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Table of Contents

1.	Purpose	3
2.	Background	4
3.	Acronyms and Abbreviations used in this Document	4
4.	Relationship of Standard Operating Procedures	5
5.	Procedures	5
	5.1 Co-ordination of Inspections	5
	5.2 Engagement	5
	5.3 Access to Site/Responsibility for Site Work Health & Safety	6
	5.4 Inspector's Powers	7
	5.5 Test Equipment Functionality and Calibration	10
	5.6 Assessing the Risks	10
	5.7 Inspection and Testing Procedures	12
	5.8 Permanent Temporary Supplies	14
	5.9 Training & Competencies	15
6.	Process to Develop Safe Working Procedures	16
7.	Examples of Authorisation Labels for New and Permanent Temporary Supplies	17
8.	Preferred Switchboard Layout for Permanent Temporary Supplies	18
9.	Referenced Material	19
10.	Definitions	20

1.0 Purpose

The purpose of this Standard Operating Procedure (SOP) is to ensure that Access Canberra Electrical Inspections Team members are provided with guidance in the performance of ***Inspection and Testing of New Housing & Permanent Temporary Supplies***.

1.1 Legislation

Access Canberra Electrical Inspectors perform various functions prescribed under **Part 2** of the **ACT Electricity Safety Act 1971**, in respect to the inspection and testing of electrical wiring work and electrical installations. In addition, these functions may be extended to giving written direction to take stated action to make the installation or work safe and compliant and may require an inspector to give a direction that requires the relevant part of an installation or wiring installation to be ***disconnected or isolated***.

Duty is imposed by the **ACT Work Health and Safety Act 2011**, through subordinate legislation, **Part 4.7** of the **ACT Work Health and Safety Regulation 2011**, where in respect to electrical work on energised electrical equipment, a person conducting a business or undertaking (PCBU) must ensure electrical work is not carried out on electrical equipment while the equipment is energised. The PCBU must also, before electrical work is carried out on electrical equipment, ensure that the equipment is tested by a ***competent person*** to determine whether or not it is energised, and must also ensure that electrical equipment that has been de-energised to allow electrical work is not inadvertently re-energised while the work is being carried out.

1.2 Scope

The scope of this Standard Operating Procedure is limited to providing guidance to Electrical Inspections Team members on administrative requirements relevant to their roles and responsibilities around the performance of carrying out electrical Inspection and Testing of New Housing & Permanent Temporary Supplies.

The phrase ***“Inspection and Testing on or Near Energised Electrical Installations”*** is used to encompass inspections that include testing for compliance with AS/NZS 3000 on or near energised conductive parts where the supply voltage exceeds 50 V a.c. or 120 V ripple-free d.c., but does not exceed 1,000 V a.c. or 1,500 V d.c.

Due to the lower risk of an Arc Flash, distinction is made between installations where prospective fault currents are unlikely to exceed 10kA (typically “Residential” or Building Classes 1 & 10), and installations where prospective fault currents may exceed 10kA (typically “Commercial” or Building Classes 2 to 9)

Although there are inherent safety risks involved in performing electrical inspection and testing on or near energised conductive parts of electrical installations, the procedures in this SOP are not intended to be a safe work instruction. Electrical Inspections Team business unit-specific safety documentation referenced by this Standard Operating Procedure must be read in conjunction with this SOP.

2.0 Background

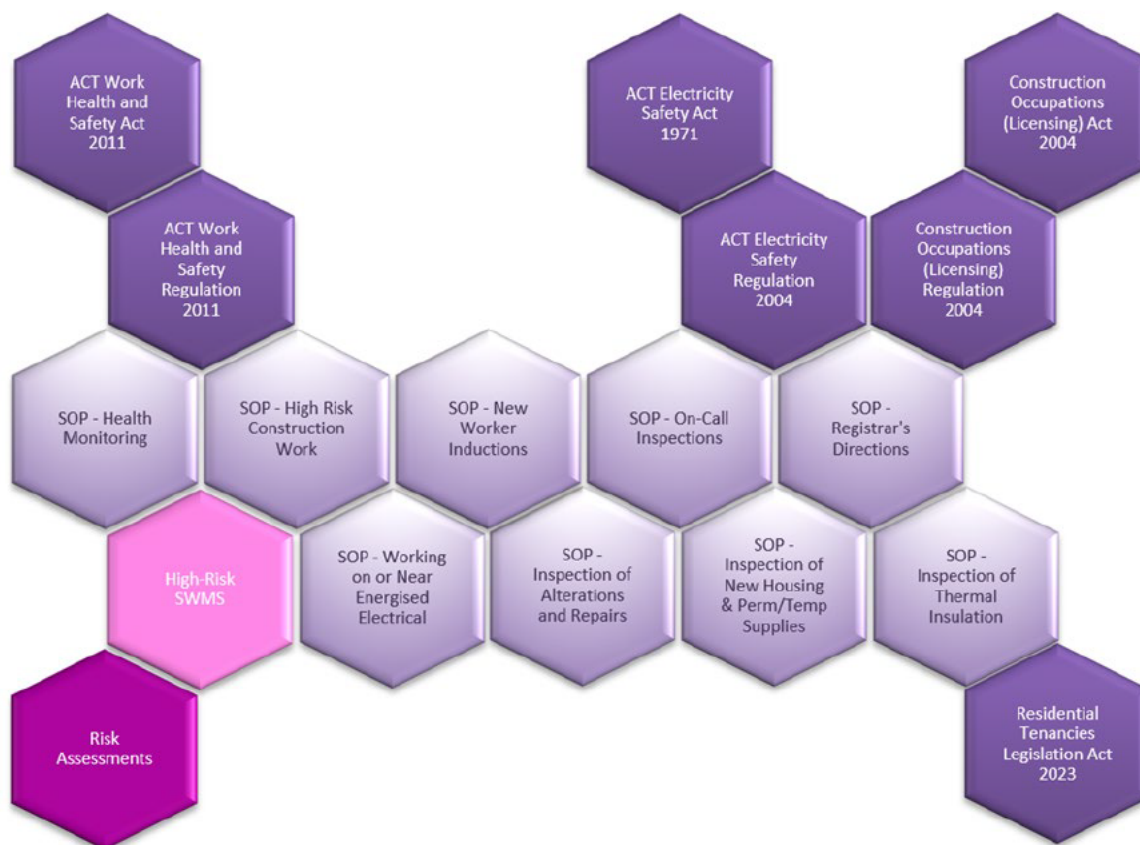
Inspection and testing carried out on or near energised electrical installations or services is deemed by regulation to be **'high risk construction work'** and must comply with the requirements of the **ACT Work Health and Safety Regulation 2011**. Energised electrical work is generally prohibited unless one or more of the exceptions under the WHS Regulations applies. In addition to these legislative requirements, guidance on the principles of safe working practices and recommended safe working procedures are provided by **AS/NZS 4836 Safe working on or near low-voltage electrical installations and equipment**.

Section 2 of AS/NZS 4836 requires that "Before work is commenced on or near any electrical installation or equipment a competent person must determine whether it is safe to do so". To align with this requirement and in recognition of Arc flash as one of the leading causes of injuries and deaths in the electrical industry, Access Canberra Electrical Inspectors must have training in "Arc Flash Awareness", as well as training recognised under the Australian Qualifications Framework in "Perform Cardiopulmonary Resuscitation" and "Perform rescue from a live low voltage panel".

3.0 Acronyms and Abbreviations Used in this Document

ACT	Australian Capital Territory
BRIMS	Access Canberra's Building Records Information Management System
MEN (M.E.N.)	Multiple Earthed Neutral (MEN) system (See Definitions)
PCBU	Person Conducting a Business Undertaking
RCD	Residual current device (See Definitions)
SOP	Standard Operating Procedure
V (V a.c.)	Voltage (Alternating Current)
WHS (Act)	Work Health and Safety (ACT Work Health & Safety Act 2011)
WHS (Regulation)	Work Health and Safety (ACT Work Health & Safety Regulation 2011)

4.0 Relationship of Standard Operating Procedures



5.0 Procedures

Procedure Steps		Responsibility
5.1.	<p>Co-ordination of Inspections</p> <ul style="list-style-type: none"> The Assistant Director of Electrical Inspections for each of the Electrical Inspection Sub-Teams will supervise and coordinate electrical inspectors performing Inspection and Testing of New Housing & Permanent Temporary Supplies and ensure Standard Operating Procedures are adhered to. 	<ul style="list-style-type: none"> ➤ Assistant Director
5.2.	<p>Engagement</p> <ul style="list-style-type: none"> Where a licensed electrician undertakes and completes any electrical work, a <i>“Certificate of Electrical Safety”</i> must be submitted within 14 days to Access Canberra and the owner of the installation provided with a copy. On receipt of a <i>“Certificate of Electrical Safety”</i> the Access Canberra Building Records Information Management System (BRIMS) will determine whether a <i>“Full”</i>, <i>“Partial”</i>, or <i>“Self-Test”</i> 	<ul style="list-style-type: none"> ➤ Assistant Director ➤ Electrical Inspections Booking Team ➤ Inspector

Procedure Steps		Responsibility
	<p>inspection is required, and the electrical bookings team will assign the work for inspection accordingly.</p> <ul style="list-style-type: none"> • Where an inspection is categorised as a 'Self-Test' this means that verification of the installation has been undertaken by the installing electrician and no further audit is required • Where an inspection is categorised as a 'Partial Inspection' a mandatory visual inspection of the relevant switchboard and circuits will be made when work on an electrical installation has been completed to verify that the work complies with the requirements of the 'Wiring Rules'. Where possible the additional inspection and tests as prescribed by the 'Standard Operating Procedure - Registrar's Directions' will be carried out. • Where an inspection is categorised as a 'Full Inspection' a mandatory visual inspection of the relevant switchboard and circuits will be made when work on an electrical installation has been completed to verify that the work complies with the requirements of the 'Wiring Rules'. Where possible the additional inspection and tests as prescribed by the 'Standard Operating Procedure - Registrar's Directions' will be carried out. 	
5.3.	<p>Access to Site/Responsibility for Site Work Health & Safety</p> <ul style="list-style-type: none"> • Electrical inspection and testing will generally be carried out at a place that is not under the control of Access Canberra. Constructions sites will have multiple PCBUs with duties in relation to the same matter under the WHS Act, and all duty holders must, so far as is reasonably practicable, consult, cooperate, and coordinate activities with each other in relation to the matter. • The Principal Contractor of a construction project is a person conducting a business or undertaking (PCBU) and must manage the risks to health and safety associated with the carrying out of construction work and must also ensure that the workplace is secured from unauthorised access. • Where the construction project is a residential premises, the owner of the residential premises is the Principal Contractor. Where the owner of the residential premises directly or indirectly engages a PCBU to undertake a construction project in relation to the premises, the person engaged is the Principal Contractor for the project if the person has management or control of the workplace. • Electrical Inspectors carrying out Electrical Inspection and Testing on or Near Energised Electrical Installations on a workplace at which construction work is carried out, must comply with any direction given by the Principal Contractor in respect to work health and safety and site security. • Electrical Inspectors carrying out Electrical Inspection and Testing on or Near Energised Electrical Installations must have a site- 	➤ Inspector

Procedure Steps	Responsibility
<p>specific induction before entering a site other than housing construction work.</p> <ul style="list-style-type: none"> In the case of Residential (New Housing) Construction sites where the Site Supervisor may not always be physically present, Inspectors must still comply with any direction given by the Principal Contractor in respect to work health and safety and site security, that is communicated by way of signage, phone, email, and/or two-way radio communication. Where uncontrolled hazards are identified on site, they should be reported to the site supervisor. 	
<p>5.4. Inspectors' Powers</p> <ul style="list-style-type: none"> Where an Inspector enters premises under Section 43 of the ACT Electricity Safety Act 1971 "General power to enter premises" <p>(1) The inspector may—</p> <ul style="list-style-type: none"> (a) enter any premises at any time with the consent of the occupier; or (b) enter premises when open to the public; or (c) enter business premises during business hours at the premises; or (d) enter premises in accordance with a warrant under this division. <p>(2) The inspector may, without the occupier's consent or a warrant, enter the land around premises to ask the occupier for consent to enter the premises.</p> In addition to (1) (a) (above), the Construction Occupations Registrar requires that the inspector may not enter any premises if the person giving consent is not a person 18 years of age or older; or is a person that does not have the capacity to give consent. Consent cannot be given by a person who has not been informed that they may refuse consent. Where an Inspector enters premises under Part 7 of the ACT Electricity Safety Act 1971, the inspector may not remain on premises entered under this part if, on request by the occupier, the inspector does not produce his or her identity card. In addition to the above, the Construction Occupations Registrar requires that an inspector must wear their inspector's identity card so that it is visible at all times while carrying out an electrical inspection. Where an Inspector seeks consent of an occupier for entering premises under Section 45 of the ACT Electricity Safety Act 1971 "Consent to entry" <p>(1) The inspector must—</p> <ul style="list-style-type: none"> (a) produce his or her identity card; and (b) tell the occupier— <ul style="list-style-type: none"> (i) the purpose of the entry; and 	<p>➤ Inspector</p>

Procedure Steps	Responsibility
<p>(ii) that anything found and seized under this part may be used in evidence in court; and</p> <p>(iii) that consent may be refused.</p> <p>(2) If the occupier consents, the inspector must ask the occupier to sign a written acknowledgment—</p> <p>(a) that the occupier was told—</p> <p>(i) the purpose of the entry; and</p> <p>(ii) that anything found and seized under this part may be used in evidence in court; and</p> <p>(iii) that consent may be refused; and</p> <p>(b) that the occupier consented to the entry; and</p> <p>(c) stating the time, and day, when consent was given.</p> <p>(3) If the occupier signs an acknowledgment of consent, the inspector must immediately give a copy to the occupier.</p> <p>(4) Unless the contrary is proven, a court must presume that an occupier of premises did not consent to an entry to the premises by an inspector under this part if—</p> <p>(a) the question whether the occupier consented to the entry arises in proceedings in the court; and</p> <p>(b) an acknowledgment under this section is not produced in evidence for the entry; and</p> <p>(c) it is not proved that the occupier consented to the entry.</p> <ul style="list-style-type: none"> • In addition to the above, the Construction Occupations Registrar requires that prior to exercising any of the powers provided by Section 45, that an electrical inspector must first gain approval from the Director of Electrical Inspections or Assistant Director of Electrical Inspections. Communication by email or SMS will be sufficient confirmation of approval. Inspectors must use the approved "Acknowledgement of Consent" form to meet the requirements of Section 45 (2), (3), and (4) of the Act. • Where an Inspector enters premises under Section 49 of the ACT Electricity Safety Act 1971 "Powers in relation to serious electrical accidents" <p>(1) This section applies if an inspector believes on reasonable grounds that a serious electrical accident has occurred on premises.</p> <p>(2) The inspector may enter the premises at any reasonable time to investigate the accident, ensure the premises are safe and prevent the concealment, loss, or destruction of anything reasonably relevant to the investigation.</p> <p>(3) The inspector may do anything necessary and reasonable for a purpose mentioned in subsection (2).</p> <p>(4) If an inspector acts under this section in the absence of the occupier, the inspector must, when leaving the premises, leave a written notice, secured in a conspicuous place, setting out—</p> <p>(a) the inspector's name; and</p>	

Procedure Steps	Responsibility
<p>(b) the time and date of the entry; and (c) the purpose of the entry; and (d) particulars of how to contact the inspector.</p> <p>(5) The power to enter premises under this section is additional to the powers under section 43 (General power to enter premises).</p> <ul style="list-style-type: none"> In addition to the above, the Construction Occupations Registrar requires that an inspector may not enter any premises including a room within a premises if the only occupant is a person(s) not 18 years of age or older; or is an otherwise vulnerable person. Where entry to the premises is necessary to secure the safety of the occupants, assistance should be sought from other on-site respondents or police. Where an Inspector enters premises under Section 51 of the ACT Electricity Safety Act 1971 "Disconnecting etc dangerous electrical equipment and installations" and finds an article of electrical equipment, or an electrical installation, that the inspector believes on reasonable grounds is a source of danger, <ol style="list-style-type: none"> An inspector may— <ol style="list-style-type: none"> label the article conspicuously to indicate the danger and prohibit use of the article until it has been repaired or otherwise rendered safe for use; or disconnect the installation. In addition to the above, the Construction Occupations Registrar requires that electrical inspectors must make a reasonable attempt to disconnect the part of an installation that is dangerous prior to resorting to disconnecting the entire electrical installation. Where an installation has been disconnected, the Registrar must be notified within 24 Hours. Where an Inspector enters premises under Section 57 of the ACT Electricity Safety Act 1971 "Power to inspect electrical wiring work" to conduct a test or inspection required under part 2 of the Act 'Electrical wiring work and electrical installations' <ol style="list-style-type: none"> An inspector may enter and remain on premises to conduct a test or inspection in relation to an electrical installation or electrical wiring work. An inspector may enter and remain on the premises <ol style="list-style-type: none"> at any reasonable time; and with the people, equipment, or material that the inspector reasonably needs to conduct the test or inspection. The inspector may not <ol style="list-style-type: none"> enter or remain on premises if, on request by the occupier, the inspector does not produce his or her identity card; or 	

Procedure Steps	Responsibility
<p>(b) without the consent of the occupier, enter or remain on any part of the premises used for residential purposes.</p> <p>(4) The power to enter premises under this section is additional to the powers under section 43 (General power to enter premises).</p> <ul style="list-style-type: none"> In addition to the above, the Construction Occupations Registrar requires that an inspector may not enter any premises if the person giving consent is not a person of 18 years of age or older; or is a person that does not have the capacity to give consent. Where this direction restricts the ability of the electrical inspector to properly carry out an inspection/audit, an inspector should consider arranging a more suitable time for the inspection or to changing the type of inspection. 	
<p>5.5. Test Equipment Functionality and Calibration</p> <ul style="list-style-type: none"> The designated 'Equipment Manager' must ensure that all test equipment critical to electrical inspections such as multimeters, network analysers, insulation testers, and clamp ammeters are calibrated at regular intervals not exceeding 12 months. Prior to undertaking the Inspection and Testing of an Energised Electrical Installation, inspectors must ensure that all test equipment is in good repair, functional, and that equipment for live testing is certified as Category III and/or IV Inspectors undertaking the Inspection and Testing of an Energised Electrical Installation must be equipped with the following Live-Testing equipment: Insulation tester, network analyser, RCD tester, clamp ammeter, multimeter, and non-contact voltage detector. Inspectors undertaking the Inspection and Testing of an Energised Electrical Installation must be equipped with the following Dead-Testing accessories: earth probe, resistor box, socket outlet polarity meter, alligator clip leads, independent earth spike, and earth trailing lead. Inspectors performing Inspection and Testing of an Energised Electrical Installation must be equipped with a Low Voltage Rescue Kit complying with 'AS/NZS 4836 Safe working on or near low voltage electrical installations'. 	<ul style="list-style-type: none"> ➤ Equipment Manager ➤ Inspector
<p>5.6. Assessing the Risks</p> <ul style="list-style-type: none"> Before undertaking Inspection and Testing of New Housing and Permanent Temporary Supplies, all hazards and environmental considerations shall be identified. While it is expected that Inspectors carrying out Inspection and Testing of New Housing and Permanent Temporary Supplies will be carried out on an installation or portions of an installation that have yet to be energised, before work is commenced on or near 	<ul style="list-style-type: none"> ➤ Inspector

Procedure Steps	Responsibility
<p>any electrical installation or equipment, a competent person must determine whether it is safe to do so by way of risk assessment and by using AS/NZS 4836 to develop safe working procedures. (See Figure 1)</p> <ul style="list-style-type: none"> • WARNING: All electrical conductors and parts, including neutral and earthing conductors, shall be treated as energized until proven de-energised. Always test before touching. • While carrying out Inspection and Testing of New Housing and Permanent Temporary Supplies Electrical Inspections Team members must continuously re-assess the risks of the situation they are involved in, review the controls to reduce the risk, and implement additional controls where warranted. • Electrical Inspections Team members should always seek guidance from their Assistant Director or Health and Safety Representative where required. • While this Standard Operating procedure focuses on risks associated with Inspection and Testing of New Housing and Permanent Temporary Supplies, Electrical Inspections Team members must consider all hazards in their assessment. Relevant hazards may include: <ul style="list-style-type: none"> - poor housekeeping, preventing safe and clear access and exit from any area requiring inspection including switchboards. - lack of access to hand washing, clean and hygienic toilet facilities and drinking water - limited access to shelter for protection against exposure to solar ultraviolet radiation (UVR), eating meals and taking breaks, and to protect against in adverse weather conditions. - falls from heights. - other workers on site, what they are doing, what plant and equipment they are using. • Inspectors carrying out Inspection and Testing of New Housing and Permanent Temporary Supplies may be required to do so while working alone and at times isolated from the assistance of other people. Working alone or remotely increases the risk of other hazards such as exposure to occupational violence, and poor access to emergency medical and police assistance, and these risks should be considered when assessing the overall risk. 	

Procedure Steps		Responsibility
5.7	<p>Inspection and Testing Procedures</p> <ul style="list-style-type: none"> • Before work is commenced on or near any electrical installation or equipment, a competent person must determine whether it is safe to do so by way of risk assessment and by using AS/NZS 4836 to develop safe working procedures. • Electrical work on energised electrical equipment is <i>prohibited</i> unless: <ul style="list-style-type: none"> - it is necessary in the interests of health and safety that the electrical work is carried out on the equipment while the equipment is energised; or - it is necessary for the electrical equipment to be energised in order for the work to be carried out properly; or - <i>it is necessary for the purposes of testing to determine whether equipment is energised, or</i> - there is no reasonable alternative means of carrying out the work. • Inspection and Testing of an Energised Electrical Installation, including testing on or near energised conductive parts, is deemed by regulation to be <i>'high risk construction work'</i> and before high-risk construction work commences, the Electrical Inspector must ensure that a detailed Safe Work Method Statement for the proposed work is prepared or that they follow the pre-prepared Access Canberra's Electrical Inspections Team's <i>"Safe Work Method Statement - Work on or near energised electrical installations or services"</i> • Before electrical Inspection and Testing of New Housing & Permanent Temporary Supplies commences, the inspector must ensure that the portion of the installation to be tested is NOT connected to an electricity supply. • After an electrical installation has been verified to be NOT connected to an electricity supply, further isolation applying the principles of AS/NZS 4836, need not apply. Any risk assessment however must include the following controls: <ul style="list-style-type: none"> ▪ The area where the electrical work is to be carried out is clear of obstructions so as to allow for easy access and exit. ▪ Installations must always be treated as live until confirmed dead using the following steps: <ol style="list-style-type: none"> I. Verify all test equipment used using a known voltage source before and after every test. II. Use a non-contact voltage tester to detect the presence of voltage. III. Use a Voltmeter to confirm that voltage is not present. ▪ Prior to handling any unterminated, unenclosed, or disconnected conductive parts of an installation (including the use of dead test equipment such as resistor boxes, polarity testers, and earth trailing leads), the test before you touch principle must be applied. 	➤ Inspector

Procedure Steps	Responsibility
<ul style="list-style-type: none"> ▪ The possibility of inadvertent energisation of circuits must always be considered. Always assume that new wiring work (including but not limited to, disconnected M.E.N. connections, disconnected neutrals, unterminated wiring, and unenclosed conductive parts) are live until proven dead. ▪ Where any person is required to work within 3 m of energized exposed conductors or parts (e.g., an open meter box with live service equipment), the inspector must identify appropriate risk treatments. ▪ The point at which any energised electrical equipment can be disconnected or isolated from its electricity supply is— <ul style="list-style-type: none"> - clearly marked or labelled; and - clear of obstructions so as to allow for easy access and exit by the worker who is to carry out the electrical work or any other competent person; and - capable of being operated quickly; • The point at which the electrical equipment can be disconnected or isolated from its electricity supply does not have to be clearly marked or labelled if the work is to be carried out on the supply side of the main switch or the point at which the equipment can be disconnected from its electricity supply is not reasonably accessible from the work location. • Inspectors undertaking electrical work on energised electrical equipment must use the tools, testing equipment and personal protective equipment properly. • After Inspection and Testing of New Housing (Audit of a Permanent Installation) has been completed and has been verified as compliant with the requirements of the current edition of AS/NZS 3000: Electrical Installations, known as the wiring rules, the inspector shall leave a notice attached to the switchboard adjacent to the electricity meter for the installation, giving “Authorisation for connection of permanent electrical installation to electricity network”. This notice must be signed and dated by the inspector making the authorisation and shall also include their initials for easy identification. (See figure 2.) • After Inspection and Testing of a Permanent Temporary Supply (Audit) has been completed and has been verified as compliant with the requirements of the current edition of AS/NZS 3000: Electrical Installations, known as the wiring rules, the inspector shall leave a notice attached to the switchboard adjacent to the electricity meter for the installation, giving “Authorisation for temporary supply for construction and demolition purposes”. This notice must be signed and dated by the inspector making the authorisation and shall also include their initials for easy identification. (See figure 3.) • The notice giving “Authorisation for temporary supply for construction and demolition purposes” must also carry the text: 	

Procedure Steps		Responsibility
	<p><i>“WARNING - the permanent electrical installation cannot be connected to, or energise from this temporary installation”</i> and the enclosure for the <i>‘Main Switch Temporary Supply’</i> must be sealed with an ACT Government issued seal.</p> <ul style="list-style-type: none"> • Prior to giving approval to energise an installation and prior to departure from site, the electrical inspector must ensure that the responsible electrician has correctly restored and verified any disconnected connections including the M.E.N., circuit breaker, and neutral connections. In the case of New Housing and Permanent Temporary Supply installations where the electrician is not present, this may need to be performed by the inspector. • Responsibility for the safe energisation of the installation after approval will be by the responsible electrician. In the case of New Housing and Permanent Temporary Supply installations where the electrician is not present, the inspector must ensure, so far as reasonably practicable, that energisation does not pose a risk to workers at the workplace. 	
5.8	<p>Permanent Temporary Supplies</p> <ul style="list-style-type: none"> • ‘Permanent Temporary Supply’ means a temporary electricity supply connection provided by the distributor for purposes of construction of new housing sites on residential blocks. • Permanent Temporary Supplies are only permitted when installed wholly within the standard meter box enclosure meeting the distributors requirements, and when the standard meter box is installed in the permanent location on a structure that has a building approval. • Permanent Temporary Supplies are exempt from the requirements of <i>AS/NZS 3012 Electrical installations - Construction and demolition sites</i> but are restricted to the installation of a single subcircuit supplying no more than one 10 Amp twin combination switch-socket or one 15 Amp single combination switch-socket mounted on the meter panel of the standard meter box enclosure and protected by a residual current device that operates in all live conductors equivalent to the requirements of AS/NZS 3012 for the supply of final subcircuits for construction and demolition. • The panel mounted enclosure for the Temporary Supply Main Switch and circuit protective device are sealed at the time of inspection and an approval notice for the connection to the electricity network is attached adjacent to the electricity meter. This notice includes a warning that the permanent electrical installation cannot be connected to or energised from the temporary installation” (See Figure 3 and Figure 4) 	➤ Inspectors

