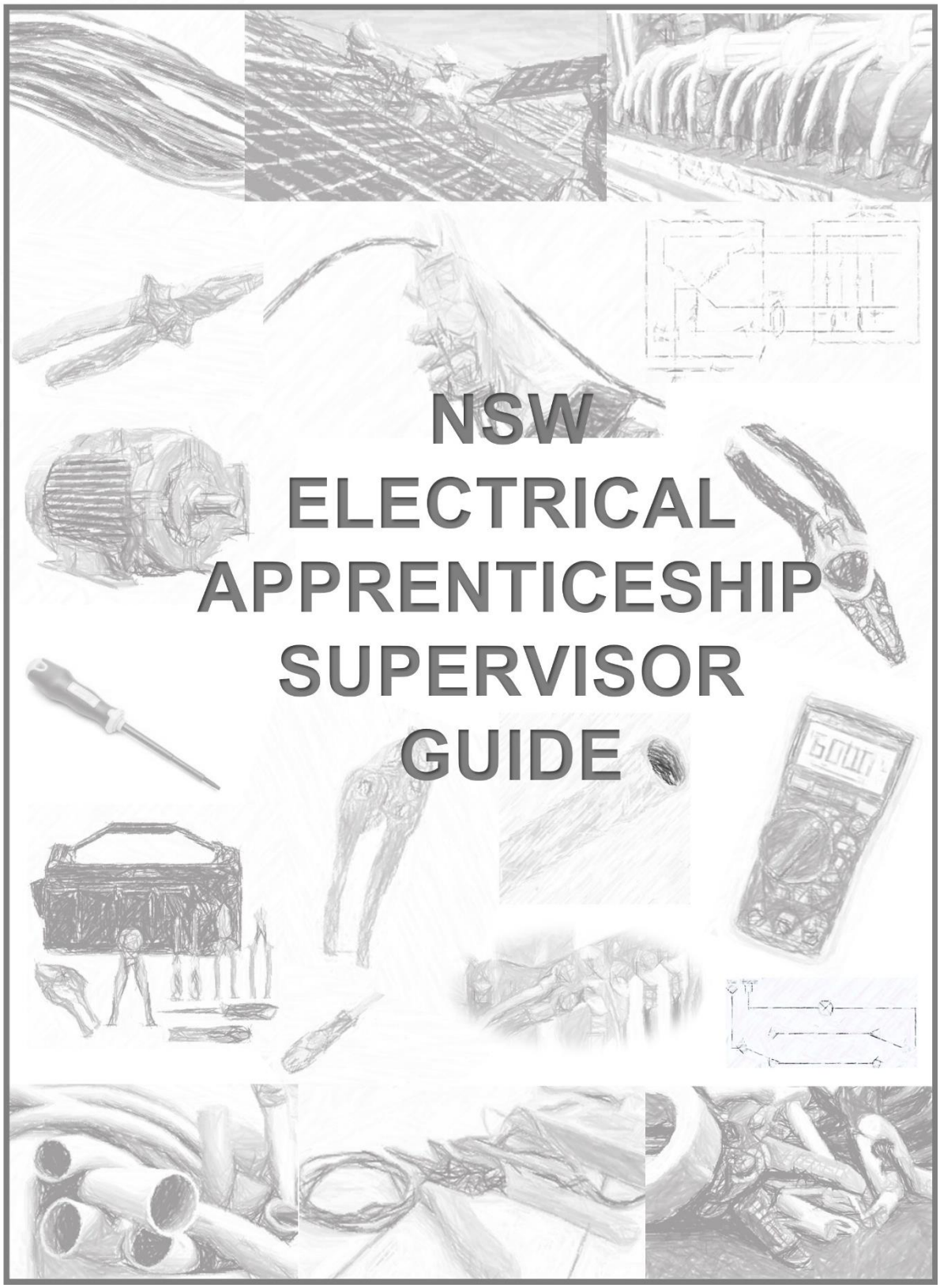
NSW Utilities & Electrotechnology
Industry Training Advisory Body (ITAB)



NSW ELECTRICAL APPRENTICESHIP SUPERVISOR GUIDE

NSW Utilities & Electrotechnology
Industry Training Advisory Body (NSW UE ITAB)

15 December 2021

Developed by:	NSW Utilities & Electrotechnology Industry Training Advisory Body (NSW UE ITAB)
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Contents

The Purpose of the Guide – Electrical apprenticeship

This policy guideline, "Electrical Apprenticeship[1] Supervisor Guide" is one of several advisory guidance resources developed for the supervision of *Electrotechnology[2] apprentices* in training in NSW. It has been developed with the involvement of key industry stakeholders in NSW. These include employer and employee representative bodies, practitioners, regulators, training providers and workers who have drawn on much experience in the industry and/or are involved in providing direct or indirect supervision of *Electrotechnology apprentices*. The Guide has been initiated by the industry with the aim of:

- improving the quality of apprenticeship supervision,
- promoting increased awareness of the roles and responsibilities of supervisors in developing and mentoring apprentices to be qualified tradespersons,
- improving safe work practices and the quality of graduating apprentices, and
- providing a resource for state government agencies who monitor apprenticeship 'Contracts of Training'.

This Guide specifically covers the apprenticeship titled *Electrotechnology - Electrician Certificate III*. This involves a 'Contract of Training' between the employer and the apprentice. On successful achievement of the qualification, an apprentice becomes eligible to apply for an "*Electrician's[3]*" licence.

For more information refer to:

- NSW Commissioner's Information Bulletin **704** (https://www.training.nsw.gov.au/cib_vto/cibs/cib_704.html), and
- the Vocational Training Order (VTO) of approved apprenticeships and traineeships in NSW.

The **Electrotechnology – Electrician** VTO specifies the *Certificate III in Electrotechnology Electrician* qualification as the NSW approved apprenticeship qualification which the NSW government formally recognises for Registered Training Organisation (RTO) funding purposes in NSW. An RTO is funded once the 'Contract of Training' is signed by the employer and apprentice along with a Training Plan developed by the RTO, outlining the training and assessment program that will be delivered to assist the apprentice gain the qualification.

