

# NIOSH ALERT



## Preventing Electrocutions of Crane Operators and Crew Members Working Near Overhead Power Lines

### WARNING!

**Crane operators and crew members may be electrocuted when they work near overhead power lines.**

Take the following steps to protect yourself from electrocution when operating or working around cranes that are near overhead power lines:

1. Operate cranes only if you have been trained in safe operating procedures and the Occupational Safety and Health Administration (OSHA) safety requirements.
2. Participate in all crane safety programs offered by your employer or labor organization.
3. Know the location and voltage of all overhead power lines at the jobsite before operating or working with any crane.
4. Assume that all power lines are energized and maintain the minimum clearance required by OSHA at all times:
  - At least 10 feet for lines rated 50 kilovolts or below
  - At least 10 feet plus 0.4 inch for each kilovolt above 50 kilovolts (or maintain twice the length of the line insulator, but never less than 10 feet)
5. For more protection, maintain the greater clearances recommended by the American National Standards Institute (ANSI):

<b>Power line voltage phase to phase (kV)</b>	<b>Minimum safe clearance (feet)</b>
50 or below . . . . .	10
Above 50 to 200 . . . . .	15
Above 200 to 350 . . . . .	20
Above 350 to 500 . . . . .	25
Above 500 to 750 . . . . .	35
Above 750 to 1,000 . . . . .	45

6. Where it is difficult for the crane operator to see the power lines or pay attention to maintaining required

clearance during crane movement or operation, designate a person whose sole responsibility is to observe the clearance and to give immediate warning when the crane approaches the limits of safe clearance.

7. Be aware of the limitations of boom guards, insulated lines, ground rods, nonconductive links, and proximity warning devices. Do not use these devices as a substitute for de-energizing and grounding lines or maintaining safe clearance.



Workers are killed each year when cranes contact overhead power lines.

Call 1-800-35-NIOSH (1-800-356-4674) for additional information or for free single copies of the complete *NIOSH Alert: Request for Assistance in Preventing Electrocutions of Crane Operators and Crew Members Working Near Overhead Power Lines* [DHHS (NIOSH) Publication No. 95-108].

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