Safety Requirements for Working Near High-Voltage Power Lines

Georgia Transmission

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Power Line Dangers

High-voltage transmission lines are necessary for delivering electricity over long distances – from generating plants to distribution substations. Overhead high-voltage transmission lines are not insulated; therefore, you should avoid working near transmission lines with any equipment or personnel. Electricity can arc, or flash, over a large distance, so any equipment or people in close proximity to the power lines can still be in danger of damage, injury or death – even without making direct contact with the power lines.

Electrical Shock and Arcing

Electric shock occurs when current passes through the human body by coming in contact with an energized conductor. Potential damage will depend on the severity and level of voltage during the shock. As the voltage goes through the body, it can cause damage to skin, severe internal injuries to tissue and muscles, or even death.

Arcing, or flashing, can be defined as dangerous conditions related to the release of electrical energy. It occurs when any conductive object – including a person – comes in close proximity to the energized conductor, causing an arc that can reach as much as 5,000 to 35,000 degrees Fahrenheit.

Accessing Rights of Way

An easement for rights of way (ROW) grants the utility a legal right to access and use their equipment, structures or conductors. It also gives permission to maintain the required width of the ROW and remove danger trees found on property adjacent to ROW, according to the terms of the easement. This easement is typically granted by property owners to a utility for the purpose of constructing, operating and maintaining power lines and communication lines. Only qualified and approved contractors may enter or perform work in the ROWs maintained by Georgia Transmission.

Pre-Job Planning/Hazard Assessment

During the pre-job planning phase – after your first site survey is made – plans should be developed to avoid working around any energized electric lines. Overhead power lines can be a hazard in any construction project, whenever conductive objects are raised into the air – such as when guying towers or structures, moving houses, operating farm equipment, installing antennas, constructing a temporary scaffold or tower, or operating cranes, excavators, and aerial-lift equipment. The Occupational Safety and Health Administration (OSHA) requires the use of appropriate personal protective equipment (PPE) to address all safety and health hazards identified in the hazard assessment. Take care of any safety concerns prior to the start of work, or the arrival of any heavy equipment, to prevent accidents and avoid job delays. Don't take chances with your safety!

Notice Prior to Commencing Work Near High-Voltage Lines

Any work activities that are planned to occur adjacent to, parallel or in close proximity to a high-voltage transmission line should be reported to the owner at least 72 hours (excluding weekends and holidays) preceding the commencement of such work.

If work will occur within 10 feet of a high-voltage line, the person responsible for such work must give notice to the GSOC Transmission Control Center (1.800.241.5375) and allow ample time for the utility owner to respond.

This notice shall contain:

- Name of person and company in charge of work
- Telephone number of person in charge of work
- Location – (Street address or GPS coordinates where work will be performed)
- Address and phone number of company in charge of work
- Type of work
- Date(s) upon which the work will commence and be completed

Once notice is given, the utility owner will schedule an on-site meeting with the person responsible for the work within a reasonable amount of time. After an on-site meeting has occurred and the utility owner has made arrangements to complete safeguards against the danger from accidental contact, the person responsible for the work can commence as discussed in the documented agreement and within the guidelines provided in the High-Voltage Safety Act.

Notice Under Georgia's High-Voltage Safety Act

Under Section 46-3-34 of Georgia's High-Voltage Safety Act:

(b) Where work is to be done, the person responsible for such work shall give notice to the utilities protection center during its regular business hours at least 72 hours, excluding weekends and holidays, prior to commencing such work and such notice shall:

1. *Describe the tract or parcel of land upon which the work to be done is to take place with sufficient particularity to enable the owner or operator of the high-voltage lines to ascertain the precise tract or parcel of land involved;*
2. *State the name, address, and telephone number of the person who will be in charge of the work;*
3. *Describe the type of work to be engaged in by the person; and*
4. *Designate the date upon which the work will commence and will be completed*

(c) After receipt of the notice required by subsection (b) of this Code section, the owner or operator of the high-voltage line shall contact the person whose name is given as required by paragraph (2) of subsection (b) of this Code section within a reasonable time, so that appropriate satisfactory arrangements can be made for the completion of the safety precautions required by Code Section 46-3-33, including coordination of work schedules and payment of costs required to effect such safety precautions. Upon completion of such arrangements, the owner or operator of such high-voltage line shall effect such safety precautions within a reasonable time.

(d) If, after such arrangements are made, a delay in commencing the work is encountered, then the person responsible for the work shall be required to give a new notice as specified in subsection (b) of this Code section.

(e) The person responsible for the work shall be responsible to assure that the safety requirements of Code Section 46-3-33 are completed prior to the commencement of any such work.