Procedure Steps		Responsibility
5.9	<p>Training & Competencies</p> <ul style="list-style-type: none"> • Before Inspection and Testing is undertaken on New Housing & Temporary/Permanent Supplies, Electrical Inspectors must be trained in the <i>Standard Operating Procedure – Working Alone in the Field</i>. • Inspectors undertaking the Inspection and Testing of an Energised Electrical Installation must have as a minimum, a current Statement of Attainment in ‘<i>Arc Flash Awareness Training</i>’. • Inspectors undertaking the Inspection and Testing of an Energised Electrical Installation must have a current Statement of Attainment in both “<i>Perform CPR</i>” and “<i>Perform rescue from a live low voltage panel</i>” recognised under the Australian Qualifications Framework • Inspectors undertaking the Inspection and Testing of an Energised Electrical Installation must be assessed by their immediate supervisor as a <i>competent person</i> in respect being able to determine whether or not an electrical installation is energised, and a competent person in respect of being able to complete a risk assessment for inspection and testing carried out on or near energised electrical installations or services. 	<ul style="list-style-type: none"> ➤ Inspector ➤ Assistant Director ➤ Directors

6.0 Process to Develop Safe Working Procedures

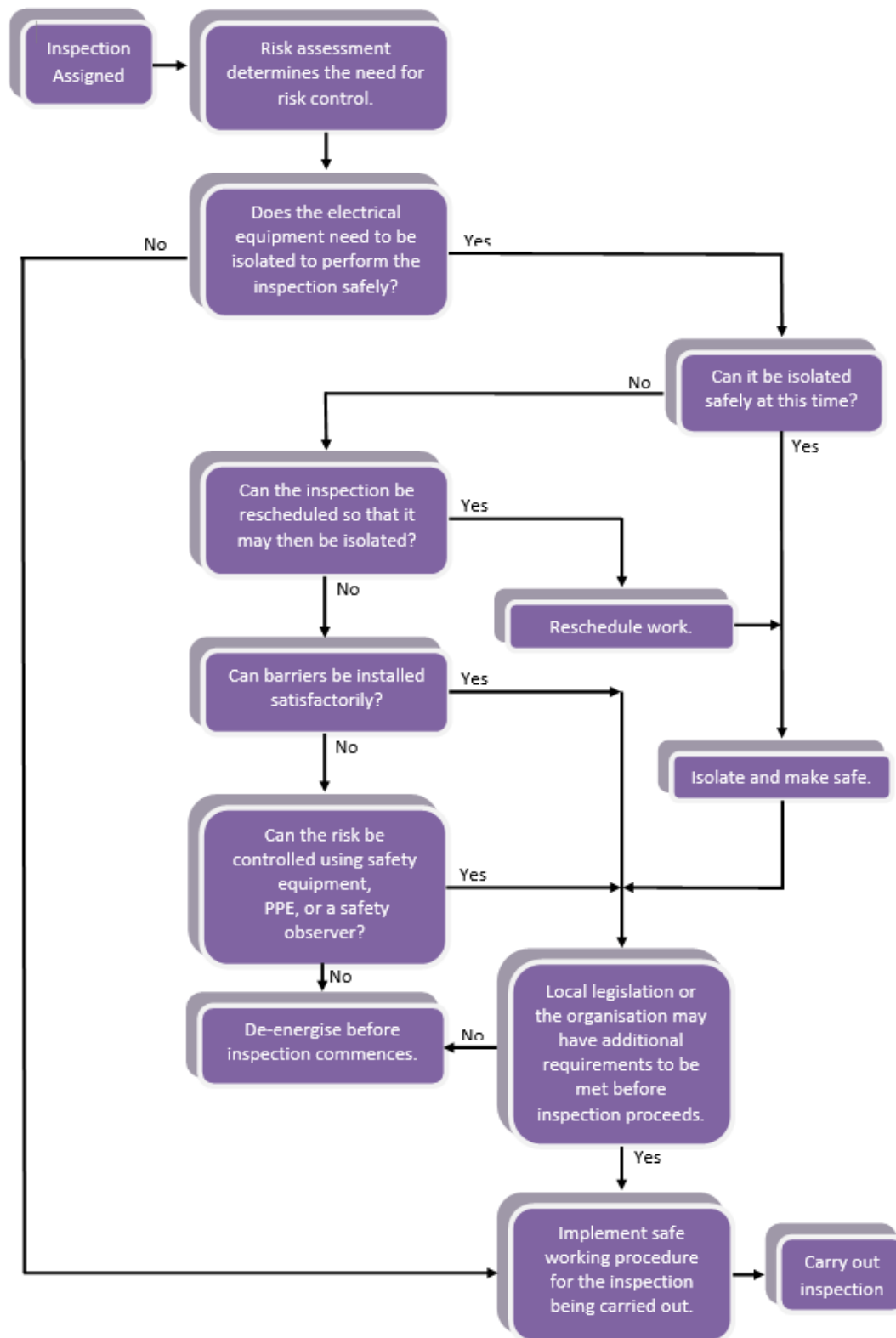


Figure 1 - The diagram above outlines the process to develop safe working procedures in conjunction with the guidance provided by AS/NZS 4836 – Safe Working on or Near Low-Voltage and Extra-Low Voltage Electrical Installations and Equipment

7.0 Examples of Authorisation Labels for New and Permanent Temporary Supplies

**IMPORTANT NOTICE
PERMANENT INSTALLATION**

**Authorisation for connection of
permanent electrical installation to
electricity network**

Suburb..... **TAYLOR**

123	45	
Section	Block	Unit

This permanent electrical installation has been tested by a licensed electrician. A Certificate of Electrical Safety has been issued for compliance with Part 2 Sections 4, 5 & 6 of the Electricity Safety Act 1971 (the Act), certifying this installation complies with the current edition of the standard AS/NZS3000: Electrical Installations, known as the Wiring Rules.

Under section 4 of the Act, an audit has been conducted by an ACT Government electrical inspector. Approval for connection to the electricity network is given.

Approval covers..... **NEW HOUSE**

Signed *Signature (AZ)*
Electrical Inspector – 02 6207 7775

Date: **15 / 12 / 23**

12/2016

Figure 2 "Authorisation for connection of permanent electrical installation to electricity network".

**IMPORTANT NOTICE
TEMPORARY INSTALLATION
SUPPLY**

**Authorisation for temporary supply for
construction and demolition purposes**

Suburb..... **WHITLAM**

43	21	
Section	Block	Unit

This temporary electrical installation has been tested by a licensed electrician. A Certificate of Electrical Safety has been issued for compliance with Part 2 Sections 4, 5 & 6 of the Electricity Safety Act 1971 (the Act), certifying this temporary installation complies with the current edition of the standard AS/NZS3000: Electrical Installations, known as the Wiring Rules.

Under section 4 of the Act, an audit has been conducted by an ACT Government electrical inspector. Approval for connection to the electricity network is given.

WARNING
The permanent electrical installation cannot be connected to, or energised from, this temporary installation.

Approval covers..... **PERM/TEMP**

Seal No **YES**

Signed *Signature (AZ)*
Electrical Inspector – 02 6207 7775

Date: **15 / 12 / 23**

12/2016

Figure 3 "Authorisation for temporary supply for construction and demolition purposes"

8.0 Preferred Switchboard Layout for Permanent Temporary Supplies

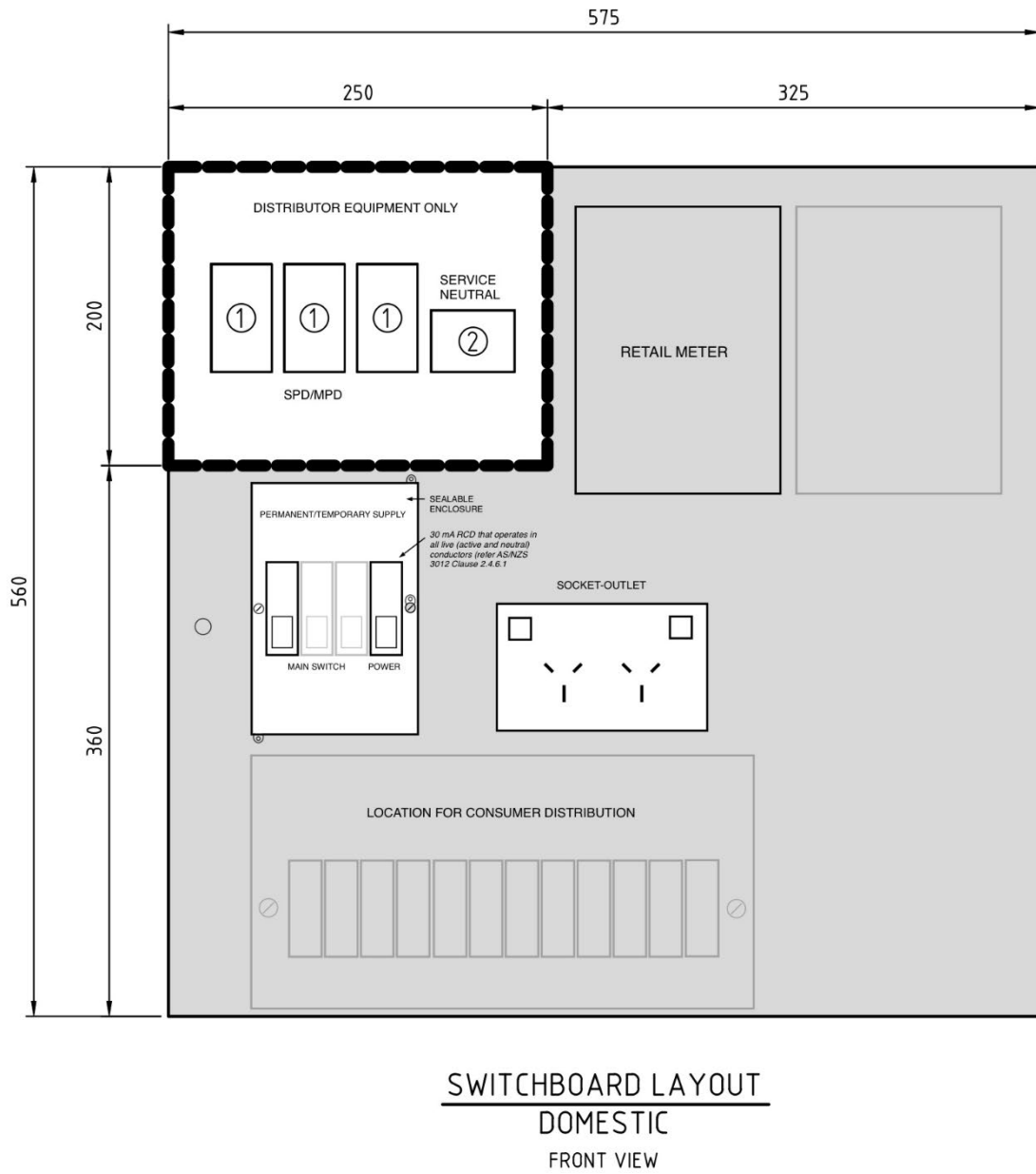


Figure 2 - Preferred switchboard layout for Permanent Temporary Supplies

9.0 Referenced Material

Name	Location (Document Path)
<i>ACT Electricity Safety Act 1971</i>	Electricity Safety Act 1971 Acts
<i>Work Health and Safety Act 2011</i>	Work Health and Safety Act 2011 Acts
<i>Work Health and Safety Regulation 2011</i>	Work Health and Safety Regulation 2011 HTML view (act.gov.au)
<i>Safe Work Method Statement – Inspection and Testing on or Near Energised Electrical Installations - Residential</i>	G:\Access Canberra\PEG\Electrical\Electrical Resources\Electrical WHS Info\Safe Work Method Statements
<i>Safe Work Method Statement - Work on or near energised electrical installations or services</i>	G:\Access Canberra\PEG\Electrical\Electrical Resources\Electrical WHS Info\Safe Work Method Statements
<i>Standard Operating Procedure - Registrar’s Directions</i>	G:\Access Canberra\PEG\Electrical\Electrical Resources\Electrical WHS Info\Standard Operating Procedures
<i>AS/NZS 4836 – Safe Working on or Near Low-Voltage and Extra-Low Voltage Electrical Installations and Equipment</i>	G:\Access Canberra\PEG\Electrical\Standards
<i>AS/NZS 3000 – Australian/New Zealand Standard for Electrical installations (known as the Australian/New Zealand Wiring Rules)</i>	G:\Access Canberra\PEG\Electrical\Standards

10.0 Definitions

'Required' means a requirement of the relevant legislation.

'May' means the existence of an option.

'Electrical installation' means:

- a) electrical wiring or cable used or for use in carrying or controlling electricity (other than electricity with a voltage of not more than 50V a.c. or 120V ripple-free d.c.), including the following:
 - (i) a wiring system, switchgear, control gear, generator, electrical accessory, electrical appliance, or fitting, that is used or for use in the conversion, storage, transmission, distribution, generation, or use of electrical energy and connected to wiring or cable.
 - (ii) a switch, fuse, plug, socket outlet, lighting outlet, adaptor, ceiling rose, or other device associated with wiring, a switchboard, or an appliance, mentioned in subparagraph.
 - (iii) a consuming device in which electricity is converted into heat, motion, or another form of energy, or is substantially changed in its electrical character.
 - (iv) support for electrical wiring or cable.
- b) but does not include:
 - (i) a portable generator or storage device supplying, or for the supply of, electricity to the installation.
 - (ii) an appliance that receives, or is intended to receive, its main electricity supply through a socket connection.
 - (iii) a lamp.
 - (iv) an electricity network or part of a network.
 - (v) telecommunications cabling or equipment that operates or is intended to operate at a voltage of 90V a.c. or lower.

'Electrical wiring work' means the installation, replacement, augmentation, curtailing, maintenance, repair, or alteration of the location of all or part of, an electrical installation, other than:

- (i) an electrical installation that operates at extra low voltage
- (ii) telecommunications cabling or equipment that operates at a voltage not greater than 90V a.c.
- (iii) plugging a plug into a socket outlet, or unplugging it; or
- (iv) fitting a lamp to a lighting outlet or removing it; or
- (v) fitting, removing, or replacing a fuse or fuse wire if the fuse or wire cannot sustainably conduct more than 30A.

'Residential Electrical Installation' means electrical installations or electrical wiring work (typically "Residential" or Building Classes 1 & 10) where if the electricity supply was connected, that prospective fault currents exceeding 10kA would not exist on its energised conductive parts.

'Wiring Rules' means the Australian/New Zealand Standard for Electrical installations (known as the Australian/New Zealand Wiring Rules) or AS/NZS 3000

'Electrical Inspection' means the audit of an electrical installation for compliance with the 'Wiring Rules' as required by Section 4 of the ACT Electricity Safety Act 1971 and as directed by the Construction Occupations Registrar (see **'Standard Operating Procedure - Registrar's Directions'**):

'Self-Test' means that verification of the installation in accordance with AS/NZS 3000 has been undertaken by the installing electrician and no further audit is required.

'Partial Inspection' means a mandatory visual inspection of the electrical installation to verify that the work complies with the requirements of AS/NZS 3000 as in force and where possible carry out the following additional inspection and tests:

- Verification of operation of RCDs of at least 10% of the relevant circuits (depending on availability of supply)
- Earth Resistance test - continuity of main earthing conductor.
- Earth Resistance test of equipotential bonded parts.
- Insulation Resistance tests of at least 10% of the relevant circuits
- Verify of the MEN connection.
- Test for interconnection of circuits of at least 10% of the circuits.

'Full Inspection' means a mandatory visual inspection of the electrical installation to verify that the work complies with the requirements of AS/NZS 3000 as in force. and where possible carry out the following additional inspection and tests:

- Verification of operation of RCDs of at least 33% of the relevant circuits (depending on availability of supply)
- Earth Resistance test - Continuity of Main Earthing conductor
- Earth Resistance test of other earthed and equipotential bonded parts.
- Insulation Resistance tests of at least 33% of relevant circuits
- Verification of the MEN connection.
- Voltage drop check.
- Verification of earth fault-loop impedance.
- Test for interconnection of circuits of at least 33% of the relevant circuits
- Polarity and correct circuit connections of Mains, Sub-Mains, and final circuits.
- Verify isolators operation. e.g., Cook tops, Hot Water Systems, Air Conditioners, Motors, etc.

'Certificate of Electrical Safety' means a report as defined by **Section 6 of the Electricity Safety Act**

'Competent Person' means person, who has acquired, through training, qualification or experience or a combination of these, the knowledge and skill enabling that person to perform the required task correctly.

'Energised' means connected to a source of electrical supply or subject to hazardous induced or capacity voltages.

'De-energised' means separated from all sources of supply, but not necessarily isolated, earthed or out of commission.

'Disconnected' 'NOT Connected' means physically separated from any source of electrical energy including by a switching action or physical removal of circuit connections.

'Isolated' means separated from all possible sources of electrical energy and rendered incapable of being energised unintentionally.

'Work On' means performance of a function within 500 mm of exposed energized conductors or live conductive parts and/or electrical equipment.

Note 1: Work within 500 mm is classified as "work on", as per Figure 1.

Note 2: Includes undertaking or supervising the following: constructing, manufacturing, assembling, installing, connecting, maintaining, repairing, altering, testing, verifying, assessing, or inspecting, removing, or adding to an electrical installation or equipment.

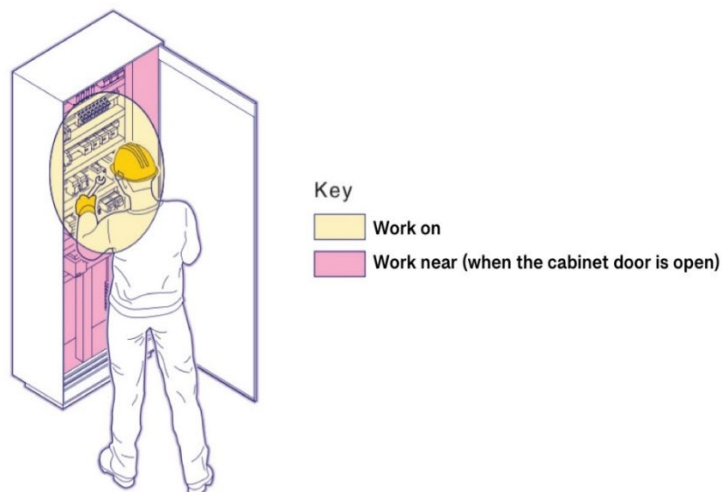


Figure 3 - 500 mm electrical work zone for work on low-voltage and extra-low voltage equipment within an enclosed switchboard panel

'Work Near' means performance of a function within 3 m of exposed energized conductors or live conductive parts and/or electrical equipment.

Note 1: Work within 3 m is classified as "work near", as per Figure 2

Note 2: Functions may include cleaning, pest control or other tasks that are not defined as electrical work.

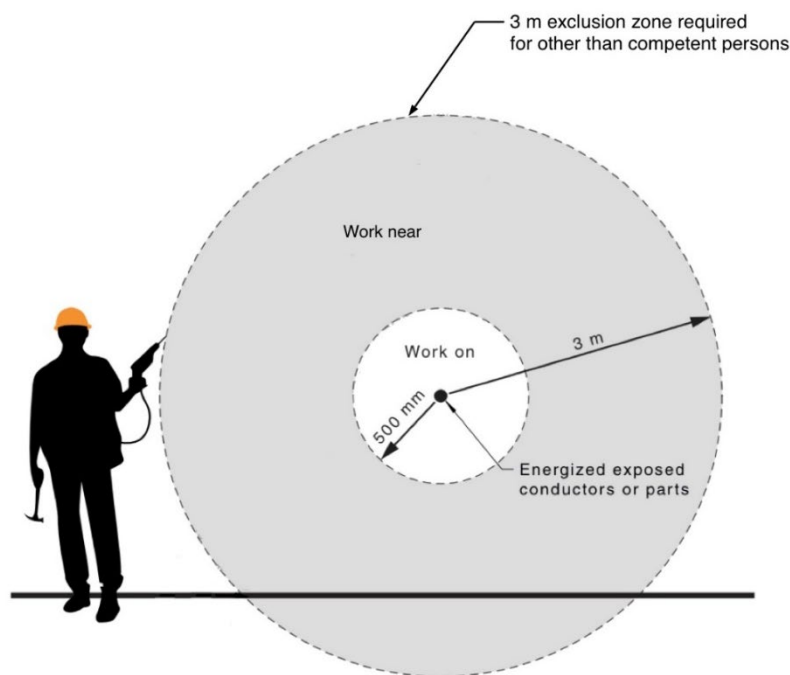


Figure 4 - Illustration of 3 m exclusion zone and "on or near"

'Permanent Temporary Supply' means a temporary electricity supply connection provided by the distributor for purposes of construction of new housing sites on residential blocks, which is exempt from the requirements of *AS/NZS 3012 Electrical installations - Construction and demolition sites* but subject to other restrictions, as detailed in Section 5.9 of this document.

'Principal Contractor', means a person conducting a business or undertaking that commissions a construction project, the principal contractor for the project may also be:

- a) a person conducting a business or undertaking authorised by the person that commissions a construction project to have management or control of the workplace.
- b) a person conducting a business or undertaking engaged directly or indirectly by the owner of residential premises to undertake a construction project.

A construction project has only 1 principal contractor at any specific time.

'Construction Work' means:

- a) any work carried out in connection with the construction, alteration, conversion, fitting-out, commissioning, renovation, repair, maintenance, refurbishment, demolition, decommissioning or dismantling of a structure; and
- b) includes the following:
 - (i) any installation or testing carried out in connection with an activity mentioned in paragraph (a).
 - (ii) the removal from the workplace of any product or waste resulting from demolition.
 - (iii) the prefabrication or testing of elements, at a place specifically established for the construction work, for use in construction work.
 - (iv) the assembly of prefabricated elements to form a structure, or the disassembly of prefabricated elements forming part of a structure.
 - (v) the installation, testing or maintenance of an essential service in relation to a structure.
 - (vi) any work connected with an excavation.
 - (vii) any work connected with any preparatory work or site preparation (including landscaping as part of site preparation) carried out in connection with an activity mentioned in paragraph (a);
 - (viii) an activity mentioned in paragraph (a), that is carried out on, under or near water, including work on buoys and obstructions to navigation; but
- c) does not include any of the following:
 - (i) the manufacture of plant.
 - (ii) the prefabrication of elements, other than at a place specifically established for the construction work, for use in construction work.
 - (iii) the construction or assembly of a structure that once constructed or assembled is intended to be transported to another place.
 - (iv) testing, maintenance, or repair work of a minor nature carried out in connection with a structure.
 - (v) mining or the exploration for or extraction of minerals.

'High Risk Construction Work' means construction work that—

- a) involves a risk of a person falling more than 2m; or
- b) is carried out on a telecommunication tower; or
- c) involves demolition of an element of a structure that is load bearing or otherwise related to the physical integrity of the structure; or
- d) involves, or is likely to involve, the disturbance of asbestos; or
- e) involves structural alterations or repairs that require temporary support to prevent collapse; or
- f) is carried out in or near a confined space; or

- g) is carried out in or near a shaft or trench with an excavated depth greater than 1.5m; or
- h) is carried out in or near a tunnel; or
- i) involves the use of explosives; or
- j) is carried out on or near pressurised gas distribution mains or piping; or
- k) is carried out on or near chemical, fuel, or refrigerant lines; or
- l) is carried out on or near energised electrical installations or services; or
- m) is carried out in an area that may have a contaminated or flammable atmosphere; or
- n) involves tilt up or precast concrete; or
- o) is carried out on, in or adjacent to a road, railway (including light rail), shipping lane or other traffic corridor that is in use by traffic other than pedestrians; or
- p) is carried out in an area at a workplace in which there is any movement of powered mobile plant; or
- q) is carried out in an area in which there are artificial extremes of temperature; or
- r) is carried out in or near water or other liquid that involves a risk of drowning; or
- s) involves diving work; or
- t) involves the cutting of crystalline silica material using a power tool or another mechanical process.

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Table of Contents

1.	Purpose	3
	1.1 Legislation	3
	1.2 Scope	3
2.	Background	4
3.	Acronyms and Abbreviations used in this Document	4
4.	Relationship of Standard Operating Procedures	5
5.	Procedures	5
5.	Procedures	5
	5.1 Co-ordination of Inspections	5
	5.2 Engagement	5
	5.3 Access to Site/Responsibility for Site Work Health & Safety	6
	5.4 Inspector's Powers	7
	5.5 Test Equipment Functionality and Calibration	10
	5.6 Assessing the Risks	10
	5.7 Inspection and Testing Procedures	12
	5.8 Re-energisation	14
	5.9 Alternate Energy Systems	15
	5.10 Training & Competencies	16
6.	Process to Develop Safe Working Procedures	16
7.	Referenced Material	19
8.	Definitions	22

1.0 Purpose

The purpose of this Standard Operating Procedure (SOP) is to ensure that Access Canberra Electrical Inspections Team members are provided with guidance in the performance of ***Inspection and Testing of Alteration and Repair of Electrical Installations***.

1.1 Legislation

Access Canberra Electrical Inspectors perform various functions prescribed under **Part 2** of the **ACT Electricity Safety Act 1971**, in respect to the inspection and testing of electrical wiring work and electrical installations. In addition, these functions may be extended to giving written direction to take stated action to make the installation or work safe and compliant and may require an inspector to give a direction that requires the relevant part of an installation or wiring installation to be ***disconnected or isolated***.

