

ELECTRICAL SAFETY MANAGEMENT SYSTEMS - 17/06/2003 02:53:39 PM

1. APPOINTMENT OF ELECTRICAL SUPERVISORS

Point	Standard	Guideline
1.1	One or more Electrical Supervisors have been appointed.	<p>Intent: To ensure compliance with MSIA s44 and MSIR 5.10(1). The mine must be under the control of one or more Electrical Supervisor(s) and the number of appointments must ensure effective 'day to day' control of electrical work carried out.</p> <p>Personnel: Manager or his delegate.</p> <p>Method: Compare appointments with parts of the mine and any commute cycles.</p>
1.2	Electrical Supervisors hold requisite qualifications.	<p>Intent: To ensure compliance with MSIR 5.10(2)(a). Electrical Supervisors must hold electrical engineering qualifications acceptable for corporate membership of the Institution of Engineers Australia, or an 'A' Grade electrical fitter/mechanic licence. Subject to an exemption being issued, the holder of an A Grade electrical mechanics licence may be appointed.</p> <p>Personnel: Manager or his delegate.</p> <p>Method: View and assess licence/qualifications held.</p>
1.3	Electrical Supervisors have the requisite experience.	<p>Intent: To ensure compliance with MSIR 5.10(2)(b). Electrical Supervisors must have 2 years relevant experience of electrical work in mining, or other heavy industry.</p> <p>Personnel: Manager or his delegate.</p> <p>Method: Assess periods of appointment and previous employment history.</p>
1.4	The manager has provided a written summary of responsibilities and duties to each appointed Electrical Supervisor.	<p>Intent: To ensure compliance with MSIA s44 (1).</p> <p>Personnel: Manager or his delegate.</p> <p>Method: View and assess written summary of duties and responsibilities provided.</p>
1.5	Details relating to Electrical Supervisor appointments and cancellations are recorded in the Record Book.	<p>Intent: To ensure compliance with MSIR 5.10(4). Details of appointments, cancellations, and areas of responsibility must be recorded in the Mine Record Book.</p> <p>Personnel: Manager or his delegate.</p> <p>Method: View and assess appointments and cancellations in the Record Book.</p>
1.6	Electrical Supervisors have acknowledged their appointments by signing in the Record Book and on any instrument of appointment.	<p>Intent: To ensure compliance with MSIA s44 (3).</p> <p>Personnel: Manager or his delegate.</p> <p>Method: View acknowledgements of appointment in the Record Book and on any instrument.</p>

2. ELECTRICAL WORKER'S LICENCES

Point	Standard	Guideline
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2.1	Licence details of electrical workers employed or engaged at the mine are recorded.	<p>Intent: To ensure compliance with Electricity (Licensing) Regulation 57. The following details must be recorded and kept for 2 years after employment ceases.:</p> <ul style="list-style-type: none"> (a) name and residential address; (b) number, type and expiry date of the licence registration; (c) period of employment at the mine. <p>A convenient and preferred method of recording details is to maintain a register.</p> <p>Personnel: Manager or his delegate.</p> <p>Method: View records kept and enquire in regard to any possible omissions.</p>
2.2	Electrical installing work is undertaken by persons holding a current 'Electrical Mechanics Licence'.	<p>Intent: To ensure compliance with Electricity (Licensing) Regulation 19, as required by MSIR 5.9.</p> <p>Personnel: Manager or his delegate and/or relevant licence holders.</p> <p>Method: Check details in Section 1 of Electrical Logbook against licence records.</p>
2.3	Electrical workers operate within the authority of the licence or permit held.	<p>Intent: To ensure compliance with Electricity (Licensing) Regulation 19, as required by MSIR 5.9.</p> <p>Personnel: Manager or his delegate and/or relevant licence holders.</p> <p>Method: Identify licence holders other than 'A' Grade Electrical Mechanics from the licence register and enquire in regard to electrical work those persons undertake.</p>
2.4	Contractors undertaking electrical installing work hold an 'Electrical Contractor's Licence'.	<p>Intent: To ensure compliance with Electricity (Licensing) Regulation 33, as required by MSIR 5.9.</p> <p>Personnel: Manager or his delegate.</p> <p>Method: Check details of electrical installing work in Section 1 of Electrical Log Book.</p>

