CASE STUDY

Temporary Construction Power Microgrid

MIDWEST

CHALLENGE:
Provide reliable, temporary power for remote construction job trailers.

SOLUTION:
One Xcape system was installed as a standalone microgrid, which is supported by a Generac 35 kW propane-fueled generator and battery storage stystem.

RESULT:
A flexible, resilient solution that ensures power is available on the remote jobsite for job trailers and construction tools.

"The generators are used to charge the batteries on days when the sun is not shining, and the batteries have been depleted. This adds a level of resiliency to the system and guarantees it will always be operational."

Temporary Microgrid Supplies Necessary Power for Construction Job Trailers

OPPORTUNITY

An Xcape microgrid solution was installed for a client in Wisconsin to utilize clean energy in the support of temporary power for construction job trailers. Due to the remote nature of the project and the time of year, it was easier to install a temporary microgrid than it was to install temporary power from the grid.

"This project was an off-grid development and is the first in the Midwest," said Steve Nieland, vice president of energy systems engineering, EnTech Solutions. "We wanted to start the project using temporary power that would align with that goal. If our microgrid was not correctly operating, the jobsite could risk being shut down. With a tight timeframe, it was important that we not lose any days due to power outages."

SOLUTION

The Xcape microgrid solution is powered by ground mount solar and a propane-fueled generator. The batteries improve the efficiency by storing extra solar energy, but for extra resiliency, Generac supplied a small, compact 35 kW propane generator that helped make the application successful.

"The main power source for the Xcape unit is the ground mount solar; however, Wisconsin winters can see reduced solar production which leads to an energy deficit," said Nieland. "The generators are used to charge the batteries on days when the sun is not shining, and the batteries have been depleted. This adds a level of resiliency to the system and guarantees it will always be operational." The energy generated and stored in the system will be used to operate job trailers and some construction tools.

The microgrid control, balancing direct power of the load and battery charging, is based upon a Schneider Electric Automation Server and Schneider Electric Conext intelligent inverters. The automation server utilizes EnTech Solutions' developed software to make decisions and manage data flow into and out of the system. The goal was to use a standard manufactured product and platform. The Xcape unit utilizing Schneider's technology platform and EnTech's cloud-based operations platform for remote monitoring are standard products that fit this application perfectly.

OUTCOME

For this project, it was important to EnTech Solutions, and the end user, to use the latest in energy technology.

Propane is a readily available resource and is easily transported and is one of the best low carbon fuel choices when compared to diesel.

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