

Date Revised:	March 2021	Overall Task Risk Rating:	Before Controls	<b>B</b>	After Controls	<b>C</b>
Description:	Activities that potentially expose workers to electrical hazards. Working with or around long, tall, or large equipment which could come in contact with overhead electrical hazards, including Dump Trucks, Boom Trucks, Excavators, Front End Loaders, Cranes, Hydro Vac. Trucks, etc....					
Location(s):	Construction Projects					
Associated Documents: Housekeeping WTS, Equipment and Machinery Operation WTS, Underground Hazards and Locates WTS						

**RED FLAGS (HOLD WORK UNTIL CORRECTED):**

Note:

- Do not continue work if there is equipment operating within the safe limit of approach distance
- Do not continue work if there is no signal person present when equipment is able to reach the safe limit of approach distance

**PERSONAL PROTECTIVE EQUIPMENT (CSA APPROVED)**

Head Protection	Foot Protection	High-Vis Protection	Hearing Protection	Hand Protection	Eye Protection	Respiratory Protection	Skin Protection	Face Protection	Fall Protection
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Note:

- Additional PPE may be required depending on the site or other activities that are happening in close proximity

**SAFE WORK PRACTICES (SWP)**

General Overhead Hazards Practices:

- No object including the boom or load are to be brought closer to an energized overhead electrical conductor with a nominal phase-to-phase rating as set out below

Voltage Rating:	Minimum Distance:
750 to 150,000 volts	3 metres (10 feet)
More than 150,000 to 250,000 volts	4.5 metres (15 feet)
More than 250,000 volts	6 metres (20 feet)

- Know the power rating of any electrical services on site: if it's not known, treat as the highest rating and maintain 6 meters of distance
- Overhead energized electrical conductors must be identified with the appropriate signage
- Ensure that "Danger overhead power lines" signs are in place and in the view of the operator
- A signal person shall be present and warn the operator when any part of the equipment or load approaches the minimum safe distance
- Stay away from downed power lines and inform the local service provider

Electrical Overhead Safety Awareness:

- Ensure electrical contractors provide procedures for energy control/isolation and lockout/tagout
- Electrical equipment, installations, conductors and insulating materials shall be suitable for their intended use and shall be installed, maintained, modified and operated so as not to pose a hazard to a worker
- All electrical equipment must be approved for its intended use and shall be of a type and rating approved for the specific purpose for which it is to be used

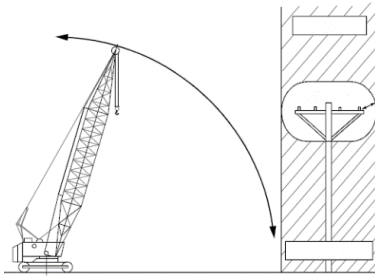


Figure 1

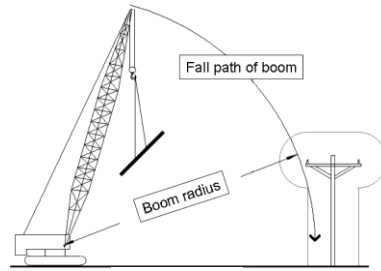


Figure 2



Figure 3

The above Figures:

- Figure 1: Crane is at the Minimum Safe Distance as Long as Only the Boom Moves
- Figure 2: Crane is NOT at the Minimum Safe Distance a Signal Person is Required
- Figure 3: Dump trucks were the #1 Cause of overhead powerline contacts in the past 5 years. (Credit: Electrical Safety Authority)

In the event of power line contact:

- Stay in the equipment. DO NOT GET OUT TO INSPECT
- 3 Long Honks of the vehicle's horn and/or verbally warn others to keep others away
- Break contact if possible
- Call the Foreman / Superintendent – the Foreman / Superintendent is to call the local utility
- As a last resort (fire) "jump clear" - do not make contact with the machine and the ground at the same time and land feet together if possible and do a slow shuffle away from the machine (do not take large steps)

Housekeeping:

- Do not use or store tools, ladders, scaffolding and other equipment or materials capable of conducting electricity close to energized electrical devices

Inspections:

- All equipment operators must conduct and record pre-use inspections where required for specific pieces of equipment
- PPE must be inspected prior to use
- All tools, devices and equipment, including personal protective equipment, that are used for working on or near energized exposed parts of electrical devices, must be designed, tested, maintained and used appropriately
- Any identified defective electrical equipment and tools that may pose a hazard shall be immediately disconnected, removed from service and the Foreman / Superintendent shall be notified

Training:

- Employee Orientations (including roles, responsibilities, applicable workplace task standards, WHMIS, etc.)
- Electrical work may only be performed by competent/ qualified workers, ensure electricians have proof of trade certificate of qualification
- Only trained, authorized personnel are allowed to operate or perform maintenance (or do repairs) on machinery or equipment
- Only operate machinery and equipment that you are authorized and trained to use

Personal Protective Equipment:

- Workers on construction projects must wear, at a minimum, head, foot and high visibility protection. Eye protection when necessary
- Appropriate personal protective equipment must be worn for adequate protection from electrical shock and/or arc flash

