Cleco Power LLC

Advanced Metering Infrastructure Project

Scope of Work

Cleco Power's (Cleco's) advanced metering infrastructure (AMI) project involved the deployment of nearly 285,000 new meters, covering all of Cleco's residential, commercial, and small industrial customers. Meter communications are supported through a secure, scalable radio frequency network infrastructure including 75 collectors and 3,134 routers. A newly deployed meter data management system (MDMS) collects and processes meter data.

Objectives

Cleco implemented an AMI system to enable remote meter reading and maintenance activities, identify and respond to customer outages more efficiently, increase system reliability using better power quality information, and lay the foundation for possible future deployment of advanced customer service offerings and time-based rate programs.

At-A-Glance

Recipient: Cleco Power LLC

State: Louisiana

NERC Region: Southwest Power Pool

Total Project Cost: $61,786,724

Total Federal Share: $20,000,000

Project Type: Advanced Metering Infrastructure

Equipment

- **284,797 Meters**
- **AMI Communications System**
  - **Secure Wireless Radio Frequency System**
  - **75 Collectors and 3,134 Routers**
- **Meter Data Management System**

Key Benefits

- **Reduced Meter Reading Costs**
- **Reduced Truck Fleet Fuel Usage**
- **Reduced Costs from Theft**
- **Reduced Greenhouse Gas Emissions**

Deployed Smart Grid Technologies

- **Advanced metering infrastructure:** The project installed AMI meters for all residential, commercial, and industrial customers. These meters digitally record electricity consumption for precise time intervals. The interval data are analyzed to improve load forecasting and generation capacity planning and to support future needs for demand response programs. Remote service connect/disconnect switches in the meters allow Cleco to respond to customer requests more efficiently and reduce the need to dispatch field crews to start or stop service.
- **Communications infrastructure:** A secure wireless radio frequency network automatically transmits customer meter reads and events to Cleco's back office systems for analysis and billing and allows the utility to remotely push firmware updates and new programs to the meters. This scalable infrastructure provides opportunities to add future service offerings and further optimize electricity delivery, system reliability, and customer participation.
- **Meter data management system:** The AMI system is integrated with an MDMS that validates the meter data and then packages them appropriately for use by the billing, forecasting, customer service, and outage management departments.

Benefits Realized

- **Reduced operating, maintenance, and theft-related costs:** Cleco saved $5.1 million in meter reading costs (labor and equipment) from October 1, 2012, through September 30, 2013. Furthermore, the utility can now remotely detect theft-of-energy situations and, for the same twelve-month period, was able to confirm and respond to 308 cases of meter tampering.

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- **Reduced truck fleet fuel usage and greenhouse gas emissions:** As a result of remote connect/disconnect operations and improved outage management, Cleco has avoided 141,238 truck rolls since the AMI system was installed.

Lessons Learned

Through the AMI project, Cleco realized that AMI implementation is a total system upgrade—not just a meter upgrade. From planning and testing to installation and business process redesign, Cleco involved all areas of its organization to ensure project success. In addition, Cleco identified the following best practices:

- **Test stages**
  - Proof-of-performance testing between two technology providers to validate stated functionality
  - System acceptance testing with the preferred vendor to verify quality of functionality
- **Meter deployment**
  - Engage early with local official/permitting agency
  - Various weekly reports required from installation vendor; weekly meetings and evaluation of vendor performance
- **Network performance**
  - Deployment area acceptance tests
  - Completion acceptance test
- **Business processes**
  - Cross-functional design team
  - Signoffs from affected managers and internal audit department
  - Review and modification of business processes to capitalize on the new technology
  - Validation of new business processes after initial implementation

Future Plans

The utility has already deployed distribution automation (DA) technologies on its system and will continue to upgrade selected circuits with DA equipment. Cleco also plans to integrate the outage management system with the new AMI system to improve outage management and restoration services. The AMI system will be further leveraged through a time-of-use rate pilot being considered for 2014. Finally, Cleco plans to implement a web portal that allows customers to view and better manage their energy usage over time.

Contact Information

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