

Project Advisor Opportunity “CIGAR”

For immediate consideration: NRECA is seeking co-op partners to advise and provide technical guidance in the creation of a new form of engineering analysis software for inverter control and cybersecurity.

Research Opportunity Summary

With the rapid growth in inverter-connected solar and energy storage, there is growing interest in studying and insuring the cybersecurity of these devices. Lawrence Berkeley National Laboratory, in partnership with NRECA, is conducting a research project to study the cybersecurity of systems that control inverters. This research will begin with analyzing the stability of different control systems, such as networks of distributed energy resources as well as control systems for voltage regulation and distribution system protection. The work will identify what parameters an attacker would change if DER and utility voltage regulation and protection systems were compromised. The team will develop simulation software that will allow utility engineers to explore scenarios using dynamic modeling and then to test how to mitigate cyberattacks.

Requirements and Benefits of the Advisory Role

In support of this research effort:

1. NRECA is seeking 2 co-op partners who can provide feedback and guidance in the process of developing this research software. There will be in-person meetings and teleconferences. Input will also be gathered for a closely related project on system restoration. Advisors will be part of a larger group of approximately 6 utilities and vendors total.
2. This project is a grant-funded effort from the Department of Energy. There is no cost share requirement or financial contribution for participating co-ops. Travel costs will be reimbursed by the grant.
3. Letters of support are requested by **28 February 2019**. NRECA can provide example language for the letter.

Electric cooperatives who participate directly in this project would gain experience in inverter control, help shape research in engineering analysis software, and receive insights in to the cybersecurity and controls on their systems.

Project Team

NRECA has joined a project team that is led by the Lawrence Berkeley National Lab and includes partners at Siemens, OSISoft, Power Standards Laboratory, and Siemens. The research is funded by the Department of Energy’s Cybersecurity of Energy Delivery Systems program, “a diverse portfolio of research and development (R&D) that is re-designing energy delivery systems to adapt and survive cyber-attacks.” Additional detail on the team and the project can be found at <https://dst.lbl.gov/security/project/ceds-cigar/>

Contact for More Information on How to Participate

- David Pinney, NRECA Program Manager Analytics: david.pinney@nreca.coop