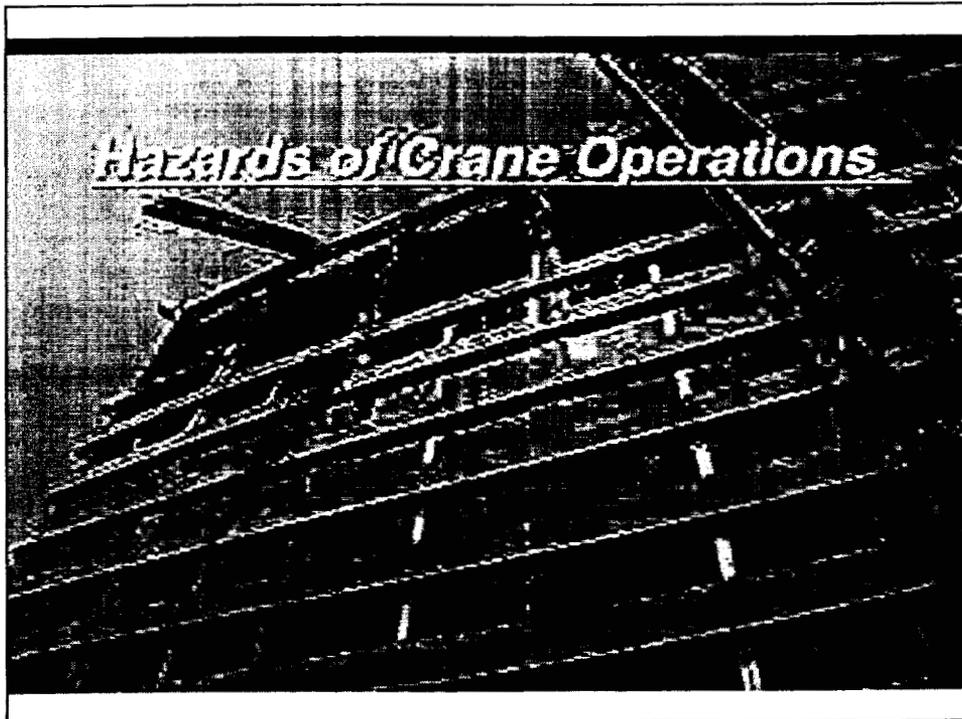


Utilizing a Permit System While Working In-Close Proximity to Overhead Power Lines

By:
Tom Broderick
Construction Safety Council

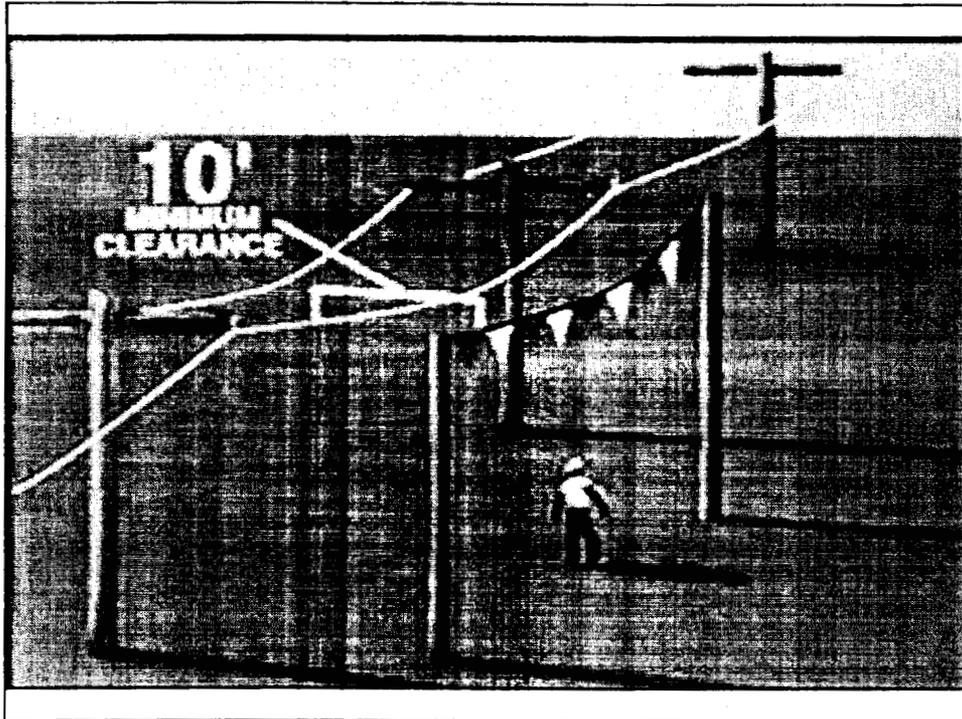


Existing OSHA Requirements

- Establishes line clearance distance for energized lines (Subpart N).
 - 10 Feet plus .4 inches for every kV over 50 kV.
 - Line clearances distances do not have to be observed if line is de-energized and visibly grounded.