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[1] *Apprentice includes the term trainee or leaner – Apprenticeship also includes Traineeship*

[2] *Electrotechnology Apprenticeship vocations encompass communications; computer systems including information technology; data, video and voice communications systems and components including telecommunications, networks, fire and security; electrical systems including equipment/machines/devices and installations; electricity supply generation, transmission and distribution systems; electronics systems and components including business equipment; instrumentation and industrial automation and control systems and devices; lift systems; refrigeration and air conditioning systems including appliance servicing; and renewable/sustainable energy systems*

[3] *Electrician – a qualified person who has been issued a licence having met requirements, to perform permitted electrical work in accordance with the law by the NSW electrical regulator, and is required to renew the licence periodically as required*

The qualification is drawn from, and contained in, the nationally endorsed Electrotechnology Training Package[4] (UEE), developed by industry. The outcome of the qualification also interrelates with the requirements of electrical licensing in NSW which, on successful achievement of the qualification, an apprentice becomes eligible to apply for an "*Electrician's*[5]" licence.

This Guide was developed through extensive consultations with key stakeholders. It is a first version release and will be amended from time to time to take account of changes in legislation, regulations, standards, technology, and/or key stakeholder views. Feedback on suggested changes is welcomed and should be directed to the NSW Utilities & Electrotechnology Industry Training Advisory Body (NSW UE ITAB) for re-submission to key stakeholders.

This Supervision Policy Guideline also augments the "***National Code of Good Practice for Australian Apprenticeships***", by the Commonwealth Government. It has been developed to assist both parties (employers and apprentices) entering into a "*Training Contract*" / 'Contract of Training' with a clear understanding of each other's obligations and expectations. A copy of the code is available via the Australian Apprenticeship website or by phone: **www.australianapprenticeships.gov.au** or 1800 020 108. A further general supervision guide[6] has been produced by Training Services NSW, **Supervising your apprentice or trainee – A guide for workplace supervisors**, October 2018 that should also be reviewed and considered in determining the level of supervision to provide.

The Guide presents a model of best practice supervision and for Supervisors responsible for supervising and mentoring apprentices during their period of training. It is intended to promote more sound supervision and safe work practices, leading to reductions in danger to life/property and, the development of quality tradespersons for the industry.

Also, the Guide presents a valuable and timely resource for Registered Training Organisations (RTOs) and apprentices, who can utilise it to monitor their development, during the course of their apprenticeship. This particularly applies to reporting systems, such as Profiling, logbooks or portfolio, where the apprentice and the supervisor are responsible for recording and authenticating workplace activities and experiences in accordance with a prescribed data reporting arrangement.

At the beginning of the 'Contract of Training', the RTO will establish, in consultation with the employer and apprentice, a 'Training Plan' and a training and assessment program to be used for the apprentice to achieve the qualification. It will also address the system of workplace evidence to be used.

[4] *www.training.gov.au*

[5] *Electrician – a qualified person who has been issued a licence having met requirements, to perform permitted electrical work in accordance with the law by the NSW electrical regulator, and is required to renew the licence periodically as required*

[6] *https://www.training.nsw.gov.au/apprenticeships_traineeships/employers/getting_started/supervise_app_tee.html*

In this light, the Guide provides a framework for supervisors, RTOs and apprentices to refer to, and be well armed with, the expectations and patterns of best practice supervision that should be provided to support and ensure all parties to the 'Contract of Training' meet their obligations and a well-rounded and highly qualified electrical tradesperson graduates from their apprenticeship.

The structure of the Guide is comprised of the following key sections:

- Introduction – an overview of the apprenticeship arrangements,
- Apprentices,
- Employers,
- Supervisors,
- Conceptual model of apprenticeship supervision,
- A table of Supervision of Electrical Apprentices outlining electrical activities and typical Pattern of Supervision of Electrical Apprentices at Appendix A, and
- A section, that explains key definitions used in the Guide, at Appendix B – Definitions

Disclaimer: *It should be noted that this Policy Guideline does not in any way replace any Commonwealth or State 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 respective parties.*

INTRODUCTION

Employers have a duty to ensure the safety of their workers. (In this Guide, 'employers' refers to Person Conducting a Business or Undertaking (PCBU) in the electrical industry; generally electrical contractors employing licensed electricians).

With respect to electrical installations pursuant to AS/NZS 3000 and related standards and codes of practice both employers and licensed electrical workers must also deliver safe and fit for purpose electrical installations to their clients or customers.

This means that if employers, are responsible for their supervision and safety. In larger firms, the employer may in turn employ supervisors. Where this occurs, the supervisors assume the employer's/contractor's obligations in terms of assuring safety at work and the integrity of the products or services they deliver.

This supervision responsibility also extends to the engagement and support of apprentices into the industry. There is an added responsibility not only to supervise an apprentice, but to provide an apprentice with specific support and learning opportunities. This is often demonstrated through on-the-job supervision, mentoring and coaching activities, typically augmented by day release to undertake technical education at the approved Registered Training Organisation's (RTO's) premises.

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Respective responsibilities are enshrined in the 'Contract of Training', which both parties have signed in concert with an RTO to follow a Training Plan, and which, the State Training Authority (Department of Education – Training Services NSW) have approved when confirmed compliant with the VTO and are responsible for monitoring it.

