

SMART GRID SYSTEM AT SANTA RITA JAIL
Project # CPP09E901800000
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PROJECT OVERVIEW:

- Smart Grid Definition
 - A Smart Grid is a localized electrical grid which is powered by a cluster of on-site generators, including solar photovoltaic panels, fuel cell cogeneration plants, wind turbines, emergency generators, and advanced energy storage battery systems). A Smart Grid will allow Santa Rita Jail to operate in parallel with PG&E's power distribution grid or independent of it. It will entail advanced electrical metering and switching technology, and utilize two way communications between PG&E and SRJ.

- Smart Grid Project Goals at Santa Rita Jail
 - Demonstrate the commercial implementation of a Smart Grid
 - Reduce peak electrical load and monthly demand charges and respond to real-time pricing information.
 - Shift electrical loads to off-peak electrical hours
 - Store Renewable and Fuel Cell energy overproduction
 - Improve grid reliability and reduce electrical voltage sags and spikes
 - Meet the jail's critical electrical reliability requirements to enable seamless islanding and reconnection during power outages
 - Allow exporting of power during peak time periods.
 - Stabilize the utilities electric feeder to the neighboring community

- Construct a Smart Grid System at the Jail.
 - Integrate the existing Solar Power System and Fuel Cell Cogeneration Plant into the Smart Grid environment
 - Upgrade the jail's existing emergency generator's control system.
 - Install five small wind turbines.
 - Install an Advanced Battery Energy Storage System to be used to discharge energy during peak electrical hours.
 - Install Static Disconnect Switch to be used to instantaneously island from PG&E's Electrical Distribution Grid
 - Install an advanced CERTS Smart Grid Control
 - Remove Reverse Power Relay to allow exporting
 - Install solar hot water system. Location: On Service Building Roof.