



Berry Bros. General Contractors, Inc. Corporate Policy Procedure

Section # 59

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(HSE) Health, Safety & Environmental Policies and Procedures Manual

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Powerline Safety

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SUBPART A - INTRODUCTION


When working near electrical lines or equipment, avoid direct or indirect contact. Direct contact is contact with any part of the body. Indirect contact is when part of the body touches or is in dangerous proximity to any object in contact with energized electrical equipment. Two assumptions should always be made:

- (1) Lines are 'live' (energized): and
- (2) Lines carry high voltage. Electrical lines can only be considered 'dead' when verified by the local area Electric Department or Utility.

When there is any question about voltage and safe distance, the work must be shut down and the local area Electrical Foreman/Head Electrician or designated Berry Brothers Representative contacted and all concerns adequately addressed before activities can resume.

As voltages increase, minimum clearances increase. Through arcing, injuries or fatalities may occur even if actual contact with high voltage lines or equipment is not made. Potential for arcing increases as voltage increases. Weather and contact with conductors such as tools can increase the possibility of becoming energized without contact.

The Berry Brothers Overhead Power Line Policy applies to all overhead conductors, regardless of voltage and requires areas to:

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1. Ensure employees are not placed in proximity to Overhead Powerlines. Proximity is defined as within 10 feet up to 50 kilovolts, and 4 inches for every 10 thousand volts above 50 kilovolts.
2. Inform employees of the hazards and precautions when working near Overhead lines.
3. Post warning decals on cranes and similar equipment regarding **10-foot minimum clearance**.
4. Ensure that when equipment is working near the proximity of overhead lines a 'spotter' is designated and observes for safe working clearances around all overhead lines and directs the operator accordingly.
5. Use warning cones as visible indicators of the **10-foot safety zone** when working near the proximity of overhead powerlines.

Note: "Working near the proximity" is defined as working within a distance from any OPL which is less than combined length of the lifting device, the associated load length, and the required minimum clearance distance (as define in Item #1., above).


6. Notify the local area Electrical Foreman / Head Electrician at least 24 hours before any work begins to identify voltages and clearances, or de-energize, apply safety grounds, or relocate lines.

Required Clearance = Lift Equipment Height + Load Length + At Least 10 feet

SUBPART B - POLICY STATEMENT

All Berry Brothers employees and Contractors shall conform to the Overhead Powerline Proximity Policy. The first line of defense in preventing electrical contact accidents is to remain outside the minimum safe distance clearances. Because most company and contractor employees are not qualified to determine voltage, the local area Electrical Foreman / Head Electrician shall be called to establish voltages and minimum clearances, and take appropriate action to render the work safe. Where notification cannot be made 1 day prior to beginning work, efforts shall be made to request the local area Electrical Foreman / Head Electrician to respond immediately.

All Berry Brothers employees and contractors who work near the proximity of overhead lines shall receive specialized electrical safety training because of their frequent work near overhead electrical systems. BBGCI's Health and Safety Department shall determine training content, duration and frequency. Training shall be held in conjunction with local area training, and shall include characteristics, hazards and precautions for the prevention of an Overhead Powerline contact.

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SUBPART C – GENERAL PROCEDURES

Prior to the start of all operations where potential contact with overhead electrical systems is possible, the supervisor, head operator, tool pusher or person leading the work shall identify overhead lines or equipment, and reference their location to prominent physical features, or physically mark the area directly in front of the overhead lines with safety cones, survey tape, or other means. Electrical line location shall be discussed at a pre-work safety meeting of all employees on the job. **The briefing shall cover at least the following: hazards associated with the job, where the lines are specifically located, work procedures involved, special precautions, energy source controls, and personal protective equipment requirements.** All Berry Brothers and contractors shall attend this meeting and require their employees to conform to OPP electrical safety standards. New/transferred employees will be informed of electrical hazards and proper procedures during orientations.

On construction projects, the contractor shall identify and reference all potential electrical hazards and document such actions to the Berry Brothers Representative.

Overhead electrical lines or equipment will be conspicuously marked and workers will be reminded of their location by the project supervisor. New employees shall be informed of electrical hazards and proper precautions and procedures. These procedures shall be adhered to by business partners subject to the compliance procedures of the contract, including work stoppage in extreme cases.

Where there is potential for proximity or contact with overhead electrical systems, the local area Electrical Foreman / Head Electrician shall be called to decide the need to de-energize, safety ground, remove, or otherwise protect against accidental contact. Where there is a suspicion of low wires (under 20 feet), the local area Electrical Foreman / Head Electrician shall be notified to verify and take appropriate action. All electrical contact incidents, including 'near-misses', shall be reported to the local area Health and Safety Specialist.

