



Government of **Western Australia**
Department of **Mines, Industry Regulation and Safety**

CHECKLIST

Electrical supervisors' competency



The following guidelines and checklist are designed to assist managers in the appointment of competent electrical supervisors, who have a crucial role in the development and management of electrical safety control measures. The intention of the checklist is not to identify validation of an electrical supervisor, but instead to offer an overview of the knowledge and skills related to successful supervisory performance.

Under the provisions of the *Mines Safety and Inspection Act 1994*, the principal employer of a mine is required, as far as is practicable, to provide and maintain a work environment where employees are not exposed to hazards. The Mines Safety and Inspection Regulations 1995, Regulation 5.10 requires the principal employer and registered manager of the mine to ensure that sufficient electrical supervisors have been appointed for the effective supervision, maintenance and testing of electrical equipment. This also includes the management of electrical hazards and risks to employees in the workplace.

In order to manage electrical risk under section 44 of the *Mines Safety and Inspection Act 1994*, the principal employer and registered manager of a mine must ensure that an appointed electrical supervisor is competent and can assist in identifying reasonably foreseeable electrical hazards that could give rise to the risk of injury or harm to employees. These electrical risks need to be eliminated, or if it is not reasonably practicable to eliminate the risk, the principal employer must maintain and if necessary revise, implement and maintain control measures, so those measures maintain a work environment with minimal risk to the health and safety of employees.

Electrical supervisor involvement in the development and implementation of control measures that mitigate electrical hazards is vital to the success of any safety management system. These measures include, but are not limited to, hazard assessments, inspections, audits and electrical safety training for all personnel (qualified and non-electrical), and the evaluation of an existing safety management system.

Training and development of electrical supervisors is essential and a competency training matrix should be developed based on company and industry needs. This matrix should be related to: activities, skills, knowledge, regulatory training, current best practices and supervisor experience.

In addition, electrical supervisors must have a clear understanding of the company's expectations, overall goals, and the role each individual has in achieving the required outcomes.

Regulatory requirements

Electrical installations in Western Australia are governed by legislation and must meet requirements of the:

- *Electricity Act 1945*
- Electricity Regulations 1947
- Electricity (Licensing) Regulations 1991 (ELR).

Mining operations must also comply with provisions of the:

- *Mines Safety and Inspection Act 1994* (MSIA).
- Mines Safety and Inspection Regulations 1995 (MSIR).

Organisational relationship and structure

The principal employer is required under Section 9 of the *Mines Safety and Inspection Act 1994* to provide such supervision to employees as is necessary to enable them to perform their work in such a manner that they are not exposed to hazards.

The Mines Safety and Inspection Regulations 1995, Part 5, regulation 5.10 (1) specifies that the principal employer and the registered manager of a mine must ensure appointment in writing and that sufficient electrical supervisors are appointed.

Electrical supervisors are appointed by, and responsible to, the registered manager for purposes of statutory compliance with Part 5 of the Mines Safety and Inspection Regulations 1995.

Accountability

Electrical supervisor responsibilities [MSIR r. 5.10] include:

- ensuring the efficient supervision of the installation, maintenance and testing of electrical equipment in the area of responsibility
- to be responsible to the manager for the electrical equipment at the mine.

Duties of the electrical supervisor

The duties of an electrical supervisor include:

- ensuring that all work carried out by persons, in relation to electrical equipment and installations in their area of responsibility, is adequately supervised
- ensuring that electrical equipment or installations in their area of responsibility are installed and tested in accordance with the Mines Safety and Inspection Regulations 1995 and maintained in a safe working condition
- ensuring that electrical installations and equipment are in accordance with AS/NZS 3000:2018 *Electrical installations* [MSIR r. 5.3]
- stopping the use of any electrical equipment or installation considered to be dangerous and reporting to the manager any situation which may affect the safe use of electricity or contravene the Mines Safety and Inspection Regulations 1995 [MSIR r. 5.11]
- investigating, recording and reporting to the registered manager:
 - any electrical shock or burn received by a person
 - any fire suspected to be caused by electricity
 - any dangerous occurrence involving electricity which could have caused injury to a person [MSIR r. 5.11]
- ensuring that an entry is made in the mine record book and electrical log book for all such incidents [MSIR r. 5.11]
- maintaining the electrical log book and recording all information required under Part 5 of the Mines Safety and Inspection Regulations 1995 [MSIR r. 5.11]
- ensuring all electrical incidents are correctly reported to the Department of Mines, Industry Regulation and Safety
- ensuring maintenance systems for installations and electrical equipment are maintained in a safe working order and those systems are continually monitored to remain up-to-date
- ensuring when electrical contractors carry out installing work on site, certification of the work has been made by submission of preliminary notices and/or completion notices to Building and Energy (formerly *EnergySafety*) where required [ELR rr. 51 and 52]. In addition to such notices, the contractor shall make a certified entry and have it verified by the nominee or electrical supervisor in Section 1 of the electrical log book [MSIR r. 5.14]
- ensuring each entry made in the electrical log book contains all the details as required by the Electrical (Licensing) Regulations 1991, including the names of all electrical workers and contractors who performed the work and the date on which it was completed
- ensuring all electrical installing work is inspected and tested in accordance with AS/NZS 3000:2018 *Electrical installations*, AS/NZS 3017:2007 *Electrical installations – testing guidelines*, and company specifications.

