

National Supervision Guideline for Electrotechnology Apprentices

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Disclaimer

This National Supervision Guideline does not in any way replace any Commonwealth, State or Territory legislative and/or regulatory requirements and does not override any duty of care responsibilities, codes of practice and other relevant codes or regulations pertaining to the supervision of apprentices.

Mandatory requirements may vary between States and Territories, and in different worksite situations. Wherever practical, this document has incorporated elements of mandatory requirements that are common to most jurisdictions but users should familiarise themselves to specific requirements that may apply to them.

This National Supervision Guideline has been produced by Energy Skills Australia, the industry declared Industry Skills Council for the Electrotechnology, Electricity Supply, Generation and Gas Transmission sectors.

Established in 1995, Energy Skills Australia is an independent, not for profit, bipartite company committed to supporting high quality training and workforce development within the energy industries, refer our [website](#) for more information.

The Purpose of this Guideline

This National Supervision Guideline has been produced as advisory information for employers, employees, apprentices, training providers, regulators and other industry stakeholders involved in the training of electrotechnology apprentices.

This information has been developed by Energy Skills Australia through consultations with industry stakeholders.

Apprenticeships utilise a combination of on-the-job and off-the-job training to develop the full range of competencies required to successfully complete the apprenticeship.

Supervision of apprentices at work fulfils several purposes:

- Safety – supervision is a means of mitigating risk while the apprentice is developing competency in an industry with significant hazards and potentially severe consequences in the event of an incident occurring
- Quality – supervision contributes to ensuring the quality of apprentice work outputs are at an acceptable enterprise standard
- Learning support – supervision contributes significantly to the learning experience of the apprentice, especially to their ability to apply their knowledge and skills in varied circumstances

The type of supervision that is appropriate will vary depending on the work involved and the current competency level of the apprentice. It assists apprentices to learn good practice early on, supports them as they hone skills, and allows them to develop the confidence to step into their trade safely and effectively at the conclusion of the apprenticeship.

This National Supervision Guideline augments the Australian Government's "*National Code of Good Practice for Australian Apprenticeships*". It has been developed to assist both parties (employers and apprentices) entering into a "Training Contract/Contract of Training" to understand each other's obligations and expectations. The code is available from the Australian Apprenticeships [website](#).

This document will be amended from time to time to take account of changes in line with legislation, regulations, standards, technology, and/or key stakeholder views. Feedback on suggested changes is welcomed and should be directed to Energy Skills Australia in the first instance via office@e-oz.com.au.

Scope

This National Supervision Guideline applies to apprentices training under the Electrotechnology Training Package (UEE) or its predecessor or successor Training Packages.

It includes apprentices training in all disciplines including but not limited to:

- Electrician
- Electrical fitter
- Refrigeration and air-conditioning
- Instrumentation and control
- Data and voice communications
- Electronics and communications

Definition of Terms

The definitions below are provided to aid understanding of phrases used throughout this document.

Apprentice

A person in training undertaking an Apprenticeship under a "Training Contract"/ "Contract of Training" using the UEE training package or its predecessor or successor Training Package.

It can also apply, in context, to any person in training who is involved in workplace activities as a part of that training. This could include trainees undertaking Certificate II qualifications or existing tradespersons undertaking Skill Sets or higher qualifications such as Diplomas.

Contract of Training

A contract of training is an agreement entered into by an apprentice and an employer for an agreed period of time (typically 48 months). It will be in a form

recognised by State, Territory and Commonwealth governments. The purpose of the contract is to develop the apprentice to become a fully qualified and competent tradesperson.

The contract of training imposes obligations on both the apprentice and the employer. Those obligations include obligations to provide supervision and to provide a range of work for the apprentice to properly acquire the required competencies.

The contract of training will require a Training Plan to be negotiated with a Registered Training Organisation (RTO). The training plan will detail the off-the-job component of the apprentice's training.

In some jurisdictions a contract of training may be also called a training contract.

High Risk Work

High Risk work is defined under WHS / OHS legislation and regulations. It includes but is not limited to working at heights and working in confined spaces.

High risk work may impose additional supervision requirements.

Licensed electrical work

This refers to any work that is subject to electrical licensing or restricted electrical licensing in the State or Territory in which it is being performed.

The performance of licensed electrical work by apprentices is considered to be limited to those apprentices for whom their contract of training will lead to an electrical license or restricted electrical license to perform that licensed electrical work at the completion of their apprenticeship (For example, installing LV cables would be restricted to apprentice electricians).

Range of work

This may also be referred to as "Range of Conditions".