O.C.G.A. § 46-3-34. "Work" under Georgia's High-Voltage Safety Act means "the physical act of performing or preparing to perform any activity under, over, by, or near high-voltage lines, including, but not limited to, the operation, erection, handling, storage, or transportation of any tools, machinery, ladders, antennas, equipment, supplies, materials, or apparatus or the moving of any house or other structure whenever such activity is done by a person or entity in pursuit of his trade or business." O.C.G.A. § 46-3-32(6).

For more information regarding responsibilities, liability, and penalties regarding working near high-voltage lines, please refer to Georgia's High-Voltage Safety Act, O.C.G.A. § 46-3-30 et seq.

Safety Considerations - OSHA

Electricity will flow through any conductive material by making contact or in close proximity to high-voltage transmission lines. Only trained, electrically qualified utility workers are allowed to work in close proximity to these lines with special permission.

Please notify us of any incident involving contact with, or arcing/flashing from, an energized Georgia Transmission power line – so we may inspect the site, make the appropriate repairs, and avoid future problems or damage. Other local utilities or government agencies may also need to be notified.

A good rule of thumb for avoiding contact with the overhead power lines is to keep a minimum 10 foot circle of safety between you, your equipment, and the line up to 50 kV. Do not permit any part of your equipment, or any person working on or around it, to come within 10 feet of any power line. Serious injuries could result to you or others working near you.

As voltage increases, the safety circle increases as well. For example, with 500 kV lines the safety circle increases to 25 feet. Under no circumstances should unqualified workers attempt to measure to calculate these distances. If the voltage is unknown, OSHA recommends that a distance of no less than 20 feet be kept from power lines. Contact the utility to provide guidance.

OSHA requires workers to be protected when working near high-voltage lines. For example, Section 5(a)(1) of the Occupational Safety and Health Act of 1970, commonly known as the General Duty Clause states: “Each employer shall furnish to each of their employees’ employment and a place of employment which are free from recognized hazards that are causing or are likely to cause death or serious physical harm to their employees.”

In addition, OSHA standard 29 CFR § 1926.416 states:

1926.416(a)(1)- No employer shall permit an employee to work in such proximity to any part of an electric power circuit that the employee could contact the electric power circuit in the course of work, unless the employee is protected against electric shock by de-energizing the circuit and grounding it or by guarding it effectively by insulation or other means.

1926.416(a)(3)- Before work is begun the employer shall ascertain by inquiry or direct observation, or by instruments, whether any part of an energized electric power circuit, exposed or concealed, is so located that the performance of the work may bring any person, tool, or machine into physical or electrical contact with the electric power circuit. The employer shall post and maintain proper warning signs where such a circuit exists. The employer shall advise employees of the location of such lines, the hazards involved, and the protective measures to be taken.

Other Safety Precautions

- Post warning signs prominently on all cranes, excavators and/or other high-lift equipment to effectively keep job personnel on the alert for accidental electrical contact and what to do in an emergency.
- Do not stockpile, load or unload any material near or underneath power lines.
- Treat all power lines as energized, until confirmed by a utility employee that they are de-energized.
- Exercise caution when working near overhead lines that have long spans between poles. Wind can make them swing laterally. Additionally, ice buildup can cause sagging, decreasing the distance between the power lines and the ground.

If Contact Occurs

If equipment or machinery comes in contact with power lines and the item becomes energized, follow these safety steps:

- The operator should remain in the cab or operator's seat until it is safe to exit.
- Keep everyone away from the immediate area. The machine, the load and the ground around it will be energized until the utility de-energizes the power line.
- Dial 911 and provide required information.
- Call the GSOC Control Center at 1.800.241.5374 or 770.270.7246 immediately to report the event.
- Don't move toward the machine to render aid until the utility says it is safe to do so.
- The machine should not be moved except to help emergency medical service or authorities access the location.

Georgia Transmission: A Culture of Safety

At Georgia Transmission, safety is at the core of all that we do. We believe that when we work safe and stay healthy, we are better able to provide the best in reliable service that our members expect, and on which millions of Georgians rely. It is our expectation that our partners and other stakeholders who may work on — or near — our equipment share that belief. When we all work safe — and ensure that others work safe too — we help create a safer and more prosperous Georgia to call home.

A copy of the "High-Voltage Safety Act" statute can be found online.

Georgia Transmission Corp., a not-for-profit cooperative owned by 38 Electric Membership Corporations (EMCs), owns more than 3,500 miles of high-voltage transmission lines and more than 760 substations. These facilities deliver power to Georgia's EMCs, providing electricity to more than 4.3 million Georgians. For more information, visit gatransmission.com.

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