SUBPART D - LOOK UP AND LIVE FLAGS

In order to prevent accidental contacts of overhead lines all Aerial Lifts, Cranes, Boom trucks, service rigs and similar equipment shall use "LOOK UP AND LIVE" flags. The flags are visual indicators that the equipment they are working with is being currently used or has been returned to its "stowed or cradled" position. The flags shall be yellow with black lettering or lime green with black lettering and shall state in bold lettering "LOOK UP AND LIVE". The procedure for the use of the flag shall be:



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1. When the boom or lift is in its stowed or cradled position the flag shall be located on the load hook.
2. Prior to operation of the boom or lift, the operator of the equipment shall assess the work area to determine the location of all overhead lines and communicate the same to all crews on site. Once completed the Operator shall remove the flag from the load hook and transfer the flag to the steering wheel of the vehicle. Once the flag is placed on the steering wheel, the operator may begin to operate the equipment.
3. After successfully completing the work activity and returning the equipment to its stowed or cradled position, the operator shall return the flag to the load hook.
4. The operator of the equipment is responsible for the placement of the LOOK UP AND LIVE flag.

SUBPART E - HIGH RISK TASKS

1. Heavy Equipment or similar equipment:

All heavy equipment, including mechanical elevating and other rotating equipment, shall be inspected initially prior to use and at the beginning of each shift.

Prior to the start of any task involving any type of equipment where the equipment itself, or the load that it is moving has the potential of encroaching into the 10' Safety Window, a high visibility marker, (orange safety cones or other devices) shall be temporarily installed to mark overhead wires. The supervisors will discuss electrical safety with appropriate crewmembers at on-site tailgate safety talks. When working in proximity to overhead lines a spotter shall be positioned in a conspicuous location to direct movement and observe for contact with the overhead wires. The spotter, equipment operator, and all other employees working on the job location shall be alert for overhead wires.

All Heavy Equipment or similar equipment shall display a warning decal regarding electrical contact. Independent truck drivers delivering materials to field locations shall be cautioned about overhead electrical wires before beginning work, and a properly trained Berry Brothers or contractors employee shall assist in the loading/off loading operation. Trucks that have emptied their material shall not leave the work location until the boom; lift or box is down and confirmed to be safely secured.

2. Aerial Lifts, Cranes, Boom Devices:



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Where there is potential for proximity or contact with overhead lines or equipment, work shall not begin until a safety meeting is conducted and appropriate steps taken to identify, mark, and warn against accidental contact. The supervisor will review operations daily to ensure compliance.

Where the operator's visibility is impaired, a spotter shall guide the operator. Hand signals shall be used and clearly understood between operator and spotter. When visual contact is impaired, the spotter and operator shall be in radio contact. When operating in reverse, a spotter shall guide the operator and an audible backup warning should be sounded.

Aerial lifts, cranes, and boom devices shall have appropriate warning decals, and shall use warning cones or similar devices to indicate the location of overhead lines and identify the **10 foot minimum safe working boundary**.

In order to prevent rollover and other dangerous situations, load and / or design limits shall be strictly adhered to.


3. Tree Work:

Wires shall be treated as live and high voltage until verified as deenergized by the local area Electrical Foreman / Head Electrician. The local area Electrical Foreman / Head Electrician or an approved electrical contractor or Line-clearance tree removal contractor shall remove branches touching wires before work begins. Limbs and branches shall not be dropped onto overhead wires. If limbs or branches fall across electrical wires, all work shall stop immediately and the local area Electrical Foreman / Head Electrician called.

When climbing or working in trees, pruners shall try to position themselves so that the trunk or limbs are between their body and electrical wires. If possible, pruners shall not work with their back toward electrical wires.

A bucket truck is the preferential method of pruning when climbing poses a greater electrical contact threat. Personal protective gear shall have appropriate di-electric characteristics needed for working near electricity. All tools must shut off when being carried up into a tree or bucket by an employee. (ISN requirement)

Brush chippers not equipped with a mechanical infeed system shall be equipped with an infeed hopper. The infeed hopper must be long enough to prevent employees from contacting the blades or knives of the machine during operation.

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OSHA standard 1910.269(r) addresses both personnel and equipment requirements. The line-clearance tree trimming equipment requirements in 1910.269(r)(2) through (8) apply to 1910.269 qualified employees and line clearance tree trimmers who are clearing lines with brush clippers, sprayers, stump cutters, chain saws, backpack power cutters, climbing ropes, or safety saddles.

Line-clearance tree trimmers are workers that have received specialized training so they can work within 10 feet of energized power lines and equipment. These workers must:

- Contact the local area Electrical Foreman / Head Electrician and determine the voltage(s) of any lines that may pose a hazard before work begins. Alternatively, all lines must be considered as operating at the voltage of the line with the highest voltage if the true voltage of the line is not known.
- Ensure their body parts and any ladders, platforms, or aerial devices being used remain outside the minimum approach distance from any energized part.
- Use only insulated tools and equipment to remove branches and limbs that are in contact with, or are within the minimum approach distance of, energized parts.
- Chainsaws must not be running when employees are climbing.
- Stop all work during adverse weather conditions (high winds, icing, thunder and lightning, etc.) that make the work hazardous. Line-clearance tree trimming personnel may, however, begin work on storm restoration efforts in the aftermath of a storm (that is, in less severe weather conditions) if they have been trained in the special hazards involved with this type of work. These employees may perform work in any type of weather if the lines and circuits in the area have been verified as de-energized by the local area Electrical Foreman / Head Electrician.

