



Power Line Safety
OSHA CRANES AND DERRICKS

EFFECTIVE NOV. 8, 2010 OSHA 29 CFR 1926.1407-1411



For Line Voltages BELOW 350 kV, Trigger Distance is 20 Feet

- A. Identify the work zone by demarcating boundaries, or based on crane's 360° maximum working radius
- B. If it is determined that the crane, load, load lines, or rigging can get closer than 20 feet to a power line:
 ...YOU MUST APPLY ONE OF THREE OPTIONS...

OPTION 1: DEENERGIZE

Confirm from the utility operator that the power line is deenergized and visibly-grounded at the work site

-OR-

OPTION 2: LIVE LINE, 20 FEET

Ensure no encroachment within 20 feet

OPTION 3: LIVE LINE, TABLE A

- Step 1. Determine line voltage with utility operator¹
- Step 2. Ensure no encroachment within Table A minimum distance limits (*see below)

-BY IMPLEMENTING THE FOLLOWING AT MINIMUM-

1. Conduct a planning meeting with the operator & workers who will be in area of the equipment or load
2. If tag lines are used they must be non-conductive
3. Erect and maintain an elevated warning line of barricades, signs, flags at 20 feet or Table A distance. If the operator cannot see the elevated warning line, a dedicated spotter in continuous contact with the operator is required.
4. Implement at least ONE additional measure from the following list:
 - (i) Proximity warning alarm to give operator sufficient warning to prevent encroachment
 - (ii) Dedicated spotter equipped with visual aid and in continuous contact with operator²
 - (iii) Range control limit device that automatically warns operator when to stop movement
 - (iv) Range of movement limit device that automatically limits the range of movement
 - (v) Insulating link installed at a point between the end of the load line and the load

Note 1. The Rule allows two working days maximum for utility response on voltage determination

Note 2. If a spotter is used with step 3 at least one other measure, (i), (iii), (iv), or (v) must be implemented

FOR OPERATIONS INSIDE "TABLE A" MINIMUM CLEARANCE DISTANCE SEE REVERSE (p. 2/2)

- THIS GUIDE DOES NOT APPLY TO LINE VOLTAGES OVER 350 kV, SEE RULES (1926.1409) FOR > 350 KV
- CRANE ASSEMBLY & DISASSEMBLY ALSO REQUIRE SAFETY MEASURES NEAR POWER LINES, SEE 1926.1407
- FOR EXCEPTIONS UNDER SUBPART V, REFER TO 29 CFR 1926

Table A – Minimum Clearance Distances*

<u>AC Voltage(nominal)</u>	<u>Min Clearance</u>
up to 50kV.....	10 feet
over 50 to 200kV.....	15 feet
over 200 to 350kV.....	20 feet

Information given on this page is in summary form. See actual regulation for full details & definitions (29 CFR Part 1926.1408)



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LIVE LINE OPERATIONS INSIDE "TABLE A" MINIMUM CLEARANCE DISTANCES

Equipment operations in which any part of the equipment, load line, or load (including rigging and lifting accessories) is closer than the minimum approach distance under Table A of § 1926.1408 to an energized power line is prohibited, **except where the employer demonstrates that all of the following requirements are met:**

1. Employer determines that it is infeasible to do the work without breaching Table A minimum approach distance
2. Employer determines after consulting with utility operator that it is infeasible to deenergize or relocate the power line
3. Power line operator or qualified PE³ must determine minimum clearance distance in light of the on-site conditions
4. A planning meeting including utility operator or PE is held to determine procedures to be followed including at minimum, the following (Items 5 through 16):
 5. If the power line is equipped with an automated device which reenergizes the power line in the event of a power line contact, it must be disabled by the utility operator before work starts if the design of the device permits
 6. Employ a dedicated spotter equipped with a visual aid and who is in continuous contact with the operator
 7. Provide an elevated warning line or barricade using high-visibility markings, e.g. flags, in the view of the operator
 8. Use an insulating link at a point between the end of the load line (or below) and the load⁴
 9. Use non-conductive rigging if rigging may come within the Table A distance (§ 1926.1408) during the operation
 10. If crane has one, must use range limiter set to minimum clearance distance determined for the project in Item 3
 11. Tag lines if used must be of the non-conductive type
 12. Provide perimeter barricades of at least a 10 foot distance around the crane or max. possible in case of obstacles
 13. Workers other than operator are prohibited from touching the crane or the load line above the insulating link, and operators using remote controls must use wireless controls or else use an insulating mat that insulates the operator from the ground.
 14. Only personnel essential to the operation are permitted to be in the area of the crane and the load
 15. The equipment (crane) must be properly grounded
 16. Insulating line hose/cover-up must be installed by the utility operator unless unavailable for voltages involved
17. The procedures developed to comply with the above (Items 3-16) are to be documented and available on-site
18. Equipment user and utility operator (or PE) meet with the operator and other workers that will be in the area to review the procedures that will be implemented to prevent breaching the minimum approach distance established in Item 3
19. The procedures are implemented
20. The utility operator (or PE) and all employers of employees involved in the work must identify one person with stop-work authority who will direct the implementation of the procedures
21. If a problem occurs with implementing the procedures or there are indications that those procedures are inadequate to prevent electrocution, the employer must safely stop work and develop new procedures or have the utility deenergize or relocate the power line before resuming operations.
22. Safety devices, operational aids used to prevent power line contact or electrocution must comply with manufacturers' procedures for use and conditions of use
23. Employer must train each operator & crew member assigned regarding power line safety in accord with 1926.1408(g)
Note 3. Registered professional engineer (PE); Note 4. See www.millerproducts.net or 1926.1408(4)(iv) and (v) for details regarding 1-year and 3-year phase-in periods on mandatory use of insulating links

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