JOB HAZARD AND RISK ANALYSIS		RISK RATING SYSTEM	
		A	High risk of injury or equipment / property damage.
		B	Medium risk of injury or equipment / property damage.
		C	Low risk of injury or equipment / property damage.
TASK HAZARDS	RATING BEFORE CONTROLS	TASK CONTROLS	RATING AFTER CONTROLS
<ul style="list-style-type: none"> <li>Improper De-energizing of Equipment</li> </ul>	<b>B</b>	<ul style="list-style-type: none"> <li>When unsure, always treat electrical conductors as if they are energized and take precautions accordingly</li> </ul>	<b>C</b>
<ul style="list-style-type: none"> <li>Lack of Communication</li> </ul>	<b>C</b>	<ul style="list-style-type: none"> <li>A signal person shall be present when approaching the Minimum Safe Distance</li> <li>Ensure that "Danger overhead Power Lines" signs visible</li> </ul>	<b>C</b>
<ul style="list-style-type: none"> <li>Lack of Training</li> </ul>	<b>B</b>	<ul style="list-style-type: none"> <li>All equipment operators must be competent, and hold valid training certifications</li> <li>Electrical work to be performed by competent/ qualified workers (with proof of trade certificate of qualification)</li> </ul>	<b>C</b>
<ul style="list-style-type: none"> <li>Lack of Knowledge</li> </ul>	<b>B</b>	<ul style="list-style-type: none"> <li>DO NOT Operate equipment within the Minimum Safe Distance without a Signal Person</li> <li>Know the power rating of any electrical services on site - if it's not known, treat as the highest rating and maintain 6m</li> <li>Electrical equipment, installations, conductors and insulating materials shall be suitable for their intended use</li> <li>All tools / devices / equipment (including PPE) that are used on or near energized exposed parts of electrical devices, must be designed, tested, maintained &amp; used appropriately</li> </ul>	<b>C</b>
<ul style="list-style-type: none"> <li>Lack of Inspection</li> </ul>	<b>B</b>	<ul style="list-style-type: none"> <li>Conduct and record pre-use inspections where required</li> <li>Damaged equipment must be taken out of use, and reported to the Foreman / Superintendent</li> <li>Equipment shall be operated and maintained as per the manufacturer's instructions</li> </ul>	<b>C</b>
<ul style="list-style-type: none"> <li>Lack of site planning</li> </ul>	<b>C</b>	<ul style="list-style-type: none"> <li>Overhead hazards must be identified and communicated with the appropriate signage</li> <li>Do not use or store tools / equipment / materials capable of conducting electricity close to energized electrical devices</li> </ul>	<b>C</b>
<ul style="list-style-type: none"> <li>Wet Conditions and/or Proximity to Liquids</li> </ul>	<b>C</b>	<ul style="list-style-type: none"> <li>Do not use electrical equipment in close proximity to sources of wet conditions / liquid</li> <li>Ground Fault Circuit Interrupters (GFCI) must be used outdoors or in damp locations</li> </ul>	<b>C</b>

## SAFE JOB PROCEDURES (SJP)

### Pre-Task Commencement:

1. Gather and wear the required PPE for the task - on construction sites, all must wear head, foot and high visibility protection. Eye protection when necessary
2. Ensure the site-specific workplace violence assessment is complete
3. Complete the Daily GAZZ Card and review with all workers the shift's tasks with any associated hazards and control strategies
4. Ensure all workers understand the GAZZ Card contents, and sign off in acknowledgement
5. Locate Utilities – Call “Ontario One Call” for locate services (when necessary)
6. Ensure controls are in place prior to commencing work so risks are mitigated / eliminated
7. Determine what equipment / machinery / tools and material, are required for the completion of the task
8. Inspect all equipment / machinery / tools prior to use and document the inspections on appropriate forms when required
9. Ensure preventative maintenance activities have been completed where required, prior to using equipment / machinery / tools
10. If equipment / machinery / tools are observed to be damaged, remove it from use and notify the Foreman / Superintendent
11. Install fencing and hoarding where needed
12. Locate overhead hazards, if it is suspected that they will be encountered and ensure adequate signage
13. Contact utility owners and determine voltage/power to each respective overhead electrical hazard

### During Task:

1. Ensure adequate additional PPE is worn as needed (i.e. arc-flash PPE)
2. Do a visual safety check for overhead lines before starting any activity
3. Isolate all sources of energy where possible
4. Post appropriate signage to warn all workers of overhead electrical hazards
5. Know the full height of equipment and machinery and check these heights against the line clearance distances marked on the site plans
6. Only use equipment, installations, conductors and insulating materials suitable for their intended use
7. The foreman / superintendent shall designate a trained signal person / spotter to be used any time it is possible for a part of the vehicle, equipment or its load to enter the Minimum Safe Distance of approach to an overhead power line
8. When in operation, do not leave equipment / machinery / tools unattended

### Task Completion:

1. Ensure all equipment / machinery / tools are maintained and stored appropriately in the designated locations
2. Implement any housekeeping or maintenance as required