Checklist

1. Formal qualifications and experience

The electrical supervisor:

<input type="checkbox"/>	Holds requisite qualifications <i>Electrical supervisors must hold electrical engineering qualifications acceptable for professional engineer membership of the Institution of Engineers Australia, or a WA electrician's licence</i>
<input type="checkbox"/>	Has the required experience relevant to the area of responsibility <i>Electrical supervisors must have a minimum two years relevant experience of electrical work in mining or other heavy industry</i>
<input type="checkbox"/>	Understands the electrical hazards and the risks to employees in their area of responsibility <i>Electrical supervisors must have a theoretical and working knowledge of the systems, processes and equipment to be maintained</i>
<input type="checkbox"/>	Can identify reporting obligations required for an electric shock or a dangerous occurrence involving electricity.

2. Understanding of regulatory requirements

The electrical supervisor:

<input type="checkbox"/>	Understands the requirements and has a working knowledge of Part 5 of the Mines Safety and Inspection Regulation 1995
<input type="checkbox"/>	Understands the requirements and has a working knowledge of the Electricity (Licensing) Regulations 1991 including regulation 55(2) <i>Regulation 55(2) requires that, before electrical work is carried out on or near an energised part of an electrical installation, the following measures must be taken:</i> <ul style="list-style-type: none"> • <i>A risk assessment is to be undertaken by a competent person familiar with the type of work to be carried out</i> • <i>The competent person is satisfied that the requirements of Regulation 55(2)(b) are met</i> • <i>A safe work method statement (SWMS) for the work has been prepared in accordance with Regulation 3.143(4) of the Occupational Safety and Health Regulations</i> • <i>Suitable personal protective equipment and safety equipment is used by the person carrying out the work</i>
<input type="checkbox"/>	Understands the requirements and has a working knowledge of AS/NZS 3000:2018 <i>Electrical installations</i> <i>Specific attention should be given to Section 8, Verification of installation</i>
<input type="checkbox"/>	Understands the requirements and has a working knowledge of AS/NZS 3007:2013 <i>Electrical equipment for mines and quarries</i>
<input type="checkbox"/>	Understands the requirements and has a working knowledge of the electrical log book <i>They can identify what installations or alterations require notification to the network operator or Building and Energy.</i> <ul style="list-style-type: none"> • <i>An initial connection made to transmission or distribution works or a private generating plant</i> • <i>An alteration to a main switchboard</i> • <i>An alteration to service apparatus, transmission or distribution works</i> • <i>The installation or removal of a private generating plant</i> • <i>The alteration of the capacity of a private generating plant</i>
<input type="checkbox"/>	Is competent and can demonstrate an understanding of maximum demand calculations <i>Refer to AS/NZS 3000:2018 Electrical installations, Table C2 Maximum demand – non domestic electrical installations</i>

Has an understanding of the code of practice for persons working on or near energised electrical installations

Has the skills and knowledge to investigate electrical accidents and incidents.

3. Understanding of documentation control

The electrical supervisor:

Is computer literate

Has an understanding of change management processes used at the mine

Understands document control and retention procedures implemented by the principal employer

Understands electrical drawing management system maintained at the mine

Has knowledge and can demonstrate an understanding on regulatory records to be kept at the mine

Can demonstrate an understanding of the development and maintaining of a risk register.

4. Supervision of electrical workers

The electrical supervisor:

Understands how to develop, conduct and review risk assessments
They can identify electrical hazards and risks to persons undertaking a task, eliminating or minimising those risks as far as is reasonably practicable by the development of an acceptable risk assessment

Understands the concept of hierarchy of hazard control and the five levels involved

- Elimination
- Substitution
- Engineering controls
- Administrative controls
- Personal protective equipment

Understands effective supervision
The importance of effective supervision is recognised by Regulation 50 of the Electricity (Licensing) Regulations 1991. In particular, Regulations 50, 50AA and 50AB provide detailed requirements for effective supervision of workers for the purpose of preventing danger to life and property.

Effective supervision includes, but is not limited to, the following:

- ensuring that all workers are licensed to carry out the required work
- ensuring adequate job planning, risk assessment and risk mitigation
- ensuring the supervising electrical worker has the necessary knowledge and skill levels for the type of work to be undertaken
- giving due consideration to the level of training, knowledge and skill of the electrical worker(s) who are being supervised
- managing the number and proximity of electrical workers to enable the required level of oversight and clear lines of communication.

The principal employer is responsible in providing effective supervision of electrical workers. In deciding on the appropriate level of supervision for an electrical worker on a particular scope of work or task, the electrical supervisor must consider all relevant factors including, but not limited to, the following:

- the type of work
- knowledge and skills of the employee
- competence of the electrical supervisor

Understands the levels of supervision for electrical apprentices including:

- direct supervision
- general supervision
- broad supervision

Is competent and can demonstrate a working knowledge of isolation procedures used at the mine.

Summary

When recruiting a competent electrical supervisor, you may also wish to consider if they can:

- implement and monitor the site's electrical safety programs, policies and procedures to meet legislative and corporate requirements
- communicate clearly
- develop work priorities
- coordinate resources
- develop teams and individuals
- show leadership in the workplace
- establish effective workplace relationships.

The State mining engineer advises that, in relation to electrical work, "**effective supervision**", means being present at the site of the electrical work to the extent necessary to ensure that the work is being correctly performed and carried out in accordance with the Act and regulations and being aware of the details of the work being performed and giving detailed instructions and directions with respect to the work.



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