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Overhead powerline fatalities

There have been numerous accidents involving overhead conductor contacts, resulting in death and severe injury. This Flash outlines the typical scenarios that are repeated in these incidents.

Examples of recent incidents:

- A.** Three workers were electrocuted in dump truck-related overhead powerline contacts between April and July, 2006. Sadly, these fatalities could have been prevented had the workers known what to do when working near powerlines.

None of the victims in these fatalities understood the hazards of coming too close to a powerline. In one fatality, the dump truck with its load raised, made contact with a powerline as the vehicle was reversing. Unaware that the truck had become energized, the victim was electrocuted when he touched the rear of the vehicle. In the other two fatalities, each of the dump trucks contacted the powerline and the drivers knew something had gone wrong. Both drivers were killed by step potential as they stepped off their equipment. They would still be alive had they stayed on their equipment and radioed for help.

- B.** A worker was relocating a ladder in the extended position, on a residential housing project, when it contacted the Utility's overhead primary line. **This scenario happens far too frequently.**

Employers have a responsibility to educate their workers on the hazards surrounding construction sites, particularly overhead conductors. The Occupational Health and Safety Act must be followed with respect to Limits of Safe Approach.

- All workers must look up, prior to extending, moving or climbing a ladder or scaffold, to ensure it is safe to proceed.
- Persons employed to operate boom trucks, dump trucks, cranes or hoisting equipment, require proper training to identify the hazards overhead.
- Using swimming pool skimmers, painting poles, pruning tools or erecting TV antennas, we must exercise extreme caution to ensure we do not impede on the Limits of Safe Approach. **Look above!**

- C.** Two fatalities involving contact with energized overhead powerlines. One incident claimed the life of a young male while seriously injuring another. This incident occurred when the two victims were erecting the long metal support pole of a party tent and it contacted the overhead powerline. Three weeks later, four scout leaders were killed doing exactly the same thing, lowering a tent pole in a jamboree in the United States.

Unfortunately, such accidents are not uncommon to Ontario and the Electrical Safety Authority (ESA). Fatalities involving powerlines account for 38% of all electrocutions in Ontario over the past 8 years.

One common thread in these incidents is the victim's lack of awareness of where the overhead energized powerlines are. Powerlines are everywhere and the public often treats powerlines no differently than a fire hydrant. It has always been there and it is not seen as a threat or danger.

Contact with overhead powerlines will likely result in serious injury or fatality

Accidental contact with an energized powerline is not forgiving. History has shown that contacting a powerline while moving a ladder, using a tree trimmer, erecting an antenna or flagpole, or other similar work usually results in a fatality or serious injury. Furthermore, an incident may occur without direct contact with an overhead powerline. Electricity can jump or "arc" to a person or tools in proximity to a powerline.

ESA continues to warn the public and workers to use caution when working near overhead powerlines. Ladders, antennas, tree trimmers, flagpoles, rolling scaffolds and boom trucks have all contributed to electrical fatalities at home and in the workplace over the last decade.

Respect the power of electricity – ensure that you, your family and co-workers apply caution when working near electric powerlines.

As these fatalities demonstrate, understanding the dangers and knowing what to do when working near overhead powerlines is crucial to worker safety. For that reason, when working in close proximity to powerlines, the Occupational Health and Safety Act and Regulations (OHSa) requires workers and supervisors to:

- a) Conduct a hazard assessment of the jobsite; and
- b) Use a competent designated signaller to ensure that any part of the vehicle or equipment or its load may approach the minimum distance identified in Table F1.

Follow these key safety steps when working near overhead powerlines:

1. Conduct a hazard assessment before starting work; determine the location all powerlines.
2. If possible, relocate the work so that it is not near the powerline. When this is not practical, a safe work procedure should be followed which includes:
 - a. Determining the safe distance of approach (limit of approach) identified in Table F1. The limit of approach is not the same for all powerlines, it depends on the voltage the line is carrying. The higher the voltage, the further the distance required.
 - b. Hire qualified persons to do jobs near overhead electrical lines, such as tree trimming, or have the line de-energized by the local electrical utility or power supply authority.
 - c. Mark the safe distance or limit of approach. If the work is on the ground, use cones or barriers. Using a competent designated signaller will work as well. Make room for swing areas for tools, ladders and cranes. Keep far enough away so that if an object such as an antenna were to fall it would not be close enough to contact the powerline.
 - d. Be aware of the location of powerlines at all times. Moving equipment, raising a load or a vehicle under a powerline creates the potential to come into contact with the energized conductor, thus the potential for fatalities. OHSa requires the use of a competent designated signaller when working in proximity to powerlines.
3. Signs are required to warn workers of the dangers of powerlines if a work location has overhead powerlines running through it.
4. Stay in the vehicle and radio for help if your vehicle or equipment comes into contact with a powerline.

If you see other workers putting themselves at risk by working in close proximity to overhead conductors -- stop them, educate them, and **help save a life**.

Remember:

- **Always conduct a hazard assessment before beginning work;**
- **Be aware of the location of powerlines at all times; and**
- **Take steps to ensure that you and your equipment stay a safe distance from powerlines, as defined by OHSa below:**

Table F1: Minimum safe distances from Power-lines

<u>Voltage</u>	<u>Minimum Distance</u>
Up to 150,000 Volts	3.0 m
More than 150,000 to 250,000 Volts	4.5 m
More than 250,000	6.0 m