

# Crane Tech Newsletter

CRANE TECH

March 2006

Excerpt from ASME B30.5, Table 2:  
Required Clearance for Normal Volt-  
ages in Operation Near High-Voltage  
Lines.

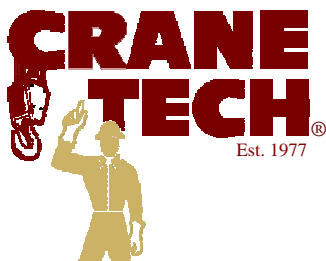
Minimum Nominal Voltage, kV (Phase to Phase)	Required Clearance in Feet
to 50 .....	10 ft.
Over 50 to 200 .....	15 ft.
Over 200 to 350 .....	20 ft.
Over 350 to 500 .....	25 ft.
Over 500 to 750 .....	35 ft.
Over 750 to 1,000 .....	45 ft.

(1) Environmental conditions such as fog,  
smoke, or precipitation may require in-  
creased clearances.

**Note: In transit clearances are not ad-  
dressed in this Tech Tip.**

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## Tech Tips<sup>®</sup>

*Crane & Rigging Job Site Safety*

### Power Line Safety:

If you want to know the number one cause  
of crane related fatalities you need not look  
any further than power lines. The Bureau of  
Labor Statistics reports that a high percent-  
age of electrocution deaths comes from con-  
tact with overhead power lines.

Why so many injuries and fatalities result  
from crane contact with power lines is a  
continual point of interest. Simply telling  
operators to "look up" and recognize the  
danger is not enough. Operators need  
greater awareness of these dangers and a  
better visual reference.

When seated in a crane cab it's difficult to  
judge power line clearance. The difficulty  
comes in because there is very little refer-  
ence for an operator looking out to a boom  
point. And, because power lines are seen as  
thin black lines in the sky, operators have  
difficulty distinguishing distance, and they  
may not even see them.

#### A few basic rules to help avoid power line contact.

- (1) Crane operators must learn to recognize  
the Prohibited Zone. The Prohibited Zone is  
the area surrounding energized power lines  
whose size is dictated by the highest voltage  
in the lines. (See the table inset)
- (2) Plan to have power lines de-energized or  
relocated as necessary to prevent energizing  
the crane. Planning ahead gets this job done  
before your crane arrives.
- (3) Plan to ensure proper clearance is main-  
tained if the operator booms down. If the  
crane's boom could move into the prohibited  
zone special precautions must be taken to  
ensure that no part of the crane or load will  
enter the prohibited zone. Make operating  
within a boom's length of the prohibited  
zone a condition requiring special planning.
- (4) Never handle loads that are placed un-  
der power lines. Barricade these areas to  
prevent storage of materials or crane entry.
- (5) Crane operators must know Minimum  
Required Clearances of the ASME B30.5, but  
don't expect operators to know how much  
voltage a power line carries. Supervisors  
must find this information and help opera-  
tors plan their crane's set-up.

### Tech Tip Continued:

(6) Never allow a crane to set up on one  
side of power lines and handle loads on  
the other side of the power lines. This is  
an extremely dangerous operation and it  
must never be allowed to occur.

(7) Alert ground personnel to the dangers  
associated with power line contact. These  
are the workers typically killed when a  
crane comes into contact with power  
lines. If a power line contact does occur,  
ground personnel must not go to the op-  
erators aid because the crane and ground  
will be energized.

A short Tech Tip cannot cover every as-  
pect of power line safety, but raising  
awareness to this deadly subject may  
improve awareness to this deadly topic.

To help crane operators and ground  
crews gain a better sense for the location  
of power lines and load you may find the  
following practice useful.

### Make a Ground Level Reference for the Prohibited Zone:

- (1) Determine the distance from power  
lines that creates the prohibited zone.  
Increase this distance the greatest  
amount possible. Don't forget to add in  
the distance of jibs and/or extensions  
that are installed but not in use.
- (2) Project this distance to the ground  
and place large high visibility construction  
cones or barrels along the line created by  
your prohibited zone measurement.
- (3) Advise crane operators and ground  
crews to not allow loads to move beyond  
the cones.

High visibility cones and/or barrels create  
a visual reference line that is easily seen  
by the crane operator and ground crews.  
This planning step can reduce the likeli-  
hood of a load or crane intruding into the  
Prohibited Zone.

Read and be thoroughly familiar with  
ASME B30.5-3.4.5 "Operating Near Elec-  
tric Power Lines."

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