

SUPERVISION OF ELECTRICAL WORK

SUBMISSION

Western Australia: - Department of Mines, Industry
Regulation and Safety

Supervision of Electrical Work

Introduction

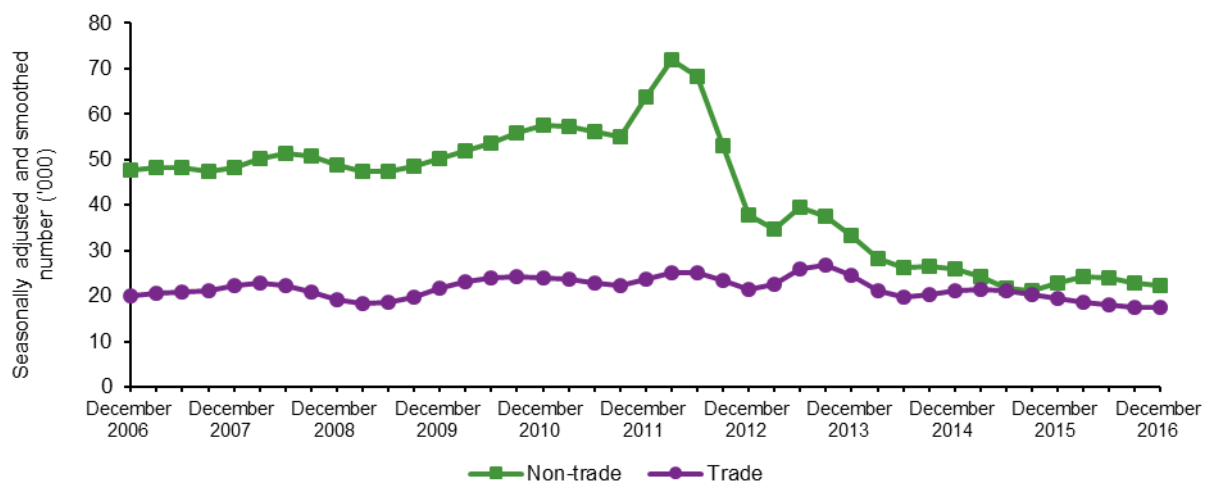
Master Electricians Australia appreciates the opportunity to contribute to the consultation into the supervision of electrical work.

Master Electricians Australia (MEA) is a modern trade association representing electrical contractors. A driving force in the electrical industry and a major factor in the continued success and security of electrical contractors, MEA is recognised by industry, government and the community as the electrical industry's leading business partner, knowledge source and advocate. The organisation's website is: www.masterelectricians.com.au.

Current Industry

The Electrical Industry in Western Australia is made up of approximately 40,000 electricians, 5900 electrical contractors (source WA Energy safety bulletin#77) and 3,900 apprentices as at 31 December 2016(NCVER Apprentices and trainees 2016 - December quarter). The industry profile indicates most electrical service/contracting businesses are small in nature, employing 7 or less employees. 38% (NCVER Apprentice Oct – Dec 2016) of apprentices are engaged by small businesses with less than 20 employee. Any changes undertaken must reach a balance and not reduce the incentive / commitment of Supervising Electrical Workers or Electrical Contractors to take on apprentices. Small Businesses are sensitive to increases in regulatory compliance due to limited opportunities to absorb costs or find efficiencies.