3. IN-HOUSE ELECTRICAL INSTALLING WORK & LICENCE

Point	Standard	Guideline
3.1	In-house electrical installing work is authorised by an 'In-House Electrical Installing Work Licence' and current 'Certificate of Registration'.	<p>Intent: To ensure compliance with Electricity (Licensing) Regulation 37. This regulation requires an employer who is not the holder of an electrical contractors licence and who employs an electrical worker to undertake electrical installing work, to hold and maintain the registration of an 'In-House Electrical Installing Work Licence'.</p> <p>Personnel: Manager or his delegate.</p> <p>Method: Determine whether in-house electrical installing work is carried out, view the 'In-House Electrical Installing Work Licence' held and assess currency of registration.</p>
3.2	An 'In-House Electrical Installing Work Licence' and a current 'Certificate of Registration' is displayed in a conspicuous place.	<p>Intent: To ensure compliance with Electricity (Licensing) Regulation 45.</p> <p>Personnel: Manager or his delegate.</p> <p>Method: View and assess the licence and registration certificate displayed.</p>

3.3	At least one eligible 'Nominated Electrical Worker' is currently employed by the 'In-House Electrical Installing Work Licence' holder.	Intent: To ensure compliance with Electricity (Licensing) Regulation 37. It is an offence to carry out 'In-House Electrical Installing Work' if the holder of the 'In-House Electrical Installing Work Licence' does not currently employ at least one eligible person to be a 'Nominated Electrical Worker'. Eligibility requirements are detailed in Electricity (Licensing) Regulation 37. Personnel: Manager or his delegate. Method: Identify one 'Nominated Electrical Worker' and assess eligibility.
3.4	Details of electrical installing work are recorded in an Electrical Log Book.	Intent: To ensure compliance with MSIR 5.14. Log Books indicate the requisite details. Personnel: Appointed Electrical Supervisors and or In-house Nominees. Method: Review details of electrical installing work recorded in Log Book(s).

4. APPOINTMENT OF HIGH-VOLTAGE OPERATORS

Point	Standard	Guideline
4.1	The manager has appointed one or more 'High-voltage Operators'.	Intent: To ensure compliance with MSIA s44, MSIR 5.18(1) and Electricity Regulations (1947) regulation 301. This audit element does not apply if high-voltage equipment is not installed at the mine. Personnel: Manager or his delegate. Method: Determine whether high voltage equipment is installed and details of person(s) that the manager has appointed as 'High Voltage Operator' where applicable.
4.2	Persons appointed as 'High-voltage Operator' are competent.	Intent: To ensure compliance with MSIR 5.18(1). Defined in MSIA s4, 'Competent Person' means having knowledge, training and experience which qualifies the person to perform specified duties. Personnel: Manager or his delegate and/or appointed 'High Voltage Operators'. Method: Interview appointees and/or assess records demonstrating competence.
4.3	The manager has provided a written summary of responsibilities and duties to each appointed 'High-voltage Operator'.	Intent: To ensure compliance with MSIA s44 (1). Personnel: Manager or his delegate. Method: View and assess written summary of duties and responsibilities provided.
4.4	Details of 'High-voltage Operator' appointments are recorded in the Record Book.	Intent: To ensure compliance with MSIA s44 and MSIR 5.18 (2)(c). Details should include the areas of responsibility and any limitations imposed. Personnel: Manager or his delegate. Method: View and assess appointments details recorded in the Record Book.
4.5	' High-voltage Operator' have acknowledged their appointments by signing in the Record Book and on any instrument of appointment.	Intent: To ensure compliance with MSIA s44 (3). Personnel: Manager or his delegate. Method: View acknowledgement of appointment signatures in the Record Book and on any instrument.

