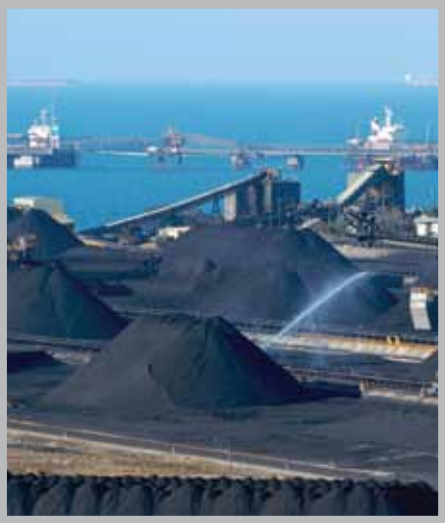
Department of **Employment, Economic Development and Innovation**

SafeGuard

A safety and health management system and audit criteria for the Queensland mining and quarrying industries



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Introduction—Why SafeGuard?

Mining and quarrying are, by their very nature, hazardous industries.

Many organisations have proven that the risks can be controlled to acceptable levels through effective safety and health management systems—supported by formal risk management processes that identify hazards, assess and rank risk, determine control measures and monitor effectiveness of the controls. However, it is possible to further reduce the incidence of injury, death and occupational disease in our mines, quarries and associated activities.

Those in control have a duty of care to provide safe systems of work and a safe and healthy workplace for all people on the site. Therefore, safety and health should be an integral part of management systems from the first day of planning the mine or quarry right through to every aspect of its operations. Safety and health should not be a bolt-on item or an afterthought.

Every aspect of an organisation's activities should consider the safety and health of employees. Machines and equipment should be designed, constructed and installed for safe operation. Work systems should be planned to minimise risk. In other words, helmets and safety glasses, while important, should not represent an organisation's only answer to safety and health.

Most importantly, making safety and health a part of everything you do prevents pain and suffering. It also has many financial benefits. A workplace free from injuries promotes higher productivity, lowers workers compensation insurance costs, reduces the threat of legal action or fines, improves employer–employee relationships, boosts morale and helps retain staff.

SafeGuard will help assess an organisation's safety and health management system, measure its performance and ensure continuous improvement.

The elements outlined for safety and health in this edition are modelled on the Australian and New Zealand standard AS/NZS 4801:2001 (see the table on page 3). This edition has also incorporated the revised requirements stated in ISO 14001:2004, which are also addressed in the 'how to' document AS/NZS ISO 19011, Guidelines for quality and/or environmental management systems auditing. Relevant elements from the second edition (which was modelled on the international standard AS/NZS ISO 9001:1994) have been incorporated into this edition.

SafeGuard has been developed by the Mines Inspectorate within the Department of Employment, Economic Development and Innovation (DEEDI) in consultation with industry, unions and occupational health and safety specialists.

DEEDI welcomes comments on SafeGuard to assist in the continual improvement of this document.

Corresponding SafeGuard and AS/NZS 4801 elements

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Part 1 Safety and health management system and audit criteria

This section plays a dual role:

1. It can be used as a guide to setting up an effective safety and health management system.
2. It can be used to carry out a detailed audit of your organisation's safety and health management system.

Auditing

An audit is more than an inspection of a safety and health management system. As defined in ISO 19011, it is a 'systematic, independent and documented process for obtaining evidence and evaluating it objectively to determine the extent to which audit criteria are fulfilled'.

The SafeGuard audit system goes somewhat beyond this, in that it also identifies and reinforces where the system is performing well.

Auditing is used extensively in management systems. This is because traditional inspections identified problems but not the system errors that were causing them. Audits provide a basis for continual improvement of safety and health management systems. They set up a system for action to correct the immediate problem and steps to stop it happening again.

An audit should be conducted in two phases:

1. desktop auditing for systems, to determine whether the systems are in place and suitable
2. onsite auditing, to verify and determine the effectiveness of these systems.

An organisation must accept that for an audit to be effective, there must be commitment and adequate resources. Responsibility for corrective action must be clearly assigned and an action plan must be prepared and carried out as soon as possible.

