

WAC 296-155-53408 Power line safety. (1) Assembly, disassembly, or reconfiguration of a crane/equipment.

(a) Before assembling, disassembling, or reconfiguring a crane/equipment, it must first be determined if any part of the crane/equipment, load line, or load (including rigging and lifting accessories) could get, in the direction or area of assembly, closer than 20 feet of a power line that is up to 350 kV, or closer than 50 feet of a power line that exceeds 350 kV during the assembly, disassembly, or reconfiguration process. If so, the requirements in Option (1), Option (2), or Option (3), must be met as follows:

(i) **Option (1) - Deenergize and ground.** Confirm from the utility owner/operator that the power line has been deenergized and visibly grounded at the job site.

(ii) **Option (2) - Clearance.** Ensure that no part of the crane/equipment, load line, or load (including rigging and lifting accessories) gets closer than 20 feet of a power line that is up to 350 kV, or closer than 50 feet of a power line that exceeds 350 kV, by implementing the measures specified in (b) of this subsection.

(iii) **Option (3) - Table 4 clearance.**

(A) Determine the line's voltage and the minimum approach distance permitted under Table 4 of this section.

(B) Determine if any part of the crane/equipment, load line, or load (including rigging and lifting accessories), could get closer than the minimum approach distance of the power line permitted under Table 4 of this section. If so, the requirements in (b) of this subsection must be followed to ensure that no part of the crane/equipment, load line, or load (including rigging and lifting accessories), gets closer to the line than the minimum approach distance.

(b) **Preventing encroachment/electrocution.** Where encroachment precautions are required under Option (2) or Option (3), all of the following requirements must be met:

(i) Conduct a planning meeting with the A/D director, operator, assembly, disassembly, or reconfiguration crew and the other workers who will be in the assembly/disassembly work zone to review the location of the power line(s) and the steps that will be implemented to prevent encroachment/electrocution. The utility owner shall be invited to attend. This meeting shall be conducted prior to assembly, disassembly, or reconfiguration of the crane/equipment, must be documented, and such documentation shall remain on-site for the duration that the crane/equipment is on-site. Should power line conditions change, another meeting shall be conducted prior to work commencing. The meeting document shall include at least the following:

(A) Date the meeting is conducted;

(B) Names and signatures of all meeting attendees;

(C) Address/location of where the crane assembly, disassembly, or reconfiguration will be performed;

(D) Drawing showing the crane/equipment's work zone and how it will be identified;

(E) Voltage information and the location of all energized lines;

and

(F) Steps that are implemented to prevent encroachment/electrocution.

(ii) If tag lines are used, they must be nonconductive.

(iii) At least one of the following additional measures must be in place. The measure selected from this list must be effective in preventing encroachment. The additional measures are:

(A) Use a dedicated spotter (who meets the definition of a dedicated spotter) who is in continuous contact with the crane/equipment operator, plus an elevated warning line, barricade, or line of signs, in view of the spotter, equipped with flags or similar high-visibility markings. The dedicated spotter must:

(I) Be equipped with a visual aid to assist in identifying the minimum clearance distance. Examples of a visual aid include: A clearly visible line painted on the ground; a clearly visible line on stanchions; a set of clearly visible line-of-sight landmarks (such as a fence post behind the dedicated spotter and a building corner ahead of the dedicated spotter);

(II) Be positioned to effectively gauge the clearance distance;

(III) Where necessary, use equipment that enables the dedicated spotter to communicate directly with the operator, in accordance with WAC 296-155-53406(13) (radio, telephone, or other electronic transmission of signals); and

(IV) Give timely information to the operator so that the required clearance distance can be maintained.

(B) A proximity alarm set to give the operator sufficient warning to prevent encroachment.

(C) A device that automatically warns the operator when to stop movement, such as a range control warning device. Such a device must be set to give the operator sufficient warning to prevent encroachment.

(D) A device that automatically limits range of movement, set to prevent encroachment.