Duty is imposed by the **ACT Work Health and Safety Act 2011**, through subordinate legislation, **Part 4.7** of the **ACT Work Health and Safety Regulation 2011**, where in respect to electrical work on energised electrical equipment, a person conducting a business or undertaking (PCBU) must ensure electrical work is not carried out on electrical equipment while the equipment is energised. The PCBU must also, before electrical work is carried out on electrical equipment, ensure that the equipment is tested by a ***competent person*** to determine whether or not it is energised, and must also ensure that electrical equipment that has been de-energised to allow electrical work is not inadvertently re-energised while the work is being carried out.

1.2 Scope

The scope of this Standard Operating Procedure is limited to providing guidance to Electrical Inspections Team members on administrative requirements relevant to their roles and responsibilities around the performance of carrying out electrical Inspection and Testing of Alteration and Repair of Electrical Installations.

The phrase ***“Inspection and testing on or near energised electrical installations”*** is used to encompass inspections that include testing for compliance with AS/NZS 3000 on or near energised conductive parts where the supply voltage exceeds 50 V a.c. or 120 V ripple-free d.c., but does not exceed 1,000 V a.c. or 1,500 V d.c.

Due to the increased risk of an Arc Flash, distinction is made between installations where prospective fault currents exceed 10kA (typically “Commercial” or Building Classes 2 to 9), and installations where prospective fault currents do not exceed 10kA (typically “Residential” or Building Classes 1 & 10)

Although there are inherent safety risks involved in performing electrical inspection and testing on or near energised conductive parts of electrical installations, the procedures in this SOP are not intended to be a safe work instruction. Electrical Inspections Team business unit-specific safety documentation referenced by this Standard Operating Procedure must be read in conjunction with this SOP.

2.0 Background

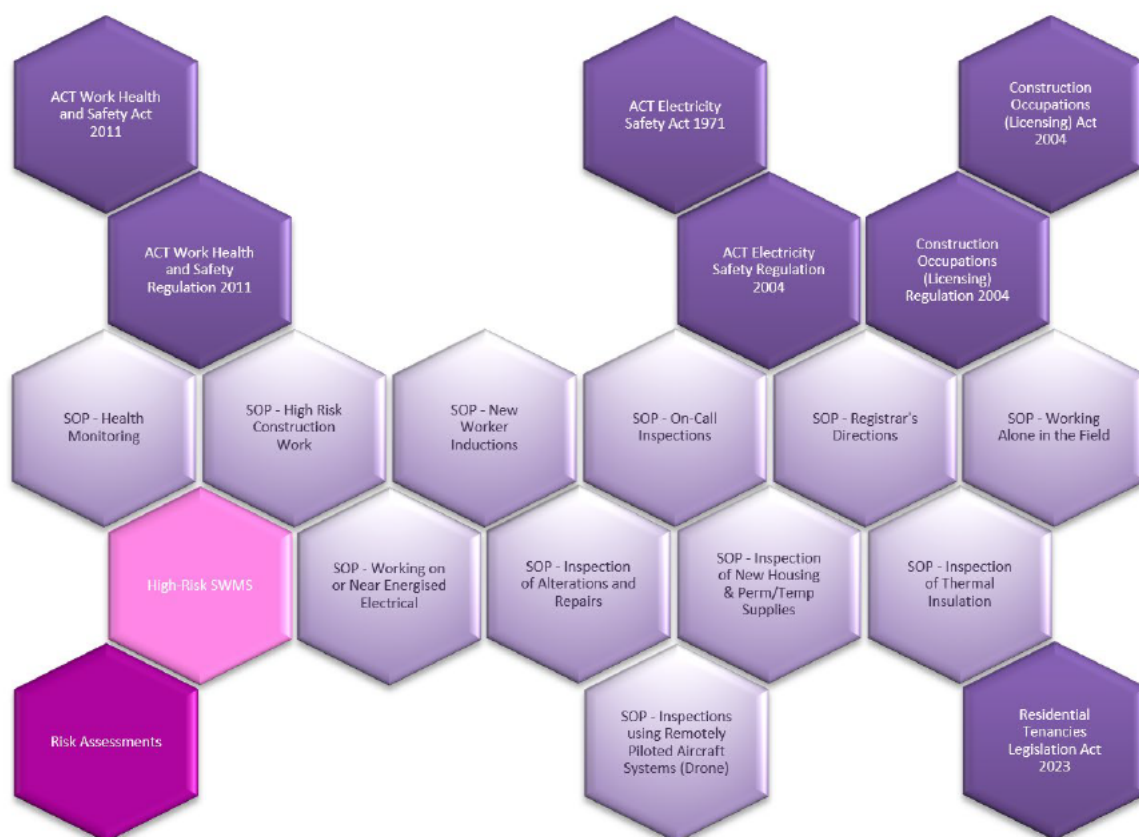
Inspection and testing carried out on or near energised electrical installations or services is deemed by regulation to be **'high risk construction work'** and must comply with the requirements of the **ACT Work Health and Safety Regulation 2011**. Energised electrical work is generally prohibited unless one or more of the exceptions under the WHS Regulations applies. In addition to these legislative requirements, guidance on the principles of safe working practices and recommended safe working procedures are provided by **AS/NZS 4836 Safe working on or near low-voltage electrical installations and equipment**.

Section 2 of AS/NZS 4836 requires that "Before work is commenced on or near any electrical installation or equipment a competent person must determine whether it is safe to do so". To align with this requirement and in recognition of Arc flash as one of the leading causes of injuries and deaths in the electrical industry, Access Canberra Electrical Inspectors must have training in "Arc Flash Awareness", as well as training recognised under the Australian Qualifications Framework in "Perform Cardiopulmonary Resuscitation" and "Perform rescue from a live low voltage panel".

3.0 Acronyms and Abbreviations Used in this Document

ACT	Australian Capital Territory
BESS	Battery Energy Storage System
BRIMS	Access Canberra's Building Records Information Management System
CASA	Civil Aircraft Safety Authority
MEN (M.E.N.)	Multiple Earthed Neutral (MEN) system (See Definitions)
PCBU	Person Conducting a Business Undertaking
PV	(PV Array) Photo-Voltaic Array
RCD	Residual current device (See Definitions)
RPAS	Remotely Piloted Aircraft System
SOP	Standard Operating Procedure
V (V a.c.)	Voltage (Alternating Current)
V (V d.c.)	Voltage (Direct Current)
WHS (Act)	Work Health and Safety (ACT Work Health & Safety Act 2011)
WHS (Regulation)	Work Health and Safety (ACT Work Health & Safety Regulation 2011)

4.0 Relationship of Standard Operating Procedures



5.0 Procedures

Procedure Steps		Responsibility
5.1.	<p>Co-ordination of Inspections</p> <p>5.1.1 The Assistant Director - Electrical Inspections & Compliance for each of the Electrical Inspections sub-teams will supervise and coordinate electrical inspectors performing electrical inspection and testing on or near energised electrical installations and ensure Standard Operating Procedures are adhered to.</p>	<ul style="list-style-type: none"> ➤ Assistant Director
5.2.	<p>Engagement</p> <p>5.2.1 Where a licensed electrician undertakes and completes any electrical work, a "Certificate of Electrical Safety" must be submitted within 14 days to Access Canberra and the owner of the installation provided with a copy.</p> <p>5.2.2 On receipt of a "Certificate of Electrical Safety" the Access Canberra Electrical Inspections business system (BRIMS) will determine whether a "Full", "Partial", or "Self-Test" inspection is required, and the electrical bookings team will assign the work for inspection accordingly.</p>	<ul style="list-style-type: none"> ➤ Assistant Director ➤ Electrical Inspections Booking Team ➤ Inspector

Procedure Steps		Responsibility
	<p>5.2.3 Where an inspection is categorised as a 'Self-Test' this means that verification of the installation has been undertaken by the installing electrician and no further audit is required</p> <p>5.2.4 Where an inspection is categorised as a 'Partial Inspection' a mandatory visual inspection of the relevant switchboard and circuits will be made when work on an electrical installation has been completed to verify that the work complies with the requirements of the 'Wiring Rules'. Where possible the additional inspection and tests as prescribed by the 'Standard Operating Procedure - Registrar's Directions' will be carried out.</p> <p>5.2.5 Where an inspection is categorised as a 'Full Inspection' a mandatory visual inspection of the relevant switchboard and circuits will be made when work on an electrical installation has been completed to verify that the work complies with the requirements of the 'Wiring Rules'. Where possible the additional inspection and tests as prescribed by the 'Standard Operating Procedure - Registrar's Directions' will be carried out.</p>	
5.3.	<p>Access to Site/Responsibility for Site Work Health & Safety</p> <p>5.3.1 Electrical inspection and testing will generally be carried out at a place that is not under the control of Access Canberra. Constructions sites will have multiple PCBUs with duties in relation to the same matter under the WHS Act, and all duty holders must, so far as is reasonably practicable, consult, cooperate, and coordinate activities with each other in relation to the matter.</p> <p>5.3.2 The Principal Contractor of a construction project is a person conducting a business or undertaking (PCBU) and must manage the risks to health and safety associated with the carrying out of construction work and must also ensure that the workplace is secured from unauthorised access.</p> <p>5.3.3 Electrical Inspectors carrying out electrical inspection and testing on or near energised electrical installations on a workplace at which construction work is carried out, must comply with any direction given by the principal contractor in respect to work health and safety and site security.</p> <p>5.3.4 Electrical Inspectors carrying out electrical inspection and testing on or near energised electrical installations must have a site-specific induction before entering a site other than housing construction work.</p> <p>5.3.5 In the case that a site-specific induction has not been given, an inspector must be accompanied by someone who has been given a site-specific induction.</p>	➤ Inspector

Procedure Steps		Responsibility
	<p>5.3.6 Where High-Risk Construction Work is identified on site, Electrical Inspectors are to refer to the High-Risk Construction Work Safe Work Method Statements. referenced in the “Referenced Material” section of this SOP.</p>	
5.4.	<p>Inspectors’ Powers</p> <p>5.4.1 Where an Inspector enters premises under <i>Section 43 of the ACT Electricity Safety Act 1971 “General power to enter premises”</i></p> <p>(1) The inspector may—</p> <ul style="list-style-type: none"> (a) enter any premises at any time with the consent of the occupier; or (b) enter premises when open to the public; or (c) enter business premises during business hours at the premises; or (d) enter premises in accordance with a warrant under this division. <p>(2) The inspector may, without the occupier’s consent or a warrant, enter the land around premises to ask the occupier for consent to enter the premises.</p> <p>5.4.2 In addition to (1) (a) (above), the Construction Occupations Registrar requires that the inspector may not enter any premises if the person giving consent is not a person 18 years of age or older; or is a person that does not have the capacity to give consent. Consent cannot be given by a person who has not been informed that they may refuse consent.</p> <p>5.4.3 Where an Inspector enters premises under <i>Part 7 of the ACT Electricity Safety Act 1971</i>, the inspector may not remain on premises entered under this part if, on request by the occupier, the inspector does not produce his or her identity card.</p> <p>5.4.4 In addition to the above, the Construction Occupations Registrar requires that an inspector must wear their inspector’s identity card so that it is visible at all times while carrying out an electrical inspection.</p> <p>5.4.5 Where an Inspector seeks consent of an occupier for entering premises under <i>Section 45 of the ACT Electricity Safety Act 1971 “Consent to entry”</i></p> <p>(1) The inspector must—</p> <ul style="list-style-type: none"> (a) produce his or her identity card; and (b) tell the occupier— <ul style="list-style-type: none"> (i) the purpose of the entry; and (ii) that anything found and seized under this part may be used in evidence in court; and (iii) that consent may be refused. <p>(2) If the occupier consents, the inspector must ask the occupier to sign a written acknowledgment—</p>	➤ Inspector

Procedure Steps	Responsibility
<p>(a) that the occupier was told—</p> <ul style="list-style-type: none"> (i) the purpose of the entry; and (ii) that anything found and seized under this part may be used in evidence in court; and (iii) that consent may be refused; and <p>(b) that the occupier consented to the entry; and</p> <p>(c) stating the time, and day, when consent was given.</p> <p>(3) If the occupier signs an acknowledgment of consent, the inspector must immediately give a copy to the occupier.</p> <p>(4) Unless the contrary is proven, a court must presume that an occupier of premises did not consent to an entry to the premises by an inspector under this part if—</p> <ul style="list-style-type: none"> (a) the question whether the occupier consented to the entry arises in proceedings in the court; and (b) an acknowledgment under this section is not produced in evidence for the entry; and (c) it is not proved that the occupier consented to the entry. <p>5.4.6 In addition to the above, the Construction Occupations Registrar requires that prior to exercising any of the powers provided by Section 45, that an electrical inspector must first gain approval from the Director or Assistant Director - Electrical Inspections & Compliance. Communication by email or SMS will be sufficient confirmation of approval. Inspectors must use the approved "Acknowledgement of Consent" form to meet the requirements of Section 45 (2), (3), and (4) of the Act.</p> <p>5.4.7 Where an Inspector enters premises under Section 49 of the ACT Electricity Safety Act 1971 "Powers in relation to serious electrical accidents"</p> <ul style="list-style-type: none"> (1) This section applies if an inspector believes on reasonable grounds that a serious electrical accident has occurred on premises. (2) The inspector may enter the premises at any reasonable time to investigate the accident, ensure the premises are safe and prevent the concealment, loss, or destruction of anything reasonably relevant to the investigation. (3) The inspector may do anything necessary and reasonable for a purpose mentioned in subsection (2). (4) If an inspector acts under this section in the absence of the occupier, the inspector must, when leaving the premises, leave a written notice, secured in a conspicuous place, setting out— <ul style="list-style-type: none"> (a) the inspector's name; and (b) the time and date of the entry; and (c) the purpose of the entry; and (d) particulars of how to contact the inspector. 	

Procedure Steps	Responsibility
<p>(5) The power to enter premises under this section is additional to the powers under section 43 (General power to enter premises).</p> <p>5.4.8 In addition to the above, the Construction Occupations Registrar requires that an inspector may not enter any premises including a room within a premises if the only occupant is a person(s) not 18 years of age or older; or is an otherwise vulnerable person. Where entry to the premises is necessary to secure the safety of the occupants, assistance should be sought from other on-site respondents or police.</p> <p>5.4.9 Where an Inspector enters premises under <i>Section 51 of the ACT Electricity Safety Act 1971 "Disconnecting etc dangerous electrical equipment and installations"</i> and finds an article of electrical equipment, or an electrical installation, that the inspector believes on reasonable grounds is a source of danger, (1) An inspector may— (a) label the article conspicuously to indicate the danger and prohibit use of the article until it has been repaired or otherwise rendered safe for use; or (b) disconnect the installation.</p> <p>5.4.10 In addition to the above, the Construction Occupations Registrar requires that electrical inspectors must make a reasonable attempt to disconnect the part of an installation that is dangerous prior to resorting to disconnecting the entire electrical installation. Where an installation has been disconnected, the Registrar must be notified within 24 Hours.</p> <p>5.4.11 Where an Inspector enters premises under <i>Section 57 of the ACT Electricity Safety Act 1971 "Power to inspect electrical wiring work"</i> to conduct a test or inspection required under <i>part 2 of the Act 'Electrical wiring work and electrical installations'</i> (1) An inspector may enter and remain on premises to conduct a test or inspection in relation to an electrical installation or electrical wiring work. (2) An inspector may enter and remain on the premises (a) at any reasonable time; and (b) with the people, equipment, or material that the inspector reasonably needs to conduct the test or inspection. (3) The inspector may not (a) enter or remain on premises if, on request by the occupier, the inspector does not produce his or her identity card; or (b) without the consent of the occupier, enter or remain on any part of the premises used for residential purposes. (4) The power to enter premises under this section is additional to the powers under section 43 (General power to enter premises).</p>	

Procedure Steps	Responsibility
<p>5.4.12 In addition to the above, the Construction Occupations Registrar requires that an inspector may not enter any premises if the person giving consent is not a person of 18 years of age or older; or is a person that does not have the capacity to give consent. Where this direction restricts the ability of the electrical inspector to properly carry out an inspection/audit, an inspector should consider arranging a more suitable time for the inspection or to changing the type of inspection.</p>	
<p>5.5. Test Equipment Functionality and Calibration</p> <p>5.5.1 Inspectors carrying out the tests specified in <i>AS/NZS 3017 Electrical Installations – Verification Guidelines</i> must be equipped with the following live-testing equipment: non-contact voltage indicator, voltmeter, low range ohmmeter, insulation resistance test instrument, proving unit (battery-powered known voltage source), clamp ammeter, instrument for measuring fault-loop impedance, and instrument for initiating the operation of a RCD.</p> <p>5.5.2 Inspectors carrying out the tests specified in <i>AS/NZS 3017 Electrical Installations – Verification Guidelines</i> must be equipped with the following dead-testing accessories: test leads and probes, earth probe, resistor box with a range of resistors of known value, socket outlet polarity meter, alligator clip leads, independent earth spike for the temporary connection to mass of earth, and earth trailing lead.</p> <p>5.5.3 The designated Equipment Manager must ensure that all test equipment required to carry out the tests specified in <i>AS/NZS 3017 Electrical Installations – Verification Guidelines</i>—including, but not limited to, non-contact voltage indicator, voltmeters, low-range ohmmeters, instruments for measuring fault-loop impedance, insulation resistance testers, and clamp ammeters—are calibrated at intervals not exceeding twelve (12) months. Where routine checks indicate a significant error in measurement accuracy, full calibration must be undertaken by a qualified test laboratory. Laboratories performing calibration must comply with the requirements of AS ISO/IEC 17025.</p> <p>5.5.4 To reduce risk of damage, and personal injury to inspectors undertaking the inspection and testing of energised exposed conductors and parts, inspectors must ensure that all test instruments and associated test leads for use on energized circuits (typically voltmeter, clamp meters, RCD test instruments and earth fault-loop impedance test equipment) must have a minimum impulse voltage withstand category rating of:</p> <ul style="list-style-type: none"> - Category III for measurements performed on final subcircuits; distribution boards; submains of an LV installation and/or, 	<ul style="list-style-type: none"> ➤ Equipment Manager ➤ Inspector

Procedure Steps	Responsibility
<p>- Category IV for measurements performed at the source of an LV installation such as consumer mains and main switchboards.</p> <p>5.5.5 Prior to conducting any electrical test, inspectors must verify that all test equipment is correctly configured, fully functional, and in good physical condition. This includes checking contact probes and test leads for damage to insulation, verifying continuity, and ensuring secure connections.</p> <p>5.5.6 Inspectors performing inspection and testing of an energised Electrical Installation must be equipped with a Low Voltage Rescue Kit complying with <i>'AS/NZS 4836 Safe working on or near low voltage electrical installations.'</i></p>	
<p>5.6. Assessing the Risks</p> <p>5.5.7 Before undertaking inspection and testing of Alteration and Repair of electrical installations, all hazards and environmental considerations shall be identified.</p> <p>5.5.8 It is expected that Inspectors carrying out inspection and testing of Alteration and Repair of electrical installations are likely to be carried out on installations or portions of an installations that have already been energised, and before work is commenced on or near any electrical installation or equipment, a competent person must determine whether it is safe to do so by way of risk assessment and by using AS/NZS 4836 to develop safe working procedures. (See Figure 1 and Figure 2)</p> <p>5.5.9 To be considered competent to carry out a risk assessment of installations where prospective fault currents exceed 10kA (typically "Commercial" or Building Classes 2 to 9), Electrical Inspectors must have training in <i>"Arc Flash Awareness"</i>, as well as training recognised under the Australian Qualifications Framework in <i>"Perform CPR"</i> and <i>"Perform rescue from a live low voltage panel"</i>.</p> <p>5.5.10 While carrying out inspection and testing of Alteration and Repair of Electrical Installations, Electrical Inspections Team members must continuously re-assess the risks of the situation they are involved in, review the controls to reduce the risk, and implement additional controls where warranted.</p> <p>5.5.11 Electrical Inspections Team members should always seek guidance from their Assistant Director or Health and Safety Representative where required.</p> <p>5.5.12 While this Standard Operating Procedure focuses on risks associated with inspection and testing of Alteration and Repair of electrical installations, Electrical Inspections Team members must consider all hazards in their assessment. Relevant hazards may include:</p>	<p>➤ Inspector</p>

Procedure Steps	Responsibility
<ul style="list-style-type: none"> - structures built prior to December 2003 which may include asbestos containing materials (ACM) or asbestos contaminated dust (ACD) present within switchboards. - aggressive customers, customers affected by drugs or alcohol, and minor children and other vulnerable persons. - other workers on site, what they are doing, what plant and equipment they are using. - dangerous dog breeds, venomous reptiles, and bites and stings from insects and spiders. - overgrown vegetation, hoarded backyard or household rubbish, and any other obstructions preventing safe and clear access and exit from the area requiring inspection including switchboards. - limited access to shelter for protection against exposure to solar ultraviolet radiation (UVR), eating meals and taking breaks, and protection in adverse weather conditions. <p>5.5.13 Inspectors carrying out Inspection and testing of Alteration and Repair of electrical installations may be required to do so in combination with other high-risk work including working at heights, hazardous areas, and confined spaces. Where High-Risk Construction Work is identified on site, Electrical Inspectors are to refer to the relevant Electrical Inspections Team’s High-Risk Construction Work Safe Work Method Statements.</p> <p>5.5.14 Inspectors carrying out Inspection and testing of Alteration and Repair of electrical installations may be required to do so while working alone and at times isolated from the assistance of other people. Working alone or remotely increases the risk of other hazards such as exposure to occupational violence, and poor access to emergency medical and police assistance, and these risks should be considered when assessing the overall risk.</p>	

Procedure Steps	Responsibility
<p>5.7 Inspection and Testing Procedures</p> <p>5.6.1 Electrical Inspectors are prohibited from carrying out work on or near energised electrical installations or services unless one or more of the following exceptions under the WHS Regulations applies:</p> <ul style="list-style-type: none"> - it is necessary in the interests of health and safety that the electrical work is carried out on the equipment while the equipment is energised; or - it is necessary for the electrical equipment to be energised in order for the work to be carried out properly; or - it is necessary for the purposes of testing to determine whether equipment is energised, or - there is no reasonable alternative means of carrying out the work. <p>5.7.1 Before work is commenced on or near any electrical installation or equipment, a competent person must determine whether it is safe to do so by way of risk assessment and by using AS/NZS 4836 to develop safe working procedures.</p> <p>5.7.2 Where inspection and testing of an electrical installation can be performed de-energised inspectors must work de-energised and must follow the inspection and testing procedures in the relevant Standard Operating Procedure.</p> <p>5.7.3 Where it is not reasonably practical to reschedule or omit the inspection and testing of an alteration or repair of an electrical installation, any work on or near exposed energised conductors or live conductive parts, must be performed in accordance with Access Canberra Electrical Inspection Team's <i>Standard Operating Procedure - Inspection and testing on or near energised electrical installations</i> and must ensure that a detailed Safe Work Method Statement for the proposed work is prepared or that they follow the pre-prepared Access Canberra's Electrical Inspections Team's "<i>Safe Work Method Statement - Work on or near energised electrical installations or services</i>".</p> <p>5.7.4 Inspectors undertaking electrical work on de-energised electrical equipment must use the tools, testing equipment and personal protective equipment properly.</p> <p>5.5.15 Inspectors undertaking electrical work on de-energised electrical equipment must ensure that all test equipment is checked to confirm it remains operational, safe, and fit for use. Particular attention must be given to equipment that has been stored for extended periods, with checks verifying that internal batteries are adequately charged and that the equipment functions as intended.</p>	<p>➤ Inspector</p>

Procedure Steps	Responsibility
<p>Instrument accuracy may be confirmed by:</p> <ul style="list-style-type: none"> - Comparing readings against a range of resistors with known values; or - Testing against a circuit with known characteristics. <p>5.5.16 To reduce risk of damage, and personal injury to inspectors undertaking the inspection and testing of energised exposed conductors and parts, inspectors must ensure that all test instruments and associated test leads for use on energized circuits (typically voltmeter, clamp meters, RCD test instruments and earth fault-loop impedance test equipment) must have a minimum impulse voltage withstand category rating of:</p> <ul style="list-style-type: none"> - Category III for measurements performed on final subcircuits; distribution boards; submains of an LV installation and/or, - Category IV for measurements performed at the source of an LV installation such as consumer mains and main switchboards. <p>5.7.5 Prior to testing, the immediate area and environment shall be assessed for the safety of personnel performing the tests. This assessment must include that the area is clear of obstructions to allow for easy access and exit, and that adequate independent lighting is provided.</p> <p>5.7.6 Before inspection and testing of Alteration and Repair of electrical installations commences, the inspector must ensure that the portion of the installation and the circuits to be tested are correctly identified.</p> <p>5.7.7 Before Inspection and testing of Alteration and Repair of Electrical Installations commences, the inspector must ensure that they consult with the person with management or control of the workplace (e.g., will de-energisation affect the health and safety of any person, damage equipment or property, cause distress to the owner/occupier?), and then notify any other affected persons as appropriate.</p> <p>5.7.8 Work shall not be carried out on or near de-energised exposed conductors and parts until a competent person has ensured the isolation device for each possible source is locked out and tagged or physically separated from the supply equipment so that the circuits under test cannot be energised unintentionally.</p> <ul style="list-style-type: none"> ▪ NOTE: Where the electrical installation is complex, the isolation procedures must be performed by the responsible electrician and checked by another competent person. <p>5.7.9 Prior to testing, the inspector must confirm that all open or</p>	

