

ASP Safety Alert Electrical Safety & Authorisations

Alert Number: SA06_19

26 June 2019

Subject: ISSC - Testing of connections to low voltage electricity networks

Key Messages

NSW Industry Safety Steering Committee has issued a Safety Alert for Testing of connections to low voltage electricity networks

Dear ASP/2s,

Following the release of the NSW Industry Safety Steering Committee (ISSC) Safety Alert - *Testing of connections to low voltage electricity networks* Ausgrid would like to remind ASP/2s of the requirements for testing when performing low voltage service works on Ausgrid's network.

As detailed in the attached ISSC safety alert:

- Testing of service connection work to be performed in accordance with Australian Standard (AS) 4741:2010 *Testing of connections to low voltage electricity networks*. Including:
 - Polarity;
 - Neutral integrity;
 - Phase rotation; and
 - Phasing confirmation.
- Workers performing the test must:
 - Be authorised and competent to carry out test procedures;
 - Have relevant qualifications to conduct the testing;
 - Have current competencies in the testing and understanding of the operation of a Multiple Earth Neutral (MEN) system assessed under the authority of a Registered Training Organisation; and
 - Be regularly assessed for competency.

Failure to test or performing incorrect tests can lead to hazardous situations with the potential for property damage, personal injury and even death. Where there is any doubt about test results do not reconnect the installation, Contact Ausgrid for advice before reconnection.

Ausgrid

Electrical Safety & Authorisations

SAFETY ALERT

Testing of connections to low voltage electricity networks

The Industry Safety Steering Committee (ISSC) which includes representatives from all NSW Distribution Network Service Providers (DNSP), the Department of Planning & Environment and the National Electrical Contractors Association (NECA) would like to remind all workers performing service work and other connection work on the LV network of the requirements for performing testing.

All NSW DNSPs (Ausgrid, Endeavour Energy, Essential Energy) require, as a minimum, testing of service connection work to be performed in accordance with Australian Standard (AS) 4741:2010 *Testing of connections to low voltage electricity networks*. This standard defines the minimum tests required to confirm low voltage connections affecting the polarity or neutral integrity of the electricity network or supply to any electrical installation are correct.

Action required

Minimum tests required within AS4741:2010 include:

- Polarity
- Neutral integrity
- Phase rotation
- Phasing confirmation

Failure to correctly perform polarity and neutral integrity testing, can significantly increase the likelihood of a hazardous voltage (capable of electrocution) being applied to normally earthed metalwork and frames of appliances within electrical installations. In addition an incorrect polarity (active phase connected to neutral conductor) will also increase the likelihood of property damage due to high currents being applied to the neutral and earthing conductors possibly leading to property fire.

Due to the nature of an incorrect polarity or a hazardous voltage (high resistance neutral) on normally earthed metalwork, standard protection equipment installed at the electrical installation will not operate to remove the hazard.

Specific control measures

Test procedures should be developed that meet the requirements of AS4741:2010 including any additional requirements of the DNSP. Only authorised and competent workers are to carry out test procedures.

AS4741:2010 requires workers performing the test to have relevant qualifications to conduct the testing, relevant authorisation and current competencies in the testing and understanding of the operation of a Multiple Earth Neutral (MEN) system assessed under the authority of a Registered Training Organisation. Workers competency is required to be regularly assessed.

Remember, if you have any doubt following the test procedures or results obtained do not connect the installation and leave active and neutral conductors isolated and danger tagged until all doubts are resolved.



May 2019

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