It is expected that an apprentice will have the opportunity to undertake work across a broad range of equipment, application and task types in order to develop the well-rounded competence of a tradesperson.

It is recognised that particular enterprises may specialise in an industry segment and their apprentices may develop specific competencies relevant to that segment, but this cannot be at the expense of core trade competencies.

Note that minimum expectations of a range of work can be imposed by regulators and by Competency Standard Units within a training plan.

Supervising Tradesperson

A Supervising Tradesperson is a qualified, experienced and (where applicable) licensed tradesperson¹ with the relevant technical competency, charged with oversight of an apprentice.

This oversight includes responsibility for the apprentice's safety and the development of technical competency. Supervisors may be work team leaders or a senior tradesperson in the team. The Supervising Tradesperson should also have an understanding of learning principals and the capacity to guide and support the apprentice's learning.

Training Contract

See Contract of Training.

Training Plan

A Training Plan is an agreement between an apprentice, employer and a chosen Registered Training Organisation. It details the Qualification the apprentice will undertake, the Competency Standard Units making up that qualification, and other supporting information.

Background to Supervision

Entry into Electrotechnology industry vocations is typically through State or Territory approved Apprenticeships. Electrotechnology Industry apprenticeships typically take approximately four years to complete. They utilise a mixed on-the-job and off-the-job training regime to develop an apprentice's full range of competencies.

The appropriate level of supervision that should be applied to a trainee or apprentice during the on-the-job component should be applied with respect to:

- The welfare of the apprentice in terms of WHS/OHS;
- The necessity for completed work to comply with minimum standards;
- The learning of new aspects of competency;
- The practicing of skills and exercising of knowledge to improve quality and efficiency of work;
- The application of skills and knowledge to a representative range of work; and
- Any mandatory requirements imposed by legislation, regulation or codes of practice.

¹ If the work being performed requires a license to perform it, then the Supervising Tradesperson must hold that license.

Supervision requirements need to be considered at the time that the allocation of work to the apprentice is being planned.

The tapering pattern of supervision, (progressing from direct through general to broad supervision), is a proven model in developing competence. Determining the appropriate level of supervision requires assessing both the technical and safety requirements of the work to be conducted as well as the apprentice's current experience and proven capability.

Although this Guideline includes nominal timeframes, these are for indicative purposes only and should not be used as a rule for each individual.

Progression through the supervision pattern should be based on an assessment of the technical and safety requirements of the work to be conducted, as well as the apprentice's current experience, proven capability and competency achieved.

At any given time during the apprenticeship, the apprentice is likely to be working under different levels of supervision for different tasks.

Levels of Supervision

Supervision means the level and pattern of control exercised over an apprentice when allocating work to be performed or undertaking that work.

There are three forms of supervision used in relation to this National Supervision Guideline. They recognise the need to monitor closely and provide high levels of support when the apprentice undertakes new or unfamiliar work with reductions in monitoring and support as the apprentice becomes competent.

Direct Supervision

Direct supervision describes a situation in which the Supervising Tradesperson constantly monitors the apprentice, reviewing their work practices and standard of work. This includes dedicated oversight of all activities performed by the apprentice.

The Supervising Tradesperson should remain readily available (within visual contact and/or earshot (audible range) at all times.

Direct supervision is normally appropriate where:

- The apprentice is new to the task or has not yet demonstrated a consistent ability to perform the task to a minimum standard;
- The task contains variations to basic work that are new to the apprentice;
- The formally assessed hazards and risks related to the task indicate direct supervision is appropriate;
- The apprentice has not yet completed off-the-job training that supports competent performance of the task; or

- There is a reasonable chance for unplanned events that may be beyond the apprentice's current ability to manage.

General Supervision

General supervision describes a situation in which the Supervising Tradesperson is not constantly reviewing the apprentice but remains in face-to-face contact on a recurrent (periodic) basis.

The Supervising Tradesperson continues to provide instruction and direction for tasks to be performed and must test the apprentice's work prior to commissioning (and/or energising) circuits, apparatus and/or equipment.

Although not necessarily in close proximity, the Supervising Tradesperson must be contactable for assistance or instruction as required.

General supervision is normally appropriate where:

- The apprentice has previously demonstrated their ability to perform the task safely and to minimum standards without need for constant intervention;
- The apprentice has demonstrated an understanding of any hazards and risks involved with the task and an ability to manage those risks appropriately;
- The apprentice clearly understands when and how to seek assistance and support;
- The formally assessed hazards and risks related to the task indicate general supervision is appropriate;
- The apprentice has an appropriate level of knowledge and practical skill from either or both on-the-job or off-the-job learning; and
- The apprentice has previously demonstrated an ability to manage (or seek assistance with) reasonably predictable unplanned events.

