



Safety Advice 02-2010 (NZ)

Spouting Strike Against 11 kV Overhead Conductor from Scaffold.

Work in progress at the time of this event was the removal of old metal spouting from a residential building. The work was being conducted from a scaffold of a height similar to the adjacent 11 kV overhead conductor.

Two workers were on site engaged in the spouting removal. The younger of these, working from the scaffold, was removing a 7 meter section of old spouting. While rotating it outboard of the scaffold, the spouting end overlapped the 11 kV conductor by 120 mm, coming into contact with this live source. Other spouting to hand contact marks were evident at 3.5 and 4.4 meters along the spouting from the spouting to conductor contact point.

The employee received shock and burn injuries to his hands and hip, corresponding with a fault path through his body. This was a potentially fatal event.

In this instance a scaffold had been erected within the distance for which New Zealand Electrical Code of Practice ECP 34 ("Code of Practice for Electrical Safe Distances") requires consent from the lines asset owner for the activity. The spouting work activity itself significantly encroached the minimum safe approach distance from the conductors for such work activity.

All readers of this Safety Advice are reminded that ECP 34 places obligations on all persons regarding work and non-work activities near to overhead conductors. Sections 3 and 9 of ECP 34 specify safety requirements. Key among these:

1. For erection of structures Tables 2 and 3 of ECP 34 specify safe distances by conductor voltage and conductor span. To the side of conductors, such as with the scaffold in this event, the safe distances from conductors, without engineering advice, range from 3.5 metres (up to 1kV) to 22.5 metres (220kV). Section 3.2 requires discussion with the lines asset owner where there is a risk that the structure may encroach the safe distance at any point in its assembly or use. This section also requires the lines owner to determine any measures to be applied or whether the work can proceed as planned.
2. For work activity by employees who are not electrically competent to work near overhead conductors, ECP 34 Section 9.2 specifies a minimum safe approach distance (MSAD) of 4 meters from 11 kV live conductors. The MSAD applies to the person and anything they are in contact with or holding, such as the spouting length in this instance. The MSAD can be reduced, with lines asset owner consent, to the minimums specified in Table 9, provided that asset owner consent conditions for safety from electrical hazards are met.



In this instance the person holding the spouting length clearly encroached the MSAD to the point of overlapping contact with the live high voltage conductor, and the work was done by an employer without any discussion with the lines asset owner.

All readers of this EEA Safety Advice are reminded of the following:

- All persons have obligations to avoid electrical hazards from overhead conductors, and to talk with the lines asset owner where minimum safe approach distances for structures and where work or other activities may encroach this.
- It is critical to safety from electrical hazards, firstly to identify these, and secondly, to engage with the lines asset owner early, even at the planning stages, so that the work activity can be conducted safely, to plan, and without loss to any party.

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