

WORKING NEAR POWERLINES

Arc, contact, step potential. MAD is a wall. Guessing voltage is the incident.

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THE JOB

Any lift where overhead or buried electrical lines exist or might. Method: PROVEN-SWP-018. Distances: WorkSafeBC Table 19-1A, the same numbers BC Hydro publishes.

WHO IS EXPOSED

Operator
Rigger and tag-line hands
Spotter on the line
Anyone who can walk up to a crane in contact

A JHA names what can hurt someone and how that risk is controlled. It is not the procedure. Do the work to the matching SWP.

HAZARDS AND RISK

Task is the work being analysed. Controls follow eliminate, substitute, engineer, administer, PPE last. Extreme is the killer with no recovery. High is serious injury or a dropped load you still have a chance to stop.

TASK	HAZARD	LEVEL	RISK	CONTROL
Find the lines	Service drop, distribution or transmission missed on the drawing	HIGH	Contact or arc. Fatal. 14.52.1.	Look up. Look down. Ask the site. Do not trust a single drawing.
Name the voltage	Guessing kV. Treating transmission as distribution.	HIGH	MAD too short. Arc across the gap you thought was enough.	BC Hydro Express Connect 1 877 520 1355. Unknown: 3 m distribution, 6 m transmission, until they verify.
Hold MAD	Boom, load or tag line inside Table 19-1A	EXTREME	Arc or contact. Operator and ground crew both exposed.	1 m under 750 V. 3 m to 75 kV. 4.5 m to 250 kV. 6 m to 550 kV. All of boom, load, people, tools. 19.24.1.
Work inside MAD	Entering the limits without assurance in writing	EXTREME	Unplanned contact. No utility control of the line.	Stop. Coded 30M33 signed by the power-system owner. PROVEN-FRM-037 is the schematic, not the assurance.
Contact	People approaching a live crane. Operator jumping into step potential.	EXTREME	Second electrocution. Fatal.	Stay on unless fire or shock. People back 10 m - 33 m if transmission or a manhole. 911. Jump clear, feet together, shuffle. Briefed before the lift.

RESIDUAL RISK

A verified voltage still arcs across a gap. Residual is a boom that drifts, a tag line that sails, or a person who approaches a crane in contact. Held by MAD as a wall, a dedicated spotter, and 10 m / 911 on contact - not by the line looking dead.

THE JOB DOES NOT PROCEED IF

Voltage not verified by the utility
MAD for this voltage cannot be held and there is no signed 30M33
No dedicated spotter when the boom or load can encroach
Tag line that can blow into the line

PPE - LAST LINE

Hard hat
CSA-grade footwear
High-visibility clothing
Eye protection
Task-rated gloves
Hearing protection where required
Fall protection where the work exposes a fall

MATCHING SWP

SWP - WORKING NEAR POWERLINES -> <https://sin.ae.org/safety/swp/working-near-powerlines>

REFERENCES

Workers Compensation Act s. 21(2)(b) - workers made aware of known or reasonably foreseeable hazards
Workers Compensation Act s. 21(2)(e) - information, instruction, training and supervision
OHS Regulation B.C. Reg. 296/97 (in force 15 Apr 1998) Part 3 - program, instruction, inspections (ss. 3.1-3.12)
CCOHS Job Safety Analysis - JSA and JHA are the same method: break the job, name the hazards, select controls
Workers Compensation Act s. 21 - known or reasonably foreseeable hazards; instruction and supervision
OHS Regulation (B.C. Reg. 296/97, in force 15 Apr 1998) Part 3 - OHS program, instruction, inspections
OHS Regulation Part 4 s. 4.13 - risk assessment where rescue or evacuation may arise
OHS Regulation Part 8 - PPE; headwear CSA Z94.1-05 or Z94.1-15
OHS Regulation Part 11 - fall protection
OHS Regulation Part 14 - Cranes and Hoists
14.2(5) - CSA Z150-1998, or ASME B30.5-2004, or ASME B30.22-2005 (articulating boom)
14.2(6) - CSA Z248-2004 for tower, hammerhead and self-erecting tower cranes
14.35 pre-use inspection 14.36 load weight 14.42.1 critical lift 14.44 loads over work areas 14.45 unattended loads
14.47-14.49 signals
OHS Regulation Part 15 - Rigging
Manufacturer load chart, manual and configuration limits
Site lift plan, FLHA and site rules where stricter
OHS Regulation Part 19 s. 19.24.1 and Table 19-1A - minimum approach distance for persons, tools, machines, material and equipment
19.24.1(2) - tower crane zone-limiting device if practicable
Form 30M33 - assurance in writing if MAD cannot be maintained. Only the coded WorkSafeBC form. Part 19.
14.52.1 - high voltage electrical equipment and cranes
BC Hydro Working near power lines - same Table 19-1A. Express Connect 1 877 520 1355.
BC Hydro: unknown voltage - 3 m distribution, 6 m transmission, until they verify.
BC Hydro: fallen line or contact - 10 m, call 911. Downed transmission or manhole - 33 m.