Broad Supervision

Broad supervision is only suitable for apprentices who have demonstrated an ability to conduct the intended work autonomously.

In this situation, the Supervising Tradesperson need only make occasional face-to-face contact but should continue to provide instruction and direction for tasks to be performed and must inspect and test the apprentice's work prior to commissioning (and/or energising) circuits, apparatus and/or equipment.

Although not necessarily in close proximity, the Supervising Tradesperson must be contactable for assistance or instruction as required.

Broad supervision may be appropriate where:

- The apprentice has previously demonstrated their ability to perform the task safely and to acceptable standards without need for supervisor intervention;
- The apprentice has demonstrated an understanding of any hazards and risks involved with the task and an ability to manage those risks appropriately;
- The apprentice has previously demonstrated their ability to assess and monitor hazards and risks involved with the task;
- The apprentice clearly understands when and how to seek assistance and support;
- The formally assessed hazards and risks related to the task indicate broad supervision is appropriate;
- The apprentice has a significant level of knowledge and practical skill from both on-the-job and off-the-job learning; and
- The apprentice has previously demonstrated an ability to manage (or seek assistance with) unplanned events that may occur.

Given that when an apprentice completes their training and becomes a tradesperson, they are expected to be able to work un-supervised, it is important that they should be able to work under broad supervision with minimal support by the time they near the end of the apprenticeship.

Regulatory restrictions to broad supervision may exist in some circumstances. In such cases where general or even direct supervision may be mandated, it is still important that the apprentice develops the competency to perform the work without intervention by the supervisor before the end of the apprenticeship in order for them to be a safe and reliable tradesperson.

Regulator defined levels of Supervision

It should be noted that some Electrical Regulators consider that there are only two levels of supervision applying to apprenticeship/traineeship training when performing electrical work.

The regulators descriptions and the descriptions in this National Supervision Guideline generally correspond as follows:

Regulator supervision terminology	Supervision guideline terminology
Direct supervision	Direct supervision
Indirect supervision	General supervision
Indirect supervision	Broad supervision

Selecting a level of Supervision

The level of supervision that is appropriate should be in context with the tasks to be performed, the environment in which the tasks are to be performed and the current competence of the apprentice who is to perform the tasks.

The following should be considered:

- Requirements of any legislation, regulations, duty of care responsibilities, or codes of practice,
- The employer's and supervisor's assessment of the apprentice's ability to perform the tasks, including;
 - Past experience doing the same and similar work,
 - The quality of the work and compliance with good work practices on past occasions,
 - The level of support from required in doing the work on past occasions, and
- Supervision guideline tables, refer pages 13-16, provide a pattern of supervision considered appropriate for typical application.

Employer and Supervisor Support of Training

Employers are responsible for taking all reasonable steps to ensure that an apprentice's work activities during the term of apprenticeship are such that they experience a suitable mix of work activities relating to the competencies associated with their training program.

It is important that, over the period of the apprenticeship, the apprentice:

- Gains experience with all of the core competencies of the trade
- Gains experience with a representative range of conditions
 - *Examples of a representative range of equipment might include different types, brands, models, capacities*
 - *Examples of a representative range of methods might include different installation environments, structures, fixings, or techniques*
 - *Examples of a representative range of applications might include different customer uses of the product or service*
- Has the opportunity to start competency development under direct supervision then progress to general and finally broad supervision as proven competency develops

The supervisor role is also critical to the training outcome. The apprentice needs the supervisor to:

- Help the apprentice minimise any negative outcomes, especially in the earlier stages of competency development,
- Help the apprentice interpret and assimilate new information and contexts,
- Provide opportunities to demonstrate capabilities in a safe manner, and
- To assist the apprentice with their obligation to record workplace experience by verifying their workplace records (profile or work log records).

Apprentice Support of Training

The apprentice is required to be proactive with their own training. This includes:

- Working safely and to the best of their ability,
- Asking appropriate questions when unsure of facts or requirements,
- Respecting the contribution being made by employer and supervisors,
- Diligently monitoring their own progress and documenting their workplace experience (profile or work log records in the form required by their RTO / regulators).

Regulatory Requirements

As previously stated, nothing in this National Supervision Guideline should be construed as an indication that any regulatory requirement set out in Acts, Regulations, Australian Standards, or Codes of Practice can be ignored or avoided.

Specific regulatory requirements may vary across different States and Territories and across different industries and trades.

