



# Supervision Guideline for Apprentice Substations Electricians

This Guideline has been developed by the Victorian Electricity Supply Industry (VESI) Skills and Training Reference Committee to provide guidance to employers and apprentices.

*In the Victorian  
Electricity Supply  
Industry*

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DATE	VERSION	AMENDMENT	NAME
MARCH 2010	1	Completed document	VESI STRC
AUGUST 2012	2	Clarified definition of Supervisor included Updated footer and version number Updated levels of supervision for various tasks General formatting Circulated amongst industry for comment	VESI STRC
JULY 2013	3	Aligned content to the suite of Supervision Guidelines to ensure consistency across all Guidelines General formatting Updated footer and version number	VESI STRC
NOVEMBER 2013	4	New section in regards to the application of Safe Approach Distance - Special	VESI STRC
SEPTEMBER 2014	5	Updated the Supervision level definitions	VESI STRC

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## INTRODUCTION

This Guideline has been developed and established by the Victorian Electricity Supply Industry, (VESI) Skills and Training Reference Committee (STRC). Any changes to this Guideline can only be made with the agreement of the VESI STRC.

## PURPOSE

This Guideline has been developed to assist both employers and Substation Electrician Apprentices who enter into a training contract, to understand the obligations and expectations in regards to workplace supervision, taking into consideration the welfare of the apprentice in terms of safety and competency development

## SCOPE

This Guideline applies to the supervision of Substation Electrician Apprentices employed in the VESI who are undertaking an apprenticeship to the National Electrotechnology Electrician Qualification and completing the on job training component in a Substation environment. (Substation includes terminal stations, zone substations, field protection and voltage regulating devices).

## RESPONSIBILITIES

### Employer

- Ensure that employees meet the requirements of this Guideline
- Shall take all reasonable steps to ensure supervision of apprentices is carried out by a person that is competent to carry out the work
- Establish effective coaching/mentoring practices for their apprentices
- Provide opportunities for the Apprentice to develop their knowledge and skills

### Supervisors/Crew Leaders

- Ensure that apprentices and relevant employees meet the supervision requirements of this Guideline
- Apply this Guideline when planning or allocating work functions and activities in the work place for apprentices
- Take into consideration the kind of work being undertaken, especially with regard to live LV work or work in the vicinity of live apparatus
- Have regard to the level of competence of the apprentice for the particular task, skill or activity to be performed

### Apprentices

- Only undertake work or activity for which they have been trained and/or supervised in accordance with this Guideline.

## **SUPERVISION FRAMEWORK**

The Supervision framework describes the criteria and supervision levels that the employer and Apprentice shall allow for when planning work.

In determining the appropriate level of supervision to apply the following criteria shall be considered:

- Safety of the apprentice
- The work to be carried out
- The experience of the apprentice
- When the knowledge and skills is attained (off job training)

Apprentices should not undertake tasks unless they have received the relevant training. However this does not restrict an apprentice from observing or assisting qualified personnel undertaking tasks, for which the apprentice is not trained.

At all times during the term of their apprenticeship, the apprentice shall be under Direct, General or Broad Supervision as defined below and in Table 1 Work Types. The goal is for supervision to progressively diminish from direct to broad in the third or fourth year of the apprenticeship dependant on experience gained and the task. Note: Where 'No' is indicated in Tables 1 this means the task is not permitted.

### **Direct Supervision**

The onsite supervising tradesperson shall be in direct visual and audible contact with the apprentice, providing constant instruction and inspection of tasks being performed.

### **General Supervision**

The onsite supervising tradesperson shall make regular face to face contact with the apprentice, delivering progressive instruction and inspection on tasks being performed.

### **Broad Supervision**

The onsite supervising tradesperson shall provide instruction and inspection of tasks being performed by the apprentice.

## **RECOGNITION OF PRIOR COMPETENCIES**

There are situations where an apprentice has previously been assessed as competent and/or authorised to undertake certain activities (e.g. Licence to perform high risk work and/or Network Authorisations).

Exemptions are permitted for these activities provided that the licence to perform high risk work and/or Network Authorisations and appropriate refresher training records are current and with Network Operator approval.

