GENERAC®
INDUSTRIAL POWER

COUNTY JAIL
California

CASE STUDY

CHALLENGE:
Replace a generator system at a critical facility that offers extra redundancy while confined to limited space.

SOLUTION:
Generac 2500 kW MPS diesel generator system.

RESULT:
A MPS that provides the redundancy other systems can't provide while reducing the number of generators running when the load is low.

"Due to the critical nature of this facility, there can be no loss of power, so extra redundancy was required to guarantee steady power in a utility outage."

A Redundant, Scalable Solution Guaranteeing Backup Power to a Jail

Generators are used in a wide array of applications; however, correctional facilities and prisons can be overlooked. Power outages at these facilities can lead to potentially hazardous situations for both inmates and law enforcement. With no power, electronic monitoring devices, security systems and surveillance systems stop working, which could lead to potential escape or hiding situations. Some facilities have also upgraded to electronic systems that control and operate doors remotely. During a power outage, inmates could be locked in the cell until power is restored or the cells could unlock and allow inmates out.

Security isn't the only concern for the building. Heating, cooling, ventilation and the well-being of inmates are also important. If there are inmates, who are receiving regular medical care at a prison or correctional facility, vital lifesaving equipment and systems like defibrillators and oxygen systems can cease to operate, endangering their lives. Emergency power systems are vitally important to the health and safety of inmates and workers.

A county jail in California, can house hundreds of inmates. The facility already had a 2500 kW generator onsite, but they were in need of a new solution.

"The original backup generators for the jail were being demolished, so new exterior grade generators were required," said Jerry Jones, Layton Construction Company. "For a facility of this type, there is no margin of time allowable for zero power."

Jones said the main considerations while specifying the new generator system were redundancy and scalability. "The jail wanted the possibility of utilizing our new generators for a future expansion as well as the existing building," he said. "Due to the critical nature of this facility, there can be no loss of power, so extra redundancy was required to guarantee steady power in a utility outage."

That is when Energy Systems stepped in. "I presented the idea of using a Generac Modular Power System (MPS) for the facility," said Rocky Bear, sales representative, Energy Systems. "A MPS provides the redundancy other systems can't provide while reducing the number of generators running when load is low." Bear said there are numerous benefits to a Generac MPS for the jail. One of the main advantages for the facility would be the ability to eliminate the single point of failure that one 2500 kW unit presents. Instead of relying on a single generator during power emergencies, more engineers are recognizing the benefit of

APPLICATION:
Municipal

SYSTEM CONFIGURATION:
2500 kW MPS

MODELS:
2 x MD1000 kW Gemini
1 x MD500 kW

paralleled generators. “Paralleled generators can provide the same amount of power as a larger genset, while adding redundancy, flexibility, expandability and reliability,” said Bear. In the end, Bear specified a 2500 kW MPS system consisting of two MD1000 kW Generac Gemini units and a MD500 kW diesel generator. “This solution gave them several flexible options including the N+1 protection,” he said. “A generator system with 1500 kW is all they needed right now, but they wanted the 2500 kW backup for future growth. This also gave them the option to repair and maintain the engine and still have onsite power without a portable rental.”

Bear said a unique part of the project was arranging the equipment so it would fit in the limited space designated. “The two Geminis were each fitted with 10,000 gallon UL2085 tanks, as well as a 350 gallon UL142 tank for the 500 kW unit and a freestanding 750 kW load bank to exercise each generator,” he said. “We had very limited space and we could not give up any parking space for these generators. We designed six different layout options for the customer to pick between to give them the proper amount of clearance needed.” For this application, as space was at a premium, using Generac’s Gemini units was optimal as the units take up 20% less space when compared to a single larger genset.

Bear was also able to support the customer with obtaining items needed for air board applications, fire department special requirements and measures to meet National Electrical Code (NEC) requirements. For instance, load bank testing is needed for the facility to be NEC compliant. A load bank test ensures that your generator will run at proper rating so the end user can have peace of mind when power goes out. If not completed, the generator may not function properly when needed during the next power outage. Instead of renting a load bank, cables and paying the labor, Bear was also able to assist the customer and order a 750 kW standalone load bank to test the generators.

Jones said he was happy with the installation process and would recommend Generac products to other facilities. “The customer service was overall good,” he said. “The equipment was fabricated in the time we were told at the beginning of the project with no delays. The overall quality of the product we received was of good workmanship and accurate of the design we were provided.”

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