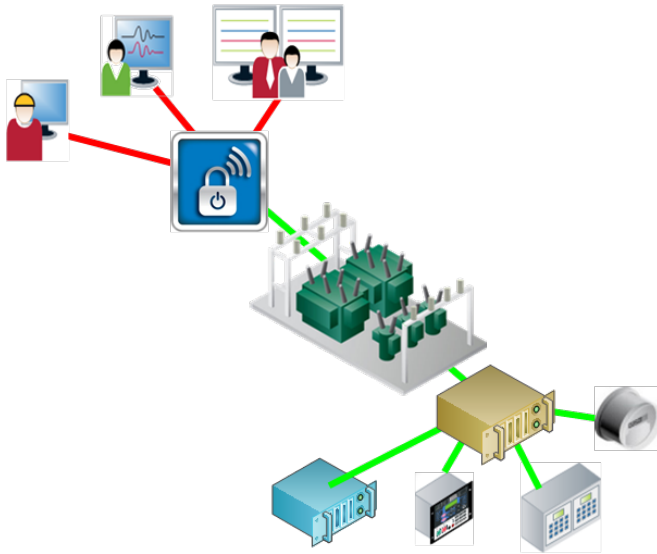


# Secure Remote Substation Access Solutions



- Learn about emerging secure remote substation access technologies and solutions while gaining visibility into existing best practices
- Understand the impact of regulation on remote access architectures and implementations
- Unbiased visibility into vendor-based remote access solutions
- Utility Workshop – sharing challenges, solutions and lessons learned with peers
- Technical report - Remote access solutions under a variety of scenarios for device management and operations

## Background, Objectives, and New Learnings

There is an established need for remote substation access solutions that provide support for a wide range of IEDs including current, legacy, and future devices, and also deliver the required level of cyber security and compliance support. Remote communications access to substations can provide new opportunities for data integration solutions such as fault location, asset optimization, and power quality monitoring. It may also reduce the number of times field personnel are required to visit substations to retrieve IED configuration or event files for analysis. However, balancing this level of access with cyber security and potential regulatory compliance requirements can be very difficult. This balance can be achieved through proper preparation, procedure implementation, and organizational support.

The objective of this project is to investigate and address implementation challenges for secure remote substation access solutions. New learnings will identify technology gaps and best practices, research and assess specific implementation challenges, and perform lab testing of existing and emerging solutions. This will enable effective application of existing solutions and foster new technology solutions.

## Benefits

The research will benefit the public in several ways, most notably by enabling wider electric industry adoption of proven and emerging methods to provide secure remote access to substations. This increased access will provide utilities with greater flexibility in utilizing operational and maintenance data from sensors and systems. Additionally, an improved understanding of strategies and technology for secure remote substation access will allow utilities to mitigate potential security risks and perform improved forensic analysis.

## Project Approach and Summary

This project will explore and address a variety of implementation challenges facing secure remote substation access solutions. The focus is on solutions implemented in the electric sector for Transmission and Distribution substations and remote field locations. For each identified challenge, the project team will study implementation options, best practices and capabilities/limitations regarding the challenge.

EPRI will work with participants to establish and prioritize solution topics to study. A preliminary list of potential remote access topics includes:

- Security architectures that support NERC CIPv5 compliance
- Identification of specific devices or scenarios that do not easily integrate with Remote Substation Access solutions
  - Vendor proprietary IED tools/protocols
  - Use of multiple authentication devices/gateways
- Remote Access System Management of IEDs
  - Management and tracking of configurations
  - Patch management
  - Password management

EPRI will research and summarize existing industry solutions with a focus on implementation best practices, technology gaps, and new developments. A workshop for participants will allow a “hands-on” approach to gain system familiarization and increased understanding of the implementation challenges discussed.

#### **Deliverables**

Technical Report: Secure Remote Substation Access: Implementation Challenges and Solutions

Workshop: Secure Remote Substation Access Security Solutions Workshop at EPRI’s Cyber Security Research Lab in Knoxville, TN.

#### **Price of Project**

The price to participate in this project is \$40,000. This project qualifies for tailored collaboration or self directed funding.

#### **Project Status and Schedule**

This project will begin when there are a minimum five funders and is anticipated to commence in early 2014. It is anticipated this project will last one year.

#### **Who Should Join**

This project is valuable to any utility that has or desires to implement secure remote access to substations, IEDs, and field equipment. The topics covered can be applied to both transmission and distribution substations.

#### **Contact Information**

For more information, contact the EPRI Customer Assistance Center at 800.313.3774 (askepri@epri.com).

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