



Touch and Step Potential

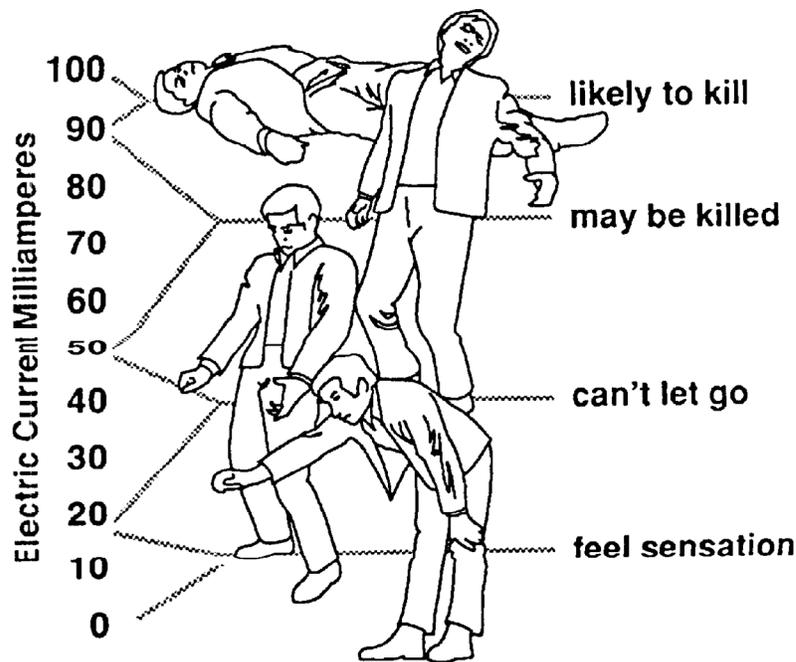
Think Safe. **Live Safe.**



This document provides an overview of the electrical shock risks associated with touch and step potential. For more information please contact Newfoundland Power.

Customer Service:	1-800-663-2802
Construction Services:	1-888-491-5066
Outage Emergencies:	1-800-474-5711

Electric Shock



Electric shock is caused by electric current passing through the body. Symptoms can range from a barely perceptible tingle to immediate heart stoppage. As well as electric burn injuries, there may be internal bleeding, unconsciousness, respiratory paralysis, cardiac disorders and ultimately, a fatality.

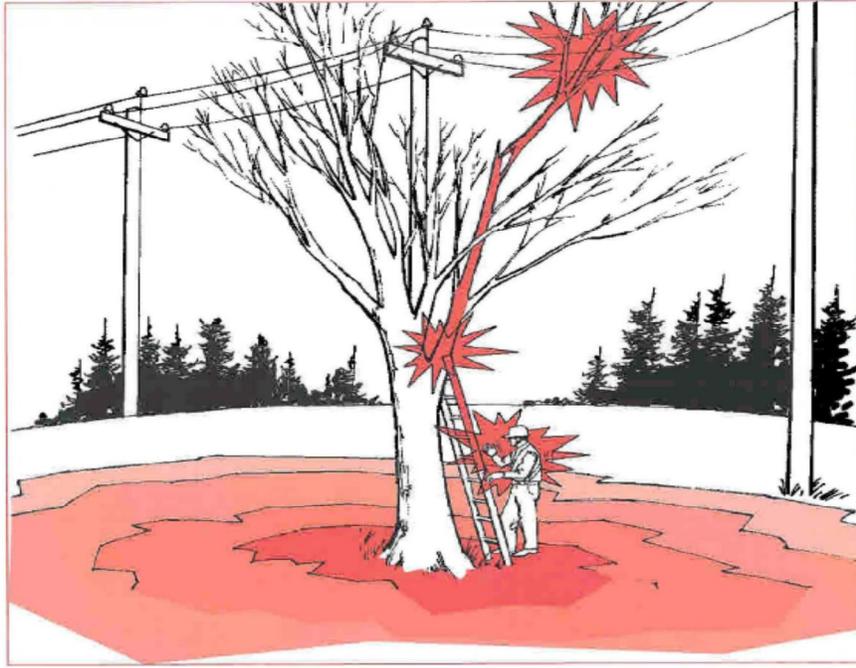
Factors that affect the severity of an electric shock include:

- the length of time the current is flowing through the body;
- the path of current through the body; and,
- the rate of current flow (determined by voltage and resistance).

