



ELECTRICAL WORKERS REGISTRATION BOARD

PRACTISING LICENCE REFRESHER COURSE PRESCRIPTION

LINE MECHANIC

Issued by NJJ Sickels
Registrar
26 February 2007

Introduction

The Electrical Workers Registration Board has developed a line mechanic practising licence refresher course prescription (the line mechanic refresher course) which training providers can use either as their tuition course, or as a guide for alternative refresher courses to satisfy the prerequisite tuition requirements for the issue of Board line mechanic practicing licences.

The line mechanic refresher course is expected to be completed within three hours and it should be noted that the course does not include basic first aid and cardio-pulmonary resuscitation which is required to be completed as a prerequisite to line mechanic practicing licence issue.

The line mechanic refresher course does not include references to basic first aid and cardio-pulmonary resuscitation as it is considered that these subjects are more than adequately covered in publications produced by other organisations.

With the exception of the basic first aid and cardio-pulmonary resuscitation aspects, the tuition course satisfies the line mechanic requirements of Schedule 5 to the Electricity Regulations 1997.

General

It is considered that the Board needs to have requirements for the practising licence refresher courses that:

- reduce as far as possible the cost of compliance to industry; and
- are readily available to industry; and
- have integrity and be appropriate for the licence categories; and
- are subject to regular audit; and
- provide an assurance to the public that persons who are issued with practising licences on the basis of completing the course are competent to safely carry out prescribed electrical work to a level that satisfies the regulatory requirements.

Training providers must ensure that all amendments to the Electricity Regulations 1997 and the standard specifications that are cited in this document are incorporated into the line mechanic refresher course.

Line mechanic refresher course content

The line mechanic refresher course covers the following subjects:

- testing for safety; and
- the requirements relating to the supervision of trainees both from a supervisor and trainee perspective, and
- earthing requirements; and
- prospective short circuit current levels; and
- safety and safe working practices; and
- hazard identification; and
- testing, certification, and inspection; and
- an appreciation of the types of accidents that have been reported within the previous twelve months; and
- safe working practices (general); and
- issues highlighted by the Board in ELECTRON newsletter.

Duration of course

As stated in the introduction section the line mechanic refresher course is expected to be completed within three hours and this excludes basic first aid and cardio pulmonary resuscitation required by Schedule 5 to the Electricity Regulations 1997.

Course presenters

The Board requires persons wishing to offer the line mechanic refresher course to be accredited by the Board on an annual basis. This will require potential tuition course presenters to present their credentials for Board accreditation on an annual basis.

The Board would then only publish the names of accredited presenters in its publicity material and on its website.

Auditing of tuition courses and presenters

The Board has an effective auditing programme in place to ensure that the Board's statutory function to ensure competency is satisfied, as well as satisfying the Board's role in ensuring public safety.

Levels of knowledge

Please note that the letters A, B or C alongside subject material in this document represent the level of knowledge the Board expects line mechanic refresher course candidates to obtain from the refresher course.

The levels of knowledge are:

- (A) Thorough knowledge
- (B) Good knowledge
- (C) General knowledge

Specific line mechanic refresher course content

Testing for safety

- (A) All line mechanic refresher course candidates are required to have a thorough knowledge of:
 1. The methods of carrying out the tests required by AS/NZS 3000 in relation to overhead electric lines and underground cables; and
 2. The Electricity Regulations 1997 relating to the tests required to be completed by line mechanics prior to the connection of any prescribed electrical work to a power supply; and
 3. The requirements for the testing of installations including polarity, phase rotation and main earthing systems; and
 4. The testing of RCDs used for personal protection.

The requirements relating to the supervision of trainees both from a supervisor and trainee perspective

- (A) All line mechanic refresher course candidates are required to have a thorough knowledge of the requirements of the draft Code of Practice for the supervision of trainee electricians which was issued by the Electrical Workers Licensing Group in May 2006.

Please note that while the above mentioned draft Code of Practice is specific in its application to trainee electricians, for the purposes of the line mechanic refresher course the draft Code's principles apply to all trainees.

Earthing requirements

(A) All line mechanic refresher course candidates are required to have a thorough knowledge of:

1. The connection of systems to the general mass of earth in relation to safety, insulation characteristics and protection; and
2. The requirements of the Electricity Regulations 1997 in relation to the impedance of supply systems; and
3. The requirements for earthing prior to commencing work on networks; and
4. The use of HV and LV temporary earths; and
5. The requirements of the Electricity Regulations 1997 in relation to the earthing of overhead electric line conductors.

Prospective short circuit current levels

(B) All line mechanic refresher course candidates are required to have a good knowledge of prospective short circuit current levels.