Existing OSHA Requirements

- Requires the use of an observer *where it is difficult* for the operator to maintain the desired clearance (Subpart N).
 - Uncontrolled, subjective protective measure.
 - Up to Competent Person to determine use.



Existing OSHA Requirements

- Allows the use of protective technologies.
 - Insulated link
 - Boom cage
 - Proximity warning device
 - Power line clearance distance must still be observed.

Existing OSHA Requirements

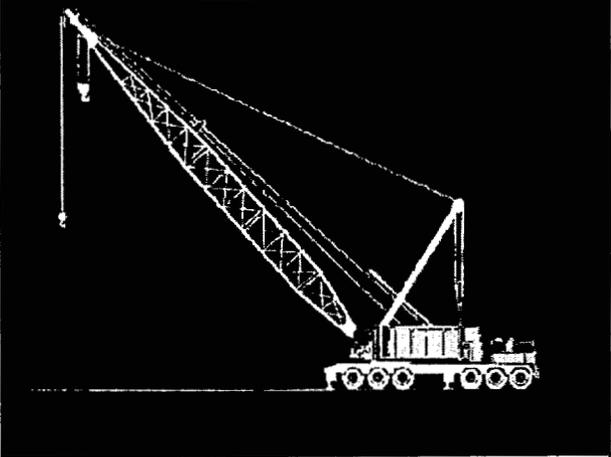
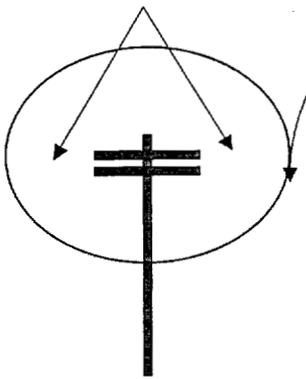
- 1926.550 (a)(15)(vi) - All overhead wires are to be considered to be energized unless owner indicates it is not and is visibly grounded.
- Note: OSHA does not address insulated vs. un-insulated lines in Subpart N.
 - Subpart K addresses employer responsibilities to take regardless if a line is “concealed or not”.

Existing ASME Requirements

- ASME B30.5-3.4.5 *Operating Near Electric Power Lines*. Cranes shall not be used to handle materials stored under electric power lines unless any combination of boom, load line, or machine component cannot enter the prohibited zone.
 - Note: ASME requirements are more restrictive than OSHA.

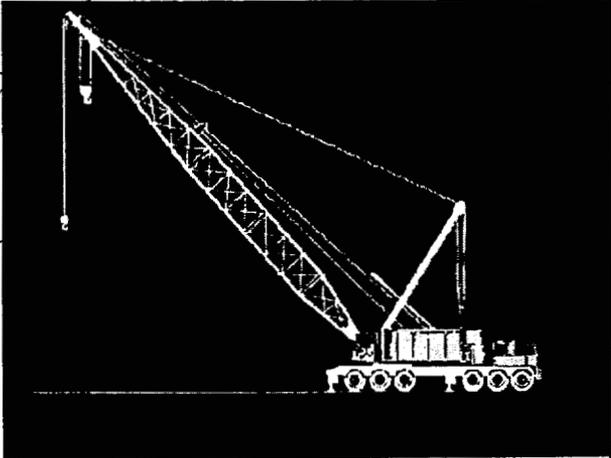
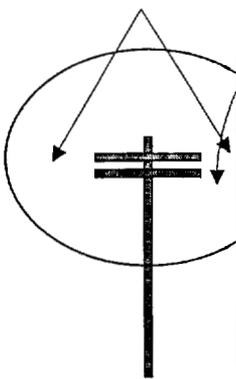
Figure 17 of ASME B30.5
"Prohibited Zone"

Prohibited Zone



What if the crane has the potential
to reach the "Prohibited Zone"?

Prohibited Zone



What if the crane has the potential to reach the “Prohibited Zone”?

- ASME B30.5-3.4.5.3 – An on-site meeting between project management and qualified representative of the electrical utility shall take place to establish the procedure to safely complete the operations.

Proposed Term “Affected Zone”

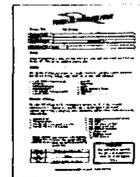
- An affected zone can be established that will equal the distance of any combination of boom, load line, load, or machine component plus 10 feet from a power line.
- If equipment is used within this affected zone, then a permit system consistent with existing OSHA requirements in Subpart K can be used.
- At no time will equipment be allowed to enter the prohibited zone unless the line is de-energized and visibly grounded, or barrier protection used.

