POWER PROFILE

Global Relay

Global Relay is the only cloud-based archiving company in the world to own and operate its own data center.

POWER NEED

Global Relay is the leading provider of cloud-based message archiving, supervision, and eDiscovery solutions for the global financial services industry. Global Relay Archive securely captures and preserves email, instant messaging, mobile messaging, Bloomberg, Thomson Reuters, Twitter, LinkedIn, Facebook and more with access through BlackBerry, iPhone, iPad, Android, Outlook and the web. Global Relay's 18,000 customers in 90 countries include broker-dealers, hedge funds, investment advisors and public companies, as well as 22 of the top 25 global banks.

The company has experienced rapid growth in the past few years, necessitating the need to build its own state-of-the art data center, making Global Relay the only cloud-based archiving company in the world to own and operate its own data center. The 24,000 square-foot facility was built in North Vancouver, British Columbia, Canada at a cost of US $24 million. A second mirrored data center is planned.

In designing its data center, the company sought to create an environmentally friendly facility with a low- to zero-carbon footprint supported by cutting-edge green technologies. For example, instead of cooling the data center with traditional, energy-intensive air conditioning systems, the facility is cooled using evaporative cooling technology. This step alone results in a 50 percent electricity savings when compared to traditional data centers.

As with any data center, Global Relay also needed a robust, reliable backup power system, but one that was as ecologically friendly as possible.

SOLUTION

Working with the experts from Finning Power Systems, the company selected two 60-Hz Cat® C32 diesel generator sets generating 1 MW of power each, as well as a Cat flywheel UPS 1000Z system for the first phase of construction. This phase includes the data center building and the infrastructure to support 50 high-density server racks that store petabytes of data.

Even though the facility is located in Canada, it is engineered to operate on the mixed 230 V / 400 V three-phase standard common in northern and central Europe. Incoming utility transformers directly step the voltage down to 230 V / 400 V, and the generator sets, UPS, and power distribution operate at 400 V all the way to the server rack. This system design is estimated to reduce operating costs by about 15 percent over a traditional North American power configuration.
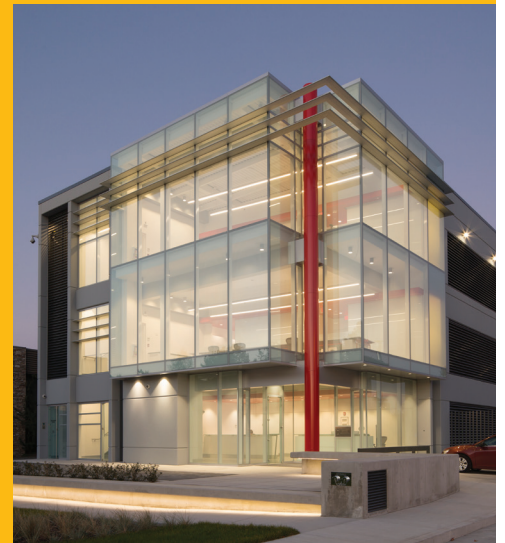
CUSTOMER
Global Relay

LOCATION
North Vancouver, British Columbia, Canada

CUSTOMER BUSINESS ISSUE
Backup power for mission-critical data center

SOLUTION
• Two Cat® C32 diesel generator sets
• One Cat® flywheel UPS 1000Z system
• System design, installation, maintenance
• Equipment financing from Cat Financial

CAT DEALER
Finning Power Systems

The backup power system features an N+1 generator set configuration, with one generator assigned to pick up the load if any of the primary generators fail. This configuration supplies the additional redundancy needed to ensure the data center is operational at all times.

The data center also uses a custom-built automated generator switchboard in place of a parallel generator set configuration. This arrangement supports four independent phases with a common redundant generator set, allowing Global Relay to shift the load between generator sets in the event of a failure. For additional redundancy, the facility features two active electrical paths to the IT load, as well as a standby wrap-around path direct from the generators.

As part of the company's commitment to environmentally friendly business practices, Global Relay selected flywheel UPS systems as an alternative to traditional lead-based battery UPS systems that must be continually maintained and replaced every three years.

"In addition to supplying the capabilities we need, the UPS systems have the added benefit of coming from the same supplier as our generator sets, so we can work with a single source for sourcing, financing, warranty, and ongoing maintenance," said Duff Reid, chief operating officer for Global Relay.

The power solution from Caterpillar is supported by a 10-year warranty and an extended maintenance contract. "We are committed to being a long-term provider of archiving solutions to our customers, so it's important that we work with a supplier that has high-quality products, a respected reputation, and the longevity to support our backup power solutions far beyond the initial purchase and installation," Reid said.

RESULTS

Global Relay's North Vancouver data center went live in September 2013. The facility has supplied service to Global Relay's customers ever since, and interruptions in the power supply from the grid have been handled seamlessly by the backup power system.

"Redundancy and fault tolerance are critical in supporting our operations, and the power solution from Caterpillar has worked flawlessly," said Reid.

To address the ongoing expansion of the company's services, executives at Global Relay plan to purchase three additional diesel generator sets and another three 1000 kVA UPS systems to support subsequent phases of the facility build-out in Vancouver.

"Service has been top-notch, and Finning Power Systems has worked quickly to address everything from maintenance requirements, warranty needs, and billing," Reid said. "Every member of the team has taken the time and effort to understand our current requirements and help us anticipate future needs."

For more information, please visit www.catelectricpowerinfo.com/pp.

Two Cat C32 diesel generator sets provide backup power for the data center building and the infrastructure to support 50 high-density server racks.

CAT®