(c) Assembly, disassembly, or reconfiguration below power lines is prohibited. No part of a crane/equipment, load line, or load (including rigging and lifting accessories), whether partially or fully assembled, is allowed below a power line unless it has been confirmed that the utility owner/operator has deenergized and visibly grounded the power line at the job site.

(d) Assembly, disassembly, or reconfiguration inside Table 4 clearance is prohibited. No part of a crane/equipment, load line, or load (including rigging and lifting accessories), whether partially or fully assembled, is allowed closer than the minimum approach distance under Table 4 of a power line unless it has been confirmed that the utility owner/operator has deenergized and visibly grounded the power line at the job site.

(e) **Voltage information.** Where Option (3) is used, the utility owner/operator of power lines must provide the requested voltage information prior to commencement of work or within two working days of the request.

(f) **Power lines presumed energized.** It must be assumed that all power lines are energized unless the utility owner/operator confirms that the power line has been, and continues to be, deenergized and visibly grounded at the job site.

(g) Posting of electrocution warnings. There must be at least one electrocution hazard warning conspicuously posted in the cab so that it is in view of the operator and (except for overhead gantry and tower cranes) at least two on the outside of the crane/equipment.

(2) **Operation of crane/equipment.**

(a) Hazard assessments and precautions inside the work zone. Before beginning crane/equipment operations, the employer must:

(i) Identify the work zone;

(A) Define a work zone by demarcating boundaries that are equipped with fluorescent colored flags, or similar high-visibility mark-

ings clearly visible to the operator, or a device such as a range limit device or range control warning device, and prohibiting the operator from operating the crane/equipment past those boundaries; or

(B) Define the work zone as the area 360 degrees around the crane/equipment, up to its maximum working radius.

(ii) Determine if any part of the crane/equipment, load line, or load (including rigging and lifting accessories), if operated up to its maximum working radius in the work zone, could get closer than 20 feet of a power line that is up to 350 kV, or closer than 50 feet of a power line that exceeds 350 kV. If so, the employer must meet the requirements in Option (1), Option (2), or Option (3) as follows:

(A) **Option (1) - Deenergize and ground.** Confirm from the utility owner/operator that the power line has been deenergized and visibly grounded at the job site.

(B) **Option (2) - 20-foot clearance.** Ensure that no part of the crane/equipment, load line, or load (including rigging and lifting accessories), gets closer than 20 feet to the power line by implementing the measures specified in (b) of this subsection.

(C) **Option (3) - Table 4 clearance.**

(I) Determine the line's voltage and the minimum approach distance permitted under Table 4 of this section.

(II) Determine if any part of the crane/equipment, load line, or load (including rigging and lifting accessories), while operating up to its maximum working radius in the work zone, could get closer than the minimum approach distance of the power line permitted under Table 4 of this section. If so, the employer must follow the requirements in (b) of this subsection to ensure that no part of the crane/equipment, load line, or load (including rigging and lifting accessories), gets closer to the line than the minimum approach distance.

(b) **Preventing encroachment/electrocution.** Where encroachment precautions are required under Option (2) or Option (3), all of the following requirements must be met:

(i) Conduct a planning meeting with the operator and the other workers who will be in the area of the crane/equipment or load. This meeting shall be conducted prior to the commencement of using the crane/equipment, documented, and must remain on-site for the entire duration that the crane/equipment is on-site. The utility owner shall be invited to attend. Should power line conditions change, another meeting shall be conducted prior to work commencing. The meeting document shall include at least the following:

(A) Date the meeting is conducted;

(B) Names and signatures of all meeting attendees;

(C) Address/location of where crane/equipment work will be performed;

(D) Picture/drawing showing the crane/equipment's work zone at the site and how it will be identified (360 degrees around the crane/equipment, up to its maximum working radius, range limit device, or range control warning device);

(E) Voltage information and the location of all energized lines;

and

(F) Steps that are implemented to prevent encroachment/electrocution.

(ii) If tag lines are used, they must be nonconductive.

