

# Incident Alert



## Incident Title:

Employee receives induction electric shock

## Date of Incident:

Tuesday 15 March, 2016

## Incident Description and Details:

On 15 March 2016, there was a planned outage to complete work at the Mangahao Substation.

An assurance was obtained from the local distribution network owner that the two feeders to be worked on were isolated and earthed. The Broadspectrum permit issuer applied a set of earths to the feeder side of circuit breakers 332 and 352.

A set of earths were applied by the local distribution network owner to the conductors of Levin East 1 which is approximately 6 metres from disconnector 336. The local distribution network owner earths on Shannon 1 were at the remote substation.

The work party discussed the recipient applied earth positions and concluded that a set of recipient earths was required on the Shannon 1 feeder as the local distribution owners applied earths were not visible from the work site.

They decided not to apply recipient earths to the Levin East 1 feeder as the local distribution owners applied earths were within close proximity to the work site (6metres).

Disconnecter 336 was open as the contact assembly had to be dismantled to replace the contacts. When the maintainer came into contact with both sides of disconnector 336, he obtained an electric shock due to the induction on the overhead conductor.

On further inspection, the work party noted the local distribution network owner earths were attached to a driven earth stake at the base of the pole. This created a remote earth at a different potential to that of the station earth grid.

The injured party attended at the local medical centre where he was assessed and cleared of any injury.

## Recommendations / Lessons:

- Always consider the risks associated with induction when working in close proximity to live equipment.
- For work at substations, all earthing needs to be connected to the station earth grid. Equipotential bonding provides maximum protection to workers within it from possible electrical hazards from other sources.

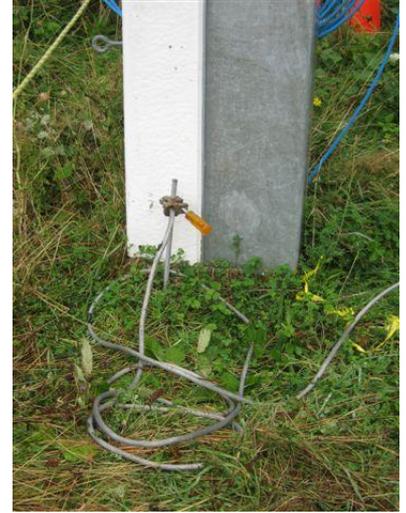
## Contact Person:

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Date of Incident Alert issue: 23/03/2016

Alert Number: 23032016



Local distribution network owner applied earths



Circuit Breaker 332 and Issuer applied earths