



# **Ameren Illinois 2nd Quarter 2014 Smart Grid Test Bed Report**

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## Executive Summary

Ameren Illinois Company (Ameren Illinois) submits the following Smart Grid Test Bed Quarterly Report in accordance with the Energy Infrastructure Modernization Act, (EIMA) 220 ILCS 5/16-108.5 et seq. . This report provides updates on the steps Ameren Illinois has taken to implement its test bed plan during the second quarter of 2014. The report includes information on activities Ameren Illinois has undertaken to further develop its “primary” test bed location, discussions with potential test bed customers, and on the testing application process.

## Current Test Bed Projects

- Ameren Illinois continues work on its alliance with Schweitzer Engineering Laboratories, Inc. (SEL), University of Illinois, (UIUC), and Pacific Northwest National Laboratories (PNNL) under the award Funding Opportunity Announcement (FOA) No. DE-FOA-0000797 under the U.S. Department of Energy (DOE). Efforts this quarter were focused on creation of a quarterly CEDS report to the DOE as well as preparing for the upcoming project workshop scheduled for August 7-8, 2014 in Washington D.C.
- Ameren Illinois continues to support the Electric Power Research Institute, UIUC and SEL under the same FOA grant per Topic Area 4 to assist in Secure Remote Access for the energy sector, titled: “Secure Policy-Based Configuration Framework (PBCONF). During this quarter all project participants met at the University of Illinois Urbana – Champaign to conduct a thorough project design review.
- An internal Ameren Illinois project associated with Smart Grid Technologies has been undertaken by installing new Voltage Regulator controls and radios on the TAC circuit 372 distribution regulators. This technology allows Ameren Illinois to remotely collect data via a secure Wi-Fi network to analyze power flow without the installation of costly current and power transformers (CTs & PTs) along with communication conductors. This testing is ongoing. Ameren Illinois also reached agreement with a Satellite Radio vendor to test three Satellite radios as part of this project. The radios will be deployed at the TAC, in rural Macon County and in Litchfield, Illinois.
- Ameren Illinois continues to support a University of Illinois – Urbana/Champaign (UIUC) & Trustworthy Cyber Infrastructure for the Power Grid (TCIPG) Research Scientist for a project entitled: Adapting Bro into SCADA: Building Specification-based IDS for DNP3 by providing real SCADA data in larger volumes to the researchers. This project involves the development of software to further enhance SCADA network systems for Utilities by an intrusion detection system (IDS) that supports proprietary network protocols, such as DNP3, used in industry control environments.

## Test Bed Applications

- A vendor who provides utility scale street lighting solutions submitted an application requesting that Ameren Illinois perform testing of their LED lighting applications. Ameren Services engineering standards department has requested that the Technology Applications Center test additional manufacturers' LED lighting technologies and thus the TAC staff are in the process of coordinating this testing project.
- An application was received from a solar panel manufacturer desiring to test its new Concentrated Photovoltaic solar panel. Ameren Illinois continues to work with the client to define the scope of the requested testing services.

## Test Bed Tours

- On April 16, 2014 ISEIF leadership and grantees participated in a TAC tour.
- On June 24, 2014 several members of Ameren Illinois Key Accounts department participated in a TAC tour.

## Additional Activities

- TAC staff are working with several manufacturers and an external research lab to identify a self-contained 69KV switching device to support AIC's continued automation of its 69KV systems. Non-disclosure agreements have been signed with these entities and the TAC staff is reviewing several proposed solutions.

## Smart Grid Test Bed Plan Success

Ameren Illinois' commitment to the successful implementation of its Smart Grid Test Bed plan is strong. However, as set forth above, Ameren Illinois reserves the right to modify, amend or alter this plan, as necessary and consistent with the law, to meet the requirements and objectives of the EIMA and other related provisions. Additionally, Ameren Illinois reserves its right to terminate this plan.