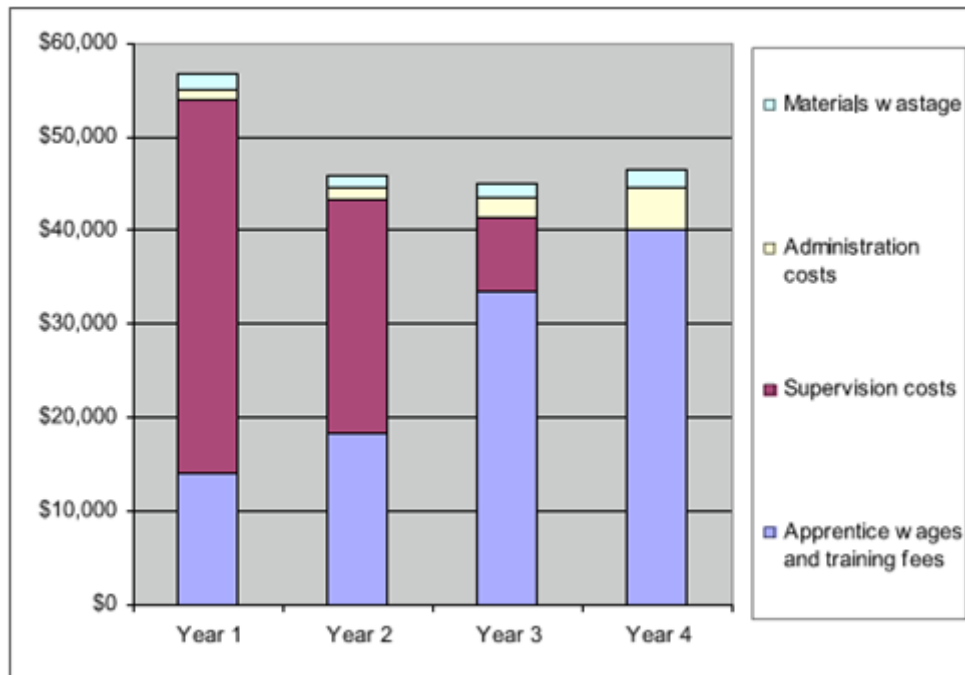
Apprenticeship availability are subject to economic conditions. Employers do evaluate the costs of apprenticeship and the rewards.



NCVER Statistical report3 August 2017

The above figure from NCVER shows that Trade have been affected by the Global Financial Crisis in 2008 / 2009 and have been on a downward trend since 2013 as the Fair Work Commissions Apprentice wage increase effective 1 January 2014 and the end of the resources boom and slower economic conditions since 2015.

Apprentice costs are the sum of wages, supervision, administration and material costs. In research published by NCVER in 2009 we see the costs associated with a direct hire apprentice in the figure below.



The cost of training apprentices Lisa Nechvoglod Tom Karmel John Saunders National Centre For Vocational Education Research 2009

Economic conditions and employer cost play a significant role in an employers decision to enter into a 4 year apprenticeship. Changes to costs or the economy can have a negative effect and result in less opportunities as the above figures demonstrate.

The electrical industry has a broad scope of work. Demonstrated by 14 different electrical qualification that have had active enrolments in Western Australia in the last 12 months (NCVER NCVER_DMS-183235-v2). In addition to the qualifications, the industry adds incalculable number of work situations which Employers and Supervising Electrical Workers experience. The regulation must, therefore, be flexible and workable so that it does not result in a disincentive to engage apprentices. MEA believe the model suggested will likely hurt the industry at a time whereby Western Australia Apprentice rates have dropped by 8% in the 12 months to 31 December 2016 (NCVER)

The Western Australian Government has recently announced a review of Workplace Health and Safety(WH&S) laws which will combine the 3 pieces of legislation into one statute. This review will have a major impact on OHS within Western Australia and may well affect how the apprentice supervision is undertaken.

MEA would suggest that any model implemented should be considered in light of the broader WH&S review and the process should align with hazard identification and risk management processes. The tree tiered system being suggested does not align with current best practice risk management process used in many electrical contracting businesses.

INDUSTRY STATISTICS

The discussion paper has not provided any specific data. Data from Safe Work Australia shows that in the previous 10 years the incident rate of serious injury of younger worker has decreased as can be seen in the table below.

Proportion of claims by age group, older and younger workers 2000–01 to 2014–15 (Source Safe Work Australia website)