APPRENTICES

Apprentices' responsibilities

Before apprentices are permitted into the workplace for the first time, they should be made aware of all of the following:

General requirements:

- requirements for following instructions and directions
- the entitlements, conditions and obligations that go with being an employee and administrative arrangements that apply and need to be followed
- orientation to the workplace areas, zones, access arrangements and emergency procedures
- key personnel in the organisation
- workplace culture and values
- team members and reporting protocols
- limitations to be aware of – asking for help when in doubt
- not taking risks - always to seek advice and report incidents
- workplace policies
- procedures to follow, in undertaking allocated work tasks or activities, including but not limited to:
  - laws,
  - standards,
  - codes of practice,
  - health, safety, welfare, environment and security practices.
- arrangements and requirements for access, safe use and storage of tools, instruments, technology, equipment, plant and support resources/records/manuals/specifications
- requirements for attending and completing scheduled training delivered by the Registered Training Organisation (RTO) including any obligations for maintaining a competency record book or work evidence log of work undertaken in the workplace

EMPLOYERS

An employer is responsible for duty of care obligations under statute when they employ and apprentice. The employer (the person, organisation or company that employs the apprentice) undertakes to provide the apprentice with an environment conducive to learning and acquiring the necessary competencies (knowledge and skills) required of the trade as agreed to in the 'Contract of Training'.

The term employer includes Group Training Companies or similar bodies who typically, assign an apprentice to several host employers during their competency development period. In these cases, the GTO is responsible for ensuring that host employers have a similar duty of care commitment.

Employers' responsibility to provide scope of work for apprentice

Supervisors are required to ensure, within the terms of the 'Contract of Training' and 'Training Plan' that their apprentices experience a suitable mix/range of work/activities that encompasses over time, varying levels of supervision and different types of processes, equipment and conditions commensurate with their technical educational development, and which relate to the range of competencies listed in their training/competency development program. To accomplish this requirement, a holistic approach should be taken when allocating work/activities to the apprentice. It includes implementing suitable arrangements, such as exploring rotation where a suitable range of work/activities cannot be provided within the organisation or with other organisations.

Employers' responsibilities for apprentices

The employer is also responsible for providing an apprentice with the following:

- access to the full range of work required to support development of the units of competency outlined in the competency development program (Training Plan) specified in the qualification requirements; in the case of GTOs, this may require moving apprentices to different host employers to provide the required range of experience;
- suitably qualified or appropriately experienced supervisors to supervise the apprentice in the workplace and to organise, support, mentor and facilitate the development of the necessary aspect (workplace component) of the units of competency, including:
  - verifying workplace performance evidence in approved record logs, and
  - liaising with the Registered Training Organisation (RTO) to monitor, respond to matters of concern and review the apprentice's progress towards achievement of all of the requirements of the units of competency for the qualification;
- time off work, with pay, to undertake training and assessment delivered by the contracted Registered Training Organisation (RTO);
- a safe working environment;
- a work environment free from any form of harassment; and
- other benefits specified in the 'Contract of Training' or industrial arrangements (e.g. site allowance, tool allowance).

Specific safety obligations of the employer

- The employer must ensure that, before entering any work site, the apprentice is familiar with and understands the Risk Management process – Hazards, Risks, Risk Controls (hierarchy of risks), specifically related to Workplace hazards e.g., dangers of interlocked electrical systems be energised automatically

- Associated risks:
  - shock/electrocution
  - arc flash and blasts
  - burns
  - indirect incidents such as falls, cuts, etc.

- Managing risks, including:
  - proving dead – energised versus de-energised/isolation
  - special tools used and PPE that must worn when performing different types of electrical work

Personal Protective Equipment (PPE) - the selection and use of PPE, which includes protective work clothing, insulated footwear (sole), head protection (helmet, glasses), insulating gloves, other special electrical safe work protective equipment or shields in protecting against injury as well as being trained in the use of mats, covers, CPR-first aid, recovery apparatus and other recognised techniques and practices that heighten safety outcomes.

Safe work policies and procedures – an understanding of and full familiarity with the safe work policies and procedures of the employer and any prevailing laws, standards or codes of practice that apply. These will include but are not limited to:

- "No Live Work"
- "Test Before you Touch"
- Never proceeding to perform a task or job where uncertainty of the correct procedure exists.

Further, apprentices should be familiar with SWPs:

- Lockout/Tagout systems and processes – ensuring they know about isolating any circuits they may work on.
- Test and Tag systems and processes – ensuring the electrical equipment they use is fit for purpose
- RCDs operating principles and practices
- Permit to work systems and processes, where applicable

Supervisor support

Apprentices must be provided with opportunities to fully understand their role and the role of their supervisors. This includes the principles and practices of the well-established and industry recognised, three levels of supervision (see Appendix A - Definitions).:

1. direct/constant,
2. general intermittent, and
3. broad minimal supervision.

Apprentices must be advised not undertake any work that has not been approved by their supervisor(s).

Apprentices must be inducted to the site where they are working. This includes full briefing on the Safety Management System employed at the client's site.

Supervisors should ensure that the apprentice has completed preparatory safety training before being introduced to a work site for the first time.

Supervisors who have been charged with the responsibilities of supporting an apprentice's competency development must be conversant with the requirements of the Training Plan and key aspects of the Competency Development/Training Program, such that they can monitor, provide advice and assist the apprentice to undertake relevant aspects of the Program. Within this responsibility context a supervisor must also ensure they act as a mentor to the apprentice by providing:

- a role model,
- regular feedback, and
- learning and competency development opportunities, whenever possible such that they correlate with the Program.

It includes monitoring the Apprentice's progress in their achievements in the off-the-job component of the program, allocating work that corresponds with the Apprentice's stage of technical capability development, frequently authenticating the on-the-job work completed, and intervening where necessary to adjust, correcting anomalies in expected development or instituting corrective behaviour measures to improve performance.

SUPERVISORS

Role of Supervisors

A key responsibility of supervisors, who in some cases may also be the owner of the business, is to manage the implementation of their organisation's Safety Management System (SMS) as well as equivalent client's safety system (where applicable). The SMS should involve:

Safety

- Providing induction to the workplace, including the local Safety Management System (SMS).
- Identifying any site-specific hazards and developing a Safe Work Method Statement (SWMS) also incorporating Safe Work Procedures (SWPs) for specific high-risk tasks.

- Ensuring that everyone working on the site has signed on to the SWMS. This may involve consultation, formal communiques, toolbox talks and one-to-one conversations.
- The employer, and more specifically, the relevant supervisor being satisfied that their workers are:
  - i) competent to work safely, and
  - ii) can follow the Safe Work Procedures (SWPs) that relate to the tasks the worker/apprentice undertakes, the equipment they will use and the environments in which they will work.

