Summary/Abstract

Name of Applicant: Florida Power & Light
Program Manager: Rick Teigland
Project Title: Smart Grid Manhole and Vault Monitoring Project (MVMP)

Project Objectives:
FPL seeks DOE funding to implement the **Smart Grid Manhole and Vault Monitoring Project (MVMP**) to accelerate and enhance ongoing smart grid and resiliency programs to minimize electrical grid impacts from major storms and other environmental events. The MVMP project aims to improve infrastructure situational awareness through advanced equipment health telemetry and predictive failure analysis.

Project Description

Vaults contain critical electrical equipment such as transformers and throwover switches located in customer-owned commercial/industrial locations. FPL plans to install 370 Vault Monitors to implement automated remote monitoring of transformer health, throwover switches, and condition of the vault itself. This includes 114 Top Critical Infrastructure (CIF) customers. Top CIF customers include community hospitals, police stations, fire stations, water treatment facilities, community emergency operations centers, and high-density residential complexes such as high-rise condominiums with thousands of residents. Vault Monitors include discrete sensors that monitor equipment health and aggregate the data into FPL's data analytics platform. Cellular communication technology along with advanced monitoring sensors will enable greater situational awareness, preventing outages due to normal equipment failure modes, improving grid resilience and reliability. In addition, the Vault Monitor data will be aggregated into FPL's Smart Grid advanced analytics system. FPL's Smart Grid advanced analytics reduces the outage duration and outage frequency for its customers by using fault locators, automated switches, and other smart devices. This system will aggregate different Smart Grid sensors to assist in fault location calculations, power quality analysis, and predictive equipment replacements before failures occur. FPL is partnering with industry leaders such as Eaton, GNIGuard, and Sentient Energy to develop and deploy these smart grid technologies. FPL's community partner is Florida Atlantic University, who will provide engineering assistance and be heavily involved in the data processing and analytic functions associate with the project, including reliability improvement measurements in disadvantaged communities and across the system. The goal of the project is to increase visibility of system operations in the manhole and vault systems, create an industry standard for monitoring, reducing outage events, and limiting outage restoration times when events do occur.