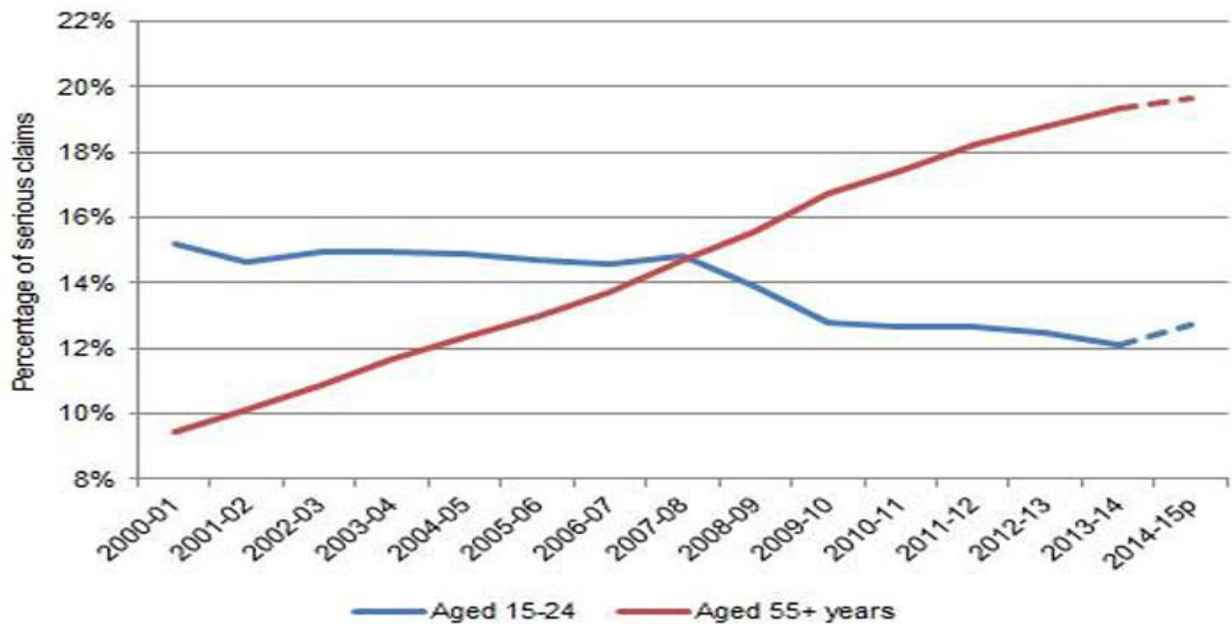
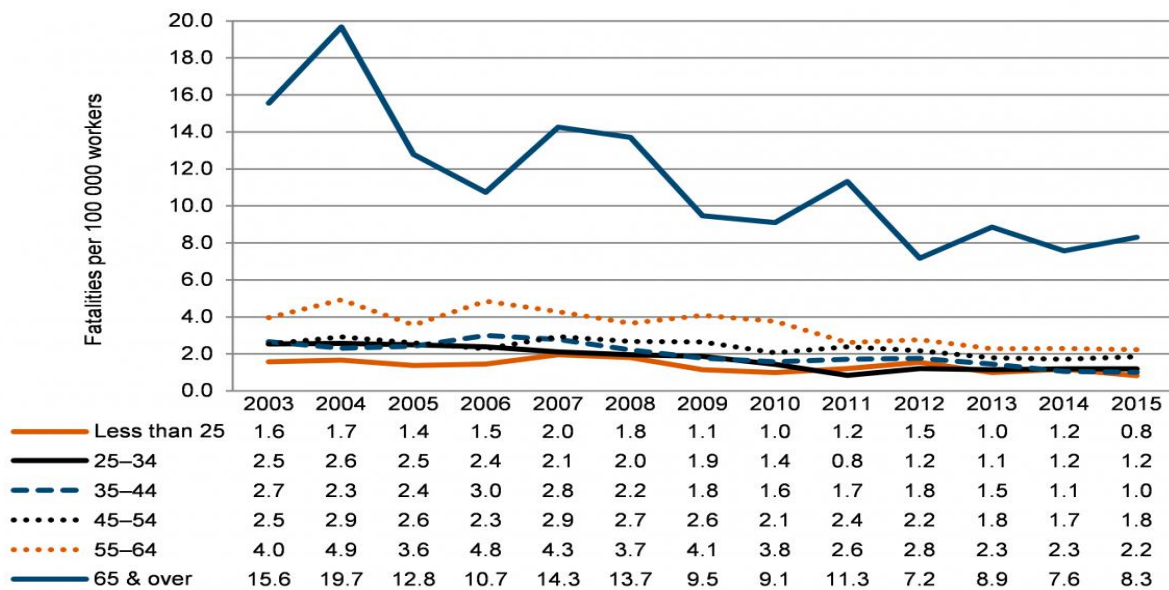


Figure 1: Worker fatalities: fatality rate by age group, 2003 to 2015 (Safe Work Australia website)



In comparing the above statistics of general Australian industry to Western Australia from the Electrical Incident Safety Report 2015-16 compiled by EnergySafety WA we see the following

“From 1 June 2006 to 30 June 2016, 22 electrical fatalities occurred in Western Australia. Western Australia’s Fatal Injury Frequency Rate (FIFR) in 2014-15 was 0.8 per million persons. It has decreased to 0.4 per million persons in 2015-16. Over the reporting period, 45 per cent of fatalities occurred in the workplace when compared to those that occurred in the general community. There were 131 electrical accidents which occurred over the ten years. Electrical accidents have decreased in 2015-16 compared to the previous year. The trends for the last ten years indicate an overall reduction.”

