

# Verification of an electrical installation

## Guideline on reconnection in bushfire affected communities



As a result of the bushfires, many homes and properties in the bushfire affected communities have had their electricity supply disconnected or isolated by the supply authority, while many properties seem unaffected by these fires, precautions need to be taken when reconnecting supply to the electrical installation.

Before placing an electrical installation or part thereof back onto supply it should be verified as far as practicable, that the installation is safe to energise and will operate in accordance with the requirements of the [Electricity Safety Act 1998](#) and Section 8 of AS/NZS 3000:2018.

1. Carry out a thorough visual inspection of the electrical installation including any other sources of supply e.g. generator, grid connect solar (see below), supply from neighbour's property (cord extension set). Areas that should be inspected include:
  - consumer mains
  - switchboards (main and associated sub-boards)
  - wiring systems (including any overhead wiring)
  - electrical equipment
  - earthing system (including main earthing cable and earth electrode)

Ensure outbuildings or equipment that is not located near the main switchboard e.g. pumps (septics, water, bore), external lighting, powered gates, etc. are inspected and tested as necessary.

If a sub-circuit or portion of the electrical installation appears or is proven damaged in any way, disconnect the affected circuit from the relevant switchboard or carry out repairs as appropriate.

When satisfied that the electrical installation to be re-energised is not damaged or affected, proceed with the further tests outlined below as relevant before energising.

2. Test RCDs, where installed, to verify the operation:
  - Press and hold the test button on the RCD for five seconds, the RCD must operate immediately on pressing the test button.
  - Reset the RCD; press the test button a second time. The RCD must operate immediately on pressing the test button.
  - If the RCD fails the testing it should be not be energised.
3. Additional testing may be required to verify the installation is safe to energise. These tests could include:
  - Continuity of the earthing system
  - Insulation resistance
  - Polarity
  - Correct circuit connections.

Note: AS/NZS 3000 section 8 provides details on testing and verification.

Where an electrical installation requires alteration or repair, verification as per section 8 of AS/NZS 3000 must be performed at the completion of this work.

## Installations with a grid connected solar panel system

Before placing a solar panel installation, or any part thereof, back into service following disconnection of the supply it should be verified, as far as practicable, that the installation is safe to energise and will operate in accordance with the requirements of AS/NZS 5033, AS/NZS 4777.1 and AS/NZS 3000.

1. Carry out a thorough visual inspection of the electrical installation. Examples of areas that should be inspected include:
  - array mounting frames, cabling and isolation / disconnection devices
  - DC cabling, from the array to the inverter
  - solar inverter mounting, cabling and isolation / disconnection devices
  - AC cabling from inverter to switchboards.
2. Additional testing may be required to verify the installation is safe to energise. These tests could include:
  - continuity of the earthing system
  - insulation resistance
  - polarity
  - correct circuit connections.
3. Test “anti-islanding” of a grid connected inverter if supply is available
  - Verify the inverter takes longer than 60 seconds to connect to the distribution network after the installation’s main switch is closed.
  - Confirm the inverter and solar system is operating correctly and that the generation output being produced is as expected for the weather conditions, (daylight hrs only). If error messages are shown on the inverter, shut down until issues are rectified.
  - Verify the inverter disconnects from the distribution network in less than two seconds after the installation’s main switch is opened.