

## **Occupational Requirements – Electrotechnology Electrician**

Applicants seeking recognition of their qualifications<sup>1</sup> or experience in relation to the Electrician trade will need to demonstrate knowledge and understanding of the occupational requirements listed below.

To be eligible for occupational recognition an applicant must have the minimum years of work experience equal to the full-time equivalent of the nominal term of the training contract for the occupation. For an electrician, the nominal term of the training contract is 48 months, so the minimum years of work experience required is **48 months (4 years)**.

Successful recognition of qualifications or experience will result in the applicant gaining the **Occupational Certificate as an Electrotechnology Electrician**.

### **Electrician Workplace Practices**

- Apply
  - sustainable procedures in the energy sector
  - WHS regulations, codes and practices in the workplace
  - measures to control WHS risks associated with electrotechnology work\*
- Participate in electrical work and competency development activities
- Provide cardiopulmonary resuscitation
- Use drawings, diagrams, schedules, standards, codes and specifications\*

### **Specific skills**

- Arrange circuits, control and protection for electrical installations\*
- Design, install and verify compliance and functionality of general electrical installations\*
- Develop and connect electrical control circuits\*
- Evaluate and modify low voltage
  - heating equipment and controls\*
  - lighting circuits, equipment and controls\*
  - socket outlets circuits\*
- Fabricate, assemble and dismantle utilities industry components\*
- Fix and secure electrotechnology equipment\*
- Identify, shut down and restart systems with alternate supplies\*
- Install low voltage wiring, appliances, switchgear and associated accessories\*
- Isolate, test and troubleshoot low voltage electrical circuits\*

- Perform rescue from a live LV panel\*
- Select wiring systems and select cables for low voltage electrical installations\*
- Solve problems in
  - direct current (d.c.) machines\*
  - low voltage a.c. circuits\*
  - magnetic and electromagnetic devices\*
  - multiple path circuits\*
  - single path circuits\*
- Terminate cables, cords and accessories for low voltage circuits\*
- Test and connect
  - alternating current (a.c.) rotating machines\*
  - transformers\*

### **Additional skills to consider**

- Align and install traction lift equipment\*
- Apply safe work practices in the rooftop solar industry
- Assemble
  - and set up basic security systems\*
  - and wire rail signalling equipment\*
  - enter and verify operating instructions in microprocessor equipped devices\*
  - mount and connect control gear and switchgear\*
- Carry out basic repairs to electrical components and equipment\*
- Conduct
  - detailed inspection of electrical installations for hazardous areas\*
  - electrical tests on LV electrical machines\*
  - mechanical tests on electrical machines and components\*
  - site survey for grid-connected photovoltaic and battery storage systems
  - visual and close inspection of electrical installations for hazardous areas\*
- Determine the explosion-protection requirements to meet a specified classified hazardous area\*
- Develop
  - electrical integrated systems\*
  - Develop, enter and verify discrete control programs for programmable controllers\*

- Develop, enter and verify word and analogue control programs for programmable logic controllers\*
- Diagnose and rectify faults in traction lift systems\*
- Enter a classified hazardous area to undertake work related to electrical equipment
- Establish the basic operating conditions of
  - air conditioning systems\*
  - vapour compression systems\*
- Fabricate and assemble bus bars\*
- Find and repair faults in LV d.c. electrical apparatus and circuits\*
- Inspect, test and maintain
  - emergency alarm systems and equipment\*
  - emergency lighting systems\*
- Install and maintain
  - cabling for multiple access to telecommunication services\*
  - emergency safety systems\*
  - rail track circuit leads and bonds\*
  - substation direct current systems\*
- Install
  - and commission whole current electricity meters\*
  - and modify and verify coaxial and structured communication copper cabling\*
  - and start up single head split air conditioning and water heating heat pump systems\*
  - battery storage equipment power conversion equipment to grid \*
  - battery storage to power conversion equipment\*
  - explosion-protected equipment and associated apparatus and wiring systems\*
  - photovoltaic
    - power conversion equipment to grid \*
    - systems to power conversion equipment \*
- Maintain
  - and service traction lift systems and equipment\*
  - capacitor bank equipment\*
  - equipment associated with hazardous areas \*
  - insulating oil\*
  - operation of
    - electrical marine equipment and systems\*

- electrical mining equipment and systems\*
- Mount and wire control panel equipment\*
- Overhaul and repair major switchgear and control gear\*
- Perform
  - high voltage field switching operation to a given schedule\*
  - low voltage field switching operation to a given schedule\*
  - substation switching operations to a given schedule
- Place and connect electrical coils\*
- Plan
  - an integrated cabling installation system\*
  - the electrical installation of integrated systems\*
- Prepare and connect refrigerant tubing and fittings\*
- Provide advice on
  - effective and energy efficient lighting products
  - the application of energy efficient lighting for ambient and aesthetic effect\*
- Recover, pressure test, evacuate, charge and leak test refrigerants - split systems\*
- Repair
  - and maintain mechanical components of electrical machines\*
  - rail signalling power and control cables\*
  - basic electronic apparatus faults by replacement of components\*
- Rewind
  - LV direct current machines\*
  - single phase machines\*
  - three phase low voltage induction machines\*
- Select and arrange equipment for special LV electrical installations\*
- Solve problems in
  - density/level measurement components and systems\*
  - flow measurement components and systems\*
  - network equipment\*
  - network protection\*
  - pressure measurement components and systems\*
  - temperature measurement components and systems\*
- Supply effective and efficient lighting products for domestic and small commercial applications\*
- Test copper rail signalling cables\*
- Troubleshoot single phase input d.c power supplies\*

- Use
  - and maintain the integrity of a portable gas detection device\*
  - engineering applications software on personal computers
  - instrumentation drawings, specifications, standards and equipment manuals\*
- Wind electrical coils\*