

CASE STUDY

Bay Area College San Francisco, California

Highlights

- Private College
- Moraga, CA
- 2500 kW Caterpillar
- Genset Sound Attenuated Enclosure
- UL-142 Subbase Fuel Tank
- Selective Catalytic Reduction
- Diesel Particulate Filter
- California Emissions Tier 4
- Transformer
- High V. Paralleling Switchgear

A college campus that has been a San Francisco area institution for over 150 years, was in need of emergency backup power. Aside from the educational facilities on campus, it also offers housing for all incoming students to live for the duration their freshmen year. A campus of this size is an energy intensive one, and in the past this college has suffered from power reliability issues and outages by their energy provider, PG&E. To make matters worse, in an effort cut down on potential wildfires in the Northern California area, PG&E planned additional power shutoffs during high wind events throughout the year.

This college only had backup power for a portion of their campus, an ongoing problem that would only be made worse by additional shutoffs from their utility power provider. In February of 2020, a person from the university, looking to get ahead of this issue began searching online for a generator that would not only be able to supply the sufficient amount of backup power for the entire facility, but one that would also be compliant with California's stringent EPA requirements.

Used CAT Generator for Bay Area College, CA 2500 kW Standby with SCR, DPF, Transformer and High Voltage Paralleling Switchgear

This search brought them to GPS's website specifically for a 2.5 megawatt Caterpillar diesel standby generator. They contacted GPS via telephone and conversations began with GPS's account manager, Jeme Turcios and president, Ron Zamir.

Initial discussions were followed with a site visit from Ron Zamir in early March. The visit established the priorities for this college and defined what logistical challenges lay ahead. Some issues identified were the amount of available space and where a generator of this size might be able to fit. There was also the matter of proximity, as the further the generator would be placed from the main power building the more costs there would be for connections, feeders, and trenching.

After several discussions and additional site visits with the project manager and site engineers, the college decided to move forward with GPS on a full turnkey installation of a 2.5 megawatt Caterpillar diesel generator, along with a transformer and high-voltage paralleling switchgear. The decided-on location was adjacent to the main power building, which required GPS to make some modifications, including trenching and fixing the slope to prepare for proper installation.

For the College, overall costs for the project were an important

concern. California's EPA emissions requirements for diesel generators can mean that even newer backup power equipment may require expensive modifications in order to be permitted. GPS worked directly with the college to

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Ron Zamir
President, GPS



Delivery of Caterpillar 2.5 MW Generator





find creative ways to save costs on the project, while meeting all requirements. GPS helped in several ways: To begin, the Caterpillar 2.5 megawatt diesel generator was pre-owned, but in excellent condition and allowed for very significant savings as compared to new equipment. Also, GPS's project management team worked hard to find paralleling switchgear at the most competitive price available. And finally, GPS was able to use its own pre-qualified contractors for the full scope of the project including construction, trenching and installation.

The rigorous permitting process began in June of 2020. GPS worked closely with the project manager through every step of the way, making the necessary adjustments to the design to meet the requirements of the city and state.

One of the more significant adjustments that had to be made in order to obtain permitting was the mandatory addition of a Diesel Particulate Filter (DPF), which removes diesel particulate matter from the exhaust and reduces emissions. During the project, there was also a retroactive ruling by the City of San Francisco that would require this generator to also have a Selective Catalytic Reduction (SCR), which further helps reduce emissions on diesel engines. These were costly additions that added another level of complexity to the overall scope of the project. And because

the DPF and SCR are heavy pieces of equipment and sit on top of the generator enclosure, modifications to the enclosure were needed in order to support the weight of these items. GPS worked closely with the the college's project manager to explain these required modifications, "maintaining a spirit of cooperation, collaboration, coordination and openness throughout the process, we were able to earn the trust of the college and continue forward on this project successfully"

Ron Zamir said in regards to this process. In December of 2020, permits were attained and the project moved forward. In January of 2021, construction began with excavation, trenching and site prep. Continuing into February began the installation of underground conduit and laying of concrete pads for the generator to sit. Followed by the generator, transformer, and switchgear delivery and installation in early March. With all additional parts added and inspections completed, startup was accomplished in early September of 2021.