Management must ensure that the corrective action has achieved the desired improvements. Auditors will follow up and confirm the action taken to correct the problems identified by the audit. They will also highlight any unintended consequences of the corrective action.

Effective auditors

Training courses in auditing are provided by management system consultancies. Also, Standards Australia has produced a guide to auditing. Specialist consultants can help carry out or review internal audits.

Clearly, it is preferable that people carrying out an audit are trained and understand formal auditing procedures. Also, auditing teams should possess expertise in the activity being audited.

Auditors should be able to carry out an objective review and report findings honestly. They should be able to communicate well (both in writing and orally) and should be able to interact effectively with workers, supervisors and management about their findings.

Element 1 General requirements

Objective

A structured and effective safety and health management system that is established, documented, implemented, maintained and continually improved.

This will assist a company to meet its legal obligations, manage hazards and risks and continually improve its safety and health performance.

Legal obligations

- Establish, document, implement, maintain and continually improve a safety and health management system. The system should be based on the principles of plan, do, check, review and act (commonly known as PDCRA).
- Identify the scope of the management system (e.g. the site/s, activities, products and/or services to be included in the system).
- Ensure everyone working for or on behalf of the organisation—including contractors and especially the senior management—is committed to the management system.

Element 2 Safety and health policy

Objective

A clear statement by the chief executive officer demonstrating the commitment of senior management to safety and health.

This statement will provide direction for the safety and health management system and will drive improvement in safety and health performance.

Legal obligations

- Ensure that the safety and health policy[1] (authorised and dated in writing by the chief executive officer of the organisation) clearly states the organisation's overall safety and health objectives and demonstrates a commitment to improving safety and health performance. The safety and health policy should:
  - be appropriate to the nature and scale of the organisation's risks
  - include a commitment to establish measurable safety and health objectives and targets to ensure continual improvement aimed at elimination of work-related injury and illness
  - declare management's commitment to comply with relevant safety and health legislation and with other requirements placed upon the organisation or to which the organisation subscribes
  - be documented, implemented, maintained and communicated to all employees and be made available to interested parties
  - be reviewed periodically to ensure that it remains current, relevant and appropriate to the organisation.
- Communicate the safety and health policy to all staff, including people working on behalf of the organisation (e.g. as contractors and subcontractors). When requested, the policy should be made available to all interested parties, such as government agencies, auditors and customers.
- Make the safety and health policy the basis of the organisation's safety and health management system and implement it at all levels of the organisation.

[1] This in the main refers to section 4.2 of AS/NZS 4801.

Element 3 Planning for hazard and risk identification, assessment and control

Objective

An effective and up-to-date method for hazard and risk identification, assessment and control.

Legal obligations

- Put in place a planning process and documented procedures to identify, assess and control hazards and risks that are likely to cause harm within the scope of the organisation's safety and health management system.
- In planning this process, involve people who have operational knowledge of the area/s where the hazards and risks are to be identified, as well as people who are competent in risk assessment and the application of effective controls.
- Follow a recognised process of risk assessment to identify and rank hazards and risks, then identify and prioritise the controls needed.
- Evaluate the residual risks after the controls have been implemented. This will reveal the effectiveness of the controls and whether additional controls or improvements are needed.
- Maintain a documented hazard/risk register (for larger organisations in particular).
- Use a method that caters for rates of changes to activities/products/services within the organisation. (Note: Separate methods may be needed, e.g. job safety analysis and/or risk management based on AS/NZS 4360, Risk management).
- Keep the chosen method up to date.

Element 4 Legal and other requirements

Objective

Regular review of relevant standards, legislation and other requirements, including the expectations of other interested parties.

This is needed to provide a safe and healthy workplace and to comply with safety and health laws. An employer has an obligation to provide a safe and healthy workplace.

Legal obligations

- Put in place a procedure for ongoing identification of the current applicable legal and other requirements placed upon, or subscribed to by, the organisation.
- Identify and review these requirements, and keep copies of them (including all amendments) up to date.
- Make these requirements available and/or communicate them to all affected parties.

Element 5 Objectives, targets and management plans

Objective

Clear, measurable objectives, targets and plans based on the safety and health policy.

These must be established to implement the commitment made in the safety and health policy and to demonstrate continual improvement in the performance of safety and health.