5. ELECTRICAL LOG BOOKS

Point	Standard	Guideline
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5.1	An Electrical Log book is kept at the mine.	Intent: To ensure compliance with MSIR 5.13 (1)(a). More than one Electrical Log Book may be kept for recording information relating to different parts of the mine. Personnel: Manager or his delegate. Method: View the Electrical Log Book(s) kept at the mine.
5.2	Entries made in Electrical Log Books are properly completed.	Intent: To ensure compliance with MSIA s89 & MSIR 5.13 (1)(a). Information entered in Log Books must be in ink and be adequate for the purpose. It is acceptable to enter brief references that indicate where more comprehensive information can be found. Personnel: Appointed Electrical Supervisors. Method: View the Electrical Log Book(s) kept at the mine.
5.3	Electrical Log books are solely used for the purpose of recording details that are required to be recorded pursuant to the MSI Act and Regulations.	Intent: To ensure compliance with MSIA s89 (1)(a). Personnel: Appointed Electrical Supervisors. Method: View entries in the Electrical Log Book(s) kept at the mine.
5.4	Entries in Electrical Log Books are acknowledged by a signature of the Registered Manager or his delegate.	Intent: To ensure compliance with MSIA s89 (1)(a). Personnel: Manager or his delegate. Method: View signatures acknowledging entries in Electrical Log Book(s).
5.5	Electrical Log Books are kept safe and in good order from commencement of mining operations.	Intent: To ensure compliance with MSIA s89 (2). Personnel: Manager or his delegate. Method: Assess condition and continuity of Electrical Log Book(s) kept at the mine.

6. ELECTRICAL ACCIDENTS & INCIDENTS

Point	Standard	Guideline
6.1	Electrical accidents and dangerous occurrences are reported to the regulatory authorities.	Intent: To ensure compliance with MSIA Part7 division 2. Every electric shock or burn or dangerous occurrence involving electricity must be immediately reported to the District Inspector. In accordance with Electricity (Licensing) Regulation 63, electrical accidents that have caused or is likely to cause danger to life or property must be reported to the Office of Energy and to any relevant Supply Authority. Personnel: Manager or his delegate. Method: Compare site details of accidents/incidents with DME records.
6.2	Electrical accidents and dangerous occurrences are recorded in the Record Book, Accident Log Book and Electrical Log Book as appropriate.	Intent: To ensure compliance with MSIA Part7 division 2 and MSIR 5.11. Details of every electric shock or burn to a person, and every dangerous occurrence involving electricity must be recorded in the Record book and Electrical Log Book. Reportable accidents involving personal injury must also be recorded in the Accident Log Book. Personnel: Manager or his delegate and appointed Electrical Supervisors. Method: Review accident/incident details entered in Record Book and Log Books.

6.3	Accidents and dangerous occurrences are appropriately investigated.	Intent: To ensure compliance with MSIR 5.11(d). Every electric shock or burn, fire, or dangerous occurrence involving electricity must be appropriately investigated by an appointed Electrical Supervisor. Personnel: Appointed Electrical Supervisor. Method: Interview Electrical Supervisor(s) and review sample investigation reports.
6.4	Electrical workers and assistants have been instructed in resuscitation methods for dealing with apparent death due to electric shock.	Intent: To ensure compliance with Electricity Regulations 1947 regulation 282, in accordance with MSIR 4.13. Personnel: Manager or his delegate. Method: Review and assess training records.

7. ELECTRICAL PLANS & RECORDS

Point	Standard	Guideline
7.1	Plans showing the location and details of high-voltage cabling and equipment are kept at the mine.	Intent: To ensure compliance with MSIR 5.13(1)(b)(i). Plans of high voltage installations are necessary to facilitate high-voltage access permit procedures required by MSIR 5.18(2)(f). Personnel: Manager or his delegate. Method: Review details and currency of high-voltage installation plans kept.
7.2	Plans showing the locations and details of low-voltage and high-voltage cables installed in the ground are kept at the mine.	Intent: To ensure compliance with MSIR 5.13(1)(b)(iii). Plans showing the locations and details of low-voltage and high-voltage cables buried in the ground are necessary to facilitate the use of excavation permit procedures required by MSIR 5.31(2). Personnel: Manager or his delegate. Method: Check availability plans showing buried cabling and check currency by reviewing any records of recent buried cable installation work.
7.3	Plans which delineate and indicate the classification of 'hazardous-areas' in which explosion-protected equipment must be installed are kept at the mine.	Intent: To ensure compliance with MSIR 5.3 which invokes Clause 7.9.2 of AS/NZS3000. A 'hazardous area' is defined as an area in which an explosive atmosphere is present, or may be expected to be present, in such quantities as to require special precautions for the construction, installation and use of electrical equipment. Personnel: Manager or his delegate. Method: Review details and check currency of 'hazardous area' plans kept.
7.4	A 'Verification Dossier' containing compliance certification and all other required information relating to explosion-protected equipment installed in 'hazardous-areas' at the mine, is kept and maintained.	Intent: To ensure compliance with MSIR 5.4 and MSIR 5.3 which invokes Clause 7.9.3 of AS3000. Relevant information required to be kept in a 'Verification Dossier' is detailed Clause 1.6 of AS2381.1. Personnel: Manager or his delegate. Method: Review Verification Dossier plans required to be kept.