Procedure Steps	Responsibility
<p>unused devices are isolated applying the principles of AS/NZS 4836, tagged in the open position, and under the control of the electrical inspector carrying out the testing. Installations must always be treated as live until confirmed dead using the following steps:</p> <ol style="list-style-type: none"> I. Use a non-contact voltage tester to detect the presence of voltage. II. Verify all test equipment used using a known voltage source before and after every test. III. Use a Voltmeter to confirm that voltage is not present. IV. Verify all test equipment used using a known voltage source before and after every test. <p>5.7.10 Prior to handling any unterminated, unenclosed, or disconnected conductive parts of an installation (including the use of dead test equipment such as resistor boxes, polarity testers, and earth trailing leads), inspectors must apply the 'TEST FOR 'DEAD' BEFORE YOU TOUCH' principle. The possibility of inadvertent energisation of circuits must always be considered. Inspectors must always assume that new wiring work (including but not limited to, disconnected M.E.N. connections, disconnected neutrals, unterminated wiring, and unenclosed conductive parts) are live until proven dead.</p> <p>5.7.11 Should any switching and/or energisation of other portions of the installation take place during an inspection, the electrical inspector must cease testing until this process is completed successfully. On successful completion of switching and/or energisation of other portions of the installation, the installation must be treated as energised until proven de-energised using the following steps:</p> <ol style="list-style-type: none"> I. Use a non-contact voltage tester to detect the presence of voltage. II. Verify all test equipment used using a known voltage source before and after every test. III. Use a Voltmeter to confirm that voltage is not present. IV. Verify all test equipment used using a known voltage source before and after every test. <p>5.7.12 Inspectors undertaking electrical work on de-energised electrical equipment must use the tools, testing equipment and personal protective equipment properly. For the purposes of this Standard Operating Procedure, 'properly' shall mean the methods and minimum safety standards for test instruments as set out by AS/NZS 3017 to verify that a low voltage electrical installation complies with the requirements of AS/NZS 3000 known as the wiring rules.</p>	

Procedure Steps		Responsibility
5.8	<p>Re-Energisation</p> <p>5.8.1 Responsibility for the safe energisation of an electrical installation after approval by an Electrical Inspector shall be by the responsible electrician.</p> <p>5.8.2 In the case of small installations where the responsible electrician is not present and a risk assessment determines there is low risk of risk of exposure to arc flash hazards, the inspector may re-energise an installation providing that, so far as reasonably practicable, that energisation does not pose a risk to workers at the workplace.</p> <p>5.8.3 Inspectors undertaking the inspection and testing of energised exposed conductors and parts must be equipped with the following Live-Testing equipment: non-contact voltage indicator, voltmeter, proving unit (battery-powered known voltage source), clamp ammeter, fault-loop impedance tester, and RCD tester.</p> <p>5.8.4 Prior to giving approval to energise an installation and prior to departure from site, the electrical inspector must ensure that the responsible electrician has correctly restored and verified any disconnected connections including the M.E.N., circuit breaker, and neutral connections. In the case of small installations where the electrician is not present, this must be performed by the inspector.</p> <p>5.8.5 Inspectors must exercise caution when inserting fuses or closing links carrying full load current, or where there is a suspected fault condition.</p> <p>5.8.6 Where the inspection and testing of an electrical installation reveals a non-compliance that presents a risk to the safety of persons and/or property, the portion of the installation posing the risk must be isolated and/or disconnected and a Defect Report issued. Using the procedures of <i>AS/NZS 4836</i> and the ACT <i>Work Health and Safety (Managing Electrical Risks in the Workplace Code of Practice)</i>, the affected equipment or circuit must be clearly tagged with an Out-of-Service or Caution tag placed in a prominent location at the point of isolation or disconnection.</p> <p>NOTE: A lock is not a mandatory for an Out-Of-Service Tag and the tag may be removed by a competent person for the purpose of rectification subject to safe work procedures.</p>	➤ Inspector
5.9	<p>Alternate Energy Systems</p> <p>5.9.1 Alternate Energy Systems or Inverter Energy Systems, typically battery energy storage, or photovoltaic arrays, comprising an energy source converted from one kind of electrical power to electrical power suitable for connection</p>	➤ Inspectors

Procedure Steps		Responsibility
	<p>to the grid via inverter(s) satisfying the requirements of AS/NZS 4777.2, shall be inspected using the same criteria as for 'New' electrical installations.</p> <p>5.9.2 Where in respect of managing the rate of which inspection/audit types will be applied, the Registrar directs that after first having received a Certificate of Electrical Safety (CES) from a licenced electrician submitted under the 'type of work' category of "New", the rate and type of inspection/audit will be:</p> <ul style="list-style-type: none"> - 90% Partial Inspection - 10% Full Inspection <p>5.8.7 Although categorised as 'New', Alternate Energy Systems may not be connected to an electricity supply unless the permanent electrical installation has been tested by a licenced electrician, a certificate of electrical safety has been issued certifying the installation complies with the current edition of AS/NZS 3000, and an audit has been conducted by an Access Canberra Electrical Inspector and approval for connection to the electricity network has been given.</p> <p>5.8.8 Where Inspections of roof located photovoltaic arrays are carried out using Remotely Piloted Aircraft Systems (RPAS), operators must be suitably accredited, and the aircraft registered with the Civil Aviation Safety Authority (CASA).</p> <p>5.8.9 Inspectors using Remotely Piloted Aircraft Systems must be trained in the <i>Standard Operating Procedure – Inspections Using Remotely Piloted Aircraft Systems (Drones)</i>.</p>	
5.10	<p>Training & Competencies</p> <p>5.10.1 Inspectors undertaking the inspection and testing of an energised electrical installation must have as a minimum, a current Statement of Attainment in '<i>Arc Flash Awareness Training</i>'.</p> <p>5.10.2 Inspectors undertaking the inspection and testing of an energised electrical Installation must have a current Statement of Attainment in both "<i>Perform CPR</i>" and "<i>Perform rescue from a live low voltage panel</i>" recognised under the Australian Qualifications Framework.</p> <p>5.10.3 Inspectors undertaking the inspection and testing of an energised electrical Installation must be assessed by their immediate supervisor as a <i>competent person</i> in respect being able to determine whether or not an electrical installation is energised, and a competent person in respect of being able to complete a risk assessment for inspection and testing carried out on or near energised electrical installations or services.</p> <p>5.10.4 Electrical Inspectors must be inducted into the <i>High-Risk Construction Work Safe Work Method Statements</i></p>	<ul style="list-style-type: none"> ➤ Inspector ➤ Assistant Director ➤ Directors

Procedure Steps	Responsibility
<p>referenced in section 6.0 of this Standard Operating Procedure.</p> <p>5.10.5 Before inspection and testing is undertaken on Alteration and Repair of Electrical Installations, Electrical Inspectors must be trained in the <i>Standard Operating Procedure – Hazards Requiring Health Monitoring</i>.</p> <p>5.10.6 Before Inspection and testing is undertaken on Alteration and Repair of Electrical Installations, Electrical Inspectors must be trained in the <i>Standard Operating Procedure – Working Alone in the Field</i>.</p> <p>5.10.7 Before inspection and testing is undertaken on Alteration and Repair of Electrical Installations, Electrical Inspectors must be trained in the <i>Standard Operating Procedure – Inspections Using Remotely Piloted Aircraft Systems (Drones)</i>.</p>	

6.0 Process to Develop Safe Working Procedures

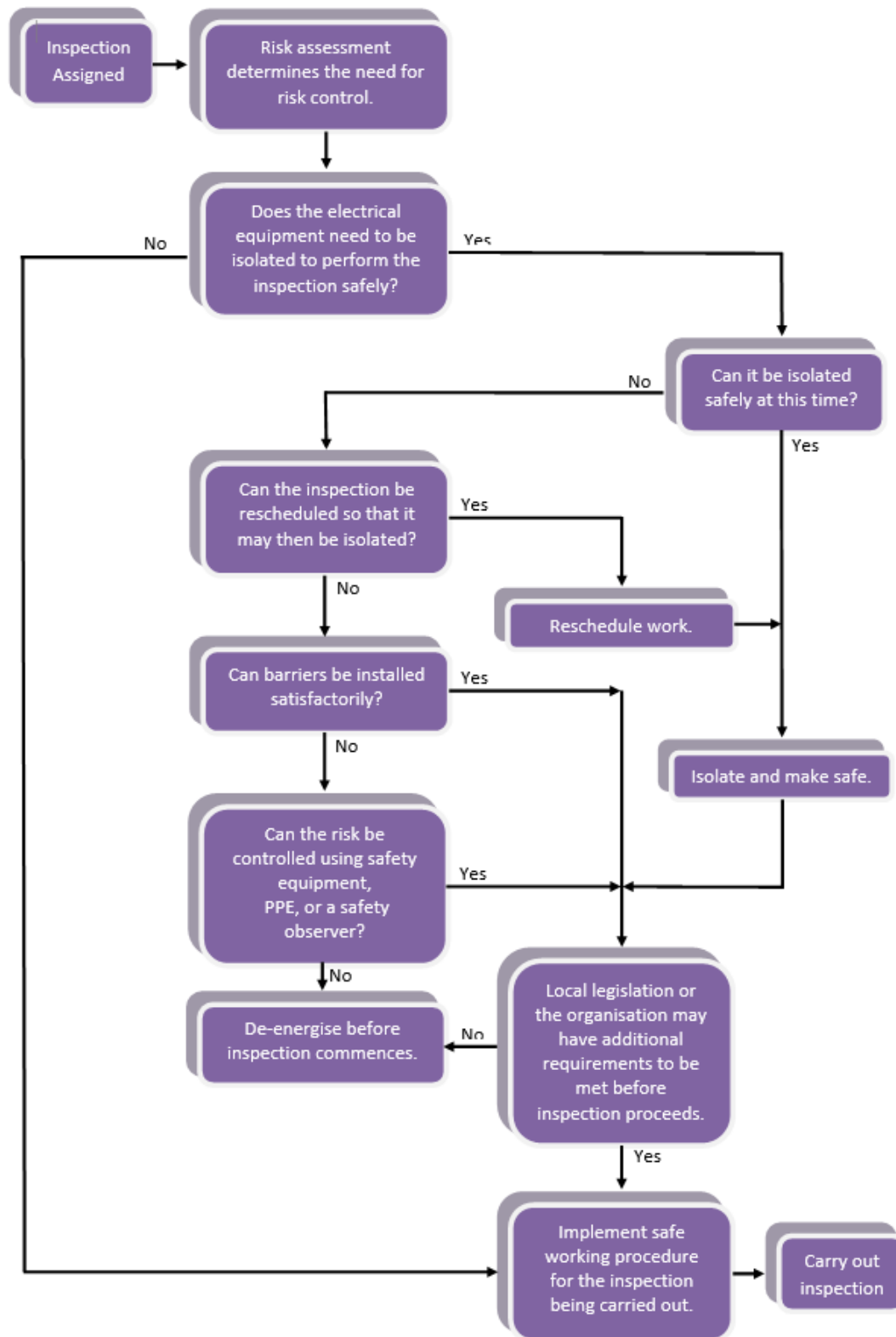


Figure 1 – Safe Work Procedures

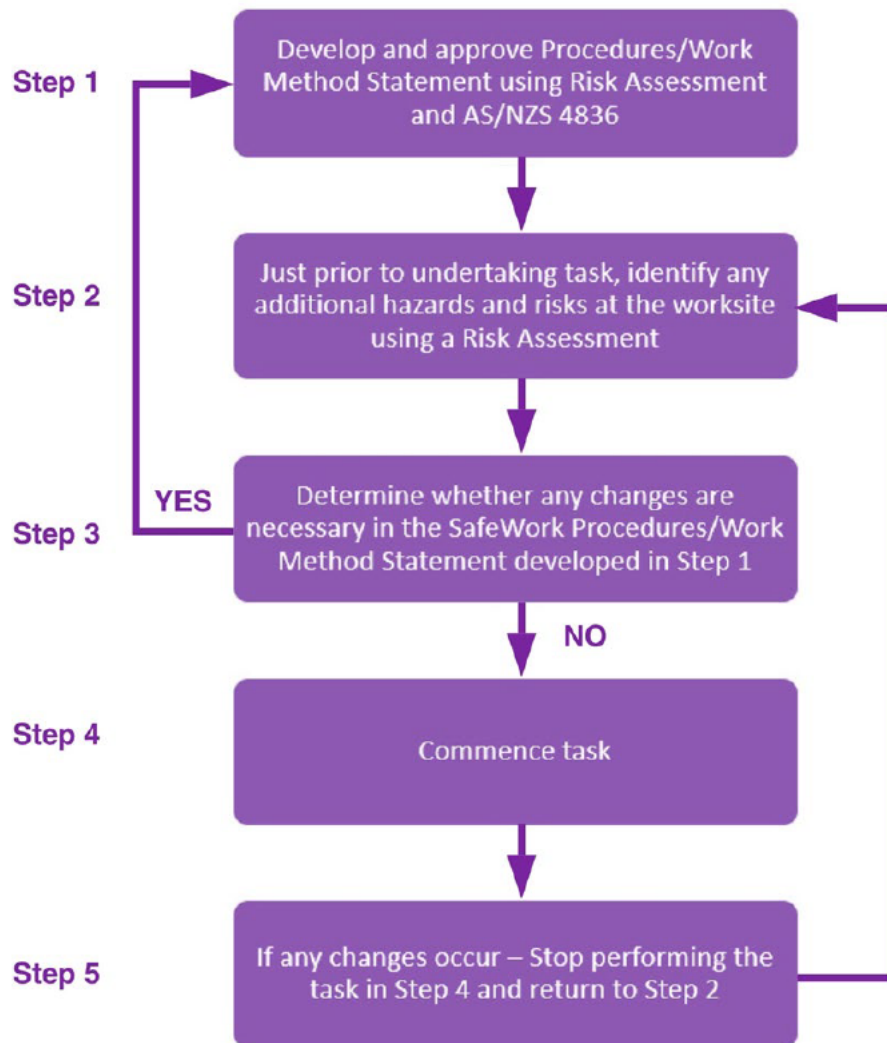


Figure 2 - The diagram above outlines the process to develop safe working procedures in conjunction with the guidance provided by AS/NZS 4836 – Safe Working on or Near Low-Voltage and Extra-Low Voltage Electrical Installations and Equipment



Figure 3 - Test Before You Touch Principle

7.0 Referenced Material

Name	Location (Document Path)
<i>ACT Electricity Safety Act 1971</i>	Electricity Safety Act 1971 Acts
<i>ACT Work Health and Safety Act 2011</i>	Work Health and Safety Act 2011 Acts
<i>ACT Work Health and Safety Regulation 2011</i>	Work Health and Safety Regulation 2011 HTML view (act.gov.au)
<i>ACT Work Health and Safety (Managing Electrical Risks in the Workplace Code of Practice) Approval 2020</i>	Work Health and Safety (Managing Electrical Risks in the Workplace Code of Practice) Approval 2020 Notifiable instruments
<i>AS/NZS 4836 Safe working on or near low-voltage and extra-low voltage electrical installations and equipment</i>	G:\Access Canberra\PEG\Electrical\Standards
<i>AS/NZS 3000 – Australian/New Zealand Standard for Electrical installations (known as the Australian/New Zealand Wiring Rules)</i>	G:\Access Canberra\PEG\Electrical\Standards
<i>AS/NZS 3017 – Australian/New Zealand Standard for Electrical installations - Verification by inspection and testing</i>	G:\Access Canberra\PEG\Electrical\Standards
<i>Standard Operating Procedure - Registrar's Directions</i>	G:\Access Canberra\PEG\Electrical\Electrical WHS System\Standard Operating Procedures
<i>Standard Operating Procedure – On-Call Electrical Inspections</i>	G:\Access Canberra\PEG\Electrical\Electrical WHS System\Standard Operating Procedures
<i>Standard Operating Procedure – Inspection and Testing On or Near Energised Electrical Installations</i>	G:\Access Canberra\PEG\Electrical\Electrical WHS System\Standard Operating Procedures
<i>Standard Operating Procedure – Working Alone in the Field</i>	G:\Access Canberra\PEG\Electrical\Electrical WHS System\Standard Operating Procedures
<i>Standard Operating Procedure – Hazards Requiring Health Monitoring</i>	G:\Access Canberra\PEG\Electrical\Electrical WHS System\Standard Operating Procedures
<i>Standard Operating Procedure – Inspections Using Remotely Piloted Aircraft Systems (Drones).</i>	G:\Access Canberra\PEG\Electrical\Electrical WHS System\Standard Operating Procedures
<i>Standard Operating Procedure - Thermal Insulation Roof-Space Electrical Inspections</i>	G:\Access Canberra\PEG\Electrical\Electrical WHS System\Standard Operating Procedures

Name	Location (Document Path)
<i>Standard Operating Procedure – High Risk Construction Work</i>	G:\Access Canberra\PEG\Electrical\Electrical WHS System\Standard Operating Procedures
<i>Standard Operating Procedure – New Worker Inductions</i>	G:\Access Canberra\PEG\Electrical\Electrical WHS System\Standard Operating Procedures
<i>Safe Work Method Statement - Work on or near energised electrical installations or services</i>	G:\Access Canberra\PEG\Electrical\Electrical WHS System\Safe Work Method Statements
<i>Safe Work Method Statement – Demolition of load-bearing Structure</i>	G:\Access Canberra\PEG\Electrical\Electrical WHS System\Safe Work Method Statements
<i>Safe Work Method Statement – Likely to involve disturbing asbestos</i>	G:\Access Canberra\PEG\Electrical\Electrical WHS System\Safe Work Method Statements
<i>Safe Work Method Statement – Tilt-up or precast concrete elements</i>	G:\Access Canberra\PEG\Electrical\Electrical WHS System\Safe Work Method Statements
<i>Safe Work Method Statement – Work on or near chemical, fuel, or refrigerant lines</i>	G:\Access Canberra\PEG\Electrical\Electrical WHS System\Safe Work Method Statements
<i>Safe Work Method Statement – Work on, in or adjacent to a road, railway, shipping lane or other traffic corridor in use by traffic other than pedestrians</i>	G:\Access Canberra\PEG\Electrical\Electrical WHS System\Safe Work Method Statements
<i>Safe Work Method Statement – Working at Heights Risk of a person falling more than two metres</i>	G:\Access Canberra\PEG\Electrical\Electrical WHS System\Safe Work Method Statements
<i>Safe Work Method Statement – Working in an area that may have a contaminated or flammable atmosphere</i>	G:\Access Canberra\PEG\Electrical\Electrical WHS System\Safe Work Method Statements
<i>Safe Work Method Statement – Work on or near pressurised gas distribution main or piping</i>	G:\Access Canberra\PEG\Electrical\Electrical WHS System\Safe Work Method Statements
<i>Safe Work Method Statement – Work that involves processing crystalline silica material using a power tool or another mechanical method</i>	G:\Access Canberra\PEG\Electrical\Electrical WHS System\Safe Work Method Statements
<i>Safe Work Method Statement – Work in areas with artificial extremes of temperature</i>	G:\Access Canberra\PEG\Electrical\Electrical WHS System\Safe Work Method Statements
<i>Safe Work Method Statement – Work in or near a confined space</i>	G:\Access Canberra\PEG\Electrical\Electrical WHS System\Safe Work Method Statements

Name	Location (Document Path)
Safe Work Method Statement – Work in or near water or other liquid that involves a risk of drowning	G:\Access Canberra\PEG\Electrical\Electrical WHS System\Safe Work Method Statements
Safe Work Method Statement – Work in an area with movement of powered mobile plant	G:\Access Canberra\PEG\Electrical\Electrical WHS System\Safe Work Method Statements
Safe Work Method Statement – Work in or near a shaft or trench deeper than 1.5m or a tunnel	G:\Access Canberra\PEG\Electrical\Electrical WHS System\Safe Work Method Statements
Safe Work Method Statement – Temporary load-bearing support for structural alterations or repairs	G:\Access Canberra\PEG\Electrical\Electrical WHS System\Safe Work Method Statements
AS/NZS 4836 – Safe Working on or Near Low-Voltage and Extra-Low Voltage Electrical Installations and Equipment	G:\Access Canberra\PEG\Electrical\Standards
AS/NZS 3000 – Australian/New Zealand Standard for Electrical installations (known as the Australian/New Zealand Wiring Rules)	G:\Access Canberra\PEG\Electrical\Standards
AS/NZS 3017 – Australian/New Zealand Standard for Electrical installations - Verification by inspection and testing	G:\Access Canberra\PEG\Electrical\Standards
Acknowledgement of Consent (form)	G:\Access Canberra\PEG\Electrical\Fillable Templates
Insulation Installation Electrical Safety Inspection Report	G:\Access Canberra\PEG\Electrical\Fillable Templates

8.0 Definitions

Term	Means:
<i>'Required'</i>	a requirement of the relevant legislation.
<i>'May'</i>	the existence of an option.
<i>'Electrical installation'</i>	<p>a) electrical wiring or cable used or for use in carrying or controlling electricity (other than electricity with a voltage of not more than 50V a.c. or 120V ripple-free d.c.), including the following:</p> <ul style="list-style-type: none"> (i) a wiring system, switchgear, control gear, generator, electrical accessory, electrical appliance, or fitting, that is used or for use in the conversion, storage, transmission, distribution, generation, or use of electrical energy and connected to wiring or cable. (ii) a switch, fuse, plug, socket outlet, lighting outlet, adaptor, ceiling rose, or other device associated with wiring, a switchboard, or an appliance, mentioned in subparagraph. (iii) a consuming device in which electricity is converted into heat, motion, or another form of energy, or is substantially changed in its electrical character. (iv) support for electrical wiring or cable. <p>b) but does not include:</p> <ul style="list-style-type: none"> (i) a portable generator or storage device supplying, or for the supply of, electricity to the installation. (ii) an appliance that receives, or is intended to receive, its main electricity supply through a socket connection. (iii) a lamp. (iv) an electricity network or part of a network. <p>c) telecommunications cabling or equipment that operates or is intended to operate at a voltage of 90V a.c. or lower. electrical wiring or cable used or for use in carrying or controlling electricity (other than electricity with a voltage of not more than 50V a.c. or 120V ripple-free d.c.), including the following:</p> <ul style="list-style-type: none"> (v) a wiring system, switchgear, control gear, generator, electrical accessory, electrical appliance, or fitting, that is used or for use in the conversion, storage, transmission, distribution, generation, or use of electrical energy and connected to wiring or cable. (vi) a switch, fuse, plug, socket outlet, lighting outlet, adaptor, ceiling rose, or other device associated with wiring, a switchboard, or an appliance, mentioned in subparagraph. (vii) a consuming device in which electricity is converted into heat, motion, or another form of energy, or is substantially changed in its electrical character. (viii) support for electrical wiring or cable. <p>d) but does not include:</p>

Term	Means:
	<ul style="list-style-type: none"> (v) a portable generator or storage device supplying, or for the supply of, electricity to the installation. (vi) an appliance that receives, or is intended to receive, its main electricity supply through a socket connection. (vii) a lamp. (viii) an electricity network or part of a network. (ix) telecommunications cabling or equipment that operates or is intended to operate at a voltage of 90V a.c. or lower.
'Electricity Distribution Network'	consists of infrastructure used, or for use, in relation to the distribution of electricity by a person for supply to the premises of another person.
'Electrical wiring work'	<p>the installation, replacement, augmentation, curtailing, maintenance, repair, or alteration of the location of all or part of, an electrical installation, other than:</p> <ul style="list-style-type: none"> (i) an electrical installation that operates at extra low voltage (ii) telecommunications cabling or equipment that operates at a voltage not greater than 90V a.c. (iii) plugging a plug into a socket outlet, or unplugging it; or (iv) fitting a lamp to a lighting outlet or removing it; or (v) fitting, removing, or replacing a fuse or fuse wire if the fuse or wire cannot sustainedly conduct more than 30A.
'Residential Electrical Installation'	electrical installations or electrical wiring work (typically "Residential" or Building Classes 1 & 10) where if the electricity supply was connected, a risk assessment would determine a low risk of exposure to arc flash hazards.
'Wiring Rules'	the Australian/New Zealand Standard for Electrical installations (known as the Australian/New Zealand Wiring Rules) or AS/NZS 3000
'Electrical Inspection'	the audit of an electrical installation for compliance with the 'Wiring Rules' as required by Section 4 of the ACT Electricity Safety Act 1971 and as directed by the Construction Occupations Registrar (see ' Standard Operating Procedure - Registrar's Directions ')
'Self-Test'	verification of the installation in accordance with AS/NZS 3000 has been undertaken by the installing electrician and no further audit is required.
'Partial Inspection'	a mandatory visual inspection of the electrical installation to verify that the work complies with the requirements of AS/NZS 3000 as in force and where possible carry out the following additional inspection and tests:

Term	Means:
	<ul style="list-style-type: none"> - Verification of operation of RCDs of at least 10% of the relevant circuits (depending on availability of supply) - Earth Resistance test - continuity of main earthing conductor. - Earth Resistance test of equipotential bonded parts. - Insulation Resistance tests of at least 10% of the relevant circuits - Verify of the MEN connection. - Test for interconnection of circuits of at least 10% of the circuits.
'Full Inspection'	<p>a mandatory visual inspection of the electrical installation to verify that the work complies with the requirements of AS/NZS 3000 as in force. and where possible carry out the following additional inspection and tests:</p> <ul style="list-style-type: none"> - Verification of operation of RCDs of at least 33% of the relevant circuits (depending on availability of supply) - Earth Resistance test - Continuity of Main Earthing conductor - Earth Resistance test of other earthed and equipotential bonded parts. - Insulation Resistance tests of at least 33% of relevant circuits - Verification of the MEN connection. - Voltage drop check. - Verification of earth fault-loop impedance. - Test for interconnection of circuits of at least 33% of the relevant circuits - Polarity and correct circuit connections of Mains, Sub-Mains, and final circuits. - Verify isolators operation. e.g., Cook tops, Hot Water Systems, Air Conditioners, Motors, etc.
'Certificate of Electrical Safety'	<i>a report as defined by Section 6 of the Electricity Safety Act</i>
'Competent Person'	person, who has acquired, through training, qualification or experience or a combination of these, the knowledge and skill enabling that person to perform the required task correctly.
'De-energized'	separated from all sources of supply, but not necessarily isolated, earthed or out of commission.
'Disconnected'	physically separated from any source of electrical energy including by a switching action or physical removal of circuit connections.
'Energized'	connected to a source of electrical supply or subject to hazardous induced or capacity voltages.
'Isolated'	separated from all possible sources of electrical energy and rendered incapable of being energised unintentionally.

Term	Means:
'Work On'	performance of a function within 500 mm of exposed energized conductors or live conductive parts and/or electrical equipment. Note 1: Work within 500 mm is classified as "work on", as per Figure 1. Note 2: Includes undertaking or supervising the following: constructing, manufacturing, assembling, installing, connecting, maintaining, repairing, altering, testing, verifying, assessing, or inspecting, removing, or adding to an electrical installation or equipment.

