

Station to Station Communications over Electric Utility Transmission Lines

Tewksbury, MA. April 24, 2009, With support from host utility American Electric Power (AEP) (NYSE:AEP) and the US Department of Energy (DOE), Amperion has successfully completed the world's first demonstration of high speed, IP-based broadband communications, connecting three substations over electric utility transmission lines.

The research and development project was begun in November 2007 under the auspices of the Electrical Grid Transformation Program, with oversight by the DOE's National Energy Technology Laboratory (NETL). Research and Development Solutions (RDS) was selected to manage the project on behalf of DOE/NETL. The focus was the implementation of broadband over power line (BPL) technology to provide data communications capable of supporting a wide range of Smart Grid applications. Equipment vendors ABB (www.abb.com) and Cooper Power Systems (www.cooperpowersystems.com) provided some of the materials for this project. Amperion developed a number of unique signal coupling and modulation techniques during the multi-month trial period.

After initial testing on a 0.77 mile 46kV circuit spanning the Kanawha River in Charleston, West Virginia, the trials moved to a 5.13 mile, 69kV circuit between AEP's Heath, Granville and West Granville stations in central Ohio. Equipment to couple the BPL signal to the overhead line and continuously monitor signal quality and channel performance was installed in each station, as well as at one intermediate point along the 69kV line. Communications for SCADA, protective relaying and remote facilities surveillance cameras were evaluated during the field trials.

Nachum Sadan, Amperion CEO, stated "AEP has a long history of delivering ground breaking technological firsts to the electric utility industry. Amperion was thrilled to have this opportunity to work with AEP on this first-ever implementation of broadband data communication over transmission lines. Using BPL for communications between stations extends the coverage of utility communications networks to topographical areas that are hard to reach with fiber in a cost effective way."

Hakan Inan, Science Applications International Corporation and representing RDS, cited "The demonstration project results were very important since this was the first attempt to move BPL communications onto high voltage lines from distribution level voltages. We believe BPL might play a very important role in expanding SCADA functions into remote substations and providing communications for protective relays in substations. We are very glad to support this effort".

AEP and Amperion are currently working on plans to test IP based broadband communication at the 138 kV level.

About RDS

Research & Development Solutions (RDS), LLC is comprised of three firms (SAIC, EG&G, and Parsons) and provides technology support services to DOE's National Energy Technology Laboratory (NETL).

About AEP

American Electric Power is one of the largest electric utilities in the United States, delivering electricity to more than 5 million customers in 11 states. AEP ranks among the nation's largest generators of electricity, owning nearly 38,000 megawatts of generating capacity in the U.S. AEP also owns the nation's largest electricity transmission system, a nearly 39,000-mile network that includes more 765-kilovolt extra-high voltage transmission lines than all other U.S. transmission systems combined. AEP's headquarters are in Columbus, Ohio.

About Amperion

Amperion Inc. is a privately held company based in Tewksbury, MA and is focused on providing smart grid communications solutions to electric utilities using a single IP based network that is highly available, cyber secure, and interoperable with multiple types of interfaces. Holder of the foundational patents for communications over power lines at megabit per second speeds, Amperion has developed BPL and wireless solutions for Smart Grid applications on medium voltage distribution lines and high voltage transmission lines. (www.amperion.com).

Inquiries can be directed to info@amperion.com