Live Line Installation within Smart Grid

Make the most of your network

Answers for energy.
The transformation of energy grids into smart grids is closely related to the growing communication requirements (bandwidth demand) in the transmission and distribution areas.

To allow for quick data transfers between large substations in the transmission grid, optical fiber cables are being used to replace ground wires on high-voltage lines (OPGW = optical ground wire).

As a result of the growing and often unpredictable feeding of energy into the grid by decentralized generators, it is becoming increasingly difficult and sometimes impossible for transmission companies to shut off line segments for installation measures to improve the communication infrastructure.

The Siemens Live Line Installation process makes it possible to perform such installations or repairs on energized power lines. This installation concept was developed in a joint effort by Siemens and a team at Dresden University in Germany.

The Siemens Live Line Installation process can be used for the following purposes:
- To replace the ground wire with an optical ground wire, in order to provide broadband communication even to smaller substations
- Additional installation of a second optical ground wire below the top of the tower, on especially communication-intensive segments
- To replace an obsolete or defective optical ground wire
Safety of both personnel and equipment is the utmost priority: Live Line Installation supplies a new earthing concept as well as pulling machines and brakes on the ground.

With Live Line installation, optical ground wires can be installed either directly at the top of the tower or below the top between the power-carrying lines. Special security precautions are taken when high-risk areas (highways, bodies of water, train lines, etc.) are to be crossed when installing the optical ground wires below the top of the tower.

During Live Line installation, the existing ground wire serves as a messenger and carries all the installation equipment, such as pulleys, the full dielectric prepulling rope and the OPGW itself. Thus the new hybrid cable can be pulled from tower to tower across the entire delivery length. In high voltage lines, the usual delivery length is approximately 4 km.

Siemens is the most experienced and most successful supplier of live line installation of optical ground wires on high-voltage lines worldwide. We conducted the first live line installation already in the year 2000.

Put our experience to work for you!