8. SUPERVISION OF ELECTRICAL WORK

Point	Standard	Guideline
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8.1	Appointed Electrical Supervisors ensure that electrical work at the mine is supervised.	Intent: To ensure compliance with MSIR 5.11(a) and Electricity (Licensing) Regulation 50. Regulation 50 specifies and can be referenced to determine what is regarded as acceptable supervision. In general, electrical work carried out by a person holding a licence to undertake that work does not require supervision. Others must be supervised by a person who holds a licence for carrying out the work in question (referred to as the 'Supervising Electrical Worker'). Special provisions apply to apprentices. Personnel: Electrical Supervisors. Method: Identify any electrical workers that are required to be supervised and assess levels of supervision established.
8.2	Electrical apprentices, permit holders and 'B' grade licence holders have been instructed regarding electrical work undertaken that requires supervision.	Intent: To ensure compliance with Electricity (Licensing) Regulation 50 as required by MSIR 5.11(a) and 5.9. Refer guidance notes in audit point 8.1 above. Personnel: Appointed Electrical Supervisors. Method: Interview relevant employees and/or assess records.
8.3	'Supervising Electrical Workers' have been instructed regarding their supervising responsibilities.	Intent: To ensure compliance with Electricity (Licensing) Regulation 50 as required by MSIR 5.11(a) and 5.9. Refer guidance notes in audit point 8.1 above. Personnel: Appointed Electrical Supervisors. Method: Interview 'Supervising Electrical Workers' and/or assess records.
8.4	Electrical workers are inducted in regard to equipment and systems of work applicable to each workplace.	Intent: To ensure compliance with MSIR 4.13. Electrical workers required to work in workplaces that they may not be familiar with must receive appropriate induction prior to commencing work. Personnel: Electrical Supervisors and individual electrical workers. Method: Discuss with electrical supervisors and assess records.
8.5	Electrical installations at the mine are designed by qualified persons.	Intent: To ensure electrical installations are designed in accordance with applicable specifications. Personnel: Electrical Supervisors. Method: Assess records and title block details on electrical plans.
8.6	'In-House Nominated Electrical Worker(s)' check, test, and certify electrical installing work carried out at the mine.	Intent: To ensure compliance with MSIR 5.14 and Electricity (Licensing) Regulations 51, 52 and 53. Electrical installing work must be carried out by licenced electrical workers and in accordance with relevant regulations, codes and standards. Refer audit point 3.3 regarding Nominated Electrical Worker(s). Personnel: In-house Nominated Electrical Worker(s). Method: Review and assess entries in section 1 of Electrical Log Book(s).

