



Chevron Energy Solutions L.P. CERTS: Microgrid Demonstration with Large-Scale Energy Storage and Renewables at Santa Rita Jail

Project Description

The overarching objectives of the proposed demonstration are to significantly reduce peak load and measurably improve power reliability at Santa Rita Jail. This will be accomplished by implementing a CERTS (Consortium for Electric Reliability Technology Solutions) microgrid that incorporates one of the nation's largest customer-sited NaS energy storage systems with multiple distributed energy resources. By effectively reducing peak load, the project will improve grid reliability, increase grid efficiency and security. By providing islanding capability, the project will meet critical customer reliability requirements.

Goals/Objectives

- Reduce peak load of utility distribution feeder by 15% via utilization of distributed energy resources (DER)
- Demonstrate the commercial implementation of CERTS self-healing, DOE-developed microgrid combined with large-scale (12 MWh) distributed energy storage
- Improve power reliability by providing dispatchable renewable energy
- Increase grid efficiency and security through the development of monitoring, diagnostic, and automation capabilities
- Providing uninterrupted power to the entire facility

Key Milestones

- Diesel Control System in service (November 2010)
- Battery in service (February 2011)
- Static Disconnect Switch in service (February 2011)
- Evaluation and reporting complete (November 2012)

Benefits

- Improve grid reliability
- Increase grid efficiency and security
- Meet critical customer reliability requirements
- Increase future commercial applications of CERTS microgrid technology with large-scale energy storage
- Demonstrate DER "plug and play" capability
- Reduce diesel consumption by 90%

CONTACTS

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PARTNERS

California Energy Commission
California Public Utilities Commission
Alameda County General Services
Agency
PG&E
California ISO
LBNL
NREL
University of Wisconsin

PROJECT DURATION

9/30/2008–10/31/2013

BUDGET

Total Project Value
\$12,285,457
DOE/Non-DOE Share
\$6,418,708/\$5,866,749

EQUIPMENT

1.2 MW photovoltaic system
1 MW molten carbonate CHP fuel cell
2 MW advanced energy storage system
12 kV sub-cycle static disconnect switch
Two 1.2 MW backup diesel generators

DEMONSTRATION STATES

California

CID: NT02872

*Managed by the National Energy Technology
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