Market Segment: Entertainment

POWER PROFILE

Customer: Caesars Superdome

Location:
New Orleans, Louisiana

Customer Business Issue:
Reliable standby power

Solution:
Cat® C18 diesel generator sets (4), Cat Switchgear

Cat® Dealer:
Louisiana Cat

Caesar's Superdome in New Orleans is one of the most iconic economic sports venues in the U.S., hosting seven Super Bowls, plus Super Bowl LIX in February 2025.

POWER NEED

Located in the central business district of New Orleans, Caesars Superdome is perhaps the most recognizable sports venue in the United States.

Its steel frame covers a 13-acre expanse that was built on a former cemetery in the early 1970s. The 273-foot dome is made of a lamellar, multi-ringed frame and has a diameter of 680 feet, making it the largest fixed dome structure in the world.

After many delays and four years required to build the facility, the Louisiana Superdome opened in 1975. As home to the New Orleans Saints, the Superdome has hosted seven Super Bowls and six Final Four tournaments – and will host Super Bowl LIX in February 2025.

The Superdome was used as a "shelter of last resort" for those unable to evacuate from Hurricane Katrina when it struck New Orleans on August 29, 2005. During the storm, a large section of the outer covering was peeled off by high winds. The photos of the damage, in which the concrete underneath was exposed, quickly became an iconic image of Hurricane Katrina.

The facility is owned by taxpayers and overseen by a state agency, the Louisiana Stadium and Exposition District. Day-to-day operations of the facility are handled by ASM Global, a worldwide leader in public facility management.

SOLUTION

As part of an extensive $535 million, five-year renovation of the Superdome, All Star Electric of Metairie, Louisiana, was tasked with upgrading the electric system. The upgrade includes four Cat® C18 standby diesel generator sets, which provide backup power for the building's essential life safety equipment, including lighting, HVAC systems and fire alarms.

"The standby system is mainly for emergency egress, to evacuate patrons who are here to see a Saints game, a concert or an event," said Todd Desselles, vice president of operations for All Star Electric. "If there's a loss of power, the standby generators are activated in order to help people safely exit the building."

The Superdome has a dedicated electrical feed from its utility provider. While the utility power is very reliable, there have been instances where the power fails.

"You have to have these systems in place in case that reliable power does happen to fail," Desselles said. "And things do fail, as we've seen in the past."

During phase one in 2020, All Star ordered two Cat generator sets that were installed in separate locations on the perimeter of the dome at the north and south ends. As the renovation progressed, two more generators were added at each location. During the second phase, switchgear was placed at each site so the generators could run in parallel.

All Star worked with Cat dealer Louisiana Cat to arrive at the right design for the system. After careful consideration, it was determined that positioning the generators outside rather than inside the dome was the right choice, according to Matt Dufrene, a sales and service rep for Louisiana Cat Electric Power.

"On this particular project, we had a lot of up-front design work," Dufrene said. "The timelines were so tight that we had to make sure we had everything we needed out here," Dufrene said. "We mobilized multiple large load banks and probably had double the guys out here that we normally would.

"It seemed like we were always up against it because the Saints were playing that weekend and we had to get something done right then and there. It was a very challenging project. But we had a lot of fun doing it, and it's a really good system that they have in place now."

RESULTS

While the Cat gensets have not been called to run during an emergency, they performed flawlessly for 12 hours during a planned utility maintenance outage, Desselles said.

"Caterpillar offers a superior product; their generator sets are some of the most reliable engines out there," Desselles said. "We felt that they had the best product and lead time for this installation."

Field-proven in thousands of applications worldwide, Cat C18 diesel generator sets are developed for mission critical, standby and prime power. A four-stroke-cycle diesel engine combines consistent performance and excellent fuel economy with minimum weight. They are built to accept 100% rated load in one step.

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The gensets at the Superdome are housed in sound attenuated enclosures and are equipped with an integrated Cat Product Link™ control system, which enables Louisiana Cat to remotely monitor:

- Genset utilization and performance
- Genset health and operation parameters

Maintenance and monitoring of the standby power system at the Superdome is handled by Louisiana Cat as part of a Customer Value Agreement (CVA) with the facility operator, ASM Global. It's essentially a turnkey system that requires minimal intervention by the end user, Dufrene said.

We monitor the gensets," Dufrene said. "We have our own product support center, where we have technical communicators who sit behind screens all day long and watch assets for alarms or shutdowns. And they'll call and ask the customer if they need one of our technicians to come out there. In many instances, we'll know something needs to be addressed before they do."

Based on previous projects, which now includes the Superdome, All Star Electric knows it can call on Louisiana Cat to help achieve successful outcomes.

"Their team is very responsive," Desselles said. "If we have any issues or problems, they're on site within a few hours. Their performance really speaks for itself, and we've had great success with them on our team."

The four Cat® C18 units installed at Caesar's Superdome are equipped with a Product Link™ control system. This allows Louisiana Cat to remotely monitor utilization, performance, health, and operation parameters, and detect issues that need to be addressed.

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