TechBriefs
Savannah River National Laboratory
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Benefits

- Attachable to live power lines
- Allows for simple installation by standard linemen
- Self-locates by GPS

Autonomously Powered Inductively Coupled Time Domain Reflectometer

Savannah River National Laboratory has developed a concept for an autonomously powered time domain reflectometer.

Description

Current time domain reflectometer technologies are large and require the power line to be disconnected. The technology conceptualized by SRNL allows the device to be connected to a live power line.

The miniaturization of the circuitry creates a lower power and more adaptable system. The device can be attached to a live power line to harvest power inductively. This power is then stored in a battery, which allows the device to work during power outages.

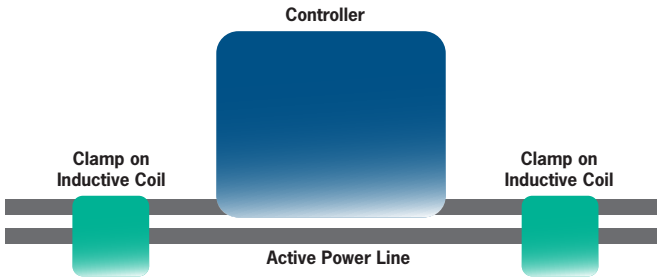
The reflectometer utilizes two inductive coils to create a signal on the power line. Phase cancellation is utilized to direct the signal. A global positioning system (GPS) is utilized to allow the device to report its location to the control center, simplifying installation. The results of the instrument can be sent to a control center via 4G or other previously developed protocols already in use by the power companies.

Applications and Industries

The conceptualized technology is applicable to the power industry.

Intellectual Property

- US Patent 10,151,788 B2
- Conceptual Stage
- Available for partnership to develop



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