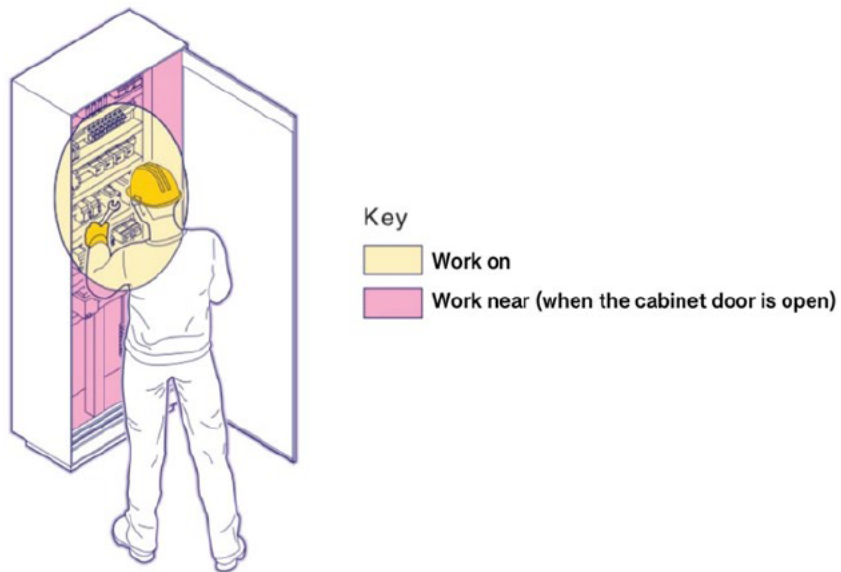


Figure 1. — 500 mm electrical work zone for work on low-voltage and extra-low voltage equipment within an enclosed switchboard panel

Term	Means:
'Work Near'	means performance of a function within 3 m of exposed energized conductors or live conductive parts and/or electrical equipment. Note 1: Work within 3 m is classified as "work near", as per Figure 2. Note 2: Functions may include cleaning, pest control or other tasks that are not defined as electrical work.

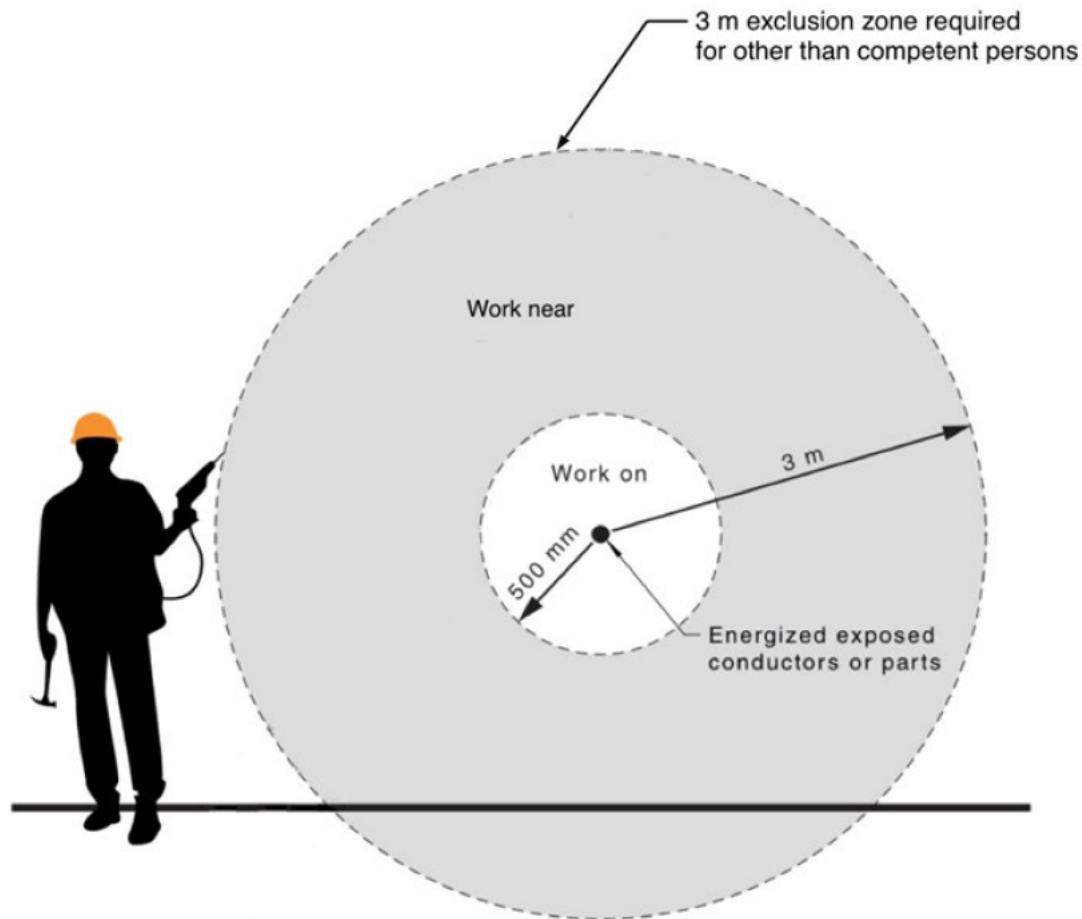


Figure 2. — Illustration of 3 m exclusion zone and "on or near"

Term	Means:
<i>'Principal Contractor'</i>	<p>a person conducting a business or undertaking that commissions a construction project, the principal contractor for the project may also be:</p> <ul style="list-style-type: none"> a) a person conducting a business or undertaking authorised by the person that commissions a construction project to have management or control of the workplace. b) a person conducting a business or undertaking engaged directly or indirectly by the owner of residential premises to undertake a construction project. <p>A construction project has only 1 principal contractor at any specific time.</p>
<i>'Construction Work'</i>	<ul style="list-style-type: none"> a) any work carried out in connection with the construction, alteration, conversion, fitting-out, commissioning, renovation, repair, maintenance, refurbishment, demolition, decommissioning or dismantling of a structure; and b) includes the following: <ul style="list-style-type: none"> (i) any installation or testing carried out in connection with an activity mentioned in paragraph (a). (ii) the removal from the workplace of any product or waste resulting from demolition. (iii) the prefabrication or testing of elements, at a place specifically established for the construction work, for use in construction work. (iv) the assembly of prefabricated elements to form a structure, or the disassembly of prefabricated elements forming part of a structure. (v) the installation, testing or maintenance of an essential service in relation to a structure. (vi) any work connected with an excavation. (vii) any work connected with any preparatory work or site preparation (including landscaping as part of site preparation) carried out in connection with an activity mentioned in paragraph (a); (viii) an activity mentioned in paragraph (a), that is carried out on, under or near water, including work on buoys and obstructions to navigation; but c) does not include any of the following: <ul style="list-style-type: none"> (i) the manufacture of plant. (ii) the prefabrication of elements, other than at a place specifically established for the construction work, for use in construction work. (iii) the construction or assembly of a structure that once constructed or assembled is intended to be transported to another place. (iv) testing, maintenance, or repair work of a minor nature carried out in connection with a structure. (v) mining or the exploration for or extraction of minerals.

Term	Means:
<i>'High Risk Construction Work'</i>	<p>construction work that—</p> <ul style="list-style-type: none"> a) involves a risk of a person falling more than 2m; or b) is carried out on a telecommunication tower; or c) involves demolition of an element of a structure that is load bearing or otherwise related to the physical integrity of the structure; or d) involves, or is likely to involve, the disturbance of asbestos; or e) involves structural alterations or repairs that require temporary support to prevent collapse; or f) is carried out in or near a confined space; or g) is carried out in or near a shaft or trench with an excavated depth greater than 1.5m; or h) is carried out in or near a tunnel; or i) involves the use of explosives; or j) is carried out on or near pressurised gas distribution mains or piping; or k) is carried out on or near chemical, fuel, or refrigerant lines; or l) is carried out on or near energised electrical installations or services; or m) is carried out in an area that may have a contaminated or flammable atmosphere; or n) involves tilt up or precast concrete; or o) is carried out on, in or adjacent to a road, railway (including light rail), shipping lane or other traffic corridor that is in use by traffic other than pedestrians; or p) is carried out in an area at a workplace in which there is any movement of powered mobile plant; or q) is carried out in an area in which there are artificial extremes of temperature; or r) is carried out in or near water or other liquid that involves a risk of drowning; or s) involves diving work; or t) involves the cutting of crystalline silica material using a power tool or another mechanical process. u)
<i>'Photovoltaic (PV) Array'</i>	<p>assembly of electrically interconnected (PV) modules, PV strings or PV sub-arrays comprising all components up to the d.c. PV port of the inverter or other power conversion equipment or d.c. loads.</p>
<i>'Battery Energy Storage System' (BESS)</i>	<p>an associated group of equipment consisting of Power Conversion Equipment (inverter), battery system(s), and isolation and protection devices. May also includes auxiliary equipment, cables, battery management module(s), and battery management system.</p>

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Table of Contents

1.	Purpose	3
	1.1 Legislation	
	1.2 Scope	
2.	Background	4
3.	Acronyms and Abbreviations used in this Document	4
4.	Relationship of Standard Operating Procedures	5
5.	Procedures	5
	5.1 Co-ordination of Inspections	5
	5.2 Engagement	5
	5.3 Access to Site/Responsibility for Site Work Health & Safety	6
	5.4 Inspector's Powers	7
	5.5 Test Equipment Functionality and Calibration	10
	5.6 Inspection and Testing Procedures	10
	5.7 Training & Competencies	13
6.	Process for Testing of Energised Electrical Installation	14
7.	Referenced Material	14
8.	Definitions	18

1.0 Purpose

The purpose of this Standard Operating Procedure (SOP) is to ensure that Access Canberra Electrical Inspections Team members are provided with guidance in the performance of ***Inspection and Testing on or Near Energised Electrical Installations***.

1.1 Legislation

Access Canberra Electrical Inspectors perform various functions prescribed under **Part 2** of the **ACT Electricity Safety Act 1971**, in respect to the inspection and testing of electrical wiring work and electrical installations. In addition, these functions may be extended to giving written direction to take stated action to make the installation or work safe and compliant and may require an inspector to give a direction that requires the relevant part of an installation or wiring installation to be ***disconnected or isolated***.

Duty is imposed by the **ACT Work Health and Safety Act 2011**, through subordinate legislation, **Part 4.7** of the **ACT Work Health and Safety Regulation 2011**, where in respect to electrical work on energised electrical equipment, a person conducting a business or undertaking (PCBU) must ensure electrical work is not carried out on electrical equipment while the equipment is energised. The PCBU must also, before electrical work is carried out on electrical equipment, ensure that the equipment is tested by a ***competent person*** to determine whether or not it is energised, and must also ensure that electrical equipment that has been de-energised to allow electrical work is not inadvertently re-energised while the work is being carried out.

1.2 Scope

The scope of this Standard Operating Procedure is limited to providing guidance to Electrical Inspections Team members on administrative requirements relevant to their roles and responsibilities around the performance of carrying out electrical Inspection and Testing on or Near Energised Electrical Installations.

The phrase ***“Inspection and Testing on or Near Energised Electrical Installations”*** is used to encompass inspections that include testing for compliance with AS/NZS 3000 on or near energised conductive parts where the supply voltage exceeds 50 V a.c. or 120 V ripple-free d.c., but does not exceed 1,000 V a.c. or 1,500 V d.c.

Due to the increased risk of an Arc Flash, distinction is made between installations where prospective fault currents exceed 10kA (typically “Commercial” or Building Classes 2 to 9), and installations where prospective fault currents do not exceed 10kA (typically “Residential” or Building Classes 1 & 10)

Although there are inherent safety risks involved in performing electrical inspection and testing on or near energised conductive parts of electrical installations, the procedures in this SOP are not intended to be a safe work instruction. Electrical Inspections Team business unit-specific safety documentation referenced by this Standard Operating Procedure must be read in conjunction with this SOP.

2.0 Background

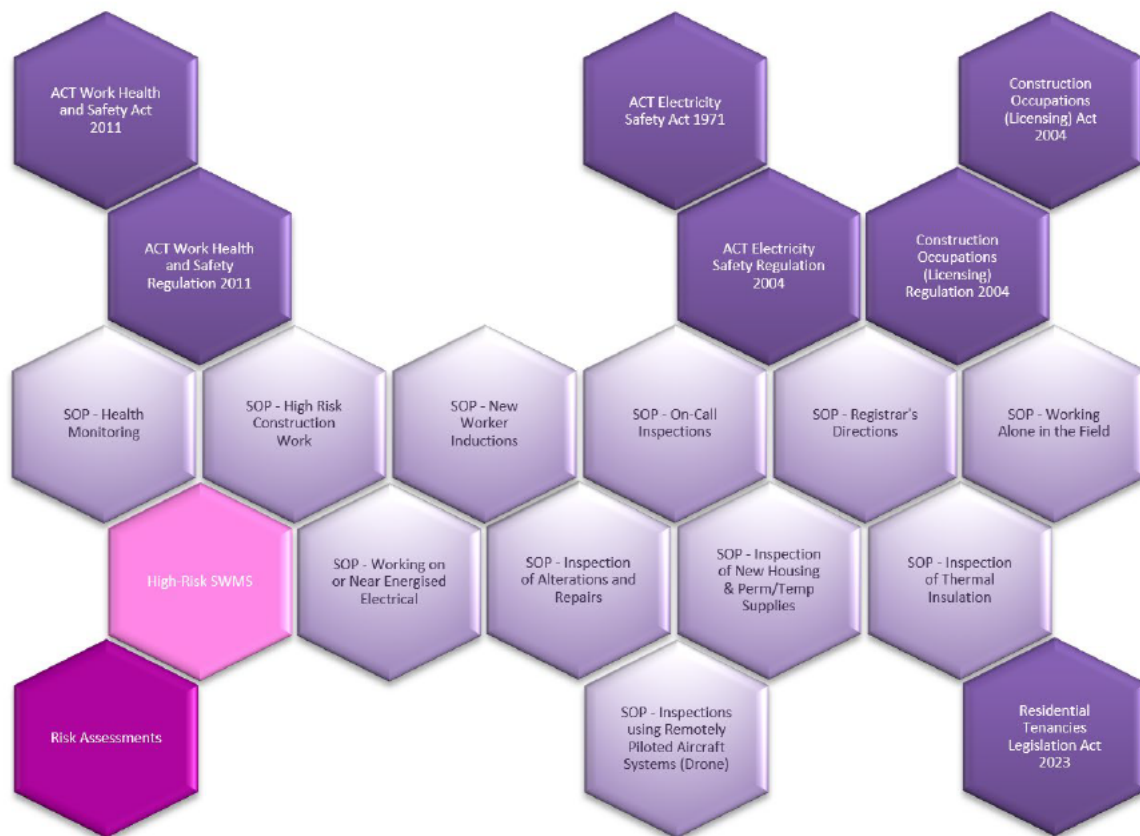
Inspection and testing carried out on or near energised electrical installations or services is deemed by regulation to be **'high risk construction work'** and must comply with the requirements of the **ACT Work Health and Safety Regulation 2011**. Energised electrical work is generally prohibited unless one or more of the exceptions under the WHS Regulations applies. In addition to these legislative requirements, guidance on the principles of safe working practices and recommended safe working procedures are provided by **AS/NZS 4836 Safe working on or near low-voltage electrical installations and equipment**.

Section 2 of AS/NZS 4836 requires that "Before work is commenced on or near any electrical installation or equipment a competent person must determine whether it is safe to do so". To align with this requirement and in recognition of Arc flash as one of the leading causes of injuries and deaths in the electrical industry, Access Canberra Electrical Inspectors must have training in "Arc Flash Awareness", as well as training recognised under the Australian Qualifications Framework in "Perform Cardiopulmonary Resuscitation" and "Perform rescue from a live low voltage panel".

3.0 Acronyms and Abbreviations used in this Document

ACT	Australian Capital Territory
MEN (M.E.N.)	Multiple Earthed Neutral (MEN) system (See Definitions)
PCBU	Person Conducting a Business Undertaking
RCD	Residual current device (See Definitions)
SOP	Standard Operating Procedure
V (V a.c.)	Voltage (Alternating Current)
WHS (Act)	Work Health and Safety (ACT Work Health & Safety Act 2011)

4.0 Relationship of Standard Operating Procedures



5.0 Procedures

Procedure Steps		Responsibility
5.1.	<p>Co-ordination of Inspections</p> <ul style="list-style-type: none"> The Assistant Director of Electrical Inspections for each of the Electrical Inspection Sub-Teams will supervise and coordinate electrical inspectors performing Electrical Inspection and Testing on or Near Energised Electrical Installations and ensure Standard Operating Procedures are adhered to. 	<ul style="list-style-type: none"> ➤ Assistant Director
5.2.	<p>Engagement</p> <ul style="list-style-type: none"> Where a licensed electrician undertakes and completes any electrical work, a <i>“Certificate of Electrical Safety”</i> must be submitted within 14 days to Access Canberra and the owner of the installation provided with a copy. On receipt of a <i>“Certificate of Electrical Safety”</i> the Access Canberra Electrical Inspections business system (BRIMS) will determine whether a <i>“Full”</i>, <i>“Partial”</i>, or <i>“Self-Test”</i> inspection is required, and the electrical bookings team will assign the work for inspection accordingly. 	<ul style="list-style-type: none"> ➤ Assistant Director ➤ Electrical Inspections Booking Team ➤ Inspector

Procedure Steps	Responsibility
<ul style="list-style-type: none"> • Where an inspection is categorised as a 'Self-Test' this means that verification of the installation has been undertaken by the installing electrician and no further audit is required • Where an inspection is categorised as a 'Partial Inspection' a mandatory visual inspection of the relevant switchboard and circuits will be made when work on an electrical installation has been completed to verify that the work complies with the requirements of the 'Wiring Rules'. Where possible the additional inspection and tests as prescribed by the '<i>Standard Operating Procedure - Registrar's Directions</i>' will be carried out. • Where an inspection is categorised as a 'Full Inspection' a mandatory visual inspection of the relevant switchboard and circuits will be made when work on an electrical installation has been completed to verify that the work complies with the requirements of the 'Wiring Rules'. Where possible the additional inspection and tests as prescribed by the '<i>Standard Operating Procedure - Registrar's Directions</i>' will be carried out. 	
<p>5.3. Access to Site/Responsibility for Site Work Health & Safety</p> <ul style="list-style-type: none"> • Electrical inspection and testing will generally be carried out at a place that is not under the control of Access Canberra. Constructions sites will have multiple PCBUs with duties in relation to the same matter under the WHS Act, and all duty holders must, so far as is reasonably practicable, consult, cooperate, and coordinate activities with each other in relation to the matter. • The Principal Contractor of a construction project is a person conducting a business or undertaking (PCBU) and must manage the risks to health and safety associated with the carrying out of construction work and must also ensure that the workplace is secured from unauthorised access. • Electrical Inspectors carrying out Electrical Inspection and Testing on or Near Energised Electrical Installations on a workplace at which construction work is carried out, must comply with any direction given by the Principal Contractor in respect to work health and safety and site security. • Electrical Inspectors carrying out Electrical Inspection and Testing on or Near Energised Electrical Installations must have a site-specific induction before entering a site other than housing construction work. • In the case that a site-specific induction has not been given, an inspector must be accompanied by someone who has been given a site-specific induction. • Where High-Risk Construction Work is identified on site, Electrical Inspectors are to refer to the High-Risk Construction Work Safe Work Method Statements. referenced in section 7.0 of this SOP 	<p>➤ Inspector</p>

Procedure Steps	Responsibility
<p>5.4. Inspectors' Powers</p> <ul style="list-style-type: none"> • Where an Inspector enters premises under <i>Section 43 of the ACT Electricity Safety Act 1971 "General power to enter premises"</i> <p>(1) The inspector may—</p> <ul style="list-style-type: none"> (a) enter any premises at any time with the consent of the occupier; or (b) enter premises when open to the public; or (c) enter business premises during business hours at the premises; or (d) enter premises in accordance with a warrant under this division. <p>(2) The inspector may, without the occupier's consent or a warrant, enter the land around premises to ask the occupier for consent to enter the premises.</p> <ul style="list-style-type: none"> • In addition to (1) (a) (above), the Construction Occupations Registrar requires that the inspector may not enter any premises if the person giving consent is not a person 18 years of age or older; or is a person that does not have the capacity to give consent. Consent cannot be given by a person who has not been informed that they may refuse consent. • Where an Inspector enters premises under <i>Part 7 of the ACT Electricity Safety Act 1971</i>, the inspector may not remain on premises entered under this part if, on request by the occupier, the inspector does not produce his or her identity card. • In addition to the above, the Construction Occupations Registrar requires that an inspector must wear their inspector's identity card so that it is visible at all times while carrying out an electrical inspection. • Where an Inspector seeks consent of an occupier for entering premises under <i>Section 45 of the ACT Electricity Safety Act 1971 "Consent to entry"</i> <p>(1) The inspector must—</p> <ul style="list-style-type: none"> (a) produce his or her identity card; and (b) tell the occupier— <ul style="list-style-type: none"> (i) the purpose of the entry; and (ii) that anything found and seized under this part may be used in evidence in court; and (iii) that consent may be refused. <p>(2) If the occupier consents, the inspector must ask the occupier to sign a written acknowledgment—</p> <ul style="list-style-type: none"> (a) that the occupier was told— <ul style="list-style-type: none"> (i) the purpose of the entry; and (ii) that anything found and seized under this part may be used in evidence in court; and <ul style="list-style-type: none"> (iii) that consent may be refused; and (b) that the occupier consented to the entry; and (c) stating the time, and day, when consent was given. 	<p>➤ Inspector</p>

Procedure Steps	Responsibility
<p>(3) If the occupier signs an acknowledgment of consent, the inspector must immediately give a copy to the occupier.</p> <p>(4) Unless the contrary is proven, a court must presume that an occupier of premises did not consent to an entry to the premises by an inspector under this part if—</p> <ul style="list-style-type: none"> (a) the question whether the occupier consented to the entry arises in proceedings in the court; and (b) an acknowledgment under this section is not produced in evidence for the entry; and (c) it is not proved that the occupier consented to the entry. <ul style="list-style-type: none"> • In addition to the above, the Construction Occupations Registrar requires that prior to exercising any of the powers provided by Section 45, that an electrical inspector must first gain approval from the Director of Electrical Inspections or Assistant Director of Electrical Inspections. Communication by email or SMS will be sufficient confirmation of approval. Inspectors must use the approved "Acknowledgement of Consent" form to meet the requirements of Section 45 (2), (3), and (4) of the Act. • Where an Inspector enters premises under Section 49 of the ACT Electricity Safety Act 1971 "Powers in relation to serious electrical accidents" <ul style="list-style-type: none"> (1) This section applies if an inspector believes on reasonable grounds that a serious electrical accident has occurred on premises. (2) The inspector may enter the premises at any reasonable time to investigate the accident, ensure the premises are safe and prevent the concealment, loss, or destruction of anything reasonably relevant to the investigation. (3) The inspector may do anything necessary and reasonable for a purpose mentioned in subsection (2). (4) If an inspector acts under this section in the absence of the occupier, the inspector must, when leaving the premises, leave a written notice, secured in a conspicuous place, setting out— <ul style="list-style-type: none"> (a) the inspector's name; and (b) the time and date of the entry; and (c) the purpose of the entry; and (d) particulars of how to contact the inspector. (5) The power to enter premises under this section is additional to the powers under section 43 (General power to enter premises). • In addition to the above, the Construction Occupations Registrar requires that an inspector may not enter any premises including a room within a premises if the only occupant is a person(s) not 18 years of age or older; or is an otherwise vulnerable person. Where entry to the premises is necessary to secure the safety of 	

Procedure Steps	Responsibility
<p>the occupants, assistance should be sought from other on-site respondents or police.</p> <ul style="list-style-type: none"> • Where an Inspector enters premises under Section 51 of the ACT Electricity Safety Act 1971 “Disconnecting etc dangerous electrical equipment and installations” and finds an article of electrical equipment, or an electrical installation, that the inspector believes on reasonable grounds is a source of danger, <ol style="list-style-type: none"> (1) An inspector may— <ol style="list-style-type: none"> (a) label the article conspicuously to indicate the danger and prohibit use of the article until it has been repaired or otherwise rendered safe for use; or (b) disconnect the installation. • In addition to the above, the Construction Occupations Registrar requires that electrical inspectors must make a reasonable attempt to disconnect the part of an installation that is dangerous prior to resorting to disconnecting the entire electrical installation. Where an installation has been disconnected, the Registrar must be notified within 24 Hours. • Where an Inspector enters premises under Section 57 of the ACT Electricity Safety Act 1971 “Power to inspect electrical wiring work” to conduct a test or inspection required under part 2 of the Act ‘Electrical wiring work and electrical installations’ <ol style="list-style-type: none"> (1) An inspector may enter and remain on premises to conduct a test or inspection in relation to an electrical installation or electrical wiring work. (2) An inspector may enter and remain on the premises <ol style="list-style-type: none"> (a) at any reasonable time; and (b) with the people, equipment, or material that the inspector reasonably needs to conduct the test or inspection. (3) The inspector may not <ol style="list-style-type: none"> (a) enter or remain on premises if, on request by the occupier, the inspector does not produce his or her identity card; or (b) without the consent of the occupier, enter or remain on any part of the premises used for residential purposes. (4) The power to enter premises under this section is additional to the powers under section 43 (General power to enter premises). • In addition to the above, the Construction Occupations Registrar requires that an inspector may not enter any premises if the person giving consent is not a person of 18 years of age or older; or is a person that does not have the capacity to give consent. Where this direction restricts the ability of the electrical inspector to properly carry out an inspection/audit, an inspector should 	

