Safety Advice 04-2014 (NZ) (Jan) (Transmission) Voltage Difference Between Earth Grids Under Construction

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The following Safety Alert courtesy of Transpower provides a case study on the importance of running equipment from a safe power source, and also bonding between earth grids at the location, including grids as part of the construction activity. The full safety advice is set out below.

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TRANSPOWER

SAFETY ALERT!

23 January 2014

Voltage difference between earth grids under construction

WHAT HAPPENED?

During the MDN Statcom construction (including the Statcom earth grid), a power supply connection was provided from the existing MDN substation control room to the MDN Statcom construction area through a cable.

This earthed power supply was used by the operative to power a hand tool within the Statcom construction area. A voltage difference was experienced between the earth grid under construction and the earth of the power supply from the control room – which is connected to the substation main earth, i.e. a voltage difference existed between MDN main substation earth and the Statcom earth grid under construction.

ACTION TAKEN

After the incident was analysed, the Statcom earth grid under construction within the construction area and MDN station existing earth grid were successfully bonded by the maintenance contractor.

After bonding, the voltage difference between the MDN main earth grid and Statcom earth grid under construction disappeared.

LEARNINGS

- Operatives are to consider all hazards associated with the task in hand and ensure adequate and effective controls are established,
- Bond all earth grids together as soon as this can practically be done, or
- Run all appliances in a construction area from a locally supplied generator,
- At all times comply with the requirements of Service Advisory TP.SS 06.01 SA2, particularly in regard use of Residual Current Device Protection (RCD) devices.

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