Marine Corps Air Station Miramar – San Diego, CA

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Marine Corps Air Station (MCAS) Miramar builds an energy security microgrid to power mission-critical facilities in the event of an outage.

The microgrid will add energy redundancy and renewable energy diversity allowing operations to continue if the utility power grid is compromised or damaged.

The Story

More than 15,000 marines, sailors and their families live at the MCAS Miramar—one of the few military bases located within a large city. After being impacted by the largest power outage in California's history on September 8th, 2011, MCAS Miramar installation leaders experienced the fragility of their power system and immediately began exploring options for adding an onsite, large-scale renewable energy system to the air station.

MCAS Miramar chose to create an innovative system that combines large amounts of methane gas from a local landfill and their on-site solar with a central, conventional power plant to provide backup power to the installation.

Partners Schneider Electric and Black & Veatch were selected to design and build the microgrid which will be scalable to potentially power the entire installation and will manage electricity during peak usage. The microgrid will incorporate renewable resources and advanced smart grid control systems.

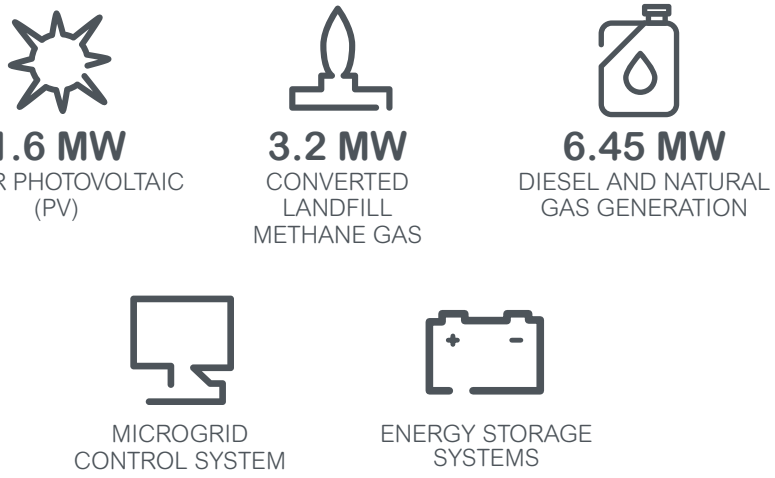
MCAS Miramar Microgrid to:

- Incorporate diverse energy sources
- Manage overall energy load
- Enhance renewable energy deployment
- Bolster cybersecurity practices base-wide
- Provide support services to the central grid
- Help the installation reduce its utility demand charges
- Offer significant energy cost-savings for both the base and local utilities
- Facilitate demand response programs

About the Microgrid

The microgrid will power several facilities at the 12 kilovolt level during a utility grid outage and will utilize existing energy resources such as landfill gas, solar photovoltaic and energy storage systems for standard operations. Schneider Electric and Black & Veatch will provide a fully permitted 7 megawatt diesel and natural gas power plant, updates to the energy control systems and integrated microgrid controls. All elements will be designed and built in compliance with Department of Defense (DoD) security infrastructure and risk management requirements. The new microgrid will integrate with the utility control system at Naval Base San Diego which will have redundant controls for additional energy security. The project is scheduled to be completed in 2019 and directly supports a DoD initiative to deploy 3 gigawatts of renewable energy throughout military installments by 2025.

Microgrid at a Glance



Redundant sources of power will provide 100% capability in over a 100 mission critical buildings on the base — including the entire flight line.

Goal

Increase energy security through use of a sophisticated microgrid that leverage renewable and onsite power

Solution

Microgrid incorporating renewable resources and advanced smart grid control system capabilities

Story

Schneider Electric partnered with MCAS Miramar to design and build a 7 megawatt power plant, updates to the energy control systems and integrated microgrid controls to provide energy security the air station needs to provide 100% capability to over a 100 mission critical buildings on the base including the entire flight line.

Results

Resilient electrical power, over 75% renewable energy, support services to the central grid, reduction of utility demand charges, and significant cost-savings for both the base and local utilities Provide support services to the central grid.

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