Two common causes of this disabling or fatal force are Touch Potential and Step Potential.

Note: 1 Milliampere = 1/1000 (.001) of an amp

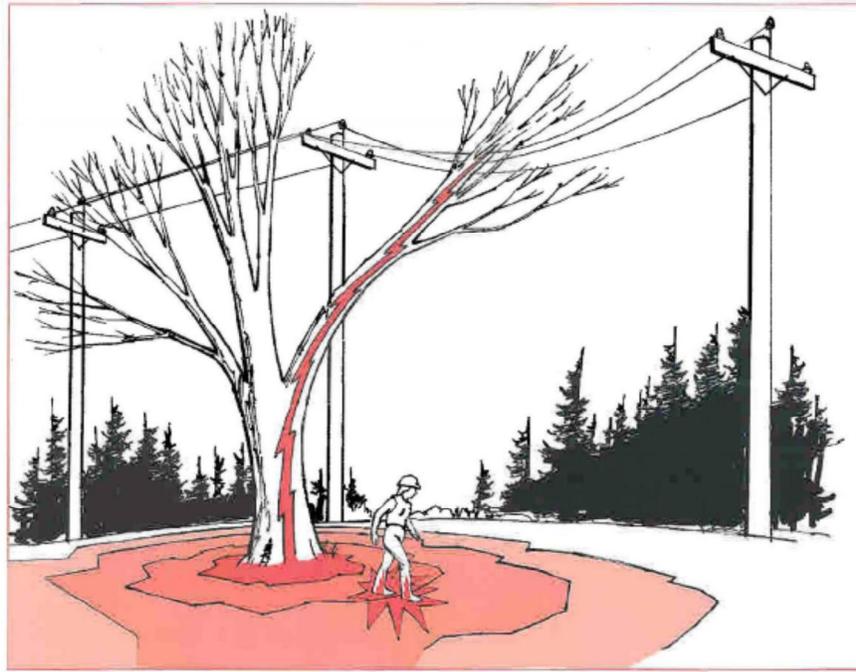
Touch Potential



Touch potential electricity can flow to a worker when contact is made with the ladder.

Touch potential is another danger that comes from the difference in voltage. It occurs when you touch something that is energized while standing on the lower voltage ground. For example, if a tree or some equipment is in contact with a power line, it will be energized to the same voltage as the power line; the surrounding ground will be energized to a lower voltage. If you touch the energized equipment or tree at the same time as you touch the ground with your feet, electricity will flow through your body from the higher voltage tree or equipment to the lower voltage ground.