OSHA Revisited – Subpart K General Requirements

.416(a)(3) Before work is begun the employer shall ascertain by inquiry or direct observation, or by instruments, whether any part of an energized electric power circuit, exposed or concealed, is so located that the performance of the work may bring any person, tool or machine into physical or electrical contact with the electric power circuit. The employer shall post and maintain proper warning signs where such a circuit exists. The employer shall advise employees of the location of such lines, the hazards involved, and protective measures to be taken.

Power Line Permit

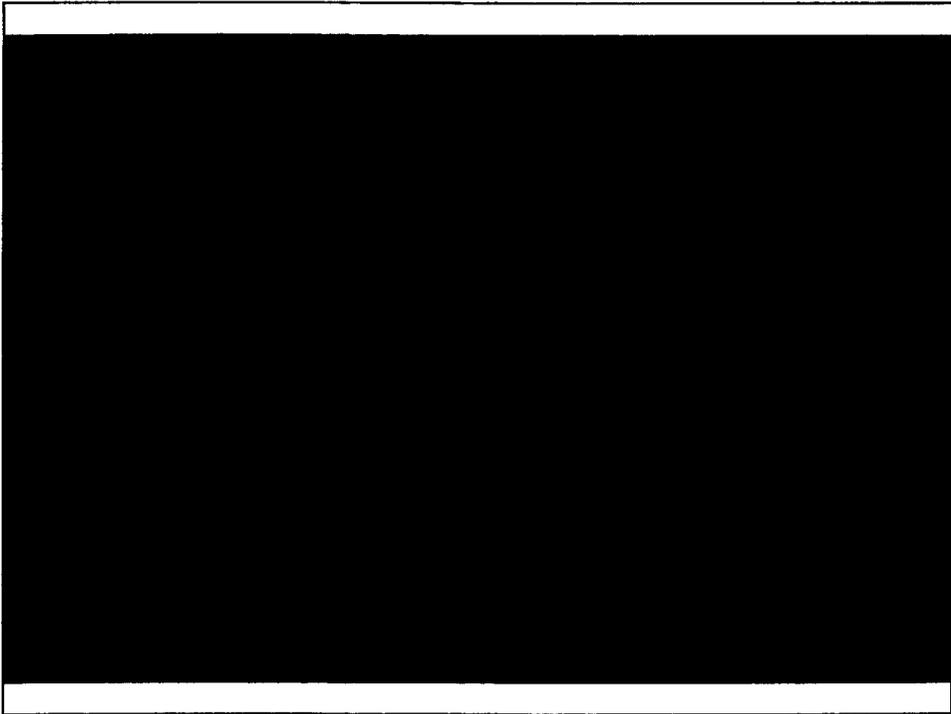
- Survey the job site to note the exact location and voltages of power lines, exposed or concealed (insulated or un-insulated).
- Identification of work to be performed that may bring person, tool, or machine into physical or electrical contact.
- Methods chosen by the employer to prevent physical or electrical contact.
- Verification of training.



Crane Accident



Public Service Announcement



Thank You

Questions?

POWER LINE AWARENESS PERMIT

Today's Date _____ Job Number _____

Contractor Name			
Job Address			
Telephone Number		Fax Number	

Emergency Contact Number	
---------------------------------	--

Survey

Before beginning any project, you must first survey your work area to find power lines at the job site. (See job site sketch on reverse side)

Identify

After finding all of the power lines at your site, identify the activities you'll be doing that may put you or your workers at risk. Mark one or more of the following:

- | | |
|--|---|
| <input type="checkbox"/> Cranes (mobile or truck mounted)
<input type="checkbox"/> Drilling rigs
<input type="checkbox"/> Backhoes/Excavators
<input type="checkbox"/> Long-handled tools
<input type="checkbox"/> Other tools/high-reaching equipment
<input type="checkbox"/> Concrete pumper | <input type="checkbox"/> Aerial lifts
<input type="checkbox"/> Dump trucks
<input type="checkbox"/> Ladders
<input type="checkbox"/> Material Handling & Storage
<input type="checkbox"/> Scaffolding
<input type="checkbox"/> Other _____ |
|--|---|

Eliminate or Control

After identifying the power line and high-risk activities on our job site, we must determine how to eliminate or control the risk of electrocution (a successful determination is often reached only after consultation with the utility). Mark one or more of the following:

- | | |
|---|--|
| <input type="checkbox"/> Move the activity
<input type="checkbox"/> Change the activity
<input type="checkbox"/> Have the utility de-energize the power line
<input type="checkbox"/> Have the utility move the power line | <input type="checkbox"/> Use barrier protection (insulated sleeves)
<input checked="" type="checkbox"/> Use an observer
<input type="checkbox"/> Use warning lines with flags
<input type="checkbox"/> Use non-conductive tools
<input type="checkbox"/> Use a protective technology; <ul style="list-style-type: none"> <input type="checkbox"/> Insulated link <input type="checkbox"/> Boom cage guard <input type="checkbox"/> Proximity device |
|---|--|

Always maintain your minimum safe clearance distance from the power line, except when the utility has de-energized and visibly grounded the power line.