9. HIGH-VOLTAGE ACCESS PERMIT PROCEDURE

Point	Standard	Guideline
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9.1	A written procedure has been established to safeguard work on or in close proximity to exposed high-voltage conductors.	Intent: To ensure compliance with MSIR 5.18 (2). The procedures must address and safeguard persons intending to carry out work on, or within the danger zone around high-voltage conductors. Note that procedures for safeguarding against inadvertent contact or close approach to overhead powerlines by plant capable of breaching requisite safety clearances are assessed in audit element 10. Personnel: Manager or his delegate. Method: Review and assess established procedures.
9.2	Electrical workers have been instructed and assessed in regard to 'High-voltage access permit procedure'.	Intent: To ensure compliance with MSIR 5.18 (2) & 4.13. All electrical workers, whether appointed as 'High-Voltage Operator' or otherwise, must be instructed in regard to the procedure for authorising high-voltage electrical work. Personnel: Manager or his delegate. Method: Assess training records and/or interview a selection of electrical workers.
9.3	Work in close proximity to high-voltage conductors is not permitted unless authorised by a 'High-voltage access permit' issued by a 'High Voltage Operator'.	Intent: To ensure compliance with MSIR 5.18 (2)(f). Personnel: Manager or his delegate. Method: Review procedure and view copies of access permits issued.
9.4	'High-voltage access permits' adequately describe the work to be undertaken and all necessary safety measures effected.	Intent: To ensure the requirements of MSIR 5.18 (3) are being consistently adhered to. Personnel: Manager or his delegate. and/or appointed 'High Voltage Operators'. Method: Review procedure and details on cancelled access permits.
9.5	Isolation of high-voltage equipment for access, maintenance or repair purposes is conducted in accordance with a switching program prepared and checked by a 'High Voltage Operator'.	Intent: To ensure that the methods of work prescribed in MSIR 5.18 (2)(e) and requirements in MSIR 5.18 (3) are complied with. Personnel: Manager or his delegate. and/or appointed 'High Voltage Operators'. Method: Review switching programmes on record and check authorising signatures.
9.6	'High-voltage access permits' reference and are accompanied by a respective switching program.	Intent: To ensure that the methods of work prescribed in MSIR 5.18 (2)(e) and requirements in MSIR 5.18 (3) are complied with. Personnel: Manager or his delegate. and/or appointed 'High Voltage Operators'. Method: Review access permit details and switching programmes on record.
9.7	Isolation of high-voltage equipment for access, maintenance or repair purposes is conducted by a 'High Voltage Operator'.	Intent: To ensure compliance with MSIR 5.18 (2)(b). The isolations referred to are those required to access, maintain or repair exposed high voltage conductors. Personnel: Manager or his delegate and/or appointed 'High Voltage Operators'. Method: Review authorising signatures on 'Access Permits'.
9.8	'High-voltage access permits' are not authorised prior to equipment being isolated, discharged, proved de-energised, short-circuited, connected to earth and tagged.	Intent: To ensure that the methods of work prescribed in MSIR 5.18 (2)(e) and requirements in MSIR 5.18 (3) are complied with. Authorisation to commence work must not be granted in advance of effecting necessary safeguards. Personnel: Manager or his delegate. and/or appointed 'High Voltage Operators'. Method: Review and ensure that the procedure reflect this aspect.
9.9	Work party members do not commence work before signing on to the 'High-voltage access permit'.	Intent: To ensure compliance with MSIR 5.18 (2)(f). Personnel: Manager or his delegate. and/or appointed 'High Voltage Operators'. Method: Review procedures and view copies of access permits issued.
9.10	'High-voltage access permits' are not cancelled prior to all work party members signing off of the access permit.	Intent: To ensure compliance with MSIR 5.18 (2)(f). Personnel: Manager or his delegate and/or appointed 'High Voltage Operators'. Method: Review procedures and view copies of access permits issued.

9.11	Records of 'High-voltage access permits' are kept for 2 years.	Intent: The keeping of records for 2 years demonstrates that the system of work is being consistently adhered to. Personnel: Manager or his delegate. Method: View copies of cancelled high-voltage access permits kept on record.
9.12	Suitable apparel, test instruments, earthing and operating equipment are provided and maintained for safely effecting high-voltage isolations.	Intent: To ensure compliance with MSIR 5.18 (2)(d). Personnel: Manager or his delegate and/or appointed 'High Voltage Operators'. Method: View and assess suitability and condition of high-voltage operating equipment and apparel provided.

