



SAFETY! ALERT!



Cable Damage During Backfilling of Trench

WHAT HAPPENED?

A pivot steer mini loader was being used to backfill an 11kV cable trench with constricted access at Kawerau substation. As a load of fill was about to be placed over the live cables the mini loader became stuck in a noncompacted area of the trench and on top of the cables. The machine became wedged in at an angle and the decision was made to lower the bucket keeping it flat and attempt to self-recover.

While attempting the recovery a worker on site thought they saw something orange in the trench and was concerned that it was part of the cable outer sheath.

The recovery attempt was stopped and a telehandler arranged to help remove the mini loader. Redundant equipment also needed to be removed to free the machine.

An outage was arranged to allow hand excavation at which time it was found that one cable sheath was damaged and a second cable was damaged to the screen.



IMMEDIATE ACTION TAKEN

- Work stopped and recovery completed using a telehandler.
- The suspected damaged cables were barriered off until an outage could be arranged for close inspection. The damage was inspected and successfully repaired.
- A full investigation is under way.

ROOT CAUSE

- The incident is still under investigation however it appears that the intention was to backfill the cables by hand using a wheelbarrow and shovel and this was not clearly communicated to all parties on the day.
- Additionally, while the workers onsite were aware the cables were live and a potential hazard, the risks with backfilling and the extraction of the machine once it was stuck were not fully assessed and managed.

LEARNINGS

- Workplans must be detailed enough and communicated to ensure all involved understand the methodology.
- Work must not start unless an appropriate plan and hazard assessment are in place.
- Work must stop and be reassessed when the plan changes or something goes wrong.
- Backfilling of trenches in the proximity of cables must be planned and managed as per excavation practices.
- During backfilling of excavations, a machine should not be driven over the backfill until it has been compacted as per specification/design.