EnergySafety WA Electrical Incident report conclusion states the following

*The analysis of incidents reported to EnergySafety over the 10-year period from 1 July 2006 to 30 June 2016 indicates that 55 per cent of fatalities involved members of the general public. Historically, the trend showed that members of the general public appear to be more at risk in this category. **There are significant risks for workers and specifically electrical workers, but these risks are mitigated by workplace safety guidelines and legislation.***

*The number of **electrical accidents has shown a significant decrease over the reporting period.** The declining trends in this category may be attributed to improved work practices as a result of improvements in the electrical installation standards and other electrical guidelines issued by EnergySafety. Online communications with electrical workers has improved, with the digital version of the Energy Bulletin being successfully implemented in 2015-16.*

The majority of electric shocks appear to occur in the general community. This again substantiates the need for education and awareness programs or advertising that will help prevent serious incidents. This has previously been achieved through tailored advertising programs encouraging the safe use of electricity and ensuring that work is carried out by licenced electrical contractors. Future education programs will primarily be structured to run through online digital media.

MEA would suggest, rather than adding a third tier to the descriptors, additional information and guidance be given to both Apprentices and Contractors on appropriate risk management process. Utilising this method may have an additional benefit of increasing skill and acceptance of a safe system of work and risk assessment that can be used to address the significantly high level of injury to older workers as well. Many businesses today utilise cloud based computing systems where such assistance and education can be easily disseminated to workers and apprentices in real time.

As such MEA has provided a draft risk assessment (see Attachment 1) that some of our Members have used / adopted for their own purposes for apprentices. This type of process is simple and is a very

quick and efficient and assists in forming good habits within an apprentice and other electrical workers that will remain for his/her working career.

MEA suggests that the following 4 areas in risk management process enlighten employers, electrical supervising workers and apprentices to some of the hazards an apprentice may experience.

A. HAZARDS

- Apprentice Tasks done may not be safe
- Apprentice on site / Unattended Accident causing personal injury
- Working near live conductors/ Electrocution causing death or personal injury
- Assigned non-competent tasks / Accident causing personal injury
- Using unsafe equipment, incorrect use of P.P.E. & out of test meters

B. CONTROLS

- Supervising Tradesman to inspect and test all work done by trainee
- Communication with supervising Tradesman to verify safety of worker visually/regularly/auditory,
- Supervising tradesman returning to site during work day.
- Only Work on de-energised site / Isolation / Lockout performed by supervising Tradesman, Use Lockout procedure.
- Defined work tasks as authorised by the Authorised Person only
- Use current Apprentice Evaluation Tool for employee to determine Specific SWMS to be used as defined in the table below.
- Supervising tradesman to ensure all equipment, tools and P.P.E. in safe condition and meets the appropriate standard.

MEA recognises that the above will vary depending on whether direct or general supervision is engaged based on the year, age and competence of the apprentice and the tradesman. It is important to note that both the two tiered system and three tiered system have not made note that a lack of experience or knowledge by the Supervising Electrical Worker is also a hazard.

C. SAFE WORK METHOD STATEMENTS (SWMS)

Electrical contractors use risk assessment and SWMS when performing work. Supervising Electrical Workers can identify the safe work method statements which the apprentice has been deemed competent in based on experience and other sources of information. Examples include

- Conduit installation, prior to concreting
- Conduit installation in the ground
- Use of portable ladders
- Installing light fittings
- Installation of switchboards
- Installation of lighting looms
- Installation of mains
- Installation of sub mains

- Installation of power & light cabling
- Installation of power points
- Manual handling
- Working at heights
- Installation of ceiling mounted lights & speakers
- Test & tag electrical appliances

D. APPRENTICE ePROFILING

Finally, the apprentices capabilities as detailed in his or her training file or eProfiling account can be communicated from the employer to the Supervising Electrical Worker and a record kept to demonstrate that the employer has fulfilled their obligations and provided the Supervising Electrical Tradesman the information needed to correctly manage the risk process and control measures for the apprentice.