- Supervisors listening to and addressing any concerns raised by their team members including apprentices and ensuring team members work together constructively and settle any disputes that may arise in accordance with their organisation's policies and procedures.

Training

- Check through questioning and discussion that any apprentice entering the workplace for the first time has:
  - completed the organisation's basic WHS induction training, and
  - is familiar with the organisation's general policies and procedures with respect to WHS in the workplace.

- Supervisors recognise their responsibility for training apprentices as mentors, in addition to supervising their work. This includes:
  - liaising with the apprentice's RTO,
  - identifying their training needs,
  - addressing training deficits,
  - continuously assessing their progress in the development of their competencies to perform a range of increasingly complex tasks and/or jobs, consistently, over a period of time and across a representative range of processes and equipment, to the standard required in the workplace
  - frequently authenticating the apprentice's workplace evidence to be reported to the RTO and the organisation's internal processes, and
  - monitoring and keeping records of the apprentice's performance.

Assessing Apprentice Competency Development

Supervisors act as mentors to develop apprentices' workplace competence, and must monitor and determine whether competence is being developed and achieved over time, by assessing their:

- Understanding of Risk Management including hazard identification, risk assessment and risk management.
- Performance of specific tasks to appropriate standards including specific technical techniques and the sequence in which tasks are performed.
- Application of underpinning technical education (knowledge) and skills in the performance of allocated work/activities.
- Understanding of, and compliance with, workplace policies and procedures.
- Problem solving in the workplace.
- General approach to work, concentration, situational awareness, reporting of workplace activities, etc.
- Progress in the apprentice's competency development against the competency development program for a national qualification and performance in the off-the-job component and on-the-job component.

In the case of Group Training Companies/Organisations (GTOs) that engage host employers to provide the scope of work and provide the day-to-day supervision of the apprentice, the supervision and mentoring responsibilities may differ to the arrangements outlined above. In these cases, the GTO and the host employer will have entered into a specific agreement as to how these aspects and arrangements will be managed. These arrangements fall outside the scope of this Guide and are therefore, not covered.

What makes a good Supervisor/Mentor?

Supervisors/mentors should be:

- licensed (in the specific licence and to the same level in the respective occupation, discipline, or domain),
- very conversant with management/supervision principles, workplace systems and procedures including compliance and knowledge of safety and risk requirements for the specific task,
- approachable by team members looking for support, and
- good coaches/mentors/instructors/teachers and attentive to the workers' state, condition and competence.

Lead Supervisor role:

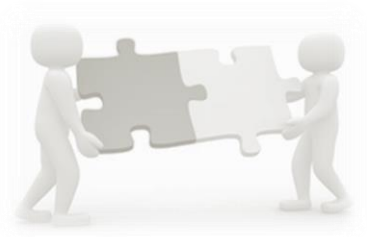
It is likely that in many cases apprentices may be supervised and mentored by different supervisors/mentors over the course of an apprenticeship period. Whilst this is a naturally occurring workplace practice, the employer nonetheless, is responsible for the overall monitoring and training of the apprentice, having entered into a 'Contract of Training' with the apprentices to assist them complete the program and gain the qualification. To ensure conformity with this obligation the employer is best advised to appoint a Lead Supervisor. Someone, who is wholly responsible for the overall monitoring and oversight of the apprentice's development.

The Lead Supervisor would be responsible for the apprentice's competency development over the duration of the apprenticeship, including:

- providing support and facilitating learning and necessary workplace experiences,
- organising and liaising placement of the apprentice with other supervisors/mentors for specific periods of time, and
- monitoring and addressing the apprentice's performance in work and the overall competency development program delivered by the RTO.

In small companies it is very likely that the Lead Supervisor is also the supervisor/mentor and may supervise and mentor the apprentice throughout the apprenticeship duration. In other instances, it may be a shared role. Different approaches are appropriate and an accepted practice in the industry. Prevailing arrangements will be depended on the size and vision of the company or organisation, in terms of number of employees and applicable policies and procedures.

Notwithstanding, someone in the company must be assigned the role of Lead Supervisor in order for the employer to meet their obligations to the apprentice.

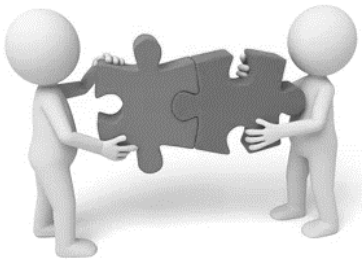


Supervising and mentoring apprentices:

The employer in appointing a Lead Supervisor must ensure they are:

- Familiar with different levels of supervision and how they apply to the experience and competence of their apprentices at a particular stage of their development and work with other supervisors/mentors to apply respective practices accordingly
- Familiar with training requirements and the competency development plan, and the specific content of the program an apprentice is required to undertake and complete

- Good teachers and role models – especially with regard to motivation, communication, safe work procedures and technical development of apprentices as well other supervisors/mentors
- Environmentally aware – keeping track of different apprentices' activities and keeping them away from any workplace hazards
- Able to assess apprentices' competency development at periodic intervals, provide support to address deficits, authentic workplace work activities undertaken, and justify the assessments they make of their workplace development; and
- Provide support advice or resources when an apprentice may experience difficulties, matters of personal wellbeing or workplace issues.



Duties of a Supervisor/Mentor

The mentoring role of a supervisor is to:

- Explain typical workplace procedures and how to work safely on different tasks, with different equipment and in different environments. This includes ensuring an apprentice having been explained the relevant procedure(s) and safe work practices to follow, has read and signed the relevant Safe Work Procedure for the task(s), environments or equipment they are required to undertake and work on.
- Advise on the correct selection and use of test instruments and related safety measures.
- Take all reasonable steps to ensure that all electrical work is checked, tested and complies with the Wiring Rules and electrical safe work practices including isolations.
- Demonstrate techniques and practices in the correct performance of specific task(s) or job(s) assigned. Where the apprentice has previously shown a technical aptitude in the same assigned work, then the apprentice should be asked to explain the technique(s) and practice(s) they will employ to carry out the work before being permitted to undertake it. The level and depth of explanation they would be expected to provide is dependent on their progress and stage of development.