10. POWERLINE CORRIDOR ACCESS PERMIT PROCEDURE

Point	Standard	Guideline
10.1	A written procedure has been established to safeguard against inadvertent contact or close approach to an energised overhead powerline by plant that is capable of breaching the requisite safety clearances.	Intent: To ensure compliance with MSIR 5.28 (1)(c) &(d). This audit element does not apply if overhead powerlines are not installed at the mine. Access procedures are not required for powerlines that are de-energised. Personnel: Manager or his delegate. Method: Review and assess written procedures if overhead powerlines are installed.
10.2	The procedure addresses emergency response methods for dealing with inadvertent machinery contact with an overhead powerline.	Intent: To ensure compliance with employers duties under MSIA s9. Personnel: Manager or his delegate. Method: Review and ensure procedure addresses the hazards likely to arise from electrified vehicles and tyre explosions.
10.3	Relevant plant operators have been instructed and assessed in regard to access procedures.	Intent: To ensure compliance with MSIR 4.13. Personnel: Manager or his delegate and a selection of plant operators. Method: Assess training records kept and/or interview a selection of plant operators.
10.4	The procedure indicates the requisite minimum powerline clearance to be maintained when plant operates in a powerline corridor.	Intent: To ensure compliance with MSIR 5.28(1)(c). The required minimum clearances are those specified in AS3007.5 and the procedure may stipulate greater clearances. Personnel: Manager or his delegate. Method: Review and assess written procedure.
10.5	The procedure prohibits the operation of plant in a powerline corridor unless the requisite clearance can be assured.	Intent: To ensure compliance with MSIR 5.28(1)(d). Personnel: Manager or his delegate. Method: Review and assess written procedure.
10.6	The procedure prohibit the operation of plant elevating parts that do not afford the required clearances when fully raised, unless authorised by a 'powerline corridor access permit'.	Intent: To ensure compliance with MSIR 5.28(1)(d). Personnel: Manager or his delegate. Method: Review and assess written procedure.
10.7	The manager has appointed in writing one or more competent person(s) for the purpose of issuing 'powerline corridor access permits'.	Intent: To ensure compliance with MSIA s44, and MSIR 5.28(1)(d). Personnel: Manager or his delegate. Method: Review details of person(s) that the manager has appointed to issue 'Powerline Corridor Access Permits' and ensure sufficient persons have been appointed

10.8	Details of persons appointed to issue 'Powerline corridor Access permits' are recorded in the Record Book.	Intent: To ensure compliance with MSIA s44. Details should include any areas of responsibility and limitations imposed. Personnel: Manager or his delegate. Method: View and assess appointments recorded in the Record Book.
10.9	Persons appointed to issue 'Powerline corridor access permits' have acknowledged their appointments by signing in the Record Book and on any instrument of appointment.	Intent: To ensure compliance with MSIA s44 (3). Personnel: Manager or his delegate. Method: View acknowledgement of appointment signatures in Record Book and on any instrument.
10.10	The manager has provided a written summary of responsibilities and duties to persons appointed to issue 'Powerline corridor access permits'.	Intent: To ensure compliance with MSIA s44 (1). Personnel: Manager or his delegate. Method: View and assess written summary of duties and responsibilities provided.
10.11	'Powerline corridor access permits' stipulate necessary safeguards to be effected that will assure the requisite safety clearances will be maintained.	Intent: To ensure requisite clearances prescribed in MSIR 5.28(1)(c) will be maintained. Personnel: Manager or his delegate and/or persons appointed to issue 'Powerline corridor access permits'. Method: Review procedures and records of access permits issued.
10.12	Records of 'Powerline corridor access permits' are kept for 2 years.	Intent: The keeping of records for 2 years demonstrates that the system of work is being consistently adhered to. Personnel: Manager or his delegate. Method: View records of access permits issued.

