

# POWER PROFILE

Customer: OSF St. Francis Medical Center

## Location:

Peoria, Illinois

## Customer Business Issue:

Standby power

## Solution:

Cat® C32 generator sets (7)

## Cat® Dealer:

Altorfer Power Systems



*The OSF St. Francis Medical Center, the fourth largest medical center in Illinois, depends on Cat® C32 generators to provide emergency standby power to 10 buildings on a 40-acre campus.*

## POWER NEED

As the fourth largest medical center in Illinois, with 5,800-plus employees and 649 beds, OSF St. Francis Medical Center in Peoria serves all types of patient care needs—from acute pediatrics and kidney transplants to advanced heart surgery—24 hours a day, seven days a week.

With 10 large buildings situated across more than 40 acres, the campus is like a city unto itself.

Most buildings experience power interruptions that are caused by utility outages and equipment failures. In many cases, these power outages are easily handled.

However, power outages caused by natural disasters and unexpected events can be much more difficult to handle. In some cases, an entire facility has to rely solely on the emergency standby power system to continue operating for several hours, or even days or more.

Unlike most standard commercial buildings, delivering emergency and standby power to healthcare facilities is a major undertaking due to their complexity, size and critical care needs that demand 24/7 uptime. It involves many systems consisting of alternate power sources, switching equipment, controls, and distribution equipment.

While power outages are a rare occurrence in Peoria, sometimes forces beyond human control can cause the loss of power. Until this year, Chris Greenway, the facilities supervisor for OSF St. Francis, can only recall one instance where power was lost when an animal got into a manhole and caused a transformer to fail.

“There are multiple ways to lose your utility feed,” Greenway says. “Actually, I’ve seen more outages on sunny days than I have on stormy days.”

## SOLUTION

To keep the power on at all times, two mission critical power plants are located on the north and south sides of Glen Oak Avenue. Six Cat® C32 generator sets that produce 1 MW of power each are housed within the standby power buildings, while a seventh is located in a separate enclosure.

Altogether, the generators can provide 7,000 kW of power, which is more than enough to handle the hospital’s entire load. The generators are set up on an N+1 configuration, which is a form of redundancy. If one of the generators fails, another idle genset starts and picks up the load.

Energy Center 1 serves the older part of the campus, while Energy Center 2, with four gensets, provides power to the rest of the campus. An eighth Cat C32 generator set will be added this year to supply additional backup power to the newly built OSF St. Francis Cancer Institute.

In the event of a power outage, the Cat generators start up within 10 seconds to provide ongoing, campus-wide power for critical patient care needs. Emergency power supports lighting, operating rooms and patient rooms. Behind the scenes, power is required for critical things like the fire alarm system, elevators and HVAC system.

Additionally, standby power is required for the two pharmacies and a laboratory, which require a climate-controlled environment to preserve life-saving drugs and a blood supply.

## RESULTS

In mid-February 2022, another blown transformer caused a temporary loss of power to the older part of the campus. Initially, temporary generators were brought in to supply power until St. Francis facilities staff found a way to circumvent the transformer, enabling the Cat gensets in Energy Center 1 to supply power until another transformer could be brought in.

“Knowing that we had a lot of power available that we weren’t using, our electrical department quickly developed a solution to carry the whole hospital using emergency power,” Greenway said.

It took a little over a month to replace the blown transformer with a remanufactured one. During that time, three Cat C32s at Energy Center 1 ran continuously at half load until the utility feed was restored.

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“That just shows the trust we have in our Cat generators,” Greenway said. “During this stretch, we ran the whole hospital on emergency power, and they worked great. Plus, it meant we didn’t have to dedicate the manpower required to keep refueling the seven temporary generators we used initially.”

Cat dealer Altorfer Power Systems supplied the generators to OSF St. Francis for both power plants, and handles preventive maintenance and any necessary repairs.

“We had Altorfer here off and on after the whole sequence of events started with the transformer failure,” Greenway said. “They changed our fuel filters when we started seeing a drop in fuel pressure, and they also changed the oil every 250 hours to ensure the preventive maintenance was performed to the highest standards.

“As for the performance of the generators, they’ve done everything we’ve asked of them and more.”

The relationship between Altorfer and St. Francis goes back a long way, well before Greenway started working for the medical center 10 years ago.

“One of the Altorfer service techs will typically call me before the service is due; he’s very engaged in the process,” Greenway says. “We have each other’s personal phone numbers. He’s well aware of the maintenance schedule for the generators, and he’s typically calling me before I know what’s coming up.

“Based on our recent use of the generators at Energy Center 1, we had to call them in the middle of the night when we noticed our fuel pressure problems, and they arrived shortly thereafter with a couple of technicians. So, we never missed a beat.”

All preventive maintenance on the generators is performed by Altorfer technicians as part of a Cat Customer Value Agreement. For added protection, the medical center has an Extended Service Coverage (ESC) Gold package.

ESC offers protection against unexpected repair bills, as well as rising parts and labor costs. It covers 100 percent of the cost of parts and labor on not just any covered parts that fail, but also any resultant damage to other Cat parts. And because all ESC options are 100 percent transferable at no additional cost, it may increase the resale value of the equipment.

To keep the gensets in run-ready condition, OSF St. Francis’ facilities staff performs weekly inspections on the generators and runs the generators once a month for an hour. To ensure the system works as intended in the event of an outage, facilities staff also conducts an annual load bank test and operates the entire medical center on emergency power for several hours.

In addition to the prompt response he receives from his Cat dealer, Greenway appreciates the consultative relationship.

“I’ve never been turned away on a phone call with a question,” he says. “Altorfer helps educate us if we have questions. I can call them and pick their brains, or have them come out here if necessary. I’ve never had an instance where I’ve called and they’re not here within the hour.

“They’re kind of like having an extra guy in my opinion,” Greenway adds. “They understand the importance of a medical center having emergency power at the ready, and they take really good care of us. I treat them like they’re one of our mission partners because they’re so reliable and ‘Johnny on the spot.’”



*Three Cat C32 generator sets helped OSF St. Francis Medical Center in Peoria maintain power during an emergency outage in February 2022.*