Electrical safety considerations

Electrical apprentices should, as a general rule, be advised and instructed in CPR and rescue techniques; and the correct selection and use of personal protective equipment (PPE), safety equipment; Safe Work Procedures (SWPs) and testing equipment as applicable to electrical related work.

Levels of Supervision

Supervisors must provide the level of supervision and support required based on the apprentice's experience and the types of work and activities being undertaken.

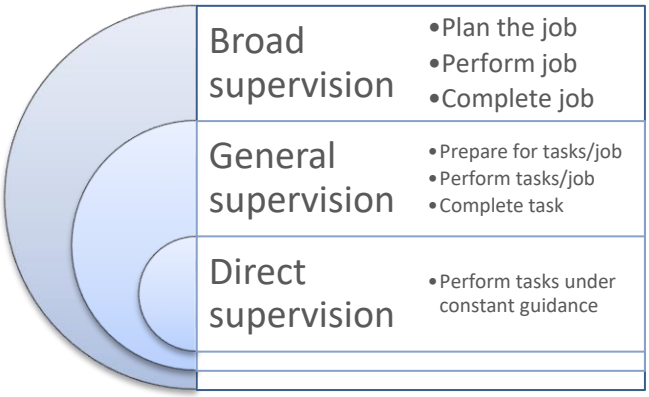
The level of supervision required by an apprentice will vary over time, dependent upon the knowledge and level of skill, proficiency and work experience of the apprentice. The decision is a matter for the Supervisor to determine on a case-by-case basis.

For example, where work is to be undertaken in generally recognised high risk environments such as height work, confined spaces, attics, traffic, which are often governed by codes of practice, then a more risk-averse approach to the level of supervision must apply. That is, a higher level of supervision is warranted and should be applied progressively until there is full confidence in the apprentice's competency to perform such activities consistently under general intermittent supervision.

The goal of supervision should be to progressively diminish supervision levels from direct to broad over time, then progressing to the final stage, more specifically the last six months – with the exception of high-risk work such as "first time" work, testing and well recognised high-risk contexts.

A supervisor must be available onsite at all times when supervising apprentices at any level. If the supervisor has to leave the workplace for any reason, apprentices must stop any work requiring supervision.

Evidence from industry and well-recognised and historical practices suggests that there are three typical levels of best-practice supervision that are used in supervising apprentices. These are described hereunder.



DIRECT / CONSTANT

1. *Direct*/constant supervision

This means the personal supervision of an apprentice at all times, on a direct and constant basis, within visual contact and/or earshot (audible range) whilst performing the tasks/work. Constant basis refers to the continuous supervision of tasks/work being performed for the first time and until skill and work practice are demonstrated for the *complexity* of the task and *work environment*.

No energised work is permitted.

Supervision/mentor is one-on-one constantly guiding, monitoring and reviewing the worker's/apprentice's work practices and standard of performance of tasks/work.

GENERAL / INTERMITTENT

2. *General* intermittent supervision

This means the apprentice does not require constant attendance of the supervisor/mentor, but requires when working on electrical equipment, personal (face to face) contact with the supervisor/mentor on a recurrent (periodic) basis to provide initial and progressive instructions and to check on the work being performed. Periodic supervision/mentorship means the apprentice is under instruction and direction for tasks/job being performed with personal *frequent* checks and feedback provided on the quality of work performed. On completion of any assigned work, the supervisor/mentor assessing the apprentice's standard of work and the supervisor/mentor performing the necessary tests prior to commissioning and/or energising of circuit/s and/or apparatus/equipment whilst the apprentice observes and learns the process.

No energised work is permitted.

A supervisor/mentor could be expected to handle own job and/or up to two other employees/apprentices.

BROAD / MINIMAL

3. *Broad* minimal supervision

This means the apprentice does not require constant supervision but requires personal contact with a supervisor/mentor on a *regular*/*occasional* basis when working on electrical installations, circuit/s and/or apparatus/equipment.

Broad/minimal supervision means the apprentice is under instruction and direction with the supervisor/mentor engaging in regular communication as to the progress of the jobs/work and occasional face to face contact to inspect and assess the quality and standard of the jobs/work. It includes, on completion of the jobs/work the supervisor/mentor being present to check and assess the work before proceeding to commission and/or energise the electrical installation, circuit/s and/or apparatus/equipment with the apprentice participating in and learning the process.

Apprentices must not work on or near live conductors other than under the strictest supervision, and in accordance with WHS Regulation 2011, Part 4.7—General Electrical Safety in Workplaces and Energised Electrical Work.

A supervisor/mentor could be expected to handle own job and/or up to 4 - 5 other employees/apprentices.

Under no circumstances may apprentices be sent to work on a site where there is no supervision.

CONCEPTUAL MODEL OF APPRENTICESHIP SUPERVISION

As outlined above, it is an industry accepted norm that supervision or control exercised over an electrical apprentice in the industry has a well-recognised pattern, typically comprised of three levels of supervision corresponding with the apprentice's stage of development. Supervision, typically, aims to progresses from direct (constant), to general (intermittent), to broad (minimal).

This well-recognised model of supervision is illustrated below, showing how key elements of an apprentice's competency development program can be monitored and evaluated to determine if their development is trending in accord with the expected norm apprenticeship program. The conceptual illustration is presented below showcasing the trend and expected pattern of supervision practice over a series of stages of the apprenticeship.