Step Potential

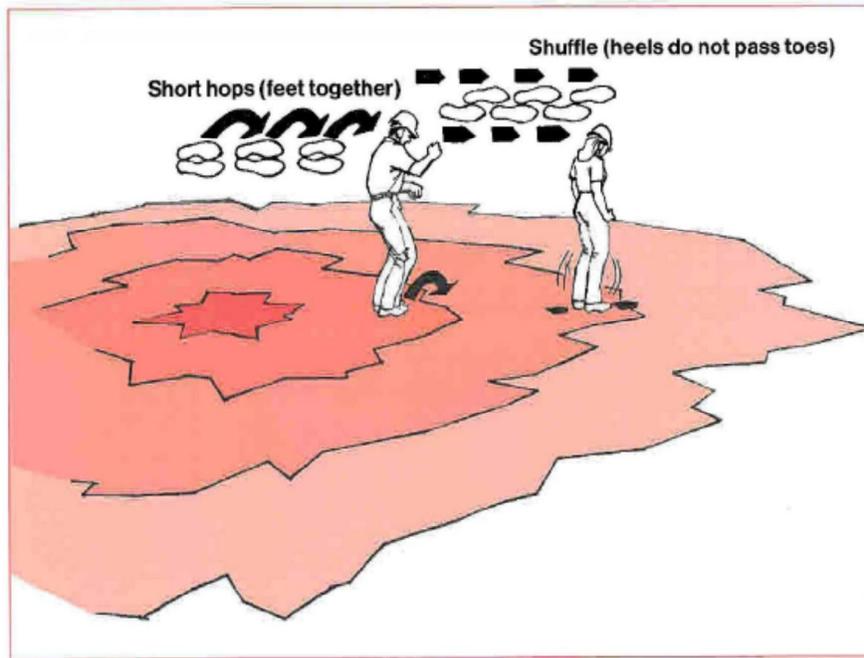


Step Potential electricity will flow from higher voltage to lower voltage.

Step potential is the voltage between two places that are a step apart on energized ground. For example, if you are standing on energized ground, there could be a significant difference in voltage between where one foot and the other are placed, and an electric current could flow up one leg and down the other.

If your feet are close together and touching, you are fairly safe. Since there is almost no voltage difference between the places your feet stand, there is little reason for electricity to seek a path through your body.

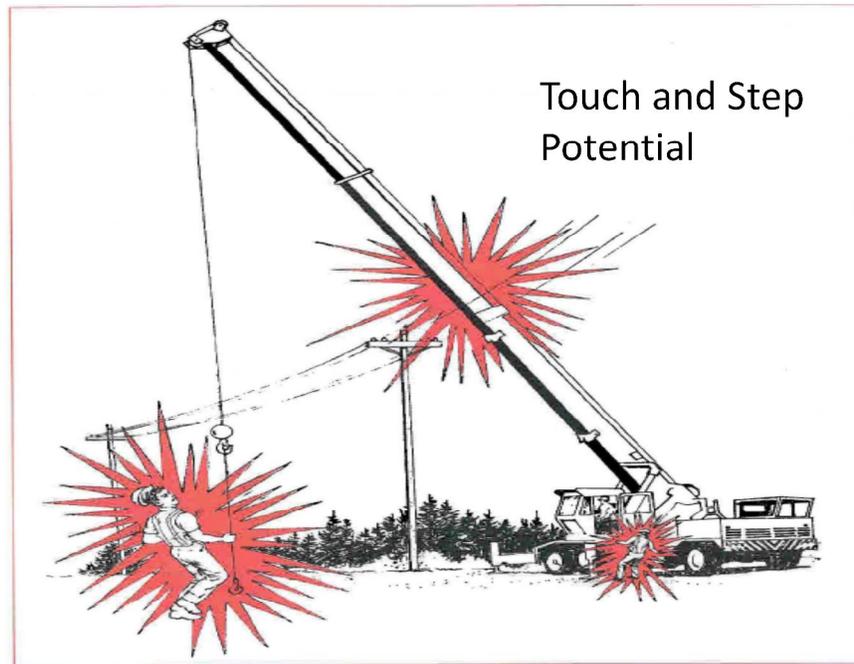
Avoiding Step Potential



If you do find yourself on energized ground and need to move away, you can avoid electric shock or electrocution due to step potential by making sure there is no space between your feet. Shuffle your feet while moving out of the energized area. When shuffling, keep your feet touching at all times to maintain the same voltage in both feet.

Similarly, rescue workers must not enter an area that might be energized. Anyone trying to reach an injured worker in an energized area would be exposed to the same danger of step potential. The power lines must be de-energized and grounded before rescue workers or first aid attendants approach.

Electricity + Heavy Equipment



Electricity can flow to a worker when contact is made with the mobile equipment.

Operators of mobile equipment such as cranes, hoists, and backhoes must take care that no part of the equipment makes contact with an overhead power line. If any part of the equipment does make contact with an overhead power line, remember that the operator is safer inside the machine than on the ground.

If mobile equipment touches a power line, electricity can travel from the power line to a worker touching any part of the equipment, including a pendant control.



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Potential

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