance, and serve as stand-by units.

RESULTS

Since its installation in November 2007, the C175-16 has run nearly 22,700 hours. When it is online and operating at a 90 percent load, the generator set is meeting oil pressure and bearing temperature expectation.

"The C175-16 is extremely efficient in terms of fuel, and all technical parameters are acceptable," Providence said. "Overall, we

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are very pleased with its performance. It has replaced the 3516 generator sets well, and is helping us generate revenue.”

As the population of Mustique continues to grow, so too does its need for more power. Recently, a C175-20 was installed to provide greater power for the island’s inhabitants. The C175-20 provides even more power than the C175-16, as well as improved fuel efficiency. According to Providence, the C175-20 is powering the island independently and reliably.

The Mustique Company received initial training from Caterpillar, and continues to interact with RIMCO representatives on a case-by-case basis. Scheduled maintenance and repairs are performed by employees of the company. “Based on the private nature of our business,

we prefer to be as independent as possible,” commented Providence. “RIMCO is there for us when we need them but, because we are a remote location, we prefer to be able to perform service ourselves, and as quickly as possible.”

As the C175-20 continues to provide prime power to the island of Mustique, Providence plans to interact with other companies using similar equipment.

“We look forward to sharing our experiences and collecting more information from other places that are using the C175. It will help us all get the most out of our power generation projects,” he concluded.

For more information, please visit cat.com/powergeneration



For more than 40 years, the Mustique Company has relied on Cat® generator sets to provide reliable power services to the island.