All line mechanic refresher course candidates should be aware that there is considerable danger inherent in the wrong selection of equipment or improper installation of equipment due to high prospective short circuit current levels. The high levels of energy dissipated during faults involving high currents can extensively damage plant and can lead to injury for any person working nearby.

Training providers need to be able to provide line mechanic refresher course candidates with information on the dangers of prospective short circuit currents.

Safety and safe working practices

(B) All line mechanic refresher course candidates are required to have a good knowledge of:

1. Safe work practices; and
2. Health and safety principles; and

3. Hazard identification systems; and
4. Clear and effective communication; and
5. The identification and application of measures to eliminate or minimise electrical hazards including:
 - Switching off supply
 - Isolating supply
 - Locking-off and tagging of isolators
 - Disconnecting load side of isolators
 - Proving supply is de-energised by testing
 - Precautions when leaving unfinished work
 - Precautions for working on live equipment
 - Safety distances
 - Personnel training
 - Safety rules
 - Insulating area
 - Access control
 - Inspection and testing of tools and equipment.

Hazard identification

(B) All line mechanic refresher course candidates are required to have a good working knowledge of the principles of risk management assessment.

The principles of risk assessment comprise of:

- identifying hazards; and
- assessing and prioritising the risks and then
- applying control measures.

How to Identify Hazards in the Workplace

The first step in identifying a hazard is to gather information. Fundamentally the following questions should be asked :

- Does the job look safe?
- What hazards could arise from this job?

After any hazards have been identified a decision must be made on which hazards are significant.

Significant hazards

Significant hazards are those that are the actual or potential cause, or source of:

- serious harm, including death; and
- harm, the severity of which depends on the frequency or extent of exposure; and
- harm not detected until after the exposure.

The purpose of prioritising the hazards is only for the order of addressing them.

All hazards must be considered, irrespective of the level of risk.

The combination of potential injury and level of exposure determines the level of risk.

Applying Control Measures

The application of control measures is the process of considering each hazard in turn and following the "hierarchy of controls" described below:

The steps to follow in the application of control measures are to:

- (a) Eliminate the hazard; and
- (b) Isolate the hazard from the worker - by distance or by time; and
- (c) Minimise the hazard - by use of personal protective equipment and training; and
- (d) Ensure workers are trained:

- in working in the presence of the hazard
- by using "standard work procedures "
- to use personal protective equipment and
- in the correct use and care of personal protective equipment.

The aim of this process is to eliminate or reduce the potential effects of hazards.

Testing, certification and inspection

(B) Line mechanic refresher course candidates are required to have a good working knowledge of:

1. The types of work requiring testing and certification by a registered line mechanic; and
2. Who is responsible for performing the prescribed tests associated with the completion of the compliance documentation involving:
 - Self certification – work which does not require inspection
 - Work requiring inspection – by a registered electrical inspector, and
3. The requirements relating to Certificates of Compliance including such certificates must be:
 - Completed within one day of the work being completed or the termination of the contract for the work [Regulation 39(5)]; and
 - One copy of the certificate must be given to the person for whom the work was carried out with 20 days of the certificate being completed; and
 - One copy must be retained for three years or returned to the Board.

Accidents that have been reported within the previous twelve months

(C) All refresher course candidates are required to have a general knowledge of the summary of reported electrical accidents produced by the Energy Safety Service.

Safe working practices (general)

General

Many factors can enhance safety in the work place, amongst which sensible, considerate behaviour and good housekeeping rank high.

A knowledge of the right way of carrying out tasks and the use of appropriate protective tools and equipment are also important.

Behaviour

The keypoint of good behaviour is for work to be carried out with due consideration for a person's own safety and the safety of others at all times.

Good behaviour requires that a responsible attitude is taken towards work, and includes

- carrying out and giving instructions properly; and
- asking if in doubt; and
- rectifying or reporting all unsafe conditions; and
- using appropriate tools and equipment correctly; and
- keeping any workplace clean and tidy; and
- not distracting others or indulging in horseplay; and
- wearing or using the protective clothing or equipment provided; and
- not starting machinery unless authorized; and
- obeying all safety rules and signs; and
- using only authorised tools and equipment; and
- not leaving tools on the floor or where they can fall on people below; and
- not wearing loose or torn clothing; and
- taking extra care when members of the public are present (they may not be as aware of hazards or as well protected against them as you are).

Housekeeping

A high standard of housekeeping is essential. Good housekeeping means:

- cleaning up at intervals during the day; and
- no accumulation of waste and rubbish in the workplace; and
- keeping fire exits and equipment clear of stock; and
- storing tools and equipment in their correct place.

ELECTRON newsletter

(B) All line mechanic refresher course candidates are required to have a good knowledge of the disciplinary cases and other issues highlighted in ELECTRON newsletter.



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