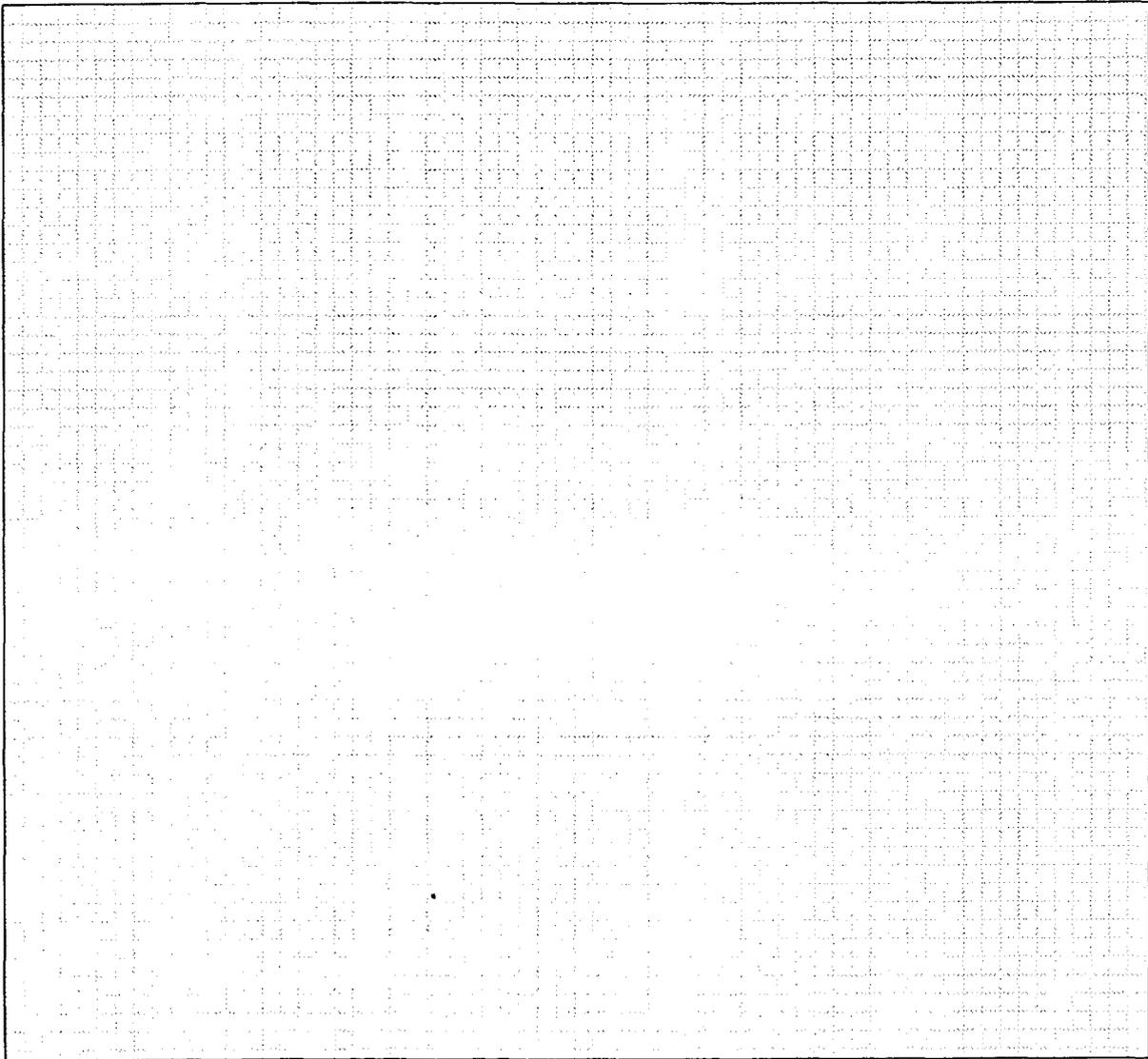
Voltages	Distance from Power Line
Less than 50 kV	10 Feet
More than 50 kV	$10' + (0.4")(\# \text{ of kV over } 50 \text{ kV})$

WARNING!

It is unlawful to operate any piece of equipment within 10' of energized lines

Jobsite sketch

(draw in location of power lines and their proximity to construction site, include such things as; proposed excavations, location of heavy equipment, scaffolding, material storage areas, etc.)



Completed by _____ Date _____

Title _____

Approved by _____ Date _____

Title _____