Procedure Steps		Responsibility
	consider arranging a more suitable time for the inspection or to changing the type of inspection.	
5.5.	<p>Test Equipment Functionality and Calibration</p> <ul style="list-style-type: none"> • The designated 'Equipment Manager' must ensure that all test equipment critical to electrical inspections such as multimeters, network analysers, insulation testers, and clamp ammeters are calibrated at regular intervals not exceeding 12 months. • Prior to undertaking the Inspection and Testing of an Energised Electrical Installation, inspectors must ensure that all test equipment is in good repair, functional, and that equipment for live testing is certified as Category III and/or IV • Inspectors undertaking the Inspection and Testing of an Energised Electrical Installation must be equipped with the following Live-Testing equipment: Insulation tester, network analyser, RCD tester, clamp ammeter, multimeter, and non-contact voltage detector. • Inspectors undertaking the Inspection and Testing of an Energised Electrical Installation must be equipped with the following Dead-Testing accessories: earth probe, resistor box, socket outlet polarity meter, alligator clip leads, independent earth spike, and earth trailing lead. • Inspectors performing Inspection and Testing of an Energised Electrical Installation must be equipped with a Low Voltage Rescue Kit complying with 'AS/NZS 4836 Safe working on or near low voltage electrical installations'. 	<ul style="list-style-type: none"> ➤ Equipment Manager ➤ Inspector
5.6.	<p>Inspection and Testing Procedures</p> <ul style="list-style-type: none"> • Before work is commenced on or near any electrical installation or equipment, a competent person must determine whether it is safe to do so by way of risk assessment and by using AS/NZS 4836 to develop safe working procedures. • Electrical work on energised electrical equipment is <i>prohibited</i> unless: <ul style="list-style-type: none"> • it is necessary in the interests of health and safety that the electrical work is carried out on the equipment while the equipment is energised; or • it is necessary for the electrical equipment to be energised in order for the work to be carried out properly; or • it is necessary for the purposes of testing to determine whether equipment is energised, or • there is no reasonable alternative means of carrying out the work. • Inspection and Testing of an Energised Electrical Installation, including testing on or near energised conductive parts where prospective fault currents greater than 10 kA do not exist, is deemed by regulation to be '<i>high risk construction work</i>' and before high-risk construction work commences, the Electrical 	<ul style="list-style-type: none"> ➤ Inspector

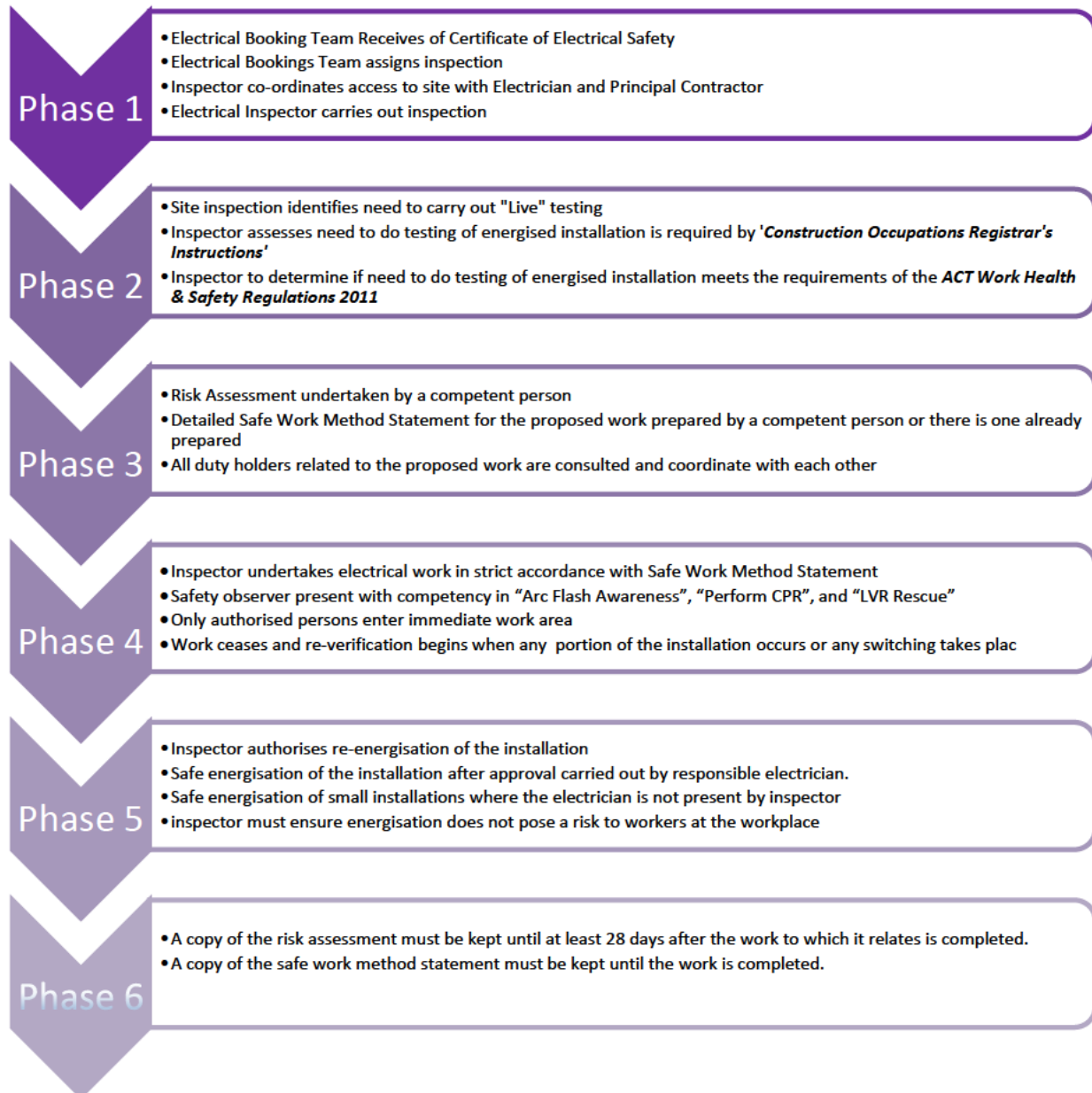
Procedure Steps	Responsibility
<p>Inspector must ensure that a detailed Safe Work Method Statement for the proposed work is prepared or that they follow the pre-prepared Access Canberra’s Electrical Inspections Team’s “Safe Work Method Statement - Inspection and Testing on or Near Energised Electrical Installations”</p> <ul style="list-style-type: none"> • Inspection and Testing of an Energised Electrical Installation, including testing on or near energised conductive parts where prospective fault currents greater than 10 kA exist, is deemed by regulation to be ‘high risk construction work’ and before high-risk construction work commences, the Electrical Inspector must ensure that a detailed Safe Work Method Statement for the proposed work is prepared or that they follow the pre-prepared Access Canberra’s Electrical Inspections Team’s “Safe Work Method Statement - Inspection and Testing on or Near Energised Electrical Installations” • Before electrical work on energised electrical equipment commences the inspector must ensure the following: <ul style="list-style-type: none"> • a risk assessment is conducted in relation to the proposed electrical work; • the area where the electrical work is to be carried out is clear of obstructions so as to allow for easy access and exit; • the point at which the electrical equipment can be disconnected or isolated from its electricity supply is— <ul style="list-style-type: none"> ○ clearly marked or labelled; and ○ clear of obstructions so as to allow for easy access and exit by the worker who is to carry out the electrical work or any other competent person; and ○ capable of being operated quickly; • the person authorises the electrical work after consulting with the person with management or control of the workplace. • The risk assessment conducted in relation to the proposed electrical work must be conducted by a competent person and must be recorded. In order to be deemed competent an inspector must have training in “Arc Flash Awareness”, as well as training recognised under the Australian Qualifications Framework in “Perform CPR” and “Perform rescue from a live low voltage panel”. • The point at which the electrical equipment can be disconnected or isolated from its electricity supply does not have to be clearly marked or labelled if the work is to be carried out on the supply side of the main switch or the point at which the equipment can be disconnected from its electricity supply is not reasonably accessible from the work location. • Only persons authorised by the person conducting the business or undertaking enter the immediate area in which electrical work on energised electrical equipment is being carried out. • While electrical work is being carried out on energised electrical equipment, all persons must be prevented from inadvertently 	

Procedure Steps	Responsibility
<p>making contact with an exposed energised component of the equipment.</p> <ul style="list-style-type: none"> • Inspectors undertaking electrical work on energised electrical equipment must be a competent person who has the tools, testing equipment and personal protective equipment that are suitable for the work, have been properly tested, and have been maintained in good working order. • Inspectors undertaking electrical work on energised electrical equipment must have a safety observer present who must have training in “Arc Flash Awareness”, as well as training recognised under the Australian Qualifications Framework in “Perform CPR” and “Perform rescue from a live low voltage panel”. • A safety observer is not required if the work consists only of testing and a risk assessment has been conducted that shows that there is no serious risk associated with the proposed work. • Inspectors undertaking electrical work on energised electrical equipment must use the tools, testing equipment and personal protective equipment properly. • Inspectors undertaking electrical work on energised electrical equipment must keep: <ul style="list-style-type: none"> • a copy of the risk assessment until at least 28 days after the work to which it relates is completed. • and a copy of the safe work method statement until the work to which it relates is completed. • Should any switching and/or energisation of other portions of the installation take place during an inspection, the electrical inspector must cease testing until this process is completed successfully. On successful completion of switching and/or energisation of other portions of the installation, the Installation must be treated as energised until confirmed dead. Prior to testing, all open or unused devices must be isolated applying the principles of AS/NZS 4836, tagged in the open position, and under the control of the electrical inspector carrying out the testing. Installations must always be treated as energised until confirmed de-energised using the following steps: <ol style="list-style-type: none"> I. Verify all test equipment used using a known voltage source before and after every test. II. Use a non-contact voltage tester to detect the presence of voltage. III. Use a Voltmeter to confirm that voltage is not present. IV. test against a known source to prove that the tester is still functional. • Prior to giving approval to energise an installation and prior to departure from site, the electrical inspector must ensure that the responsible electrician has correctly restored and verified any disconnected connections including the M.E.N., circuit breaker, and neutral connections. In the case of small installations where 	

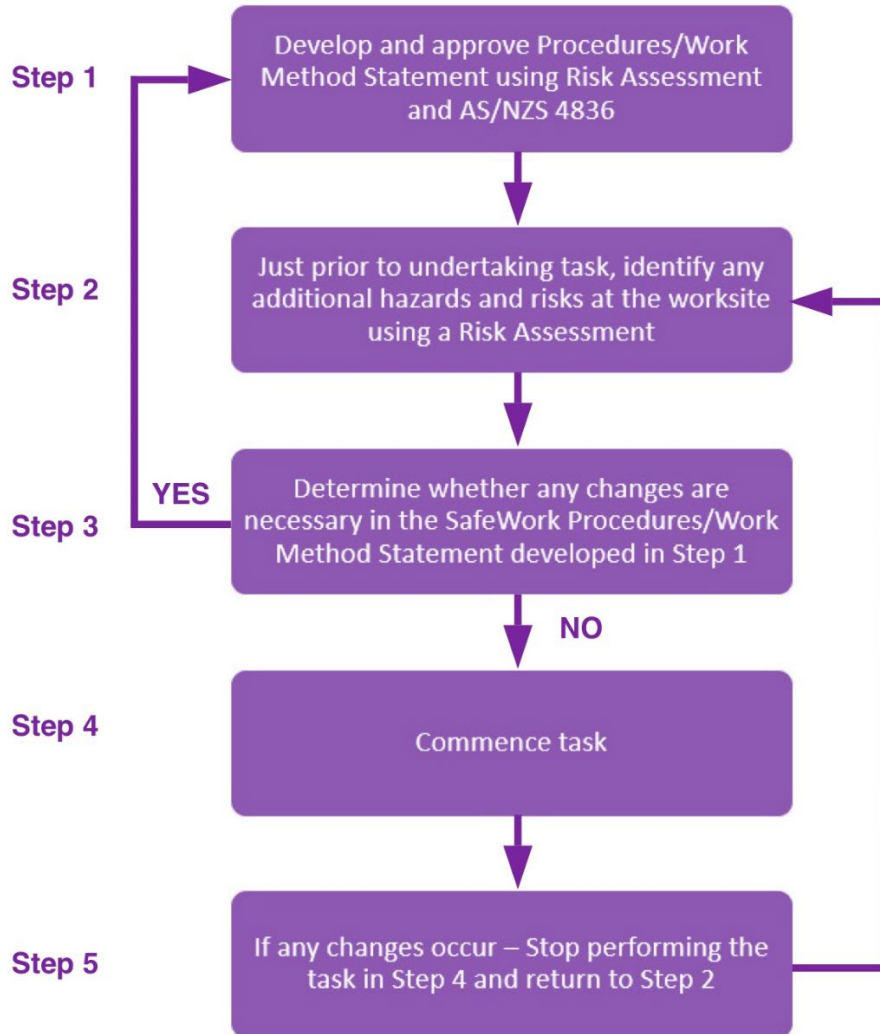
Procedure Steps		Responsibility
	<p>the electrician is not present, this may need to be performed by the inspector.</p> <ul style="list-style-type: none"> Responsibility for the safe energisation of the installation after approval will be by the responsible electrician. In the case of small installations where the electrician is not present, the inspector must ensure, so far as reasonably practicable, that energisation does not pose a risk to workers at the workplace. 	
5.7.	<p>Training & Competencies</p> <ul style="list-style-type: none"> Inspectors undertaking the Inspection and Testing of an Energised Electrical Installation must have as a minimum, a current Statement of Attainment in '<i>Arc Flash Awareness Training</i>'. Inspectors undertaking the Inspection and Testing of an Energised Electrical Installation must have a current Statement of Attainment in both "<i>Perform CPR</i>" and "<i>Perform rescue from a live low voltage panel</i>" recognised under the Australian Qualifications Framework Inspectors undertaking the Inspection and Testing of an Energised Electrical Installation must be assessed by their immediate supervisor as a <i>competent person</i> in respect being able to determine whether or not an electrical installation is energised, and a competent person in respect of being able to complete a risk assessment for inspection and testing carried out on or near energised electrical installations or services. Electrical Inspectors must be inducted into the High-Risk Construction Work Safe Work Method Statements referenced in section 7.0 of this SOP 	<ul style="list-style-type: none"> ➤ Inspector ➤ Assistant Director ➤ Director

6.0 Process for Testing of Energised Electrical Installations

The diagram below outlines the key phases of the Inspection and Testing on or Near Energised Electrical Installations commonly followed by Access Canberra Electrical Team members.



The diagram below outlines the process to develop safe working procedures in conjunction with the guidance provided by *AS/NZS 4836 – Safe Working on or Near Low-Voltage and Extra-Low Voltage Electrical Installations and Equipment*



7.0 Referenced Material

Name	Location (Document Path)
Work Health and Safety Act 2011	Work Health and Safety Act 2011 Acts
Work Health and Safety Regulation 2011	Work Health and Safety Regulation 2011 HTML view (act.gov.au)
ACT Electricity Safety Act 1971	Electricity Safety Act 1971 Acts
Standard Operating Procedure - Thermal Insulation Roof-Space Electrical Inspections	G:\Access Canberra\PEG\Electrical\Electrical Resources\Electrical WHS Info\Standard Operating Procedures
Standard Operating Procedure – On-Call Electrical Inspections	G:\Access Canberra\PEG\Electrical\Electrical Resources\Electrical WHS Info\Standard Operating Procedures
Standard Operating Procedure – Inspection and Testing On or Near Energised Electrical Installations	G:\Access Canberra\PEG\Electrical\Electrical Resources\Electrical WHS Info\Standard Operating Procedures
Standard Operating Procedure – Working Alone in the Field	G:\Access Canberra\PEG\Electrical\Electrical Resources\Electrical WHS Info\Standard Operating Procedures
Standard Operating Procedure – Hazards Requiring Health Monitoring	G:\Access Canberra\PEG\Electrical\Electrical Resources\Electrical WHS Info\Standard Operating Procedures
Standard Operating Procedure – Inspection of New Housing & Permanent Temporary Supplies	G:\Access Canberra\PEG\Electrical\Electrical Resources\Electrical WHS Info\Standard Operating Procedures
Standard Operating Procedure – Inspection and Testing of Alteration or Repair of Electrical Installations	G:\Access Canberra\PEG\Electrical\Electrical Resources\Electrical WHS Info\Standard Operating Procedures
Standard Operating Procedure – New Worker Inductions	G:\Access Canberra\PEG\Electrical\Electrical Resources\Electrical WHS Info\Standard Operating Procedures
Standard Operating Procedure – High Risk Construction Work	G:\Access Canberra\PEG\Electrical\Electrical Resources\Electrical WHS Info\Standard Operating Procedures
Standard Operating Procedure – Construction Occupations Registrar’s Direction	G:\Access Canberra\PEG\Electrical\Electrical Resources\Electrical WHS Info\Standard Operating Procedures
Insulation Installation Electrical Safety Inspection Report	G:\Access Canberra\PEG\Electrical\Fillable Templates

Name	Location (Document Path)
<i>Acknowledgement of Consent</i>	G:\Access Canberra\PEG\Electrical\Fillable Templates
<i>Safe Work Method Statement – Demolition of Load-bearing Structure</i>	G:\Access Canberra\PEG\Electrical\Electrical Resources\Electrical WHS Info\Safe Work Method Statements
<i>Safe Work Method Statement – Likely to Involve Disturbing Asbestos</i>	G:\Access Canberra\PEG\Electrical\Electrical Resources\Electrical WHS Info\Safe Work Method Statements
<i>Safe Work Method Statement – Temporary Load-bearing Support for Structural Alterations or Repairs</i>	G:\Access Canberra\PEG\Electrical\Electrical Resources\Electrical WHS Info\Safe Work Method Statements
<i>Safe Work Method Statement – Tilt-up or Precast Concrete Elements</i>	G:\Access Canberra\PEG\Electrical\Electrical Resources\Electrical WHS Info\Safe Work Method Statements
<i>Safe Work Method Statement – Work on or near chemical, fuel, or refrigerant lines</i>	G:\Access Canberra\PEG\Electrical\Electrical Resources\Electrical WHS Info\Safe Work Method Statements
<i>Safe Work Method Statement – Work on or near pressurised gas mains or piping</i>	G:\Access Canberra\PEG\Electrical\Electrical Resources\Electrical WHS Info\Safe Work Method Statements
<i>Safe Work Method Statement – Work on, in or adjacent to a road, railway, shipping lane or other traffic corridor in use by traffic other than pedestrians</i>	G:\Access Canberra\PEG\Electrical\Electrical Resources\Electrical WHS Info\Safe Work Method Statements
<i>Safe Work Method Statement – Working at Heights Risk of a person falling more than two metres</i>	G:\Access Canberra\PEG\Electrical\Electrical Resources\Electrical WHS Info\Safe Work Method Statements
<i>Safe Work Method Statement – Work in an Area that may have a Contaminated or Flammable Atmosphere</i>	G:\Access Canberra\PEG\Electrical\Electrical Resources\Electrical WHS Info\Safe Work Method Statements
<i>Safe Work Method Statement – Work in or Near a Shaft or Trench Deeper than 1.5m or a Tunnel</i>	G:\Access Canberra\PEG\Electrical\Electrical Resources\Electrical WHS Info\Safe Work Method Statements
<i>Safe Work Method Statement – Work in Areas with Artificial Extremes of Temperature</i>	G:\Access Canberra\PEG\Electrical\Electrical Resources\Electrical WHS Info\Safe Work Method Statements
<i>Safe Work Method Statement – Work in Areas with Artificial Extremes of Temperature</i>	G:\Access Canberra\PEG\Electrical\Electrical Resources\Electrical WHS Info\Safe Work Method Statements

Name	Location (Document Path)
<i>Safe Work Method Statement – Likely to Involve Disturbing Asbestos</i>	G:\Access Canberra\PEG\Electrical\Electrical Resources\Electrical WHS Info\Safe Work Method Statements
<i>Safe Work Method Statement – Work in or Near a Confined Space</i>	G:\Access Canberra\PEG\Electrical\Electrical Resources\Electrical WHS Info\Safe Work Method Statements

8.0 Definitions

‘Required’ means a requirement of the relevant legislation.

‘May’ means the existence of an option.

‘Electrical installation’ means:

- a) electrical wiring or cable used or for use in carrying or controlling electricity (other than electricity with a voltage of not more than 50V a.c. or 120V ripple-free d.c.), including the following:
 - (i) a wiring system, switchgear, control gear, generator, electrical accessory, electrical appliance, or fitting, that is used or for use in the conversion, storage, transmission, distribution, generation, or use of electrical energy and connected to wiring or cable.
 - (ii) a switch, fuse, plug, socket outlet, lighting outlet, adaptor, ceiling rose, or other device associated with wiring, a switchboard, or an appliance, mentioned in subparagraph.
 - (iii) a consuming device in which electricity is converted into heat, motion, or another form of energy, or is substantially changed in its electrical character.
 - (iv) support for electrical wiring or cable.
- b) but does not include:
 - (i) a portable generator or storage device supplying, or for the supply of, electricity to the installation.
 - (ii) an appliance that receives, or is intended to receive, its main electricity supply through a socket connection.
 - (iii) a lamp.
 - (iv) an electricity network or part of a network.
 - (v) telecommunications cabling or equipment that operates or is intended to operate at a voltage of 90V a.c. or lower.

‘Electrical wiring work’ means the installation, replacement, augmentation, curtailing, maintenance, repair, or alteration of the location of all or part of, an electrical installation, other than:

- (i) an electrical installation that operates at extra low voltage
- (ii) telecommunications cabling or equipment that operates at a voltage not greater than 90V a.c.
- (iii) plugging a plug into a socket outlet, or unplugging it; or
- (iv) fitting a lamp to a lighting outlet or removing it; or
- (v) fitting, removing, or replacing a fuse or fuse wire if the fuse or wire cannot sustainably conduct more than 30A.

'Residential Electrical Installation' means electrical installations or electrical wiring work (typically "Residential" or Building Classes 1 & 10) where if the electricity supply was connected, that prospective fault currents exceeding 10kA would not exist on its energised conductive parts.

'Wiring Rules' means the Australian/New Zealand Standard for Electrical installations (known as the Australian/New Zealand Wiring Rules) or AS/NZS 3000

'Electrical Inspection' means the audit of an electrical installation for compliance with the 'Wiring Rules' as required by Section 4 of the ACT Electricity Safety Act 1971 and as directed by the Construction Occupations Registrar (see **'Standard Operating Procedure - Registrar's Directions'**):

'Self-Test' means that verification of the installation in accordance with AS/NZS 3000 has been undertaken by the installing electrician and no further audit is required.

'Partial Inspection' means a mandatory visual inspection of the electrical installation to verify that the work complies with the requirements of AS/NZS 3000 as in force and where possible carry out the following additional inspection and tests:

- Verification of operation of RCDs of at least 10% of the relevant circuits (depending on availability of supply)
- Earth Resistance test - continuity of main earthing conductor.
- Earth Resistance test of equipotential bonded parts.
- Insulation Resistance tests of at least 10% of the relevant circuits
- Verify of the MEN connection.
- Test for interconnection of circuits of at least 10% of the circuits.

'Full Inspection' means a mandatory visual inspection of the electrical installation to verify that the work complies with the requirements of AS/NZS 3000 as in force. and where possible carry out the following additional inspection and tests:

- Verification of operation of RCDs of at least 33% of the relevant circuits (depending on availability of supply)
- Earth Resistance test - Continuity of Main Earthing conductor
- Earth Resistance test of other earthed and equipotential bonded parts.
- Insulation Resistance tests of at least 33% of relevant circuits
- Verification of the MEN connection.
- Voltage drop check.
- Verification of earth fault-loop impedance.
- Test for interconnection of circuits of at least 33% of the relevant circuits
- Polarity and correct circuit connections of Mains, Sub-Mains, and final circuits.
- Verify isolators operation. e.g., Cook tops, Hot Water Systems, Air Conditioners, Motors, etc.

'Certificate of Electrical Safety' means a report as defined by **Section 6 of the Electricity Safety Act**

'Competent Person' means person, who has acquired, through training, qualification or experience or a combination of these, the knowledge and skill enabling that person to perform the required task correctly.

'Energized' means connected to a source of electrical supply or subject to hazardous induced or capacity voltages.

'De-energized' means separated from all sources of supply, but not necessarily isolated, earthed or out of commission.

'Disconnected' means physically separated from any source of electrical energy including by a switching action or physical removal of circuit connections.

'Isolated' means separated from all possible sources of electrical energy and rendered incapable of being energised unintentionally.

‘Work On’ means performance of a function within 500 mm of exposed energized conductors or live conductive parts and/or electrical equipment.

Note 1: Work within 500 mm is classified as “work on”, as per Figure 1.

Note 2: Includes undertaking or supervising the following: constructing, manufacturing, assembling, installing, connecting, maintaining, repairing, altering, testing, verifying, assessing, or inspecting, removing, or adding to an electrical installation or equipment.

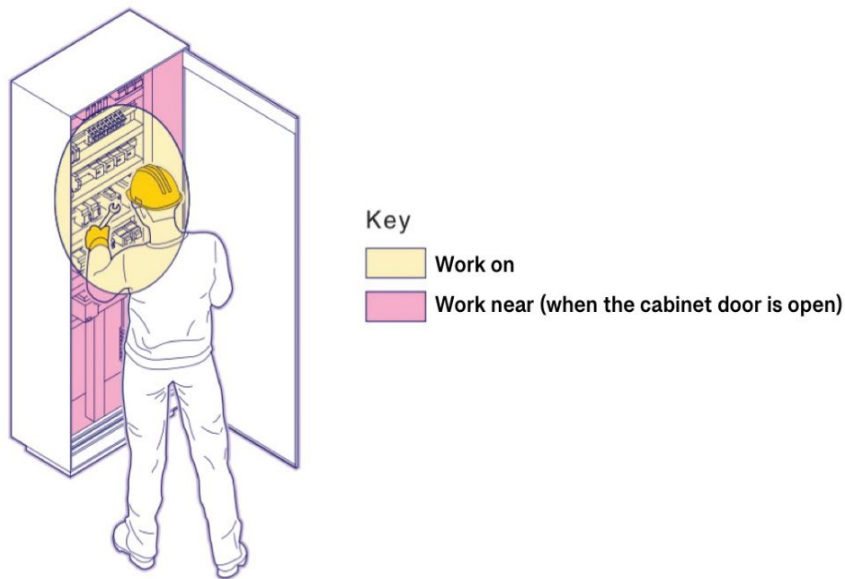


Figure 1. — 500 mm electrical work zone for work on low-voltage and extra-low voltage equipment within an enclosed switchboard panel

‘Work Near’ means performance of a function within 3 m of exposed energized conductors or live conductive parts and/or electrical equipment.