Legal obligations

- Set documented objectives and targets at all levels and functions within the organisation, taking into account:
  - hazards and risks identified
  - legal and other requirements identified
  - appropriate key performance indicators (KPIs)
  - technological options
  - operational and business requirements
  - views of interested parties.

  These should be consistent with the commitments made in the safety and health policy document (Element 2), including the commitments to comply with applicable legal and other requirements (Element 4), to eliminate workplace-caused injuries and illnesses and to improve safety and health performance.
- Establish, implement and maintain safety and health plans to meet the objectives and targets. They should include:
  - a means to achieve the objectives and targets
  - audit criteria
  - time frames for completion
  - review periods
  - designation of responsibilities.

Element 6 Resources, structure and responsibilities

Objective

Sufficient resources and clear responsibilities, authorities and accountabilities for safety and health management.

Responsibilities should be established and resources should be made available to implement and maintain the safety and health management system.

Legal obligations

- Allocate appropriate resources—financial, technological and infrastructure—to ensure that the safety and health management system can be established, implemented, maintained and improved. Resources also include competent people to manage and perform work and to verify that safety and health requirements are met. These people may include occupational health and safety (OH&S) specialists or consultants, who can identify OH&S issues, provide advice and—with the help of managers, supervisors and workers—develop control mechanisms.
- Produce an organisation chart, keep it up to date and make it readily available. The chart must clearly identify people who have responsibility, authority and accountability for establishing, implementing, maintaining and improving the safety and health management system.
- Clearly define job descriptions (or equivalent) of people with the responsibility and authority for the safety and health management system.
- Clearly inform people with specific safety and health responsibilities of these responsibilities.
- Ensure all people (managers, supervisors, workers, contractors, suppliers and manufacturers) are fully aware of their legislative and duty-of-care obligations as well as their accountabilities.
- Clarify any areas of accountability and responsibility with any contractors.
- Appoint specific managers, irrespective of their other responsibilities, to help ensure that the safety and health management system is established, implemented, maintained and improved. These managers must regularly report on the performance of the safety and health management system (including any recommendations for improvement) to senior management.

Element 7 Competency, training and awareness

Objective

Clear standards of competency that address hazards associated with particular jobs and procedures and therefore identify competency levels and training needs.

Training helps ensure workers are competent and have up-to-date knowledge of safety and health issues. Training should be provided by suitably qualified trainers and trainees must be assessed by competent assessors.

Legal obligations

- Establish, implement and maintain a training and awareness procedure for competency. This should include:
  - identification of competency requirements for the tasks carried out by persons both working for and working on behalf of the organisation
  - regular training needs analysis (which meets legislative requirements) carried out in consultation with the mineworkers.
- Carry out structured training, or other means, to address the training needs identified. This should include:
  - safety and health awareness
  - principles and practice for identification of hazards as well as risk identification, assessment and controls
  - induction (general and job-specific) for new and transferred workers
  - refresher training courses for all workers
  - changes to plant, equipment or processes.
- Ensure that training and assessment is carried out by suitably qualified persons.
- Ensure that trainees are formally assessed for competency. This should include theory and practical testing where appropriate.
- Keep records of competency training and awareness. This includes obtaining licences, certificates and authorisations for specialised positions (e.g. equipment operator, crane driver, winder driver, shot firer).

Element 8 Communication, consultation and reporting

Objective

Effective communication, consultation and reporting to ensure that all mine workers are aware of the safety and health requirements, including processes for mine worker feedback on workplace safety and health needs.

Legal obligations

- Establish, document, implement and maintain the means and methods of communication to ensure that all relevant information is communicated to and from all levels and functions (including employees, interested parties and management). These means and methods can include:
  - regular toolbox meetings
  - emails, intranet and/or noticeboards
  - formalised documentation and newsletters
  - formal (group) and informal (normally on-the-job one-to-one or two-to-one) meetings
  - pre-shift (or similar) briefing and introduction sessions.
- Establish, document, implement and maintain a procedure to consult employees on:
  - the development, implementation and review of policies and procedures for hazard identification, risk assessment and control of risks/hazards
  - any changes that affect workplace safety and health
  - selection of their safety and health representative/s.
- Inform mine workers of the identity of their safety and health representative/s.
- Ensure that those representing mine workers for the development, implementation and review of the safety and health arrangement have completed appropriate training.
- Document procedures for reporting:
  - safety and health performance (including results of audits and reviews)
  - incidents and system failures
  - hazard identification and risk assessment
  - corrective and preventive action
  - statutory reporting.