## SAFETY OBSERVER ROLE

Apprentices who are new entrants into the industry and who have not acquired relevant skills and knowledge are not to be used as safety observers in their initial 24 month period.

Apprentices may be utilised, after the initial 24 month period, as a safety observer but only if they have:

- a) been trained in rescue and/or escape techniques applicable to the task being performed
- b) been trained in Safe Approach Distances
- c) have an understanding of the task or work practice being observed; and
- d) an understanding of the functions and movements of plant and equipment.

Under no circumstances shall an apprentice perform, assist or act as a Safety Observer for a person undertaking live low voltage work.

## SAFE APPROACH DISTANCE – SPECIAL

Apprentices shall not apply the use of Safe Approach Distance – Special.

## ACCESS AUTHORITIES

An apprentice cannot be a 'Recipient in Charge' of an Electrical Access Permit.

### First Year Apprentice

If working under an access authority the apprentice shall be bracketed on to the Access Permit as an Instructed Person with an authorised Access Permit recipient.

### Third - Fourth Year Apprentice

An apprentice can be authorised as an Authorised Recipient. This means that they can sign onto access permits in their own right and work within the bounds of the access permit but shall remain under supervision.

Prior to being authorised, an apprentice shall have successfully completed:

- the first year of the apprenticeship
- Apply Access procedures to work on or near electrical network infrastructure (Receive Access Permits)

### Post Apprenticeship.

On successful completion of their apprenticeship can sign on to an Access Authority as a Recipient in Charge.

**TABLE 1 - WORK TYPES**

This table provides guidance on the supervision requirements and the activities apprentices can undertake. It has been aligned to the training package.

Type of work		Year One	Year Two	Year Three	Year Four
Cable Tray installation	Ladder	Direct	General	General	Broad
	Tray & Duct	Direct	General	General	Broad
	Tray suspension brackets	Direct	General	General	Broad
	Fixings	Direct	General	General	Broad
Conduit installation	Conduit fittings (J/boxes, Bends, Etc.)	Direct	General	General	Broad
	Conduit fittings (J/boxes, Bends, Etc.)	Direct	General	General	Broad
Rough-in light and power	Catenary wire/fixings	Direct	Direct	General	Broad
	Building wire	Direct	Direct	General	Broad
	TPS Cables & ties	Direct	Direct	General	Broad
	Plug bases	Direct	Direct	General	Broad
	Stud brackets	Direct	Direct	General	Broad
	TPS Cable dressing ( Not accessible to contact with electrical supply)	Direct	Direct	General	Broad
Sub main installation	Cable pulling, Fixings (Not accessible to contact with electricity supply)	Direct	Direct	General	Broad
Cable Installation	Install and Maintain High voltage cable	Direct	Direct	General	Broad
	Install and Maintain Low voltage cable	Direct	Direct	General	Broad
	Test and Repair High and Low voltage cables	Direct	Direct	General	Broad

Type of work		Year One	Year Two	Year Three	Year Four
<b>Mains Installation</b>	Install earth	Direct	Direct	General	Broad
	Main earth electrode	Direct	Direct	General	Broad
	Fixings	Direct	Direct	General	Broad
	Bus duct (Not accessible to contact with electricity supply)	Direct	Direct	General	Broad
<b>Distribution board installation</b>	Install/maintain switchboard	Direct	Direct	Direct	General
	Lugs	Direct	Direct	Direct	General
	Glands	Direct	Direct	Direct	General
	All terminations (Including sub circuits)	Direct	Direct	Direct	General
	Fixings	Direct	Direct	Direct	General
	Service pillars	Direct	Direct	Direct	General
	Take off boxes (Not accessible to contact with electricity supply)	Direct	Direct	Direct	General
<b>Main switchboard installation</b>	Install switchboard	Direct	Direct	Direct	General
	Lugs	Direct	Direct	Direct	General
	Glands	Direct	Direct	Direct	General
	All terminations (Including sub circuits)	Direct	Direct	Direct	General
	Fixings (Not accessible to contact with electricity supply)	Direct	Direct	Direct	General