Note 1: Work within 3 m is classified as “work near”, as per Figure 2.

Note 2: Functions may include cleaning, pest control or other tasks that are not defined as electrical work.

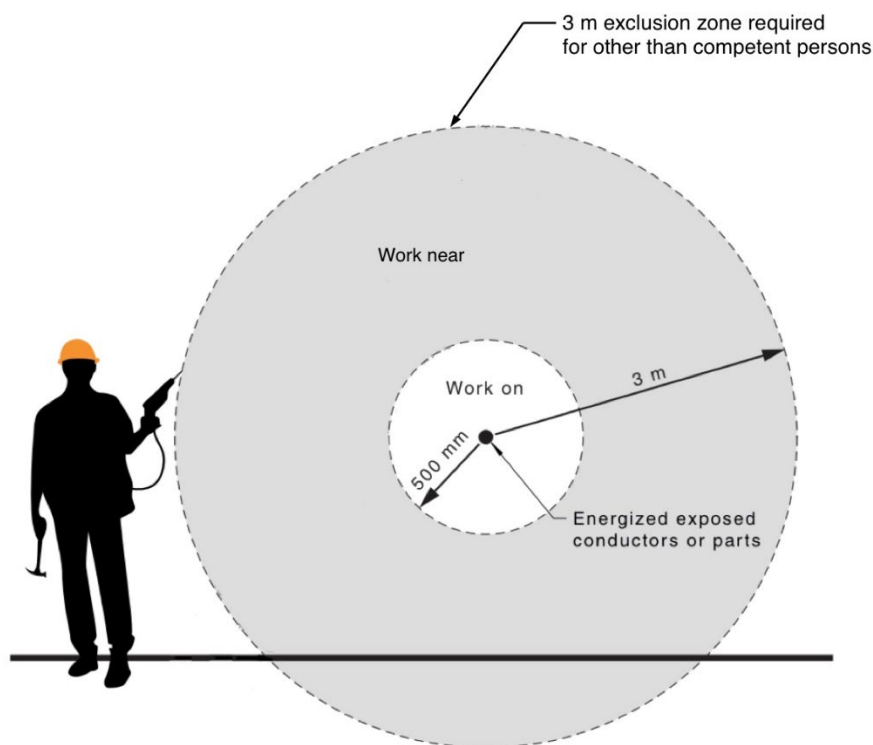


Figure 2. — Illustration of 3 m exclusion zone and “on or near”

‘Principal Contractor’, means a person conducting a business or undertaking that commissions a construction project, the principal contractor for the project may also be:

- a) a person conducting a business or undertaking authorised by the person that commissions a construction project to have management or control of the workplace.
- b) a person conducting a business or undertaking engaged directly or indirectly by the owner of residential premises to undertake a construction project.

A construction project has only 1 principal contractor at any specific time.

‘Construction Work’ means:

- a) any work carried out in connection with the construction, alteration, conversion, fitting-out, commissioning, renovation, repair, maintenance, refurbishment, demolition, decommissioning or dismantling of a structure; and
- b) includes the following:
 - (i) any installation or testing carried out in connection with an activity mentioned in paragraph (a).
 - (ii) the removal from the workplace of any product or waste resulting from demolition.
 - (iii) the prefabrication or testing of elements, at a place specifically established for the construction work, for use in construction work.

- (iv) the assembly of prefabricated elements to form a structure, or the disassembly of prefabricated elements forming part of a structure.
 - (v) the installation, testing or maintenance of an essential service in relation to a structure.
 - (vi) any work connected with an excavation.
 - (vii) any work connected with any preparatory work or site preparation (including landscaping as part of site preparation) carried out in connection with an activity mentioned in paragraph (a);
 - (viii) an activity mentioned in paragraph (a), that is carried out on, under or near water, including work on buoys and obstructions to navigation; but
- c) does not include any of the following:
- (i) the manufacture of plant.
 - (ii) the prefabrication of elements, other than at a place specifically established for the construction work, for use in construction work.
 - (iii) the construction or assembly of a structure that once constructed or assembled is intended to be transported to another place.
 - (iv) testing, maintenance, or repair work of a minor nature carried out in connection with a structure.
 - (v) mining or the exploration for or extraction of minerals.

'High Risk Construction Work' means construction work that—

- a) involves a risk of a person falling more than 2m; or
- b) is carried out on a telecommunication tower; or
- c) involves demolition of an element of a structure that is load bearing or otherwise related to the physical integrity of the structure; or
- d) involves, or is likely to involve, the disturbance of asbestos; or
- e) involves structural alterations or repairs that require temporary support to prevent collapse; or
- f) is carried out in or near a confined space; or
- g) is carried out in or near a shaft or trench with an excavated depth greater than 1.5m; or
- h) is carried out in or near a tunnel; or
- i) involves the use of explosives; or
- j) is carried out on or near pressurised gas distribution mains or piping; or
- k) is carried out on or near chemical, fuel, or refrigerant lines; or
- l) is carried out on or near energised electrical installations or services; or
- m) is carried out in an area that may have a contaminated or flammable atmosphere; or
- n) involves tilt up or precast concrete; or
- o) is carried out on, in or adjacent to a road, railway (including light rail), shipping lane or other traffic corridor that is in use by traffic other than pedestrians; or
- p) is carried out in an area at a workplace in which there is any movement of powered mobile plant; or
- q) is carried out in an area in which there are artificial extremes of temperature; or
- r) is carried out in or near water or other liquid that involves a risk of drowning; or
- s) involves diving work; or
- t) involves the cutting of crystalline silica material using a power tool or another mechanical process.

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Table of Contents

1.	Purpose	3
1.1	Legislation	3
1.2	Scope	3
2.	Background	3
3.	Acronyms and Abbreviations used in this Document	3
4.	Relationship of Standard Operating Procedures	4
5.	Registrar's Directions	5
5.1	Certificate of Electrical Safety	5
5.2	Role of the Electrical Inspector and Definition of 'Inspected' and 'Tested'	5
5.3	Categories and Criterion of an inspection/audit	6
5.4	Rate of Inspection/Audit	8
5.5	Notification and Recording of Result of Inspection/Audit	9
Table 5.1	Rate of Inspection/Audit in respect to Installation Type, Category, and Type of Work	10
5.6	Electrical Defects – Categories	11
5.7	Criteria for Categorisation of Electrical Defects	12
Table 5.2	Criteria for Categorisation of Electrical Defects	13
5.8	Inspector's Powers	14
5.	Referenced Material	18
6.	Definitions	19

1.0 Purpose

The purpose of this Standard Operating Procedure (SOP) is to ensure that Access Canberra Electrical Inspections Team members are provided with direction in the performance of their duties in respect of the **'Construction Occupations (Licensing) Act 2004 (COLA)'**, the **'ACT Electricity Safety Act 1971 (the Act)'**, and the **'ACT Electricity Safety Regulations 2004'**.

1.1 Legislation

'The Construction Occupations (Licensing) Act 2004 (COLA)' is the principal legislation governing the responsibilities of construction occupation licensees including builders, plumbers, and electricians and building certifiers in the ACT. It also includes disciplinary and complaints processes for construction practitioners including work undertaken under 'operational Acts' such as the Building Act 2004, the Electricity Safety Act 1971 and the Gas Safety Act 2000).

The Construction Occupations Registrar, appointed under **section 103 of COLA**, is given various additional powers under the **'ACT Electricity Safety Act 1971'** including under **Section 41**, the power to appoint a person to be an inspector for this Act. Once appointed, an inspector must exercise their functions under the Act in accordance with the conditions of appointment and any **'direction'** given to the inspector by the **Construction Occupations Registrar (the Registrar)**.

1.2 Scope

The scope of this Standard Operating Procedure is limited to providing direction, clarification, and guidance to Electrical Inspectors on administrative requirements relevant to their roles and responsibilities around the performance of their legislative duties related to the **'ACT Electricity Safety Act 1971'**.

Although there are inherent safety risks involved in performing electrical inspections, the procedures in this SOP are not intended to be a safe work instruction. Electrical Inspections Team business unit-specific safety documentation referenced by this Standard Operating Procedure must be read in conjunction with this SOP.

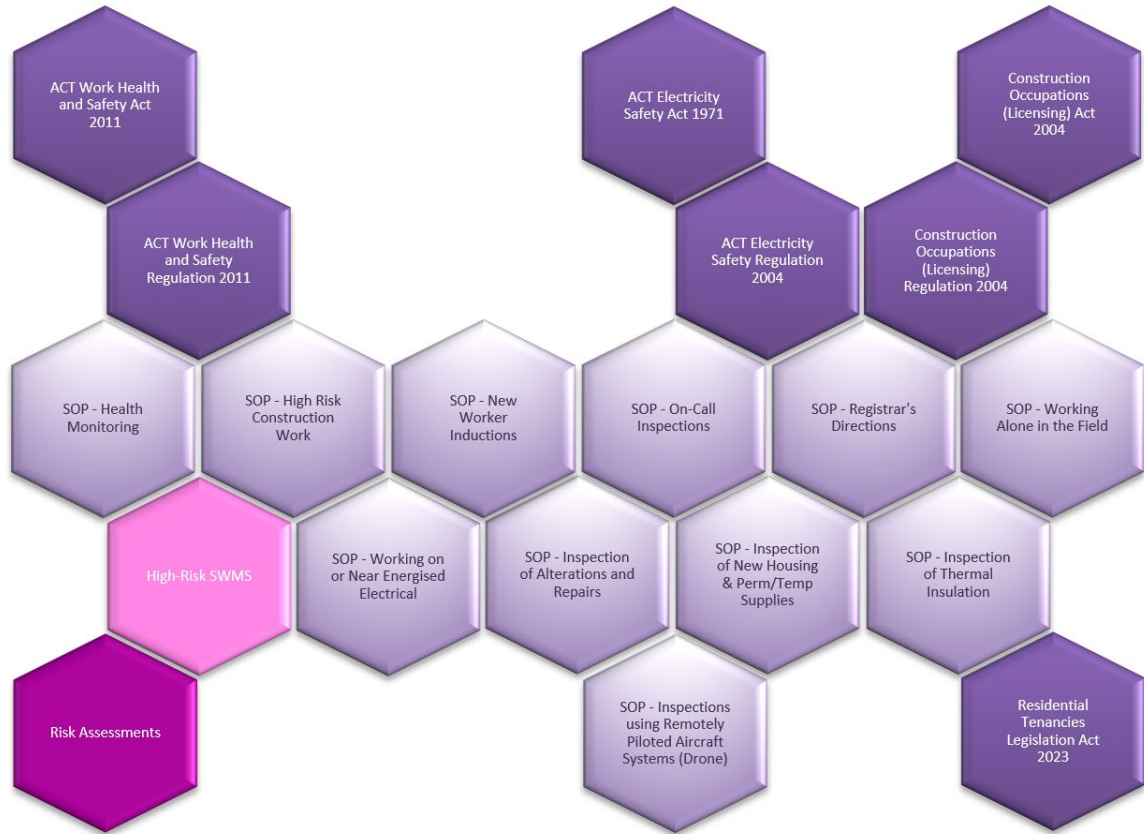
2.0 Background

Ambiguity around certain definitions and provisions within the Act have made it necessary for the Construction Occupations Registrar to exercise their power under **section 41 (2)** of the **ACT 'Electricity Safety Act 1971'** and provide **"direction"** to the appointed inspector to provide clarification of terms and explicit detail around processes.

3.0 Acronyms and Abbreviations used in this Document

ACT	Australian Capital Territory
BRIMS	Access Canberra Building Records Information Management System
COLA	Construction Occupations (Licensing) Act 2004
MEN	Multiple earthed neutral (MEN) system (See Definitions)
RCD	Residual current device (See Definitions)
SOP	Standard Operating Procedure
SWMS	Safe Work Method Statement

4.0 Relationship of Standard Operating Procedures



5.0 Registrar's Directions

Registrar's Directions		Responsibility
5.1	<p>Certificate of Electrical Safety</p> <p>Clarification of Section 6 (1) (b) of 'The Act'</p> <p>6. Testing and reporting of electrical work</p> <p>(1) A person who carries out electrical wiring work commits an offence if—</p> <p>(a) the person does not ensure that the work—</p> <p>(i) is tested in accordance with AS/NZS 3017 as in force when the test is carried out; and</p> <p>(ii) complies with the electrical wiring rules when the test is carried out; or</p> <p>(b) within 14 days after the day the test is carried out, the person does not give a report of the test to—</p> <p>(i) the construction occupations registrar; and</p> <p>(ii) the owner of the installation for which the work was done.</p> <p>Note If a form is approved under s 65 for this provision, the form must be used.</p> <ul style="list-style-type: none"> In respect of Section 6 (1) (b) of the Act (above), the Registrar makes the following direction: that the 'report of the test' shall be a 'Certificate of Electrical Safety' (CES) and is a form approved by the Registrar in accordance with s 65 of the act. 	<ul style="list-style-type: none"> ➤ Registrar ➤ Inspectors
5.2	<p>Role of the Electrical Inspector and Definition of Inspected and Tested</p> <p>Clarification of Section 4 (1) (b) of 'The Act'</p> <p>4. Connecting electrical installations to network—inspections</p> <p>(1) A person commits an offence if—</p> <p>(a) the person connects a new electrical installation to an electricity network; and</p> <p>(b) the installation has not been inspected, tested, and passed by an inspector.</p> <ul style="list-style-type: none"> In respect of Section 4 (1) of the Act (above), the Registrar makes the following direction: that after first having received a Certificate of Electrical Safety (CES) from a licenced electrician that certifies the electrical installation as compliant to the 'Australian Wiring Rules' (AS/NZS 3000) and tested in accordance with AS/NZS 3017, the role of the electrical inspector shall be that of an auditor of these facts. In respect of Section 4 (1) (b) of the Act (above), the Registrar makes the following direction: where an installation has been 'passed by an inspector' that this inspection/audit result shall in no way certify an electrical installation as safe and compliant, and does not in any way affect the declaration of compliance made by the licensee at the time of submitting the Certificate of Electrical Safety. 	<ul style="list-style-type: none"> ➤ Registrar ➤ Inspectors

Registrar's Directions		Responsibility
5.3	<p>Categories and Criterion of an inspection/audit</p> <ul style="list-style-type: none"> • Having received a Certificate of Electrical Safety (CES) from a licenced electrician which certifies the electrical installation as compliant to the Australian Wiring Rules (AS/NZS 3000) and tested in accordance with AS/NZS 3017, the registrar directs that the role of the electrical inspector shall be that of an auditor of these facts. • The principle of determining the criterion for the inspection/audit that will be carried out by an inspector, shall be designed to comply with the mandatory requirements of the Act in respect of new installations, and then apply a risk-based approach to existing installations. • The categories and criterion of inspection/audit types are set out below and are generated by Access Canberra's Building Records Information Management System (BRIMS), or any new IT process management systems implemented as a successor. <p><u>Self-Test</u></p> <ul style="list-style-type: none"> • In respect of an inspection/audit that has been assigned under the 'Self-Test' type, the Registrar makes the following direction: <ul style="list-style-type: none"> a) Verification of the installation in accordance with AS/NZS 3000 has been undertaken by the installing electrician and no further audit is required. <p><u>Partial Inspection</u></p> <ul style="list-style-type: none"> • In respect of an inspection/audit that has been assigned under the 'Partial Inspection' type, the Registrar makes the following direction: <ol style="list-style-type: none"> 1) Mandatory <ul style="list-style-type: none"> a) A visual inspection of the electrical installation to verify that the work complies with the requirements of AS/NZS 3000 as in force. 2) The following tests are advised to be carried out where possible; <ul style="list-style-type: none"> b) Verification of operation of RCDs of at least 10% of the relevant circuits (depending on availability of supply) c) Earth Resistance test - continuity of main earthing conductor. d) Earth Resistance test of equipotential bonded parts. e) Insulation Resistance tests of at least 10% of the relevant circuits f) Verify of the MEN connection. g) Test for interconnection of circuits of at least 10% of the circuits. 	<ul style="list-style-type: none"> ➤ Registrar ➤ Inspectors

Registrar's Directions	Responsibility
<p><u>Full Inspection</u></p> <ul style="list-style-type: none"> • In respect of an inspection/audit that has been assigned under the 'Full Inspection' type, the Registrar makes the following direction: <ol style="list-style-type: none"> 1) Mandatory <ol style="list-style-type: none"> a) A visual inspection of the electrical installation to verify that the work complies with the requirements of AS/NZS 3000 as in force. 2) The following tests are advised to be carried out where possible; <ol style="list-style-type: none"> b) Verification of operation of RCDs of at least 33% of the relevant circuits (depending on availability of supply) c) Earth Resistance test - Continuity of Main Earthing conductor d) Earth Resistance test of other earthed and equipotential bonded parts. e) Insulation Resistance tests of at least 33% of relevant circuits f) Verification of the MEN connection. g) Voltage drop check. h) Verification of earth fault-loop impedance. i) Test for interconnection of circuits of at least 33% of the relevant circuits j) Polarity and correct circuit connections of Mains, Sub-Mains, and final circuits. k) Verify isolators operation. e.g., Cook tops, Hot Water Systems, Air Conditioners, Motors, etc. <p><u>Change to type of Inspection/Audit</u></p> <ul style="list-style-type: none"> • An electrical inspector may change the inspection/audit type to that of another for operational reasons. Examples include, but are not limited to; <ol style="list-style-type: none"> a) An inspection/audit would pose a risk to the health and safety of the electrical inspector, or other persons. b) An inspection/audit would damage property. c) An inspection/audit would cause distress to the owner/occupier. d) There would be no benefit to electrical safety or the community, to proceed with the inspection/audit. e) There would be a benefit to electrical safety or the community to have an inspection/audit. <p>In all cases the reason for the change is to be recorded with the inspection result in the Access Canberra's Building Records Information Management System (BRIMS).</p>	

Registrar's Directions		Responsibility
5.4	<p><i>Rate of Inspection/Audit (See Table 4.1)</i></p> <ul style="list-style-type: none"> • In respect of managing the rate of which inspection/audit types will be applied, the Registrar makes the following direction: that after first having received a Certificate of Electrical Safety (CES) from a licenced electrician submitted under the 'type of work' category of "New", the rate and type of inspection/audit will be: <ul style="list-style-type: none"> - 90% Partial Inspection - 10% Full Inspection • In respect of managing the rate of which inspection/audit types will be applied, the Registrar makes the following direction: that after first having received a Certificate of Electrical Safety (CES) from a licenced electrician submitted under the 'type of work' category of "Alteration" or "repair", the rate and type of inspection/audit will be: <ul style="list-style-type: none"> - 90% Self-Test - No inspection required. - 10% Full Inspection • In respect of managing the rate of which inspection/audit types will be applied for new licensees; licensees that have been issued with a defect; and licensees that have not submitted a Certificate of Electrical Safety for a period in excess of 6 months, the Registrar makes the following direction: that after first having received a Certificate of Electrical Safety (CES) from a licenced electrician regardless of the type of work category, the rate and type of inspection/audit will be: <ul style="list-style-type: none"> - New licensees - the first 10 Certificates of Electrical Safety submitted by a new licensee are to be inspected at a rate of 100% "Full Inspection" inspection/audit. - Following Defects - the first 10 Certificates of Electrical Safety submitted by a new licensee after having received a Defect Notice, are inspected at a rate of 100% "Full Inspection" inspection/audit. - Inactive Licensees - the first 10 Certificates of Electrical Safety submitted by a licensee who has not submitted a Certificate of Electrical Safety for a period exceeding 6 months, are to be inspected at a rate of 100% "Full Inspection" inspection/audit. 	<ul style="list-style-type: none"> ➤ Registrar ➤ Inspectors

Registrar's Directions		Responsibility
	<ul style="list-style-type: none"> • In respect of managing the rate of which inspection/audit types will be applied, the Registrar makes the following direction: that after first having received a Certificate of Electrical Safety (CES) from a licenced electrician submitted under certain high-risk categories of 'Installation Type', the rate and type of inspection/audit will be: <ul style="list-style-type: none"> - 100% Full Inspection Examples of 'Installation Types' categorised as 'High-Risk' include but are not limited to: <ol style="list-style-type: none"> a) Hazardous Locations b) Medical (Patient Areas) c) Schools and Childcare Facilities d) Swimming Pools e) Renewable energy systems including PV Array and Battery Storage Systems. • In respect of managing the rate of which inspection/audit types will be applied, the Registrar makes the following direction: that after first having received a Certificate of Electrical Safety (CES) from a licenced electrician that includes the installation of thermal insulation on and around electrical wiring systems, the rate and type of inspection/audit will be: <ul style="list-style-type: none"> - 60% Self-Test - No inspection required. - 40% Full Inspections 	
5.5	<p><i>Notification and Recording of the Result of Inspection/Audit</i></p> <ul style="list-style-type: none"> • In respect of the notification and recording of the result of an Inspection/Audit, the Registrar makes the following direction: that on completion of an inspection/audit the inspector shall: <ol style="list-style-type: none"> a) Notify the licensee who submitted the Certificate of Electrical Safety of the result of the inspection/audit, and; b) Record the result of the Inspection/Audit in the current Access Canberra Building Records Information Management System (BRIMS). 	➤ Inspectors

Table 5.1 Rate of Inspection/Audit in respect to Installation Type, Category, and Type of Work

Installation Type	Category			New Work		Alteration or Repair		
	Residential	Commercial	High-Risk	Partial Inspection	Full Inspection	Self-Test	Partial Inspection	Full Inspection
Normal	✓	✓		90%	10%	90%	0%	10%
Public lights	✓	✓		90%	10%	90%	0%	10%
External lighting	✓	✓		90%	10%	90%	0%	10%
UPS	✓	✓		90%	10%	90%	0%	10%
TCCS Streetlight Project	✓	✓		90%	10%	90%	0%	10%
Temporary Supply	✓	✓		90%	10%	90%	0%	10%
Permanent/Temporary Supply	✓	✓		90%	10%	0%	0%	0%
Nextgen Energy Storage	✓	✓	✓	90%	10%	0%	0%	100%
Streetlights	✓	✓		90%	10%	90%	0%	10%
Traffic lights	✓	✓		90%	10%	90%	0%	10%
Soft wiring	✓	✓		90%	10%	90%	90%	10%
Solar battery storage	✓	✓	✓	90%	10%	0%	0%	100%
Solar battery storage & PV	✓	✓	✓	90%	10%	0%	0%	100%
Hazardous Location	✓	✓	✓	90%	10%	0%	0%	100%
High voltage	✓	✓	✓	90%	10%	0%	0%	100%
Infinity/Olsent	✓	✓	✓	90%	10%	0%	0%	100%
Schools & Childcare	✓	✓	✓	90%	10%	0%	0%	100%
Safety services	✓	✓	✓	90%	10%	0%	0%	100%
Standalone	✓	✓	✓	90%	10%	0%	0%	100%
Solar PV	✓	✓	✓	90%	10%	0%	0%	100%
Renewables	✓	✓	✓	90%	10%	0%	0%	100%
Medical/health services	✓	✓	✓	90%	10%	0%	0%	100%
Swimming pool	✓	✓	✓	90%	10%	0%	0%	100%
Spa/hot tub	✓	✓	✓	90%	10%	0%	0%	100%
Thermal Insulation	✓	✓		60%	40%	60%	0%	40%

Registrar's Directions	Responsibility
<p>5.6 Electrical Defects – Categories Clarification of Section 8 (2) of 'The Act'</p> <p>8. Directions to rectify unsafe installations</p> <p><i>(1) This section applies if an inspector believes on reasonable grounds that—</i></p> <p style="padding-left: 40px;"><i>(a) an electrical installation is unsafe or has not been inspected, tested and passed as required under this part;</i></p> <p style="padding-left: 80px;"><i>or</i></p> <p style="padding-left: 40px;"><i>(b) electrical wiring work is unsafe or has not been carried out, or tested, as required under this part.</i></p> <p><i>(2) The inspector may give the person who has carried out the electrical wiring work relevant for subsection (1) (a) or (b) a written direction to take stated action to make the installation or work safe and compliant with this part.</i></p> <p><i>(3) The direction may also require the person to give the inspector written information about the installation or work</i></p> <ul style="list-style-type: none"> • In respect of Section 8 (2) of the Act (above), the Registrar makes the following direction: that the 'written direction to take stated action to make the installation or work safe and compliant with this part' shall be a 'Defects Report' and is a form approved by the Registrar in accordance with s 65 of the act. • Where the audit of an electrical installation reveals that the installation does not meet the requirements of AS/NZS 3000 and a Defect Report is to be issued, the Registrar makes the following direction: that defects will be assessed in accordance with the Registrar's directions for categorising non-compliance and be categorised into three (3) levels of defect used to determine subsequent actions. The categories are: <ul style="list-style-type: none"> - Major (Category 1) - With a reinspection fee - Minor (Category 2) - With a reinspection fee - Minor (Category 3) - Without a reinspection fee 	<ul style="list-style-type: none"> ➤ Registrar ➤ Inspectors

Registrar's Directions	Responsibility
<p>5.7 <i>Criteria for Categorisation of Electrical Defects</i></p> <p>Category 1 (Major Defect)</p> <ul style="list-style-type: none"> • These should be life threatening immediately, or; • Within a short time, with only one action/failure, likely to cause a threat to life or property, or; • Non-compliance with the Verification Section of AS/NZS 3000 • Examples include: <ul style="list-style-type: none"> a) Exposed Live Parts b) Earthing System c) Insulation Resistance d) Overloaded Equipment e) Circuit Protection Devices not installed as required. f) RCD not installed where required. g) Polarity h) Unsuitable Equipment i) Cable Conductors j) Main Switchboard - faults k) Hazardous Locations l) Failure to test. <p>Category 2 Minor (With Fee)</p> <ul style="list-style-type: none"> • Typically, not a Cat 1 or 3 item. • They are typically Cat 3 items that require a site visit to re-verify compliance. • They are more serious than Cat 3, but not life threatening so not Cat 1. • Licensee has received previous Cat 3 advice for same non-compliance. <p>Category 3 Minor (No Fee)</p> <ul style="list-style-type: none"> • These should be issues that are not life threatening. • They may cause confusion. • It is advice to the electrician. • They are simple matters that do not require re-inspection. e.g., a photo of the repair could suffice. • Examples include: <ul style="list-style-type: none"> a) Required labels missing. b) Documentation errors. c) Earth electrode paint washed off. d) Broken/ damaged equipment by others after CES submission. e) Required Screens or Partitions not installed at time of inspection. • Licenced Electricians in receipt of a Defects Report issued under any Category, for non-compliance with the requirements of AS/NZS 3000 or referenced standards, may also be subject to occupational discipline under the Construction Occupations (Licensing) Act 2004. All Category 1 and Category 2 Defect Reports must therefore be sent to the Deputy Registrar (electrical) for consideration. 	<ul style="list-style-type: none"> ➤ Registrar ➤ Inspectors

Table 5.2 Criteria for Categorisation of Electrical Defects

Category	Category 1 Major	Category 2 Minor (With Fee)	Category 3 Minor (No Fee)
Criteria	<ul style="list-style-type: none"> • These should be life threatening immediately, or; • Life threatening within a short time, with only one action/failure, likely to cause a threat to life or property, or; • Non-compliance with the Verification Section of AS/NZS 3000 	<ul style="list-style-type: none"> ▪ Typically, not a Category 1 or Category 3 item. ▪ They are typically Category 3 items that require a site visit to re-verify compliance. ▪ More serious than Category 3, but not life threatening so not Category 1. ▪ Licensee has received previous Category 3 advice for same non-compliance. 	<ul style="list-style-type: none"> ▪ These should be issues that are not life threatening. ▪ They may cause confusion. ▪ It is advice to the electrician. ▪ They are simple matters that do not require re-inspection. e.g., a photo of the repair could suffice.
Examples	<ul style="list-style-type: none"> a) Exposed Live Parts b) Earthing System c) Insulation Resistance d) Overloaded Equipment e) Circuit Protection Devices not installed as required. f) RCD not installed where required. g) Polarity h) Unsuitable Equipment i) Cable Conductors j) Main Switchboard - faults k) Hazardous Locations l) Failure to test. 		<ul style="list-style-type: none"> a) Required labels missing. b) Documentation errors. c) Earth electrode paint washed off. d) Broken/ damaged equipment by others after CES submission. e) Required Screens or Partitions not installed at time of inspection.