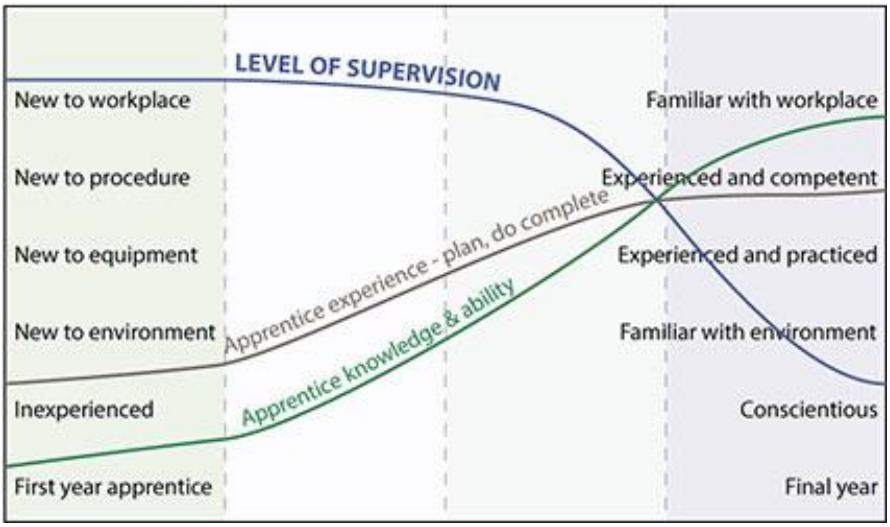
The illustration provides a one-dimensional concept that shows an apprentice's supervision pattern given a typical well-defined electrical task is likely to taper off from direct, to general, to broad over time as:

1. the technical capability of the apprentice increases (underpinned by developed understanding through concurrent technical education);

2. frequent repetition of the task at different levels of supervision over time progressing to autonomy, as risk moves from critical (direct oversight) to less critical (broad oversight); and the

3. apprentice's capacity to deal with the task (using the *four-dimensions of competency*) increases – from doing, to doing and completing and finally to planning and preparing, doing and confirming completion of the work to the standard required in the workplace, autonomously.

Conceptual Model for Supervision Level



Adapted from the E-Oz Training Standards Conceptual Model

That is, for a given well-defined electrical task the following trend should be observable over time:

- ***capacity to do work,*** trends from:
  - simply doing the task at hand (without knowing when it is completed to the required standard, not having to plan and prepare for what must be done),
  - evolving to preparing and planning to perform the task, doing the ask and signing off that the task has been completed to the required standard, autonomously;
- ***supervision,*** associated with this activity will trend from direct at the outset, to general and overtime to general as the supervisor develops more confidence of the apprentice's capacity; and
- ***technical knowledge and ability,*** will increase and improve as the underpinning knowledge and skills learnt deepens and strengthens capability through coherence with workplace practice.

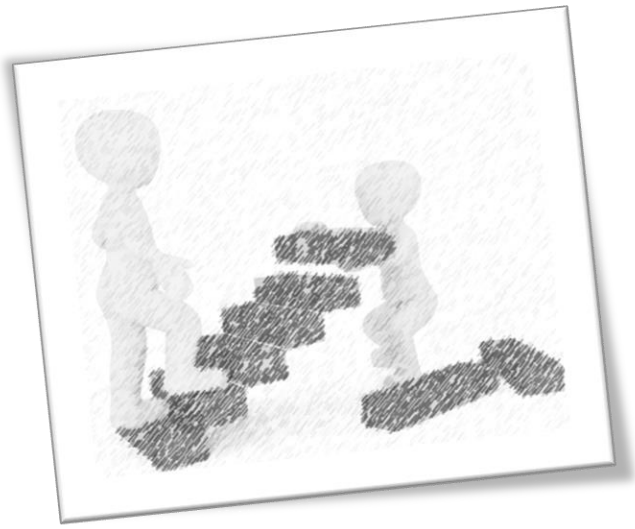
If the above concept is then applied to a range of many other tasks or jobs, a trend can be observed to guide how the level of supervision of any apprentice should be applied over time, and when it might be appropriate to determine that an apprentice has advanced to a point where a judgment can be made that they have achieved the required proficiency of the tasks.

At the same time if the tasks or jobs are linked to the units of competency making up the apprentice's qualification, and the corresponding workplace evidence is logged and verified, then an RTO Assessor can use the information to analyse the trend of development and infer along with other related supplemental training data (off-the-job program) whether competency has been achieved, and the apprentice can be deemed competent and qualified tradesperson.

In the table overleaf, a guidance table is provided outlining the typical pattern of supervision for apprentices undertaking an electrician's apprenticeship for specified functions of competency. It provides a tabulated representation of the progression of supervision for each of the competency functions, from initial engagement as an apprentice stage 1 (typically, the first 12 months) to stage 4 (typically, 36-48 months).

All final year apprentices can get broad supervision with the exception of the yellow below.

All intermediate stage apprentices need varying levels of supervision, largely at the judgement of the supervisor.



Appendix A – Table of Supervision of Electrical Apprentices

Electrical activities - table

Typical Pattern of Supervision – Electrical Apprentices Only

For apprentices undertaking an Electrician's apprenticeship

Note:
This table should be read in conjunction with, and forms an integral part, of the Guide

Competency function*	Time Served - notional	General Level/Pattern of Supervision
Install support and mechanical protection	Less than 6 months More than 6 months to 12 months More than 12 months to 2 years More than 2 years to 4 years	Direct Direct/General, after skill demonstrated General Broad
Install and terminate cables exceeding *extra-low* voltage	Less than 6 months More than 6 months to 12 months More than 12 months to 2 years More than 2 years to 3 years More than 3 years to 4 years	Direct Direct/General, after skill demonstrated General General Broad
Install apparatus/equipment	Less than 6 months More than 6 months to 12 months More than 12 months to 2 years More than 2 years to 3 years More than 3 years to 4 years	Direct Direct Direct/General, after skill demonstrated General Broad
Maintain apparatus/equipment and circuits	Less than 6 months More than 6 months to 12 months More than 12 months to 2 years More than 2 years to 3 years More than 3 years to 4 years	Direct Direct Direct/General, after skill demonstrated General Broad