Electrical Licensing

It is a requirement of electrical regulators in each State and Territory that all licensed electrical work be performed in accordance with the applicable regulations and standards, particularly AS/NZS 3000 Electrical Installations (wiring rules) and AS/NZS 4836 Safe working on low-voltage electrical installations.

A person carrying out licensed electrical work who is not an apprentice must have an electrical licence that is of the correct type and current in the jurisdiction in which the work takes place.

Apprentices engaged under a Contract of Training for specific trades are permitted to carry out certain types of electrical work under the supervision of a licenced practitioner.

The supervising electrical worker is obligated to take all reasonable steps to ensure that all electrical work is checked, tested and complies with appropriate Acts, Regulations and Australian Standards.

Employers of electrical workers and electrical workers themselves, (which includes apprentices) must be aware of, and comply with, the requirements of any local State / Territory Electricity Act, local Electricity Supply Authority requirements, Work Health and Safety Law requirements (duty of care), Codes of practice, permit systems, and any other relevant code or regulation. Information regarding applicable requirements should, in the first instance, be directed to the bodies responsible for those requirements.

In the case of a work covered by a restricted electrical license, the supervisor may hold either the appropriate restricted electrical license or an unrestricted electrical license.

Other Licensing and Registration Requirements

Electrotechnology apprentices may also be engaged in work subject to other forms of licensing or registration. Examples include refrigeration work regulated by the Australian Refrigeration Council and communications cabling work regulated by the Australian Communications and Media Authority.

Employers and apprentices engaged in any regulated work must be aware of and comply with all relevant regulatory requirements.

Typical Patterns of Supervision

Note that the following tables indicate typical supervision patterns for apprentices over time but the information in the table should not be used in place of regulatory requirements where these may apply or in place of proper assessment of the apprentice's ability to perform the work.

Table 1: Licensed Electrical Work

Type of work	Time served - typical				
	Phase 1A 0 to 6 months	Phase 1B 6 to 12 months	Phase 2 12 to 24 months	Phase 3 24 to 36 months	Phase 4 36 to 48 months
Install cable support and mechanical protection	Direct	Direct / General	General	Broad	Broad
Lay wiring/cabling and terminate accessories exceeding extra-low voltage	Direct	Direct/General	General	General	Broad
Install apparatus & equipment exceeding extra-low voltage	Direct	Direct	Direct / General	General	Broad
Maintain, troubleshoot and repair faults associated with apparatus & circuits exceeding extra-low voltage (De-energised)	Direct	Direct	Direct	Direct / General	Broad

Type of work	Time served - typical				
	Phase 1A 0 to 6 months	Phase 1B 6 to 12 months	Phase 2 12 to 24 months	Phase 3 24 to 36 months	Phase 4 36 to 48 months
Proving de-energisation of LV Installations and Equipment (Verify isolation from all sources of supply)	The supervisor is responsible for proving isolation before a phase 1 or phase 2 apprentice commences the work but the apprentice should be required to personally reconfirm de-energisation on every occasion to instil good working practices.			Direct	Direct / General ²
Test LV apparatus & circuits (De-energised)	Direct	Direct	Direct	Direct / General	General / Broad ³
Undertake commissioning procedures for LV apparatus and associated circuits (No access to exposed LV)	Direct	Direct	Direct	Direct / General	Broad
Testing for LV System integrity and operability (Energised LV)	Simulated at RTO only	Simulated at RTO only	Simulated at RTO only	Simulated at RTO only	Direct
Install & maintain explosion protect equipment	Direct	Direct	Direct	Direct / General	General

² General supervision should be restricted to apprentices who have completed all relevant training and to jobs where the supervisor has completed a hazard assessment and ensured the apprentice is competent to undertake the de-energisation task.

³ Broad supervision is only appropriate after successful completion of the electrical installation safety testing component of training BUT all electrical apprentices are to be competent in testing a full installation at the point of becoming a Tradesperson and becoming eligible for a license.

Type of work	Time served - typical				
	Phase 1A 0 to 6 months	Phase 1B 6 to 12 months	Phase 2 12 to 24 months	Phase 3 24 to 36 months	Phase 4 36 to 48 months
Disconnecting and reconnecting fixed wired electrical equipment connected to supply up to 1000 volts a.c. or 1500 volts d.c.	The supervisor is responsible for proving isolation before a phase 1 or phase 2 apprentice commences the work but the apprentice should be required to personally reconfirm de-energisation on every occasion to instil good working practices.			Direct	Direct / General ⁴
Attaching flexible cords and plugs for supply up to 1000 volts a.c. or 1500 volts d.c.	Direct	Direct	Direct / General	General / Broad	Broad

⁴ General supervision should be restricted to apprentices who have completed all relevant training and to jobs where the supervisor has completed a hazard assessment and ensured the apprentice is competent to undertake the de-energisation task.

