

WORKSITE EARTHING REQUIREMENTS FOR VEGETATION WORKS

Incident Summary

A section of 11kV overhead lines had been isolated and earthed for vegetation work to proceed. During planning the vegetation contractor identified that the work being carried out required to be completed under an Access Permit.

The Field Switcher assigned to complete the isolation and earthing arrived with only one set of earths, which did not meet Access Permit requirements. Uncomfortable with proceeding under these conditions, the vegetation team changed their work process, while the conductor remained isolated and earthed, they used live work procedures, maintaining required Minimum Approach Distances (MADs) with the attending Field Switcher acting in a stand over role.

No incident occurred, however, the vegetation team were concerned, having identified the work as requiring an Access Permit and felt uneasy not being able to work under their originally planned method.

Key Learnings

- Be familiar with the Permit and earthing requirements as outlined in
 - EEA guidance: Work on De-Energized Overhead Lines,
 - SMEI: Safety Manual Electricity Industry
 - Powerco standard 220S026 High Voltage Isolation and Access Procedures.
- Ensure discussion and planning have taken place between the Vegetation contractor and the contractor providing the Isolation, Earthing and Permit requirements, ensuring the work scope and outcomes are understood before the day of work
- Ensure that when heading out to perform isolation and earthing tasks, you have the appropriate resources assigned and available to you.
- The recipient of the Access Permit is the supervisor in charge of Electrical safety at the work site or sites. Ensure there is adequate supervision across all parts of the work area.
- In this case, the 11kV line was a spur with only one source of network supply, where one set of Issuer Earths had been applied. Additional Recipient Earths were required to achieve Access Permit requirements.

Working on De-Energized Overhead Lines

Switcher responsibilities (include but not limited to)

- Work out the number of Field Switchers required to meet planned outage time and the application of Safety Measures for efficient Permit Issue time.
- Operate Points of Isolation.

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- Apply Issuer Earths.
- Make Safe Distributed Generation.
- Check Position of Issuer Earthing and ensure applied.

Permit recipient responsibilities (include but not limited to)

- Confirm points of isolation are correct.
- Confirm isolation and restoration process is correct for the work carried out and livening.
- Confirm worksite is adequately protected by Issuer Applied Earths.
- Appoint a Safety Observer, if required, in accordance with the applicable SM-EI rules.
- Explain Permit Details to Work Party and ensure boundaries are understood.
- Ensure application of the Recipient Applied Earths.
- The Recipient may not leave the worksite. If they need to leave the worksite, work shall be suspended or the Access Permit transferred in accordance with applicable SM-EI rules.

Recipient applied earths (include but not limited to)

- Recipient Applied Earths shall be installed as close as practicable to any persons required to work on the isolated system so that the earths, where possible, are within sight of such persons and within 5m of the worksite.
- Earths shall be applied on each side of the working position unless this is not practical, for example, where the working position is at the end of a line.

For Powerco Internal Teams (Delivery and Vegetation teams)

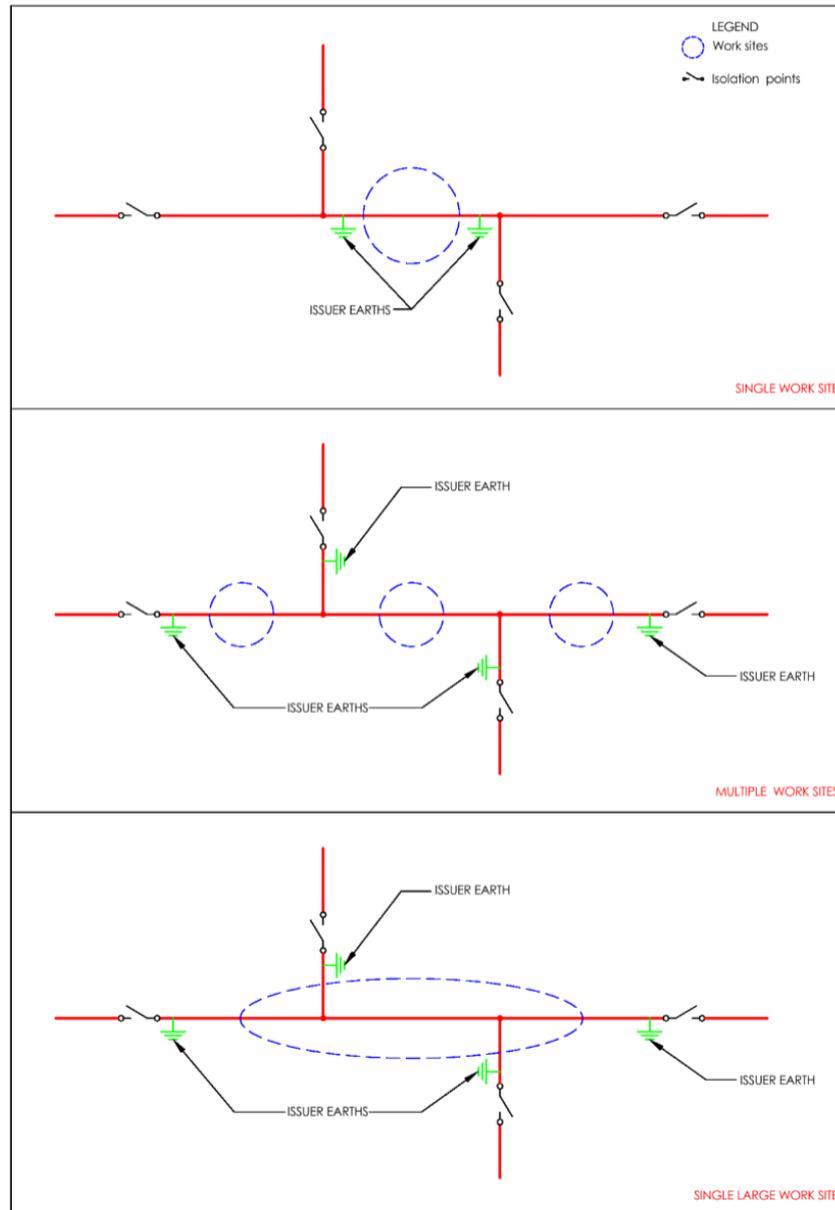
- Reinforce that only Powerco or authorised contractors with correct competencies can carry out isolation and earthing and hold Access Permits.
- Escalate any unsafe conditions immediately via HSW reporting channels.
- Ensure correct planning and communication between vegetation contractors and switching contractors. Include the required information for efficient isolation and earthing.

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The drawings illustrate the same piece of network with differing work sites and Issuer Applied Earths (recipient applied earths not shown).



Remember: "If it's not Isolated, it's not isolated."

Treat all electrical equipment as energised until confirmed otherwise.

Any questions / feedback on this Alert, please contact: Finn.parker@powerco.co.nz