(iii) Erect and maintain an elevated warning line, barricade, or line of signs, in view of the operator, equipped with fluorescent colored flags or similar high-visibility markings, at 20 feet from a power line that is up to 350 kV, or 50 feet from a power line that ex-

ceeds 350 kV (if using Option (2)), or at the minimum approach distance under Table 4 of this section (if using Option (3)). If the operator is unable to see the elevated warning line, a dedicated spotter must be used as described in (iv)(B) of this subsection, in addition to implementing one of the measures described in (b)(i), (iii) through (v) of this subsection.

(iv) Implement at least one of the following measures:

(A) A proximity alarm set to give the operator sufficient warning to prevent encroachment.

(B) Use a dedicated spotter (who meets the definition of a dedicated spotter) who is in continuous contact with the crane/equipment operator, plus an elevated warning line, barricade, or line of signs, in view of the spotter, equipped with fluorescent colored flags or similar high-visibility markings. The dedicated spotter must:

(I) Be equipped with a visual aid to assist in identifying the minimum clearance distance. Examples of a visual aid include: A clearly visible line painted on the ground; a clearly visible line on stanchions; a set of clearly visible line-of-sight landmarks (such as a fence post behind the dedicated spotter and a building corner ahead of the dedicated spotter).

(II) Be positioned to effectively gauge the clearance distance.

(III) Where necessary, use equipment that enables the dedicated spotter to communicate directly with the operator.

(IV) Give timely information to the operator so that the required clearance distance can be maintained.

(C) A device that automatically warns the operator when to stop movement, such as a range control warning device. Such a device must be set to give the operator sufficient warning to prevent encroachment.

(D) A device that automatically limits range of movement, set to prevent encroachment.

(E) An insulating link/device, as defined in WAC 296-155-52902, installed at a point between the end of the load line (or below) and the load.

(v) The requirements of (b)(iv) of this subsection do not apply to work covered by chapter 296-45 WAC.

(c) **Voltage information.** Where Option (3) is used, the utility owner/operator of power lines must provide the requested voltage information prior to commencement of work or within two working days of the request.

(d) Operations below power lines.

(i) No part of the crane/equipment, load line, or load (including rigging and lifting accessories) is allowed below a power line unless it has been confirmed that the utility owner/operator has deenergized and visibly grounded the power line at the job site, except where one of the exceptions in (d)(ii) of this subsection apply.

(ii) Exceptions. (d)(i) of this subsection is inapplicable where the employer demonstrates that one of the following applies:

(A) The work is covered by chapter 296-45 WAC.

(B) For cranes/equipment with nonextensible booms: The uppermost part of the crane/equipment, with the boom at true vertical, would be more than 50 feet below the plane of the power line, or more than the Table 4 minimum clearance distance below the plane of the power line;

(C) For cranes with articulating or extensible booms: The uppermost part of the crane, with the boom in the fully extended position, at true vertical, would be more than 50 feet below the plane of the

power line, or more than the Table 4 minimum clearance distance below the plane of the power line; or

(D) Compliance with (d)(i) of this subsection is infeasible and meets all of the requirements of subsection (4) of this section.

(e) Power lines presumed energized. It must be assumed that all power lines are energized unless the utility owner/operator confirms that the power line has been, and continues to be, deenergized and visibly grounded at the job site.

(f) **Training.**

(i) The employer must train each operator and crew member assigned to work with the crane/equipment on all the following:

(A) The procedures to be followed in the event of electrical contact with a power line. Such training must include:

(I) Information regarding the danger of electrocution from the operator simultaneously touching the crane/equipment and the ground;

(II) The importance to the operator's safety of remaining inside the cab, except where there is an imminent danger of fire, explosion, or other emergency that necessitates leaving the cab;

(III) The safest means of evacuating from the crane/equipment that may be energized;

(IV) The danger of the potentially energized zone around the crane/equipment (step potential);

(V) The need for crew in the area to avoid approaching or touching the crane/equipment and the load; and

(VI) Safe clearance distance from power lines.