Competency function*	Time Served - notional	General Level/Pattern of Supervision
Commission apparatus/equipment and circuits	Less than 6 months More than 6 months to 12 months More than 12 months to 2 years More than 2 years to 3 years More than 3 years to 4 years	Direct Direct Direct Direct/General, after skill demonstrated Broad
Test apparatus/equipment and circuits	Less than 6 months More than 6 months to 12 months More than 12 months to 2 years More than 2 years to 3 years More than 3 years to 4 years	Direct Direct Direct Direct/General, after skill demonstrated Broad (*after successful completion of training in verifying compliance and functionality of general electrical installations*)
Note: ***All electrical apprentices are to be competent in testing a full installation to comply with AS/NZS 3000 and related standards at the point of becoming a Tradesperson***		
Testing for system integrity and operability – energised (*see definition and main document)*	Less than 6 months More than 6 months to 12 months More than 12 months to 2 years More than 2 years to 3 years More than 3 years to 4 years	** ** ** ** Direct
Isolating installations and equipment to verify isolation from all sources of supply (*proving de-energisation*)	Less than 6 months More than 6 months to 12 months More than 12 months to 2 years More than 2 years to 3 years More than 3 years to 4 years	** ** ** ** *Direct*[7]

[7] *Persons required to work in association with electrical apparatus/equipment shall be competent in procedures providing de-energisation and in the use of relevant instruments.*

Competency function*	Time Served - notional	General Level/Pattern of Supervision
Diagnosing and rectifying faults associated with apparatus/equipment and circuits (*non-energised*)	Less than 6 months	Direct
	More than 6 months to 12 months	Direct
	More than 12 months to 2 years	Direct
	More than 2 years to 3 years	Direct/General, after skill demonstrated
	More than 3 years to 4 years	Broad

* *Competency functions are mapped to the index of units of competency from the Electrotechnology Training Package – electrician's qualification*

** *Should not be carried out*

Note 1: General supervision should be restricted to apprentices who have completed all relevant underpinning knowledge and workplace procedural training and skills demonstration related to the work/tasks to be undertaken and where the supervisor has completed a hazard assessment and confirmed the apprentice is competent to undertake the de-energised activity.

Note 2: Supervision Practice - the goal of supervision should be, to progressively diminish from direct to broad over time, progressing to the fourth stage/last six months – with the exception of "first time" work and testing.

Note 3: Testing for system integrity and operability whilst installations, equipment or articles are energised should not be carried out by apprentices. Where absolutely necessary, it must be undertaken under the strictest of direct supervision and comply with any prevailing legislation, regulation(s), standard(s) or code(s) of practice.

Other Activities

Appropriate levels of supervision and mentoring are also required for:

- Work in different environments, for example:
  - height work
  - work in confined spaces (dangerous atmospheres)
  - work in cramped spaces (attics, etc.)
  - work in trenches
  - work in traffic areas
  - work in hazardous areas (in conjunction with a qualified tradesperson in hazardous areas)
  - work in battery rooms
  - work in challenging weather conditions.

- General and workshop, for example:
  - manual handling
  - selection and use of power tools – including test and tag
- Working with asbestos containing materials

General Workplace Activities

General workplace activities call for appropriate levels of mentoring. These include:

- Monitoring energy usage
- Complying with SWMSs
- Complying with workplace safety systems
- Following Safe Work Procedures
- Using information systems
- Protecting the environment
- Documenting activities
- General tasks – housekeeping, transport, etc.
- Other work-related tasks

Emergency Response

Apprentices must be trained and mentored in emergency response procedures relevant to their workplace, including:

- Location of all first aid facilities
- Evacuation procedures
- Use of portable fire extinguishers
- Resuscitation and CPR
- Incident notification

Appendix B - Definitions

Apprentice

For the purpose of this Policy Guide the term apprentice has the same meaning and is interchangeable with term trainee.

Apprentice or trainee

A person who is:

- employed under a Training Contract (as executed by the employer and apprentice) that has been registered with, and validated by, the News South Wales State Training Authority; and
- undertaking paid work and structured training which commonly comprises both on and off the job training pursuant to an industrial award or agreement that applies to the apprenticeship or traineeship concerned; and
- undertaking a negotiated training program that involves obtaining a nationally recognised qualification outlined in an approved training plan (as endorsed by the relevant registered training organisation).

Competent Assistant/Safety Observer means a person whom:

Electrical 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. They cannot be a Competent Assistant/Safety Observers for "energised" work in their 1st year. Post their 1st year, electrical apprentices may progressively be invited through appropriately recognised training, to be Competent Assistant/Safety Observers if they are:

(a) appropriately skilled and qualified to provide support and assist duly licensed persons (e.g. licensed electricians), in the performance of their electrical work; and

(b) appropriately skilled to rescue and provide resuscitation to a person who has stopped breathing or is unconscious because of electrical shock; and

(c) confirmed as displaying an acceptable knowledge for the type of work to be performed of life saving skills (typically rescue and resuscitation) as well as those required for the work being performed to the satisfaction of the employer, and

(d) is appropriately skilled to rescue and/or provide CPR first aid to a person who has sustained an injury as a result of an accident caused by an electrical shock.

Contract of training

A contract of training o "training contract" is an agreement entered into by an apprentice and an employer for an agreed period of time (typically 48 months). It is formally recognised, approved and monitored by NSW State Training Authority (Training Services NSW) and supported by the Commonwealth government.

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 for the employer to provide supervision and to provide a range of work for the apprentice to properly acquire the required competencies.

The contract of training requires a Training Plan to be negotiated and established with a Registered Training Organisation (RTO) after the agreement is signed off by both parties. The training plan details the competency development program the apprentice will undertake.

Complexity

Means control circuitry, which is more complex than normal power circuits. For example, installing or maintaining control equipment in a hazardous environment/area is considered more complex, because of the environmental issues associated with the work, than installing or maintaining power circuits in a domestic setting.

