

WAC 296-45-385 Overhead lines. This section provides additional requirements for work performed on or near overhead lines and equipment.

(1) General.

(a) Before elevated structures and adjacent structures, such as poles or towers of the adjacent supporting poles, structures, and conductor supporting hardware, are subjected to such stresses as climbing or the installation or removal of equipment may impose, the employer must ascertain that the structures are capable of sustaining the additional or unbalanced stresses. If the pole or other structure cannot withstand the loads which will be imposed, it must be braced or otherwise supported so as to prevent failure.

Note: Appendix C of this chapter contains test methods that can be used in ascertaining whether a wood pole is capable of sustaining the forces that would be imposed by an employee climbing the pole. This section also requires the employer to ascertain that the pole can sustain all other forces that will be imposed by the work to be performed.

(b) When poles are set, moved, or removed near exposed energized overhead conductors, the pole must not contact the conductors.

(c) When a pole is set, moved, or removed near an exposed energized overhead conductor, the employer must ensure that each employee wears electrical protective equipment or uses insulated devices when handling the pole and that no employee contacts the pole with uninsulated parts of their body.

(d) To protect employees from falling into holes into which poles are to be placed, the holes must be attended by employees or physically guarded whenever anyone is working nearby.

(2) Installing and removing overhead lines. The following provisions apply to the installation and removal of overhead conductors or cable.

(a) The employer must use the tension stringing method, barriers, or other equivalent measures to minimize the possibility that conductors and cables being installed or removed will contact energized power lines or equipment.

(b) When conductors are being strung in or removed, they must be kept under positive control to prevent accidental contact with energized circuit.

(c) The protective measures required by WAC 296-45-375 (10)(c) for mechanical equipment must also be provided for conductors, cables, and pulling and tensioning equipment when the conductor or cable is being installed or removed close enough to energized conductors that any of the following failures could energize the pulling or tensioning equipment or the wire or cable being installed or removed:

- (i) Failure of the pulling or tensioning equipment;
- (ii) Failure of the wire or cable being pulled; or
- (iii) Failure of the previously installed lines or equipment.

(d) When conductors being installed or removed cross over energized conductors in excess of 600 volts, rope nets or guard structures must be installed unless provision is made to isolate or insulate the worker or the energized conductor. Where the design of the circuit-interrupting devices protecting the lines so permits, the automatic-reclosing feature of these devices must be made inoperable. In addition, the line being strung must be grounded on either side of the crossover or considered and worked as energized.

(e) Before lines are installed parallel to existing energized lines, the employer must make a determination of the approximate voltage to be induced in the new lines, or work must proceed on the assumption that the induced voltage is hazardous. Unless the employer can demonstrate that the lines being installed are not subject to the

induction of a hazardous voltage or unless the lines are treated as energized, temporary protective grounds must be placed at such locations and arranged in such a manner that the employer can demonstrate will prevent exposure of each employee to hazardous differences in electric potential.

Notes:

- If the employer takes no precautions to protect employees from hazards associated with involuntary reactions from electric shock, a hazard exists if the induced voltage is sufficient to pass a current of 1 milliampere through a 500-ohm resistor. If the employer protects employees from injury due to involuntary reactions from electric shock, a hazard exists if the resultant current would be more than 6 milliamperes.
- Appendix B of this chapter contains guidelines for protecting employees from hazardous differences in electric potential as required by this section.

(f) Reel handling equipment, including pulling and tensioning devices, must be in safe operating condition and must be leveled and aligned.

(g) Load ratings of stringing lines, pulling lines, conductor grips, load-bearing hardware and accessories, rigging, and hoists cannot be exceeded.

(h) Each pull must be snubbed or dead ended at both ends before subsequent pulls.

(3) Pulling lines and accessories must be inspected prior to each use and replaced or repaired when damaged or when there is a reasonable basis to doubt the dependability of such lines or accessories.

(4) Conductor grips cannot be used on wire rope, unless the grip is specifically designed for this application.

(5) Reliable communications, through two-way radios or other equivalent means, must be maintained between the reel tender and the pulling rig operator.

(6) The pulling rig may only be operated when it is safe to do so.

Note:

- Examples of unsafe conditions include employees in locations prohibited by subsection (7) of this section, conductor and pulling line hang-ups, and slipping of the conductor grip.

(7) While the conductor or pulling line is being pulled (in motion) with a power-driven device, employees are not permitted directly under overhead operations or on the cross arm, except as necessary to guide the stringing sock or board over or through the stringing sheave.

(8) Live-line bare-hand work is prohibited.

(9) When winches, trucks, or tractors are being used to raise poles, materials, to pull in wires, to pull slack or in any other operation, there must be an operator at the controls unless the machinery or process is stopped.

(10) Leadworkers must designate an employee to give signals when required.

(11) Raising poles, towers or fixtures in the close proximity of high voltage conductors must be done under the supervision of a qualified electrical employee.

(12) Employees must not crawl over insulator strings but must use a platform or other approved device to work from when making dead ends or doing other work beyond strings of insulators, at such distance that they cannot reach the work from the pole or fixture. While working on the platform or other device, they must be secured with safety straps or a rope to prevent falling. The provision of this subsection does not apply to extra high voltage bundle conductors when the use of such equipment may produce additional hazard. Climbing over dead end assemblies is permissible only after they have been completed and pinned in the final position.

(13) Towers and structures. The following requirements apply to work performed on towers or other structures which support overhead lines.

(a) The employer must ensure that no employee is under a tower or structure while work is in progress, except where the employer can demonstrate that such a working position is necessary to assist employees working above.

(b) Tag lines or other similar devices must be used to maintain control of tower sections being raised or positioned, unless the employer can demonstrate that the use of such devices would create a greater hazard.

(c) The loadline cannot be detached from a member or section until the load is safely secured.

(d) No one is permitted to remain in the footing while equipment is being spotted for placement.

(e) A designated employee must be utilized to determine that required clearance is maintained in moving equipment under or near energized lines.

(14) All conductors, subconductors, and overhead ground conductors must be bonded to the tower at any isolated tower where it may be necessary to complete work on the transmission line.

(15) A transmission clipping crew must have a minimum of two structures clipped in between the crew and the conductor being sagged.

(16) While on patrol at night and operating a motor vehicle on public roadways, there must be two employees, at least one of whom must be a qualified electrical employee. If repair to line or equipment is found to be of such nature as to require two qualified electrical employees, work will not proceed until additional help has been obtained provided that in cases of emergency where delay would increase the danger to life, limb, or substantial property, one employee may clear the hazard without assistance.

(17) Except during emergency restoration procedures, work must be discontinued when adverse weather conditions would make the work hazardous in spite of the work practices required by this section.

Note: Thunderstorms in the immediate vicinity, high winds, snow storms, and ice storms are examples of adverse weather conditions that are presumed to make this work too hazardous to perform, except under emergency conditions.

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060 and chapter 49.17 RCW. WSR 19-13-083, § 296-45-385, filed 6/18/19, effective 8/1/19; WSR 16-10-082, § 296-45-385, filed 5/3/16, effective 7/1/16. Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060. WSR 05-17-038, § 296-45-385, filed 8/9/05, effective 10/1/05; WSR 98-07-009, § 296-45-385, filed 3/6/98, effective 5/6/98.]