Procedure Steps		Responsibility
5.8	<p>Inspectors' Powers</p> <p>43. General power to enter premises (1) For this Act, an inspector may— <i>(a) enter any premises at any time with the consent of the occupier; or</i> <i>(b) enter premises when open to the public; or</i> <i>(c) enter business premises during business hours at the premises;</i> <i>or</i> <i>(d) enter premises in accordance with a warrant under this division.</i></p> <p>(2) An inspector may, without the occupier's consent or a warrant, enter the land around premises to ask the occupier for consent to enter the premises.</p> <ul style="list-style-type: none"> In respect of Section 43 (1) (a) of the Act (above), the Registrar makes the following direction: that an inspector may not enter any premises if the person giving consent is not a person 18 years of age or older; or is a person that does not have the capacity to give consent. Consent cannot be given by a person who has not been informed that they may refuse consent. <p>44. Production of identity card <i>An inspector may not remain on premises entered under this part if, on request by the occupier, the inspector does not produce his or her identity card.</i></p> <ul style="list-style-type: none"> In respect of Section 44 of the Act (above), the Registrar makes the following direction: that an inspector must wear their inspector's identity card so that it is visible at all times while carrying out an electrical inspection. 	➤ Inspector

Procedure Steps	
	<p>45. Consent to entry</p> <p>(1) When seeking the consent of an occupier for entering premises under this part an inspector must—</p> <p style="padding-left: 20px;">(a) produce his or her identity card; and</p> <p style="padding-left: 20px;">(b) tell the occupier—</p> <p style="padding-left: 40px;">(i) the purpose of the entry; and</p> <p style="padding-left: 40px;">(ii) that anything found and seized under this part may be used in evidence in court; and</p> <p style="padding-left: 40px;">(iii) that consent may be refused.</p> <p>(2) If the occupier consents, the inspector must ask the occupier to sign a written acknowledgment—</p> <p style="padding-left: 20px;">(a) that the occupier was told—</p> <p style="padding-left: 40px;">(i) the purpose of the entry; and</p> <p style="padding-left: 40px;">(ii) that anything found and seized under this part may be used in evidence in court; and</p> <p style="padding-left: 40px;">(iii) that consent may be refused; and</p> <p style="padding-left: 20px;">(b) that the occupier consented to the entry; and</p> <p style="padding-left: 20px;">(c) stating the time, and day, when consent was given.</p> <p>(3) If the occupier signs an acknowledgment of consent, the inspector must immediately give a copy to the occupier.</p> <p>(4) Unless the contrary is proven, a court must presume that an occupier of premises did not consent to an entry to the premises by an inspector under this part if—</p> <p style="padding-left: 20px;">(a) the question whether the occupier consented to the entry arises in proceedings in the court; and</p> <p style="padding-left: 20px;">(b) an acknowledgment under this section is not produced in evidence for the entry; and</p> <p style="padding-left: 20px;">(c) it is not proved that the occupier consented to the entry.</p> <ul style="list-style-type: none"> • In respect of Section 45 of the Act (above), the Registrar makes the following direction: that prior to exercising any of the powers provided by Section 45, that an electrical inspector must first gain approval from the Director of Electrical Inspections or Assistant Director of Electrical Inspections. Communication by email or SMS will be sufficient confirmation of approval. Inspectors must use the approved "Acknowledgement of Consent" form to meet the requirements of Section 45 (2), (3), and (4) of the Act.

Procedure Steps	
	<p>49. Powers in relation to serious electrical accidents</p> <p><i>(1) This section applies if an inspector believes on reasonable grounds that a serious electrical accident has occurred on premises.</i></p> <p><i>(2) The inspector may enter the premises at any reasonable time to investigate the accident, ensure the premises are safe and prevent the concealment, loss, or destruction of anything reasonably relevant to the investigation.</i></p> <p><i>(3) The inspector may do anything necessary and reasonable for a purpose mentioned in subsection (2).</i></p> <p><i>(4) If an inspector acts under this section in the absence of the occupier, the inspector must, when leaving the premises, leave a written notice, secured in a conspicuous place, setting out—</i></p> <p style="margin-left: 40px;"><i>(a) the inspector’s name; and</i></p> <p style="margin-left: 40px;"><i>(b) the time and date of the entry; and</i></p> <p style="margin-left: 40px;"><i>(c) the purpose of the entry; and</i></p> <p style="margin-left: 40px;"><i>(d) particulars of how to contact the inspector.</i></p> <p><i>(5) The power to enter premises under this section is additional to the powers under section 43 (General power to enter premises).</i></p> <ul style="list-style-type: none"> • In respect of Section 49 (2) of the Act (above), the Registrar makes the following direction: that an inspector may not enter any premises including a room within a premises if the only occupant is a person(s) not 18 years of age or older; or is an otherwise vulnerable person. Where entry to the premises is necessary to secure the safety of the occupants, assistance should be sought from other on-site respondents or police. <p>51. Disconnecting etc dangerous electrical equipment and installations</p> <p><i>(1) An inspector who enters premises under this part and finds an article of electrical equipment, or an electrical installation, that the inspector believes on reasonable grounds is a source of danger, may—</i></p> <p style="margin-left: 40px;"><i>(a) label the article conspicuously to indicate the danger and prohibit use of the article until it has been repaired or otherwise rendered safe for use; or</i></p> <p style="margin-left: 40px;"><i>(b) disconnect the installation.</i></p> <ul style="list-style-type: none"> • In respect of Section 51 (1) (b) of the Act (above), the Registrar makes the following direction: that electrical inspectors must make a reasonable attempt to disconnect the part of an installation that is dangerous prior to resorting to disconnecting the entire electrical installation. Where an installation has been disconnected, the Registrar must be notified within 24 Hours.

Procedure Steps	
	<p>57. Power to inspect electrical wiring work</p> <p>(1) An inspector may enter and remain on premises to conduct a test or inspection required under part 2 (Electrical wiring work and electrical installations) in relation to an electrical installation or electrical wiring work.</p> <p>(2) An inspector may enter and remain on the premises under subsection (1)—</p> <p style="padding-left: 40px;">(a) at any reasonable time; and</p> <p style="padding-left: 40px;">(b) with the people, equipment, or material that the inspector reasonably needs to conduct the test or inspection.</p> <p>(3) However, the inspector may not, under this section—</p> <p style="padding-left: 40px;">(a) enter or remain on premises if, on request by the occupier, the inspector does not produce his or her identity card; or</p> <p style="padding-left: 40px;">(b) without the consent of the occupier, enter or remain on any part of the premises used for residential purposes.</p> <p>(4) The power to enter premises under this section is additional to the powers under section 43 (General power to enter premises).</p> <ul style="list-style-type: none"> • In respect of Section 57 of the Act (above), the Registrar makes the following direction: that an inspector may not enter any premises if the person giving consent is not a person of 18 years of age or older; or is a person that does not have the capacity to give consent. Consent cannot be given by a person who has not been informed that they may refuse consent. • Where this direction restricts the ability of the electrical inspector to properly carry out an inspection/audit, consideration should be given to arranging a more suitable time for the inspection or to changing the type of inspection in line with the directions provided by the Registrar under "Change to type of Inspection/Audit".

6.0 Referenced Material

Name	Location (Document Path)
<i>Construction Occupations (Licensing) Act 2004</i>	Construction Occupations (Licensing) Act 2004 Acts
<i>Construction Occupations (Licensing) Regulation 2004</i>	Construction Occupations (Licensing) Regulation 2004 Subordinate laws (act.gov.au)
<i>ACT Electricity Safety Act 1971</i>	Electricity Safety Act 1971 Acts
<i>ACT Electricity Safety Regulation 1971</i>	Electricity Safety Regulation 2004 Subordinate laws (act.gov.au)
<i>Residential Tenancies Amendment Regulation 2022 (No 1)</i>	Residential Tenancies Amendment Regulation 2022 (No 1) Subordinate laws (act.gov.au)
<i>Defects Report (form)</i>	G:\Access Canberra\PEG\Electrical\Fillable Templates
<i>Acknowledgement of Consent (form)</i>	G:\Access Canberra\PEG\Electrical\Fillable Templates

7.0 Definitions

'Electrical installation' as defined by the ACT Electricity Safety Act 1971 Dictionary

'Electrical wiring work' as defined by the ACT Electricity Safety Act 1971 Dictionary:

'Certificate of Electrical Safety' means a report as defined by **Section 6 of the Electricity Safety Act**

'Wiring Rules' means the Australian/New Zealand Standard for Electrical installations (known as the Australian/New Zealand Wiring Rules) or AS/NZS 3000

'Electrical Inspection' means the audit of an electrical installation for compliance with the 'Wiring Rules' as required by Section 4 of the ACT Electricity Safety Act 1971 and as directed by the Construction Occupations Registrar (see **'Registrar's Instructions'**)

'Direction' means a written and authorised instruction given by the Construction Occupations Registrar, who appointed under section 103 of COLA, is given various additional powers under the 'ACT Electricity Safety Act 1971'. This includes under Section 41, the power to appoint a person to be an inspector for this Act. Once appointed, an inspector must exercise his or her functions under the Act in accordance with the conditions of appointment and any **'direction'** given to the inspector by the Construction Occupations Registrar (the Registrar).

'Required' means a requirement of the relevant legislation.

"Residual current device" (RCD) means a device intended to isolate supply to protected circuits, socket-outlets, or electrical equipment in the event of a current flow to earth that exceeds a predetermined value.

"Multiple earthed neutral (MEN) system" means a system of earthing in which the parts of an installation, required under AS/NZS 3000 to be earthed, are connected to the general mass of earth and, in addition, are connected within the installation to the neutral conductor of the supply system or the PEN conductor. Within an installation, the protective earthing conductor is separated from the neutral conductor.



Access Canberra - Electrical Inspectors, Installations, Inspections, Directions.

This document outlines the expectations of Access Canberra Directors and the Registrar for the appointed ACT electrical inspectors, in carrying out their delegated duties.

Mission

To help make the ACT be a safer place to live and work, -by assisting the electrical industry achieve compliance with their legislative requirements.

Clarification of duties

The *Electricity Safety Act 1971* (the Act) is the basis of the legislative role of the Electrical Inspector. Section 4 of the Act is the first time the electrical inspector is referenced in the Act.

4 Connecting electrical installations to network-inspections

- (1) A person commits an offence if-
 - (a) the person connects a new electrical installation to an electricity network; and
 - (b) the installation has not been inspected, tested and passed by an inspector.

This section of the Act is not an instruction or requirement placed on the electrical inspector. It details that it is an offence for a person to connect supply without an inspection being done first by an electrical inspector appointed under the Act.

The requirements of the inspection and testing by the electrical inspector are in Section 41 (2) of the Act.

41 Appointment of inspectors

- (1) The construction occupations registrar may appoint a person to be an inspector for this Act.
- (2) An inspector must exercise his or her functions under this Act in accordance with the conditions of appointment and any direction given to the inspector by the construction occupations registrar.

To satisfy the requirements of Section 41 (2) of the Act, this document is to be considered a direction by the Construction Occupations Registrar (the Registrar), that provides a definition of what "inspected and tested" means in section 4(1)(b) of the Act.

To add further clarity to the powers of the electrical inspector, this document has added instructions from the Registrar to the appointed electrical inspector, on how it is expected they will exercise their appointment and delegation.



Testing and Inspection/ Audit Rates

All new electrical installations require an inspection by an electrical inspector to satisfy Section 4 of the Act. The role of the electrical inspector is primarily that of an auditor, since the licensed electrician has submitted a Certificate of Electrical Safety (CES) and certified the electrical installation as compliant to the Australian Wiring Rules (AS/NZS 3000)

Other than for new installations, the Act and Regulations do not set any inspection/audit rates of electrical installation work. This is a policy decision from the Registrar, which may be varied from time to time as operational requirements permit.

For new electrical installations the inspection/audit rates are currently set to;

- 90% Partial inspections
- 10% Full inspections

For existing electrical installations where a CES form is received for the categories of Additions, Alterations or Repair, the inspection/audit rates are currently set to;

- 90% Self-Test - No inspection/audit required
- 10% have an inspection/audit

These percentages change for new licensees and for licensees that have a history of electrical defects. The current rates are;

- New licensees - the first 10 CES forms are 100% inspection/audit.
- Defected licenses have the next 10 CES forms at 100% inspection/audit.
- Licensees that have not submitted a CES for 6 Months, revert back to new licensees.

The Registrar may require certain high risk sites to have higher inspection/audit rates. Examples of this, and not limited to, are electrical installations;

- At hazardous locations
- In Medical treatment areas
- In Schools and day care centres
- That are adjacent to swimming pools
- That are for renewable energy systems that include battery storage systems.

Types of an inspection/ audit and minimum requirements

Standards

Electrical inspectors are to follow the testing procedures as defined in AS/NZS 3000 and its subordinate standards as required.

The testing electrician has provided a Certificate of Electrical Safety (CES) for their tests conducted to the Registrar, and have certified the installation complies with the required standards. The electrical inspection/audit process is designed to comply with the mandatory requirements of the Act, to inspect new installations, and a risk based approach to existing installations.

The categories of inspection types are drawn from the names our current business system BRIMS and may change in the future when any new systems are introduced.

Self-Test

- No further inspection/audit is required.

Partial inspection

Mandatory

- Visual inspection of installation per AS/NZS 3000 for compliance.

Advisory for where possible;

- RCD test of 10% of the relevant circuits (only when power is available)
- Earth Electrode inspection and test
- Insulation resistance tests of 10% of the circuits
- Verify MEN connection
- Verify Equipotential bond
- Test for interconnect of circuit at least 10% of the circuits

Full inspection

Mandatory

- Visual inspection of installation per AS/NZS 3000 for compliance.

Advisory for where possible;

- RCD test of 33% of the relevant circuits (only when power is available)
- Earth Electrode inspection and test
- Earth continuity testing of fixed electrical equipment
- Insulation resistance tests of 33% of the circuits
- Verify MEN
- Verify Equipotential bond
- Voltage drop checked
- Fault loop current checked
- Test for interconnect of circuit at 33% of the circuits
- Polarity of Mains, Sub-Mains, final circuits.
- Verify isolators operation. EG Cook tops, Air Conditioners, Motors, etc



Change to type of Inspection/ Audit

An electrical inspector may change the inspection/audit type to that of another for operational reasons. Examples include, and not limited to;

- An inspection/audit would pose a health and safety risk to the electrical inspector, or other persons.
- An inspection/audit would damage property.
- An inspection/audit would cause distress to the owner/occupier.
- There would be no benefit to electrical safety or the community, to proceed with the inspection/audit.
- There would be a benefit to electrical safety or the community to have an inspection/audit.

In all cases the reason for the change is to be recorded in the inspection results report.

Electrical Defects - Categories

When an electrical inspector fails an installation inspection for not being compliant to AS/NZS 3000 there are three (3) defect categories that are used;

1. Major (Category 1) - With a reinspection fee
2. Minor (Category 2) - With a reinspection fee
3. Minor (Category 3) - Without a reinspection fee

Electricians who incur a Major (Category 1) defect report, are also subject to occupational discipline under the *Construction Occupations {Licensing} Act 2004*. The defect report is also to be sent to the deputy Registrar (electrical) for assessment and referral to occupational discipline.

The following table is a guide to inform the electrical inspector which category to use;

Category 1 Major	Category 2 Minor (With Fee)	Category 3 Minor (No Fee)
<ul style="list-style-type: none"> • These should be life threatening immediately, or; • Within a short time, with only one action/failure, likely to cause a threat to life or property, or; • Non-compliance with the Testing and verification Section AS/NZS 3000 	<p style="text-align: center;">Typically not a cat 1 or 3 item</p> <ul style="list-style-type: none"> • They are typically Cat 3 items that require a site visit to re-verify compliance. • They are more serious than Cat 3, but not life threatening so not Cat 1. • Licensee has received previous Cat 3 advice for same non-compliance. 	<ul style="list-style-type: none"> • These should be issues that are not life threatening. • They may cause confusion. • It is advice to the electrician • They are simple matters that do not require a reinspection. For example a photo of the repair could suffice.
<ul style="list-style-type: none"> a) Exposed Live Parts b) Earthing System c) Insulation Resistance d) Overloaded Equipment e) Circuit Protection Devices not installed as required. f) RCD not installed where required g) Polarity h) Unsuitable Equipment i) Cable Conductors j) Main Switchboard - faults k) Hazardous Locations l) Failure to test 		<ul style="list-style-type: none"> a) Required labels missing b) Documentation errors c) Earth electrode paint washed off d) Broken/ damaged equipment by others after CES submission e) Required Screens or Partitions not installed at time of inspection

Table 1.

Additional Registrar Directions

There are other sections of the Act that provide powers to the electrical inspector to perform their duties under the Act. The Registrar is providing clarification and direction to these sections of the Act in the sections that follow;

Inspector's Powers

43 General power to enter premises

- (1) For this Act, an inspector may-
 - (a) enter any premises at any time with the consent of the occupier; or
 - (b) enter premises when open to the public; or
 - (c) enter business premises during business hours at the premises; or
 - (d) enter premises in accordance with a warrant under this division.
- (2) An inspector may, without the occupier's consent or a warrant, enter the land around premises to ask the occupier for consent to enter the premises.

Further to section 43 of the Act, the Registrar requests that electrical inspectors do not enter any premises where there are minors (people under the age of 18) and there is no adult supervision present.

44 Production of identity card

An inspector may not remain on premises entered under this part if, on request by the occupier, the inspector does not produce his or her identity card.

Further to section 44 of the Act, the Registrar requests that electrical inspector's wear their ID card so it is visible at all times while they are exercising their delegation as an electrical inspector.

45 Consent to entry

- (1) When seeking the consent of an occupier for entering premises under this part an inspector must-
 - (a) produce his or her identity card; and
 - (b) tell the occupier-
 - (i) the purpose of the entry; and
 - (ii) that anything found and seized under this part may be used in evidence in court; and
 - (iii) that consent may be refused.
- (2) If the occupier consents, the inspector must ask the occupier to sign a written acknowledgment-



- (a) that the occupier was told-
 - (i) the purpose of the entry; and
 - (ii) that anything found and seized under this part may be used in evidence in court; and
 - (iii) that consent may be refused; and
 - (b) that the occupier consented to the entry; and
 - (c) stating the time, and day, when consent was given.
- (3) If the occupier signs an acknowledgment of consent, the inspector must immediately give a copy to the occupier.
- (4) Unless the contrary is proven, a court must presume that an occupier of premises did not consent to an entry to the premises by an inspector under this part if-
- (a) the question whether the occupier consented to the entry arises in proceedings in the court; and
 - (b) an acknowledgment under this section is not produced in evidence for the entry; and
 - (c) it is not proved that the occupier consented to the entry.

Further to section 45 of the Act, the Registrar requests that electrical inspectors get approval from a manager (BTI-M or BTI-5 level) of the electrical inspections team before this section (45) is used. Email or SMS will suffice for this approval. Each electrical inspector is to have a book of "*Acknowledgement Of Consent*" forms in their vehicle at all times for use to satisfy the requirements of this section.

49 Powers in relation to serious electrical accidents

- (1) This section applies if an inspector believes on reasonable grounds that a serious electrical accident has occurred on premises.
- (2) The inspector may enter the premises at any reasonable time to investigate the accident, ensure the premises are safe and prevent the concealment, loss or destruction of anything reasonably relevant to the investigation.
- (3) The inspector may do anything necessary and reasonable for a purpose mentioned in subsection (2).
- (4) If an inspector acts under this section in the absence of the occupier, the inspector must, when leaving the premises, leave a written notice, secured in a conspicuous place, setting out-
 - (a) the inspector's name; and
 - (b) the time and date of the entry; and
 - (c) the purpose of the entry; and
 - (d) particulars of how to contact the inspector.
- (5) The power to enter premises under this section is additional to the powers under section 43 (General power to enter premises).



Further to section 49 of the Act, the Registrar requests that electrical inspectors do not enter any premises where there are minors (people under the age of 18) and there is no adult supervision present. Electrical inspectors should not be in any room that a minor is in unless there is also an adult present in that room. If a serious electrical incident has occurred (electric shock) and only minors are present and you need to enter the premises to make it safe:

- Ensure there are other adults present with you.
 - o For example: Ambulance personnel who may also have attended.
- Consider requesting police assistance.
 - o For example: Adolescent females are present and only male adults have responded to the incident, police assistance should be requested.

51 Disconnecting etc dangerous electrical equipment and installations

- (1) An inspector who enters premises under this part and finds an article of electrical equipment, or an electrical installation, that the inspector believes on reasonable grounds is a source of danger, may-
 - (a) label the article conspicuously to indicate the danger and prohibit use of the article until it has been repaired or otherwise rendered safe for use; or
 - (b) disconnect the installation.

Further to section 51 (b) of the Act, the Registrar requests that electrical inspectors should attempt to disconnect the part of an installation that is dangerous first, and if the entire electrical installation is to be disconnected, the Registrar is to be notified within 24 Hours.

57 Power to inspect electrical wiring work

- (1) An inspector may enter and remain on premises to conduct a test or inspection required under part 2 (Electrical wiring work and electrical installations) in relation to an electrical installation or electrical wiring work.
- (2) An inspector may enter and remain on the premises under subsection (1)--
 - (a) at any reasonable time; and
 - (b) with the people, equipment or material that the inspector reasonably needs to conduct the test or inspection.
- (3) However, the inspector may not, under this section-
 - (a) enter or remain on premises if, on request by the occupier, the inspector does not produce his or her identity card; or
 - (b) without the consent of the occupier, enter or remain on any part of the premises used for residential purposes.
- (4) The power to enter premises under this section is additional to the powers under section 43 (General power to enter premises).

Further to s_ection 57 of the Act, the Registrar requests that electrical inspectors do not enter any premises where there are minors (people under the age of 18) and there is no adult supervision present. Electrical Inspectors should not be in any room that a minor is in unless there is also an adult present in that room. Where these instructions restrain the ability of the electrical inspector to do their inspection/audit, they should then consider exercising their discretion as defined the section "[Change to type of Inspection/Audit](#)" and change the insp_ection type, or re-book the inspection/audit for another time.



Electrical Inspectors Appointment 2016 (No1)

The table below is a reproduction of the Electrical Inspectors Appointment 2016 (No 1) that lists appointed electrical inspectors and any restrictions placed on them by the Registrar. Column 4 has been added for the electrical inspector to sign as having read and accepts this appointment and the Registrars instructions.

Column 1	Column 2	Column 3	Column 4
Current Level of Position Occupant	Name	Restrictions	Electrical Inspector - Signature
Building Trade Inspector Manager	Michael Mosslar	None	
Senior Building Trade Inspector	Barry Viney	None	
Senior Building Trade Inspector	Peter O'Neill	None	
Senior Building Trade Inspector	Andrew Mecham	None	
Senior Building Trade Inspector	Vince Nassar	Limited to Type B gas installations	
Building Trade Inspector	Peter Hyland	None	
Building Trade Inspector	Vladimir Coric	None	
Building Trade Inspector	Raymond GorreU	None	
Building Trade Inspector	Keith Talbot	None	
Building Trade Inspector	James Shaw	None	
Building Trade Inspector	Phillip Williams	None	
Building Trade Inspector	Mauro Charles	None	
Building Trade Inspector	Graham Kidd	None	
Building Trade Inspector	Richard Osmialowski	None	
Building Trade Inspector	Neil Davis	None	
Senior Professional Officer	Gordon Kelly	Limited to High Voltage installations	

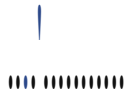


Approvals



David Middlemiss
Construction Occupations Deputy Registrar,
Deputy Director,
Access Canberra

19 December 2017



Craig Simmons
Construction Occupations Registrar
Director
Access Canberra

19 December 2017



Document Version Control

Version 0.1	June 2017	Initial document
Version 0.2	July 2017	Updated with inspectors powers
Version 0.3	July 2017	Corrected minor grammar errors, and testing requirements
Version 1.0	August 2017	For approval
Version 1.1	September 2017	Two grammar errors fixed and removed draft watermark ready for approval
Version 1.2	September 2017	Minor grammar edits - for approval version
Version 1.3	16 October 2017	Updated example in "Change to type of Inspection"
Version 1.4	19 December 2017	Grammar & Change to Directors - For Approval