ASP Safety Alert
Network Compliance & Authorisations

Alert Number: SA10_22

28 July 2022

Subject: Working on or near underground low voltage cables with conductive sheaths – changes to testing & verification requirements

Key Messages

- **Low voltage cables with exposed conductive outer sheaths must be tested prior to work in accordance with Clause 9.3.4 of the Electrical Safety Rules (ESR).**
- **Workers must be assessed as competent to carry out the testing.**
- **Where verification of the testing is required by the ESR, the verifier must be a person who is competent to carry out the testing. (Ausgrid employees will no longer be verifying the testing of these cables for ASPs).**
- **The ASP Company is responsible for the selection of the equipment used to carry out the test as well as the assessment or verification of competency of the persons performing and verifying the tests.**

Dear ASPs,

The requirements for testing and verfication of underground low voltage (LV) cables with conductive sheaths have recently changed.

Background

Hazardous voltages can be present when working on or near underground low voltage cables (LV), with conductive sheaths. These cables are used on our LV & street lighting networks. People can come into close proximity of these cables in places like pits, joint bays and within streetlight pillars.

There are a variety of underground LV cables with conductive sheaths. These include lead sheath cables and cables with a conductive wire armour, whether the armour is bare or covered by jute.

New requirements relating to testing and verification of underground LV cables with conductive sheaths

The purpose of this Alert is to communicate the following changes to testing and verification requirements relating to underground LV cables with conductive sheaths:

- **Low voltage cables with exposed conductive outer sheaths must be tested prior to work in accordance with Clause 9.3.4 of the ESR.**
- **Workers must be assessed as competent to carry out the testing.**
- **Where verification of the testing is required by the ESR, the verifier must be a person who is competent**

to carry out the testing. (Ausgrid employees will no longer be verifying the testing of these cables for ASPs).

- **The ASP Company is responsible for:**
  - **the selection of the equipment used to carry out the test; and**
  - **the assessment or verification of competency of the 'competent' persons performing and verifying the tests.**
- **From 1 September 2022, ASPs will be required to perform the testing and verification functions for their own work when working on or near underground LV cables with conductive sheaths. Notwithstanding, ASPs may undertake this function prior to 1 September 2022 if the requirements set out in this Alert are complied with.**

New process for testing and verification of underground LV cables with conductive sheaths

Ausgrid requires that **prior to commencing work on or near underground LV cables with conductive sheaths**, all ASPs must ensure that:

1. the ASP is compliant with the requirements of their ASP authorisation with Ausgrid;
2. the ASP's safe system of work adequately addresses the hazards and risks outlined in Ausgrid's Electrical Safety Rules (ESR) and this Safety Alert, that incorporates the following mandatory requirements for all work performed on or near underground LV cables with conductive sheaths:

   a. Planned work must be coordinated with an Ausgrid Officer to gather the required information on the network condition.

   b. If no underground LV cables with conductive sheaths are identified as part of the GIS review, ASP workers must perform a visual assessment, when on site, to confirm this and proceed with the standard controls.

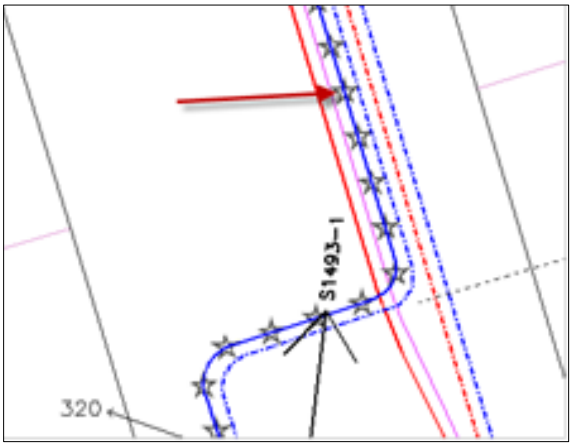
   c. If an underground LV cable/s with conductive sheath is identifed onsite, the following controls as outlined in Clause 9.3.4 of Ausgrid's ESR (in addition to those set out in the ASP's own safe system of work) must be implemented:

      i. Site Entry

      - LV insulating gloves and safety gum boots[1] must be worn before entry to the site (e.g. pit or joint bay) and before testing of the cables.
      - Ensure there is no uninsulated contact with the cable during and after the test, as per Clause 9.3.4 of Ausgrid's ESR.
      - Consider the environment and, if practical once tested and deemed safe, utilise temporary insulation and/or screening to protect against cable movement or inadvertent contact. This must be discussed prior and recorded on the ASP's site documentation.
      - If the site is obstructed by water or sediment, dewatering should not be carried out until a risk assessment has been completed and electrical and/or contamination issues identified and controlled adequately.

ii. Visual Assessment

- Visually assess all cables for damage and compare the number of cables expected from the GIS diagram, Field Book records, etc.
- If any hazards are identified, pause the work and discuss with an Ausgrid Officer.



Example of LV cables with conductive sheath in GIS data/plans

iii. Test for stray voltages

- **Testing of underground LV cables with conductive sheaths must only be completed by a 'competent' person.**
- **Verification of the test by a second 'competent' person must be completed in accordance with the ESR Clause 9.3.4.**
- LV insulating gloves and safety gum boots[1] must be worn.
- Test equipment / voltage detector must be checked before and after use, to ensure it is working correctly. An extension handle is to be used where practical to do so.
- The conductive sheaths of all underground LV cables must be tested on all sides of joints (as either side of the joint may not be bonded through).

iv. Outcomes of testing

- If the test equipment / detector does not indicate that a voltage is present on the exposed conductive sheath or armour, work on or near the cable may proceed, provided the controls set out in the ESR and this Safety Alert are followed.
- If the test equipment / detector indicates a voltage is present on the exposed conductive sheath or armour, an accurate voltage reading must then be obtained by testing with a low impedance voltmeter incorporating an independent earth. The work area must be made safe until the low impedance voltmeter test is completed.
    - If the voltage level is 5Vac or greater, ASPs must immediately prevent access to the cable until it is

isolated and made safe and contact an Ausgrid Officer and.

- If the voltage level is less than 5Vac, work on or near the cable may proceed, provided the controls set out in the ESR and this Safety Alert are in place and effective. However, the measured voltage must be reported to an Ausgrid Officer.

- If testing or further visual inspection identifies damaged cables, stray voltages, or other potential hazards, pause the work, make the area safe and contact an Ausgrid Officer.

3. the ASP has held a “Pause for Safety” with all authorised workers. This Pause for Safety must include discussion of this Safety Alert, re-familiarisation with the relevant safe systems of work, including any updates to that system following this Safety Alert.

Note 1: Where safety gum boots are required to be worn, they must comply with AS/NZS 2210, stamped with the symbol I (non-conductive) or ASTM F2413 marked with the symbol EH (Electrical Hazard Resistant).

Failure to comply with this notice may lead to the suspension of a company and/or individuals authorisation to work on or near the Ausgrid network.

If you have any questions relating to this change, please email ASPAuthorisations@ausgrid.com.au

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