

Electrical Safety Office

Managing the risk of high voltage (HV) induction

Risk of induced voltage

The Electrical Safety Office (ESO) reminds all workers of the risks associated with induced voltages when working on de-energised or non-commissioned electric lines, within close proximity to existing energised high voltage (HV) lines.

Due to the significant electromagnetic fields present around energised HV electric lines, voltages may be induced onto adjacent de-energised or non-commissioned electric lines. These voltages may be large enough to deliver potentially lethal electric shocks.

Factors affecting the level of induced voltage include:

- strength of the magnetic field being produced around the energised conductors
- distance that the lines runs parallel to each other, and
- proximity (closeness) of the lines to each other.

Higher voltages, higher currents and longer runs all contribute to increasing the risk of electric shock due to HV induction.

Safe system of work

All work around or near to energised electric lines must be performed under a safe system of work that identifies and addresses all associated risks.

A safe system of work for working on de-energised or non-commissioned electric lines needs to include:

- risk assessment procedures that identify all possible risks, including those associated with induction, and the level of risk.

- appropriate supervision to monitor compliance with safe work procedures, and
- a team-based approach to the risk assessment.

Risk treatment

Where the risk of induction cannot be eliminated, all reasonable risk treatment measures need to be implemented.

If, after implementation of risk treatment measures, the level of risk is still high or acute, work should not proceed until further measures are implemented that remove the high or acute risk and enable work to continue.

Persons responsible for conducting risk assessments must be trained and competent in the risk management process.

All workers performing work near HV electric lines need to be trained in the safe system of work and be:

- involved in the risk assessment,
- aware of any identified risks, and
- aware of the risk treatment measures implemented.

Where elimination of the risk cannot be achieved, typical risk treatment measures for managing the risk of electric shock due to HV induction include:

- application of working earths – earths need to be appropriate for the task and workers need to be competent in applying such earths.
- use of insulated equipment such as insulated platforms, vehicles, tools.

- use of insulating personal protective equipment (PPE) such as rubber soled shoes and insulating gloves – insulation ratings need to be appropriate for the voltages present and the PPE must be maintained in accordance with the manufacturer's instructions, and kept in good working order.

For more information

Visit www.electricalsafety.qld.gov.au or call the Electrical Safety Infoline on 1300 650 662.

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