

Electrical Work Standard

AGL-HSE-STD-007.1

The scope of this standard applies to all electrical activities carried out on AGL controlled sites and carried out by AGL employees, non-AGL controlled sites and equipment.

The reference numbers given to minimum controls provide a direct linkage between this standard and the Risk and Control Matrix. The Electrical Work Methodology AGL-HSE-SDM-007.1 provides further explanation of how to achieve the minimum controls.

The underlined minimum controls below have been identified as being critical controls.

RCM Ref	Minimum Controls
Electrical Work Processes	
<u>7.1.1.1</u>	<u>For all electrical work a risk assessment must be completed prior to the work being undertaken, with consideration to induction, arc flash and requirements to isolate.</u>
<u>7.1.1.2</u>	<u>Test for dead (test before touch) procedures must be applied at all times.</u>
7.1.1.3	No work is to be carried out on energised electrical conductors without an authorised permit.
7.1.1.4	All electrical work must be certified as required by the relevant legislation.
Electrical Permitting	
7.1.1.5	An appropriate safe access system must be applied before any work is undertaken on or near electrical apparatus' (which may be a permit).
Electrical Isolation	
7.1.1.6	An isolation process must be established using an AGL approved permit system which includes locks, tags, and/or a physical control mechanism to secure the isolation and prevent unplanned re-energisation.
High Voltage	
7.1.1.7	A High Voltage Permit or Access Authority must be completed prior to commencing any high voltage work activities.
Awareness of Energised Electrical Work Hazards	
7.1.1.8	At all AGL operations when working on or near energised electrical equipment, the tools and equipment used must be non-conductive or insulated.
Fault Finding and Testing	
7.1.1.9	Fault finding and testing on energised electrical equipment must be carried out by an appropriately competent or authorised person.

RCM Ref	Minimum Controls
Working Near Energised Electrical Equipment	
7.1.1.10	When working on or near energised electrical apparatus a risk assessment must be completed in accordance with AGL HSE Risk Management Standard (AGL-HSE-STD-004.1).
7.1.1.11	<p><u>An exclusion zone must be applied when working in the vicinity of:</u></p> <ul style="list-style-type: none"> • <u>A bare overhead power line;</u> • <u>An insulated overhead power line connected to a building;</u> • <u>An open switchboard with exposed components (e.g. connections or bare busbars);</u> • <u>An exposed overhead conductor (e.g. substation busbar, travelling or gantry crane busbars);</u> <u>and</u> • <u>Any exposed electrical part which may present risk to personnel.</u>
Access Levels for Electrical Work	
7.1.1.12	Access to electrical panels, substations and high voltage areas must be secured to prevent unauthorised access.
Authorisations for Electrical Work	
7.1.1.13	<u>All electrical work is to be undertaken by suitably competent and (where applicable) licensed personnel.</u>
Ladders, scaffolds and similar equipment	
7.1.1.14	On AGL controlled sites metallic, wire reinforced or otherwise conductive ladders must not be used where there is any electrical potential.
Personal Protective Equipment	
7.1.1.15	<p><u>All PPE used must comply with any relevant Australian Standards. Depending on the type of work and the risks involved, the following PPE must be considered:</u></p> <ul style="list-style-type: none"> • <u>Face Protection—use of a suitably arc rated full face shield may be appropriate when working where there is potential for an arc flash to occur;</u> • <u>Eye Protection—metal spectacle frames must not be worn;</u> • <u>Gloves—use gloves insulated to the highest potential voltage expected for the work being undertaken. Leather work gloves may be considered for de-energised electrical work;</u> • <u>Clothing—use non-synthetic clothing of non-fusible material and flame resistant. Clothing made from conductive material or containing metal threads must not be worn; and</u> • <u>Footwear—use non-conductive footwear (e.g. steel toe capped boots or shoes manufactured to a suitable standard).</u>
7.1.1.16	<u>Gloves must be used when operating metal clad switchgear and earthing High Voltage apparatus.</u>
7.1.1.17	<u>Low Voltage Gloves must be used when exposed conductive parts have not been confirmed as isolated, proven de-energised and where practicable earthed. Low Voltage gloves must also be used when working in and around live apparatus</u>
Tapes and other measuring devices	
7.1.1.18	Only non-conducting tapes and rulers must be used in the vicinity of energised electrical equipment.

RCM Ref	Minimum Controls
Portable Equipment – Inspection and Testing	
7.1.1.19	All electrical portable appliances and tools must have inspection and testing requirements determined and actioned in accordance with any relevant Australian Standards.
7.1.1.20	Inspection and testing of electrical equipment must be carried out by a competent person who has acquired, through training, qualification and/or experience, the knowledge, and skills to carry out the task.
Residual Current Devices	
7.1.1.21	RCD's must be used at AGL controlled sites in accordance with the relevant Australian Standard.
Managing Energised Electrical Work	
7.1.1.22	Electrical work must not be carried out on energised electrical equipment 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; • It may be necessary that life-saving equipment remain energised and operating while electrical work is carried out on the equipment; • It is necessary that the electrical equipment to be worked on is energised in order for the work to be carried out properly; • It is necessary for the purposes of testing; or • There is no reasonable alternative means of carrying out the work.
7.1.1.23	The justification for working on energised electrical equipment must be documented.
Managing Arc Flash	
7.1.1.24	A documented system for managing arc flash must be in place for all Business Units.
7.1.1.25	All work activities involving exposure to arc flash are to be undertaken by suitably competent and authorised personnel.
7.1.1.26	Each item of plant or area on AGL controlled sites where there is a risk of arc flash must show a visible label containing: <ul style="list-style-type: none"> • Electrical arc sign; • Level of PPE required; and • Numeric reference to the Arc Flash Register.

Version	Reviewed by	Approved by	Date approved	Next Review
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