Checking for neutral current diversion

SELECT

Before working on an existing electrical installation, it is recommended that the following safety check is carried out to determine the possibility of neutral current diversion (NCD)

START

Carry out a visual inspection of distributor/supplier intake equipment to ensure no obvious defects

With the installation energised, clamp test the distribution network operator (DNO) earthing conductor at a convenient point. Is current detected in the earthing conductor?

YES

Introduce a known load, e.g. kettle. Has the current through the earthing conductor increased?

YES

This indicates a broken protective earthed neutral conductor on the installation and the neutral current is being exported

Report the issue to the relevant DNO responsible for the intake equipment on emergency number 105

NO

Introduce a known load, e.g. kettle. Has the current through the earthing conductor increased?

NO

Safe to proceed with caution

NO

Isolate the installation. If current can still be detected in the earthing conductor, it could be that NCD is being imported from, or exported to, other installation(s) on the distribution network, e.g. a neighbouring property

POTENTIAL LIVE TEST: EXTREME CAUTION ADVISED

A SUITABLE RISK ASSESSMENT SHOULD BE CARRIED OUT, INCLUDING THE USE OF APPROPRIATE PPE IF REQUIRED

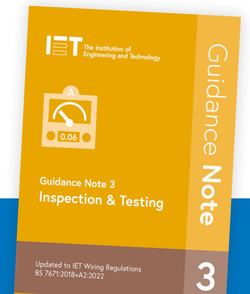
Disconnect the main protective bonding conductor (PBC) from the main earthing terminal (MET), watching for visual indications of current. Test along the MET, main PBC and at extraneous conductive parts using a non-contact voltage indicator

VOLTAGE DETECTED

Reconnect the main protective bonding conductor and report the issue to the relevant DNO responsible for the intake equipment on emergency number 105

NO VOLTAGE DETECTED

Alternative conductive path exists. Safe to proceed with caution. NCD may be present when load applied



Find out more in *IET Guidance Note 3: Inspection & Testing, Appendix D*

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