Type of work		Year One	Year Two	Year Three	Year Four
Light fitting and Bakelite installation	Lights	Direct	Direct	General	Broad
	Fixings	Direct	Direct	General	Broad
	Supports	Direct	Direct	General	Broad
	Trunking	Direct	Direct	General	Broad
	Suspensions	Direct	Direct	General	Broad
	Tubes & Lamps	Direct	Direct	General	Broad
	Socket outlets	Direct	Direct	General	Broad
	Switch plugs	Direct	Direct	General	Broad
	Mounting blocks	Direct	Direct	General	Broad
	Plaster brackets (Not accessible to contact with electrical supply)	Direct	Direct	General	Broad
Testing	Testing of installation for compliance	Direct	Direct	Direct	General
	Labelling	Direct	Direct	Direct	General
	Preparation of D/B legends (Not accessible to contact with electrical supply)	Direct	Direct	Direct	General
Fault Finding	During the fault finding process, the supervising electrician must demonstrate to the apprentice the correct procedures for fault finding	No	No	Direct (see note 1)	Direct (see note 2)
	<b>Note 1</b> - the 3rd year apprentice in the immediate presence of the supervising electrician can carry out basic fault finding tasks E.g. on single phase light and power circuits and apparatus				
	<b>Note 2</b> - the 4th year apprentice can carry out basic fault finding activities. In the immediate presence of the supervising electrician the 4th year apprentice can carry out more advanced fault finding task on power and control circuits and equipment				
Confirmation of isolation	The supervising electrician is responsible for the isolation of the installation	No	No	No	Direct
	During the isolation process the supervising electrician must demonstrate to the apprentice the correct testing procedures for electrical isolation				
	After isolation, the supervising electrician is to ensure the apprentice carries out the testing procedures to confirm isolation, under direct supervision, before work commences.				

Type of work		Year One	Year Two	Year Three	Year Four
Oil Sampling and testing	DGA Sampling	Direct	Direct	General	Broad
	Oil Filtering	Direct	Direct	General	Broad
	Dialectic testing	Direct	Direct	General	Broad
	PCB testing and removal	Direct	Direct	General	Broad
Zone/Terminals Stations	Maintain CB's and Transformers	Direct	Direct	Direct	General
	Maintain On Load Tap Changers (OLTC)	Direct	Direct	Direct	General
	Testing and Replacing Capacitor cans	Direct	Direct	Direct	General
	Testing and Maintaining Batteries and chargers	Direct	Direct	Direct	General
	Control Wiring	Direct	Direct	Direct	General
Distribution Substations	Install and Maintain LV Boards	Direct	Direct	General	Broad
	Install and Maintain HV Switchgear	Direct	Direct	General	Broad
	Install and Maintain Transformers	Direct	Direct	General	Broad
	Install and Maintain Cables	Direct	Direct	General	Broad
Safety Observer	Can only undertake Safety Observer roles in third and fourth year, under direct supervision. Qualified trades person have over riding responsibilities	No	No	Direct	Direct
Supervision of Contractor		No	No	No	No
Working Aloft	LADDER Work Aloft (Under EAP or Not Commissioned)	Direct	Direct	General	Broad
	EWP Work Aloft (Under EAP or Not Commissioned)	Direct	Direct	General	Broad

Type of work		Year One	Year Two	Year Three	Year Four
Distribution System	Install and Maintain Regulators and ACR's	Direct	Direct	General	Broad
	Voltage testing/voltage complaints	Direct	Direct	General	Broad
	Substation Load reading	Direct	Direct	General	Broad
General Maintenance	Substation Maintenance	Direct	Direct	General	Broad
Workshop/ Machine shop	Metal Fabrication <ul style="list-style-type: none"> <li>• Measure and cut</li> <li>• Acetylene</li> <li>• Welding</li> </ul>	Direct	Direct	General	Broad
	Drill Press	Direct	Direct	General	Broad
	Grinder	Direct	Direct	General	Broad
	Lathe	Direct	Direct	General	Broad

**TABLE 2 -PLANT TYPES**

**Plant types**

- Fork lift    Prior to operation must meet all regulatory requirements, i.e. age, training and hold the relevant WorkSafe licence to perform high risk work i.e.:
- EWP    a) Forklift truck operation  
b) Boom-type elevating work platform operation  
c) Vehicle loading Crane > 10mt  
( See Recognition of Prior Competencies on page 6 for further information)
- Truck-mounted crane ≥10 tonne