Dimensions of competency

Part of the broad concept of competency[8], which includes all aspects of work performance as represented by:

- **task skills** - individual tasks,
- **task management skills** – managing a number of different tasks within the job,
- **contingency management skills** - responding to irregularities and breakdowns in routine, and
- **job/role environment skills** - dealing with responsibilities and expectations of the work environment.

Electrical

For the purpose of this Policy Guide the term electrical means the electrical industry with respect to regulation, standards and associated practices concerned with electrical work.

Electrical article

Means any appliance, wire, fitting, cable, conduit, meter, insulator, apparatus, material or other electrical equipment intended or designed for use in, or for the purposes of, or for connection to, any electrical installation.

Note— A reference in this Act to an electrical article includes a reference to a high risk battery article unless otherwise provided in this Act or by the regulations—see section 6 (Gas and Electricity (Consumer Safety) Act 2017 No 15).

[8] Glossary term:
Dimensions of competency (VOCEDplus – NCVER's international tertiary education research database)

Electrical installation

Means any fixed appliances, wires, fittings, meters, apparatus or other electrical equipment used for (or for purposes incidental to) the conveyance, measuring, control and use of electricity in a particular place. It does not include a range of articles/equipment and services as specified in the NSW Gas and Electricity (Consumer Safety) Act 2017 No 15 – in Section 4 Definitions.

Electrical installation work

Means the work of installing, adding to, altering, disconnecting, reconnecting or replacing an electrical installation (Gas and Electricity (Consumer Safety) Act 2017 No 15).

Electrical work

Electrical work as prescribed in the Work Health and Safety Regulation 2017[9] means:

(a) connecting electricity supply wiring to electrical equipment or disconnecting electricity supply wiring from electrical equipment, or

(b) installing, removing, adding, testing, replacing, repairing, altering or maintaining electrical equipment or an electrical installation.

Electrical wiring work

Means the physical work of installing, repairing, altering, removing or adding to an electrical installation or the supervising of that work (Gas and Electricity (Consumer Safety) Act 2017 No 15).

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.

Lead supervisor

Someone appointed or allocated the responsibilities, on behalf of the employer, for managing the overall monitoring and oversight of the apprentice's development towards competency and completion of the qualification. Responsible, too for supervising and coordinating with other supervisors/mentors assigned activities to support, develop and train the apprentice in the relevant workplace experiences and activities, and verify evidence of those experiences and workplace against the respective units of competency.

It includes also, liaising and working with the Registered Training Organisation (RTO) to support and facilitate the conduct of their activities in the delivery of training and assessment servicers related to the Training Plan competency development program for the apprentice.

[9] Work Health and Safety Regulation 2017

Legislation covering NSW apprenticeships and traineeships

The NSW Act is the **Apprenticeship and Traineeship Act 2001**, No 80, its successor and any prescribed regulations such as the **Apprenticeship and Traineeship Regulation 2017** and its successor.

Levels of 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 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.

Live Work

Live Work refers to work on energised electrical installations, circuits, apparatus, and/or accessories. There is a general requirement that such work should not be performed without due regard for any prevailing legal requirement, standards or codes of practice. Reference should initially be made to the Australian Standard, *AS/NZ 4836 – Safe Working on low voltage electrical installations* in relation to Live Work. Live work is governed by state legislation, regulations, codes of practice or other relevant regulation or standard/code. Related information should be sought from respective Authorities and followed where applicable.

Employers in NSW are required to take all reasonable steps to ensure that electrical installation work is not carried out whilst circuits and apparatus are energised unless specific safe measures of work are implemented: Work Health and Safety Regulation 2017 (Division 4 Electrical work on energised electrical equipment).

Mentor

Refer supervising electrical tradesperson / mentor

Range of work

This may also be referred to as “Representative Range”. 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 organisations 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. Negotiated rotation to required areas may be needed. Note that minimum expectations of a range of work can be imposed by relevant regulators and by the Units of Competency within the approved training plan.

Standard of work

All electrical work being carried out must comply with AS/NZS 3000 Wiring Rules and/or other relevant standards, service and installation rules, prescribed codes of practice and related safe systems of work and associated Safe Work Procedures (SWPs).

Supervisor

Supervisor means a qualified person with related technical competence, who is charged with the responsibility of assisting, whether directly or indirectly, an Apprentice registered under a "*Training Contract*" in undertaking an approved competency development program/training plan. Supervisors may also be called apprentice masters, mentors, coaches, or Tradespersons.

Supervising electrical tradesperson / mentor

A Supervising Tradesperson is a qualified, experienced and (where applicable) licensed tradesperson[10] with the relevant technical competence, 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.

Supervision of apprentice

Supervision means the level and pattern of control exercised over an apprentice when allocating work to be performed. The goal of apprentice supervision is to progressively, over time, diminish supervision from direct to broad towards the end of the apprenticeship.

The level of supervision applied should be dependent on and in accordance with:

- the type and complexity of work to be performed;
- the prevailing conditions, applicable policies and procedures;
- knowledge and skills (off-the-job technical training/learning) acquired to date;
- the confirmed degree of competency (knowledge, skill, and experience) the apprentice has acquired to date on-the-job including practice and repetition as well as any supplemental training (encompassing refresher training), the apprentice has had relevant to each particular task, job or work function to be performed.

Testing for System integrity and operability - energised

For the purposes of this Guideline *Testing for System integrity and operability* refers only to work that relates to **testing and diagnosing** installations, equipment or articles, that are energised at *voltage* in excess of 50V a.c. or 120V ripple free d.c. in accordance with AS/NZS 3017?

[10] *If the work being performed requires a license to perform it, then the Supervising Tradesperson must hold that license.*

Training Plan

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

Voltage (reference: Standards Australia – AS/NZ 3000):

Means as defined in AS/NZ 3000 –

- ***Extra low voltage:*** Extra-low voltage not exceeding 50V a.c. or 120V ripple-free d.c.
- ***Low Voltage:*** Low voltage exceeding *extra-low voltage*, but not exceeding 1,000V a.c. or 1,500V d.c.
- ***High Voltage:*** Exceeding *low voltage*