11. GROUND EXCAVATION PERMIT PROCEDURE

Point	Standard	Guideline
11.1	A written procedure has been established to safeguard persons required to excavate ground in the vicinity of cables buried in the ground.	Intent: To ensure compliance with MSIR 5.31 (2). Personnel: Manager or his delegate. Method: View and assess written procedures.
11.2	Employees have been instructed and assessed in regard to the excavation permit procedure.	Intent: To ensure compliance with MSIR 4.13. Personnel: Manager or his delegate. Method: Assess training records kept and/or interview a selection of employees.
11.3	Excavation work in the vicinity of buried cables is not commenced unless authorised by a 'Ground excavation permit'.	Intent: To ensure compliance with MSIR 5.31 (2). Personnel: Manager or his delegate. Method: View written procedures and ensure provision for the issue of permits.
11.4	The manager has appointed sufficient competent persons for the purpose of issuing 'Ground excavation permits'.	Intent: To ensure compliance with MSIA s44, and MSIR 5.31 (2). Personnel: Manager or his delegate. Method: Review details of person(s) appointed to issue 'Ground excavation permits'.
11.5	Details of persons appointed to issue 'Ground excavation permits' are recorded in the Record Book.	Intent: To ensure compliance with MSIA s44. Details should include any areas of responsibility and limitations imposed. Personnel: Manager or his delegate. Method: View and assess authorisations recorded in the Record Book.

11.6	Persons appointed to issue 'Ground excavation permits' have acknowledged their authorisations by signing in the Record Book and on any instrument conveying that authority.	Intent: To ensure compliance with MSIA s44 (3). Personnel: Manager or his delegate. Method: View acknowledgements of appointment signatures in Record Book and on any instrument.
11.7	The manager has provided a written summary of responsibilities and duties to persons appointed to issue 'Ground excavation permits'.	Intent: To ensure compliance with MSIA s44 (1). Personnel: Manager or his delegate. Method: View and assess written summary of duties and responsibilities provided.
11.8	Persons appointed to issue 'Ground excavation permits' are required to consult current plans and specifically identify the worksite location prior to issuing a permit.	Intent: To ensure compliance with MSIR 5.31 (3). Accidents have resulted from failures to ensure plans are current and /or identify the specific worksite location. Personnel: Manager or his delegate. Method: View written procedures and ensure these requirements are provide for.
11.9	Persons appointed to issue 'Ground excavation permits' detail on the permit the safeguards that must be adhered.	Intent: To ensure compliance with MSIR 5.31 (3)(c). Personnel: Manager or his delegate. Method: View written procedures and ensure these requirements are provided for.
11.10	Records of 'Ground excavation permits' issued are kept for 2 years.	Intent: The keeping of records for 2 years assists in demonstrating that the system of work is consistently being adhered to. Personnel: Manager or his delegate. Method: View records of 'Ground excavation permits' issued.

12. TRAILING CABLE OPERATING PROCEDURES

Point	Standard	Guideline
12.1	Written procedures have been established for safeguard trailing cables used at the mine.	Intent: To ensure compliance with MSIR 5.21 (c). Trailing cables must be safeguarded from damage by vehicles in particular and also from environmental damage. Personnel: Manager or his delegate. Method: View and assess written procedure.
12.2	Relevant plant operators have been instructed and assessed regarding trailing cable operating procedures.	Intent: To ensure compliance with MSIR 5.21 (c) and MSIR 4.13. Personnel: Manager or his delegate and selection of plant operators. Method: Assess training records kept.
12.3	Procedures describe the safeguards to be effected when trailing cables are anchored, extended, retrieved, energised and de-energised.	Intent: To ensure compliance with MSIR 5.21 (c). Personnel: Manager or his delegate. Method: View and assess written procedure.
12.4	Procedures requires the installation of signs and barriers to prohibit vehicle access into places where a trailing cable are at risk from damage.	Intent: To ensure compliance with MSIR 5.21 (c). Personnel: Manager or his delegate. Method: View and assess written procedure.
12.5	Procedures require any face sump pump, to be directly connected to an underground Jumbo-drill when the machine is operating at the face.	Intent: To ensure compliance with MSIR 5.21 (b). A face pump supply cable that is not directly connected via the Jumbo machine can provide an alternative electrical earth return path and negate the effectiveness of the Jumbo trailing cable earth-continuity protection device. Personnel: Manager or his delegate. Method: View and assess written procedure.

