

QUALITY ALERT!



11 – 33kV Cable Termination Quality Issues

ISSUE IDENTIFIED:

Submitted cable termination sheets and photographs have revealed several quality issues with installed terminations. The quality issues on these cable terminations based on the submitted photos included:

- Non-chamfered and jagged edge at the semi-conductive cut back.
- Copper screen wires not pressed into mastic which can allow moisture ingress over time.
- The top XLPE insulation was not beveled and rounded using correct tools. A knife was used leaving sharp edges.
- Inadequate application of sealing mastic between the cable lug and the XLPE.

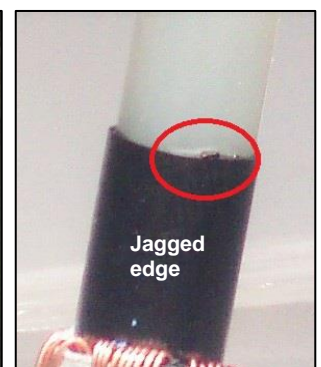
Transpower has experienced a number of 33kV cable termination failures at various substations and are working to address these quality issues before failure occurs.

CONTRIBUTING FACTORS:

- Insufficient training and incorrect tools used - The jointers completing the work had been trained to apply the product by the supplier. However, the supplier's product training assumes the jointer to be trained in best practice cable preparation and does not cover cable preparation techniques.
- There was a delay in this information being sent to Transpower. **TP.CL 01.02 Installation of high voltage cables – technical requirements**, does not state when the 11 -33kV jointing work needs to be submitted to Transpower.

ACTIONS TAKEN TO PREVENT REOCCURENCE:

1. The form attached in Appendix B of **TP.CL 01.02** is to be sent to tpcables@transpower.co.nz within **2 working days** of completing the work. TP.CL 01.02 is to be updated with this requirement.
2. There is work underway to improve the Training and Competency of those working on Transpower cables to improve the quality of this work, specify use of the correct tools and the QA process for completed work.



LEARNINGS FROM THIS

- There is a lack of control around cable termination and jointing installation work.
- The jointing work record and photographs of the jointing work needs to be sent to tpcables@transpower.co.nz within 2 working days of completing the work to ensure the quality of the installation can meet its design life.
- The photos need to represent the as left condition of the work before and after the termination is applied.



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For more information,
please contact:

Name: Nick Lee
Designation: Senior Primary Asset Engineer
Ph: +64 4 590 6848 Mob: +64 21 112 0737
nick.lee@transpower.co.nz