THREE TIERED SUPERVISIONS MODEL

MEA supports improvement in the supervision process for apprentices and improved safety in the industry. We acknowledge the previous consultation undertaken to improve the 2-tiered definition. The 3-tiered system, now proposed, causes concern for industry:-

DIRECT SUPERVISION

MEA disagrees that the new proposed definition is an improvement on the previous proposed wording. Our concerns are

- “remain on site, and ”, what is a site? Is it a mine site, a housing development, is it defined by the location of the scope of work being undertaken, a room, is it defined by the electrical contractor or by the project parameters?
- “Provide instruction ... safely, and.” We agree with this wording.
- “be able to Communicate directly....times, and ”. The plain meaning, from various dictionaries suggests that communication must be “face to face” or that there “is nothing and no one in between”. MEA believes that this is not practicable. Examples include where a supervising electrical worker being around a corner or behind a single wall where communication between the Supervising Electrical Worker and apprentice is easily undertaken on tasks that the apprentice is deemed competent. The direct supervision of apprentices on a basic house site such as roughing in, or digging a trench after proper manual handling training, mean a tradesman cannot be usefully engaged on other productive higher-level functions on the same site.
- The addition of “remain in visual range of the apprentice” is an addition to the descriptor. It is difficult to understand the addition of this wording. Electrical incidents have, by definition, electricity as the agent of injury however in many cases the root cause is a noncompliance with the basic of electrical rules, “no live work on or near energised parts”.

- The direct level also does not allow for an apprentice to progress through a given 12 month period. The two tiered system in our view did allow for this however this new system we believe does not.
- The final concern is that the use of the word “and” at the end of each descriptor indicates that all dot points “shall” be done and that in the event that even one is not completed then the supervision can be deemed to be in contravention of the regulation. Thus, opening up the Supervising Electrical Tradesperson to punitive action of some description / fine from Energysafety. Whilst we understand the intent, the application of the new wording in many situations may inadvertently be seen as a breach.

The discussion paper highlights the Victorian model. The following is the comparable level of supervision

Direct supervision

*The supervising electrician shall provide specific and constant guidance to the apprentice, closely liaising with and monitoring the apprentice, and continually reviewing the work practices and the standard of the apprentice’s work. The electrician **shall be readily available in the immediate work area, within audible range (earshot) and where possible within the visual range of the apprentice.***

MEA highlights the ability for flexibility compared to the WA suggested 3-tiered model.

INTERMEDIATE SUPERVISION

- We reiterate our concerns regarding wording that is shared with Direct Supervision. However we believe that the Intermediate descriptor is slightly more flexible and achieves a slightly more balanced approach to supervision compared to Direct level of supervision.

MEA draws the attention to the Victorian model

General supervision

The apprentice does not require specific constant guidance from the supervising electrician whilst performing familiar tasks. However, the apprentice will still require tangible face-to-face contact at regular intervals throughout the day. The supervising electrician shall provide the apprentice with instruction and direction for the tasks to be performed. They shall periodically check and test the work being performed and provide the apprentice with additional guidance and assistance as required.

The Victorian model again demonstrates a balanced model / wording compared to that suggested in the consultation paper.

GENERAL SUPERVISION

MEA has concerns with the general supervision within the proposed model. We envisage issues forming on the topic of definition. Our concerns are:-

- Worksite. MEA has raised this concern in previous sections
- Attend site at regular intervals. The ordinary meaning of these words may suggest either “arranged in or constituting a constant or definite pattern, especially with the same space between individual instances” or “recurring at uniform intervals”. Is this the intent seen by Energysafety?
- “Electronic Communication” does this include telephone, text message, email, social media of various forms facebook, snapchat, twitter. Both Apprentices and some younger Supervising Electrical Workers may well utilise these applications effectively however clarity should be set to ensure no misunderstanding.
- Completion of the electrical work, again completion of electrical work may mean a solitary task or does it refer to a whole day or a weeks worth of work?. Whilst regular attendance interacts with this part again a lack of clarity or contingency leave parties exposed to inadvertent breaches and possible prosecution.
- Again the inclusion of the word “and” at the end of each description point equates to a rigid inflexible prescriptive model.