13. STATUTORY ELECTRICAL MAINTENANCE

Point	Standard	Guideline
13.1	Electrical equipment and cables that are likely to become hazardous are periodically examined and tested at intervals which ensure safety and the results are recorded in an Electrical Log Book.	<p>Intent: To ensure compliance with MSIR 5.27(2)(a). Periodic examination and testing of cables and equipment is necessary to identify and remedy any defects likely to result in an unsafe condition. In accordance with MSIR 5.27 (4)(b) a brief reference may be entered in an Electrical Log Book describing where more comprehensive examination and test results can be found.</p> <p>Personnel: Appointed Electrical Supervisors.</p> <p>Method: Review maintenance system and the records in Electrical Log Book(s).</p>
13.2	Portable electrical apparatus normally used in a heavy operating environment is examined, tested and tagged quarterly, and the results are recorded in an Electrical Log Book.	<p>Intent: To ensure compliance with MSIR 5.27(2)(b) & 5.27(4). Portable apparatus normally used in a heavy operating environments such as workshops, mining areas, processing areas and construction sites must be examined and tested quarterly, and the results must be entered in an Electrical Log Book.</p> <p>Personnel: Appointed Electrical Supervisors.</p> <p>Method: Review records entered in Electrical Log Book(s).</p>
13.3	Portable electrical apparatus brought to the mine by contractors for use in heavy operating environments is inspected prior to use to ensure that the apparatus has been examined, tested and tagged in the previous three months.	<p>Intent: To ensure compliance with MSIR 5.27(2)(b). The requirements of MSIR 5.27(2)(b) applies equally to portable apparatus brought to site by contractors. Records of any inspections, examinations and tests carried out on behalf of the contractor must be recorded in the Electrical Log Book.</p> <p>Personnel: Appointed Electrical Supervisors.</p> <p>Method: Review records of inspections, examinations and tests entered in Log Book(s).</p>
13.4	The effectiveness of earthing systems, continuity of earthing conductors and the adequacy of electrical insulation is routinely tested, and the results are recorded in an Electrical Log Book.	<p>Intent: To ensure compliance with MSIR 5.27(2)(c) & 5.27(4). Unsafe conditions arising from ineffective earthing systems, discontinuity of earthing conductors and inadequate electrical insulation can only be revealed by systematic testing.</p> <p>Personnel: Appointed Electrical Supervisors.</p> <p>Method: Review records entered in Log Book(s).</p>
13.5	Earth-leakage devices required to be installed in a quarry operation, on parts of a dredge other than a floating treatment plant, and underground in a mine are tested monthly and the results are recorded in an Electrical Log Book.	<p>Intent: To ensure compliance with MSIR 5.27(2)(d) & 5.27(4). Earth leakage devices required to be installed in a quarry operation, on part of a dredge other than a floating treatment plant , or in an underground mine must be tested monthly.</p> <p>Personnel: Appointed Electrical Supervisors.</p> <p>Method: Review records entered in Log Book(s).</p>
13.6	Earth-leakage devices required to protect alternating current circuits supplying portable, mobile or moveable apparatus are periodically tested and the results are recorded in an Electrical Log Book.	<p>Intent: To ensure compliance with MSIR 5.24(1)(b) and 5.27 (2)(a). To comply with these requirements which apply in all parts of the mine, tests are required to be carried out 'periodically'. Industry best practice is regarded as quarterly.</p> <p>Personnel: Appointed Electrical Supervisors.</p> <p>Method: Review records entered in Log Book(s).</p>

<p>13.7</p>	<p>Earth-continuity devices required to be installed in a quarry operation, on parts of a dredge other than a floating treatment plant, and underground in a mine are tested monthly and the results are recorded in an Electrical Log Book.</p>	<p>Intent: To ensure compliance with MSIR 5.27(2)(d) &5.27(4). Earth continuity devices required to be installed in a quarry operation, on part of a dredge other than a floating treatment plant , or in an underground mine must be tested monthly. Personnel: Appointed Electrical Supervisors. Method: Review records entered in Log Book(s).</p>
<p>13.8</p>	<p>Earth Continuity devices required to be installed in places other than in a quarry operation, on parts of a dredge other than a floating treatment plant, or underground in a mine are tested periodically and the results are recorded in an Electrical Log Book.</p>	<p>Intent: To ensure compliance with MSIR 5.32(2) and 5.27 (2)(a). To comply with these requirements (applicable in all parts of the mine), tests are required to be carried out 'periodically'. Industry best practice is regarded as quarterly. Personnel: Appointed Electrical Supervisors. Method: Review records entered in Log Book(s).</p>