(B) Power lines are presumed to be energized unless the utility owner/operator confirms that the power line has been and continues to be deenergized, and visibly grounded at the job site.

(C) Power lines are presumed to be uninsulated unless the utility owner/operator or a registered engineer who is a qualified person with respect to electrical power transmission and distribution confirms that a power line is insulated.

(D) The limitations of an insulating link/device, proximity alarm, and range control (and similar) device, if used.

(E) The procedures to be followed to properly ground equipment and the limitations of grounding.

(ii) Employees working as dedicated spotters must be trained to enable them to effectively perform their task, including training on the applicable requirements of this section.

(iii) Training under this section must be administered in accordance with WAC 296-155-53409(2).

(g) Devices originally designed by the manufacturer for use as a safety device (see WAC 296-155-53410), operational aids (see WAC 296-155-53412), or a means to prevent power line contact or electrocution, when used to comply with this section, must meet the manufacturer's procedures for use and conditions of use.

(3) Prior to working near a transmitter/communication tower where an electrical charge can be induced in the crane/equipment or materials being handled, the transmitter must be deenergized or the following precautions must be taken:

(a) The crane/equipment must be provided with an electrical ground directly to the crane/equipment frame;

(b) Ground jumper cables must be attached to materials being handled by boom equipment when electrical charge is induced while working near energized transmitters. Crews must be provided with nonconductive poles having large alligator clips or other similar protection to attach the ground cable to the load;

(c) Combustible and flammable materials must be removed from the immediate area prior to operations; and

(d) If tag lines are used, they must be nonconductive.

(4) **Operation of the crane/equipment inside the Table 4 zone.** Operations in which any part of the crane/equipment, load line, or load (including rigging and lifting accessories) is either closer than the minimum approach distance under Table 4 of an energized power line, or the power line voltage is undetermined and the crane/equipment load line, or load is within 20 feet from the power line, is prohibited, except where it is demonstrated that all of the following requirements are met:

(a) Notify the crane safety program within the department;

(b) The employer determines that it is infeasible to do the work without breaching the minimum approach distance under Table 4 of this section;

(c) The employer determines that, after consultation with the utility owner/operator, it is infeasible to deenergize and ground the power line or relocate the power line;

(d) Minimum clearance distance;

(i) The power line owner/operator or RPE who is a qualified person with respect to electrical power transmission and distribution determines the minimum clearance distance that must be maintained to prevent electrical contact in light of the on-site conditions. The factors that must be considered in making this determination include, but are not limited to: Conditions affecting atmospheric conductivity; time necessary to bring the crane/equipment, load line, and load (including rigging and lifting accessories) to a complete stop; wind conditions; degree of sway in the power line; lighting conditions, and other conditions affecting the ability to prevent electrical contact.

(ii) Subsection (4)(d)(i) of this section does not apply to work covered by chapter 296-45 WAC; instead, for such work, the minimum clearance distances specified in chapter 296-45 WAC apply. Employers covered by chapter 296-45 WAC are permitted to work closer than the distances in chapter 296-45 WAC, where both the requirements of this rule and WAC 296-45-375(10) are met.

(e) A planning meeting with the employer and utility owner/operator, or RPE who is a qualified person with respect to electrical power transmission and distribution, is held to determine the procedures that will be followed to prevent electrical contact and electrocution. At a minimum these procedures must include:

(i) If the power line is equipped with a device that automatically reenergizes the circuit in the event of a power line contact, before the work begins, the automatic reclosing feature of the circuit interrupting device must be made inoperative if the design of the device permits;

(ii) A dedicated spotter (who meets the definition of a dedicated spotter) who is in continuous contact with the operator. The dedicated spotter must:

(A) Be equipped with a visual aid to assist in identifying the minimum clearance distance. Examples of a visual aid include, but are not limited to: A clearly visible line painted on the ground; a clearly visible line on stanchions; a set of clearly visible line-of-sight landmarks (such as a fence post behind the dedicated spotter and a building corner ahead of the dedicated spotter);

(B) Be positioned to effectively gauge the clearance distance;

(C) Where necessary, use equipment that enables the dedicated spotter to communicate directly with the operator; and

(D) Give timely information to the operator so that the required clearance distance can be maintained.