In addition to these specific operational requirements, employees working near live powerlines must also be trained and competent in:

- Recognizing electrical hazards and how to control or avoid them.
- Skills and techniques necessary to work safely around exposed live parts from other parts of electric equipment.
- Skills and techniques to determine the voltage of exposed live parts.
- Minimum approach distances that corresponded to the voltages to which the employee will be exposed.
- Safety-related work practices and procedures (including emergency procedures).
- Medical and first aid provisions of 1910.269(b).
- Job Safety Analysis before starting a work.

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- PPE, including fall protection equipment and specialized insulation, shielding materials, and insulated tools.
- Inspecting all climbing equipment, including ropes, prior to use
- Compliance with material handling and mechanical equipment requirements outlined in 1910.269.


While line-clearance tree trimmers can work alone, a second line-clearance tree trimmer must be within voice range of the first line-clearance tree trimmer if:

- The trimmer will approach within 10 feet of any conductor energized at more than 750 volts.
- Parts are energized at more than 750 volts and branches or limbs are being removed from within the minimum approach distance.
- Roping is necessary to remove branches or limbs from conductors or equipment.

SUBPART F - VEHICLES WITH LOADS IN EXCESS OF 14'

The Overhead Powerline Policy requires that all Vehicles with loads in excess of 14' use specific procedures to maintain safe working clearances when in transit below overhead lines. Loads < 14' are safe to move on Berry Brothers roads, unless lower clearances are posted. The specific procedures for moving loads in excess of 14' or via pathways with lower clearance heights are as listed below:

1. Prior to movement of any load in excess of 14' the local Health and Safety Department along with the local Electrical Foreman/Head Electrician must be notified of the equipment move.
2. A Berry Brothers Electrician, Electrical Construction Rep. or a qualified electrical contractor must check the intended route to the next location before relocation.
3. Check the new site for overhead lines and clearances.
4. Power lines and Communication lines shall be noted and extreme care used when traveling beneath these lines.
5. The company moving the load or equipment will provide a driver responsible for measuring each load and insuring each load is secured and transported in safe manner.
6. A Berry Brothers Electrician, Electrical Construction Rep., or a qualified electrical contractor shall escort the first load to the new location ensuring safe clearances. A service company rep will be responsible for subsequent loads to follow the same safe route.

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If proper working clearances cannot be maintained the job must be shut down until a safe route can be established or the necessary repairs have been completed to ensure that a safe working clearance has been achieved.

All work requiring movement of loads in excess of 14' are required to begin only after a General

Work Permit has been completed detailing all pertinent information about the move. The local area Head Electrician or his or her designees are solely responsible for issuing all overhead line encroachment permits.

The preferred vertical clearance for overhead lines, 480 volts and bellow including communication lines on Berry Brothers properties is 21' with an acceptable height of 20' (480 volt) and 25' for 12,000-volt lines. All new overhead lines 480 volts or less including communication lines will be constructed in such a manner as to maintain a minimum of 21' at all points along the line.

SUBPART G - EMERGENCY RESPONSE

If an overhead line falls or is contacted:

1. Keep everyone at least 10 feet away.
2. Use flagging to protect motorists, spectators and other individuals from fallen or low wires.
3. Call the local area Electrical Department or utility immediately.
4. Place 'guards' around the area.
5. Do not attempt to move the wire(s).
6. Do not touch anything that is touching the wire(s).
7. Be alert to water or other conductors present.
8. Crews shall have emergency numbers readily available. These numbers shall include local area Electrical Department, utility, police/fire and medical assistance.
9. If an individual becomes energized, **DO NOT TOUCH** the individual or anything in contact with the person. Call for emergency medical assistance and the local area Electrical Department or utility immediately. If the individual is no longer in contact with the energized conductors, CPR, rescue breathing or first aid should be administered immediately, but only by a trained person. It is safe to touch the victim once contact is broken or the source de-energized.
10. Wires that contact vehicles or equipment will cause arcing, smoke and possibly fire. Occupants should remain in the cab and wait for the local area Electrical Department or utility. If it becomes necessary to exit the vehicle, leap with both feet as far away from the vehicle as possible, without touching the equipment. Jumping free of the vehicle is the last resort.
11. If operating the equipment and an overhead wire is contacted, stop the equipment immediately and if safe to do so jump free and clear of the equipment. Maintain your balance, keep your feet together and either shuffle or bunny hop away from the vehicle another



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10 feet or more. Do not return to the vehicle or allow anyone else for any reason to return to the vehicle until the local area Electrical Department or utility has removed the powerline from the vehicle and has confirmed that the vehicle is no longer in contact with the overhead lines.

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