Table 2: Other Electrotechnology Industry Work

Type of work	Time served - typical				
	Phase 1A 0 to 6 months	Phase 1B 6 to 12 months	Phase 2 12 to 24 months	Phase 3 24 to 36 months	Phase 4 36 to 48 months
Assembling and installing ELV and non-electrical hardware or equipment	Direct	Direct / General	General	General	Broad
Installing ELV cable support and mechanical protection	Direct	Direct / General	General	General	Broad
Lay ELV wiring/cablings and terminate ELV accessories	Direct	Direct	Direct / General	General	Broad
Maintain, troubleshoot and repair faults associated with ELV Apparatus & circuits	Direct	Direct	Direct	Direct / General	Broad
Undertaking commissioning procedures of ELV apparatus and associated circuits	Direct	Direct	Direct	Direct / General	Broad
Testing ELV apparatus and circuits	Direct	Direct	Direct	Direct / General	Broad
Handling non-flammable refrigerants (restricted to apprentices who hold a Refrigeration and air-conditioning trainee licence)	Direct	Direct	General	General	Broad
Handling flammable refrigerants (restricted to apprentices who hold a Refrigeration and air-conditioning trainee licence)	Direct	Direct	Direct	General	Broad

Special Supervision Provisions

The following provisions are suggested in relation to specific high risk work activities.

Working near live parts

Extra Low Voltage (below 50 volts a.c. or 120 volts d.c.)

Where there is a risk of an apprentice coming into contact with exposed live ELV conductors, apparatus or accessories then:

- Specific risks associated with the work should be assessed,
- The apprentice's competence in performing the same work on de-energised (but simulated live) systems should be assessed and proven, and
- The apprentice should be under the supervision of a competent person at a level commensurate with the assessed risk.

Low Voltage (between 50 and 1000 volts a.c. or 120 and 1500 volts d.c.)

Where there is a risk of an apprentice coming into contact with exposed live LV conductors, apparatus or accessories then:

- The apprentice's competence in performing the same work on de-energised (but simulated live) systems should be assessed and proven,
- The apprentice should be under the direct supervision of a competent licensed person, and
- All provisions of legislation, regulations, standards and codes of practice (including AS/NZS 4836 – Safe Working on low voltage electrical installations) must be followed.

Testing for system integrity and operability whilst installations or equipment are energised should not be carried out by apprentices except in the final phase of their apprenticeship, after they have completed the electrical installation safety testing component of training, and then:

- The apprentice should be under the direct supervision of a competent licensed person, and
- All provisions of legislation, regulations, standards and codes of practice (including AS/NZS 4836 – Safe Working on low voltage electrical installations) must be followed.

Note: All electrical apprentices are to be competent in testing a full installation at the point of becoming a Tradesperson and becoming eligible for a license.

High Voltage (above 1000 volts a.c. or 1500 volts d.c.)

Apprentices should not work near⁵ exposed live HV conductors, apparatus or accessories.

Competent assistants and safety observers

Apprentices who are new entrants to the industry and who have not acquired relevant skills and knowledge should not be used as competent assistants or safety observers.

Relevant knowledge includes an understanding of the task being observed, specific hazards involved, competency in first aid and CPR, and rescue procedures as required by legislation or any prevailing industry guidelines.

Under no circumstances should an apprentice assist or act as a Safety Observer for a live HV work party.

School based apprenticeships

The typical patterns of supervision assume a full-time apprenticeship. School based apprenticeships are not full time and so the columns relating to “Time served” should be read as relating to the period spent doing electrical apprentice specific training (on-the-job with the employer and undertaking electrical qualification training at the RTO).

For example: A school-based apprentice doing 80 days of paid work over a year with 20 days of RTO electrical training has the equivalent of 20 weeks of experience in a year compared to a full-time apprentice with a nominal 45 weeks (allowing for leave) per year. Further, allowance must be given to the school-based apprentices potential slower acquisition of competency due to the fact that they are not in the electrical work environment on a daily basis. On this basis, this example apprentice could take up to 18 months to reach the same point as an equivalent full-time apprentice at the end of 6 months.

Specific considerations and judgements will be required for each school-based apprenticeship case.

⁵ In this context “near exposed HV means a situation where there is a reasonable possibility of a person either directly or through any conducting medium (e.g. mobile plant) coming within the safe working distances.