(iii) An elevated warning line, or barricade (not attached to the crane), in view of the operator (either directly or through video equipment), equipped with flags or similar high-visibility markings, to prevent electrical contact. However, this provision does not apply to work covered by chapter 296-45 WAC;

(iv) Insulating link/device;

(A) An insulating link/device installed at a point between the end of the load line (or below) and the load.

(B) For work covered by chapter 296-45 WAC, the requirement in (e)(iv)(A) of this subsection applies only when working inside the clearance distances in chapter 296-45 WAC.

(C) For work covered by chapter 296-45 WAC, Electric power generation, transmission, and distribution, involving operations where use of an insulating link/device is infeasible, the requirements of WAC 296-45-375 (10)(c)(ii) or (iii) may be substituted for the requirement in (e)(iv)(A) of this subsection.

(v) All employees, excluding equipment operators located on the equipment, who may come in contact with the equipment, the load line, or the load must be insulated or guarded from the equipment, the load line, and the load through an additional means other than the device described in (e)(iv)(A) of this subsection. Insulating gloves rated for the voltage involved are adequate additional means of protection for the purposes of this section;

(vi) Use nonconductive rigging if the rigging may be within the Table 4 distance during the operation;

(vii) If the crane/equipment is equipped with a device that automatically limits range of movement, it must be used and set to prevent any part of the crane/equipment, load line, or load (including rigging and lifting accessories) from breaching the minimum approach distance established under (d) of this subsection;

(viii) If a tag line is used, it must be of the nonconductive type;

(ix) Barricades forming a perimeter at least 10 feet away from the crane/equipment to prevent unauthorized personnel from entering the work area. In areas where obstacles prevent the barricade from being at least 10 feet away, the barricade must be as far from the crane/equipment as feasible;

(x) Workers other than the operator must be prohibited from touching the load line above the insulating link/device and crane. Operators remotely operating the equipment from the ground must use either wireless controls that isolate the operator from the equipment or insulating mats that insulate the operator from the ground;

(xi) Only personnel essential to the crane/equipment work are permitted to be in the area of the crane and load;

(xii) The crane/equipment must be properly grounded; and

(xiii) Insulating line hose or cover-up must be installed by the utility owner/operator except where such devices are unavailable for the line voltages involved.

(f) The procedures developed to comply with (e) of this subsection are documented and immediately available on-site;

(g) The crane/equipment user and utility owner/operator, RPE who is a qualified person with respect to electrical power transmission and distribution, meet with the operator and the other workers who will be in the area of the crane/equipment or load to review the procedures that will be implemented to prevent breaching the minimum ap-

proach distance established in (d) of this subsection and prevent electrocution. This meeting shall be conducted prior to the commencement of using the crane/equipment, and must be documented. The meeting documentation must remain on-site for the entire duration that the crane/equipment is on-site, and shall include at least the following:

- (i) Names and signatures of all meeting attendees;
 - (ii) Date the meeting is conducted;
 - (iii) Address/location of where the crane work will be performed;
 - (iv) Drawing showing the equipment's work zone and how it is identified;
 - (v) Voltage information and location of all energized lines; and
 - (vi) Steps implemented to prevent encroachment/electrocution.
- (h) The procedures developed to comply with (e) of this subsection are implemented;

(i) The utility owner/operator, RPE who is a qualified person with respect to electrical power transmission and distribution, and all employers of any employees involved in the work, must identify one person who will direct the implementation of the procedures. The person identified in accordance with this section must direct the implementation of the procedures and must have the authority to stop work at any time to ensure safety;