Broad definitions expose all parties to confusion and uncertainty. It may also lead to inconsistencies from individual Inspectors. If the suggested prescriptive and inflexible criteria is retained a foreseeable consequence will be a growing reluctance to engage or supervise apprentices.

RECOMMEDATION

MEA has considered the 3 tier system but from the information and systems provided has concerns about its introduction into the Western Australian industry. Our concerns in summary are

- A lack of evidence that the current model will lead to a higher safety outcome or better training outcomes for apprentices
- The system suggested does not support / utilise a modern risk management approach
- Lack of clarity/ definition about terms used
- Prescriptive wholistic list that does not allow for individual worksite/apprentice/work/risk profile to be considered.

MEA recommendation is that the original 2 tiered system be retained and enhanced with an educational / instructional campaign based on a risk management approach such as the one discussed and attached which take’s into account industry concerns/work practices, apprentice individual circumstances and work site situations.



Jason ODwyer

Manager Advisory Services

ATTACHMENT ONE

APPRENTICE SITE SPECIFIC RISK MANAGEMENT FORM

CUSTOMER: DATE:/...../.....

SITE ADDRESS:

Apprentice :

I have read and understand the restrictions placed on the work I am instructed to perform.
I agree to abide by these conditions as my obligation to my personal safety and those of other workers.

Signed

Supervising Tradesman: Lic. NO

I accept the responsibility of broad supervision of the Apprentice as indicated by the specific scope of this document.

Signed

Specific Hazards and their control measures when present at a place of work unsupervised and the sole occupant of the site			
Hazards / Risks	Risk Rating	Controls	Residual Risk Rating
Apprentice Tasks done may not be safe	High	Supervising Tradesman to inspect and test all work done by trainee	
Apprentice on site / Unattended Accident causing personal injury	High	Communication with supervising Tradesman to verify safety of worker Hourly telephone contact, Supervising tradesman returning to site during work day. Use of the companies Emergency Plan	Low
Working near live conductors/ Electrocution causing death or personal injury	High	Only Work on de-energised site / Isolation / Lockout performed by supervising Tradesman, Use Lockout procedure.	Low
Assigned non-competent tasks / Accident causing personal injury	High	Defined work tasks as authorised by the Authorised Person only Use current Apprentice Evaluation Tool for employee to determine Specific SWMS to be used as defined in the table below.	Low
Using unsafe equipment, P.P.E. & Resistance/insulation meters	High	Supervising tradesman to ensure all equipment, tools and P.P.E. in safe condition and meets the appropriate standard.	Low
Additional Site Identified Hazards			
Add the specific tasks required to be done		A clear documented description of the work to be done	

The following indicated SWMS are within the competencies of the Apprentice.			
SWMS ONLY TO BE USED (add more as worker is deemed competent)			
Conduit installation, prior to concreting	<input type="checkbox"/>	Installation of sub mains	<input type="checkbox"/>
Conduit installation in the ground	<input type="checkbox"/>	Installation of power & light cabling	<input type="checkbox"/>
Use of portable ladders	<input type="checkbox"/>	Installation of power points	<input type="checkbox"/>
Installing light fittings	<input type="checkbox"/>	Manual handling	<input type="checkbox"/>
Installation of switchboards	<input type="checkbox"/>	Working at heights	<input type="checkbox"/>
Installation of lighting looms	<input type="checkbox"/>	Installation of ceiling mounted lights & speakers	<input type="checkbox"/>
Installation of mains	<input type="checkbox"/>	Test & tag electrical appliances	<input type="checkbox"/>



The Apprentice assessed competencies are recorded below. They are used to assist in the determination of tasks that are within the scope of the Apprentice. This will form the specific safety plan for this Apprentice. SWMS that apply to those tasks are identified as the scope of work able to be performed on this specific site by the Apprentice.

Apprentice Capabilities

Apprentice name:	
Current year of apprenticeship:	<input type="checkbox"/> 1 st <input type="checkbox"/> 2 nd <input type="checkbox"/> 3 rd <input type="checkbox"/> 4 th
Registered Training organisation:

Capability Under Broad Supervision

It is the company's opinion that the following tasks can be performed under Broad Supervision in accordance with the Apprentice workers current training competency:

Tasks
Insert details from Workers file or eProfiling

Authorised Person:

I have deemed the Apprentice identified as competent to perform the above tasks.

Signed