(j) If a problem occurs implementing the procedures being used to comply with (e) of this subsection, or there is indication that those procedures are inadequate to prevent electrocution, the employer must safely stop operations and either develop new procedures to comply with (e) of this subsection, or have the utility owner/operator de-energize and visibly ground or relocate the power line at the job site before resuming work;

(k) Devices originally designed by the manufacturer for use as a safety device (see WAC 296-155-53410), operational aids (see WAC 296-155-53412), or a means to prevent power line contact or electrocution, when used to comply with this section, must meet the manufacturer's procedures for use and conditions of use; and

(l) The employer must train each operator and crew member assigned to work with the equipment in accordance with subsection (2)(f) of this section.

(5) Cranes while traveling.

(a) This section establishes procedures and criteria that must be met for cranes traveling under a power line on the job site with no load. Equipment traveling on a job site with a load is governed by subsections (2), (4), (6), and (7) of this section, whichever is appropriate, and WAC 296-155-53400(35).

(b) The employer must ensure that:

(i) The boom/mast and boom/mast support system are lowered sufficiently to meet the requirements of this section.

(ii) The clearances specified in Table 5 of this section are maintained.

(iii) The effects of speed and terrain on crane movement (including movement of the boom/mast) are considered so that those effects do not cause the minimum clearance distances specified in Table 5 of this section to be breached.

(iv) **Dedicated spotter.** If any part of the crane while traveling will get closer than 20 feet of the power line, the employer must ensure that a dedicated spotter (who meets the definition of a dedicated spotter), who is in continuous contact with the driver/operator, is used. The dedicated spotter must meet the definition of a dedicated spotter and:

- (A) Be positioned to effectively gauge the clearance distance;
 - (B) Where necessary, use equipment that enables the dedicated spotter to communicate directly with the operator; and
 - (C) Give timely information to the operator so that the required clearance distance can be maintained.
- (v) Additional precautions for traveling in poor visibility. When traveling at night, or in conditions of poor visibility, in addition to the measures specified in (b)(i) through (iv) of this subsection, the employer must ensure that:
- (A) The power lines are illuminated or another means of identifying the location of the lines must be used; and
 - (B) A safe path of travel is identified and used.
- (6) For power lines over 1000 kV, the minimum clearance distance must be established by the utility owner/operator or a RPE who is a qualified person with respect to power transmission and distribution.

Table 4: Minimum Clearance Distances

Voltage (nominal, kV)	Minimum clearance distance (feet)
up to 50	10
over 50 to 200	15
over 200 to 350	20
over 350 to 500	25
over 500 to 750	35
over 750 to 1,000	45
over 1,000	(as established by the utility owner/operator or RPE who is a qualified person with respect to electrical power transmission and distribution).

Note: The value that follows "to" is up to and includes that value.

Table 5: Minimum Clearance Distances While Traveling With No Load and Boom/Mast Lowered

Voltage (nominal, kV)	While traveling— Minimum clearance distance (feet)
up to 0.75	4 (while traveling/boom lowered)
over 0.75 to 50	6 (while traveling/boom lowered)
over 50 to 350	10 (while traveling/boom lowered)
over 350 to 750	16 (while traveling/boom lowered)
over 750 to 1,000	20 (while traveling/boom lowered)
over 1,000	(as established by the utility owner/operator or RPE who is a qualified person with respect to electrical power transmission and distribution).

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060, and chapter 49.17 RCW. WSR 25-16-089, s 296-155-53408, filed 8/5/25, effective 9/5/25. Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060. WSR 16-09-085, § 296-155-53408, filed 4/19/16, effective 5/20/16. Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060 and chapter 49.17 RCW, and 29 C.F.R. 1926, Subpart CC. WSR 13-02-068, § 296-155-53408, filed 12/31/12, effective 2/1/13. Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050,

49.17.440, 49.17.060, and 29 C.F.R. 1926, Subpart CC. WSR 12-01-086, § 296-155-53408, filed 12/20/11, effective 2/1/12.]