Element 9 Safety and health documentation

Objective

A documented safety and health management system that demonstrates how the organisation meets its safety and health commitment.

Legal obligations

- Ensure that a safety and health manual (or equivalent) shows how the objective of each element of the mine's safety and health management system is going to be met. The manual need not contain full details, but will be a reference for finding the information on safety and health within the management system. The manual should be appropriate to the size and nature of the operation and provide safety and health information (or a reference to the location of safety and health information) on:
  - safety and health policy
  - hazard identification, risk assessment and risk control methodology including monitoring of effectiveness
  - identification of legal and other applicable requirements
  - objectives, targets, management plans and continual improvement guidelines
  - organisation structures and responsibilities
  - training and competency of mine workers (including contractors)
  - communication, consultation and reporting
  - control of documents and data
  - hazard identification, risk assessment and risk controls including:
    - design and planning procedures
    - purchasing, evaluation and selection of contractors
    - standard procedures
    - maintenance procedures
  - emergency preparedness and response
  - inspection, monitoring, measurement, health surveillance and safety and health performance data
  - injury, incident and hazard reporting and investigation, including corrective/preventive actions
  - safety and health records
  - audits and management reviews.
- Ensure that the manual is clearly written so that all parts of the safety and health management system are understood by the relevant mine workers. Many sites now maintain their manuals electronically so that employees can readily access them at or near their workplaces. This also has a major benefit as far as document control is concerned—the up-to-date master copy is the electronic version and the paper copy is a secondary resource, updated as required.
- Ensure that documentation provides operational, maintenance and safety and health information, which may include:
  - design plans and specifications
  - operating manuals
  - maintenance manuals
  - process information
  - flow diagrams
  - reticulation diagrams, for example for:
    - electrical systems
    - water
    - compressed air
    - gases
    - toxic/hazardous substances
    - fuels
    - slurries
    - steam
    - sewerage

  - plans and location diagrams, for example for:
    - travel and escape ways
    - refuges
    - supervisor and control rooms
    - telephones
    - firefighting systems
    - magazines
    - fuel storage
    - power isolation points
    - ventilation
    - refrigeration.
- Document work procedures[2] where the absence of such procedures could adversely affect safety and health.
- Identify through a formal process those tasks that need documented work procedures.
  The documented work procedures must:
  - conform with safety and health legislation, standards, codes, good mining/quarrying practice and good housekeeping principles
  - be prepared for hazard/risk management as a means of communicating to the workforce the control priorities assigned based on the established level of risk (that is, they identify a safe and consistent method of work).

Element 10 Control of documents and data

Objective

Control of documents and data that relate to safety and health to ensure that the information is correct and that up-to-date copies are readily available to those who need to use them.

Legal obligations

- Put in place procedures to control all documents, information and data critical to safety and health (e.g. standard procedures, training manuals). These should include the responsibilities for the creation and modification of the various types of documentation and data.
- Approve and review documents for adequacy before issue and periodically ensure that they are reviewed and revised, as necessary, by competent and responsible people.
- Make available and keep up to date a master list or other means of identifying all documents and data under control and their current status.
- Make available current versions of relevant documents (in electronic or controlled print format) at all locations where the safety or health of a person could be adversely affected by the absence of those documents.
- Clearly identify relevant documents, ensuring that each one specifies the version and date.
- Remove obsolete documents from all points of issue or use.
- Suitably identify obsolete documents when retained for legal and/or knowledge-preservation purposes.
- Review and approve changes to documents before issue.
- Identify changes to a document in the document or in an attachment.

[2] These are currently known as standard work procedures, standard operating procedures and standard work instructions.

Element 11 Hazard and risk identification, assessment and control

Objective

Implementation and maintenance of an effective process for hazard identification, risk assessment and risk control.

Legal obligations

- Establish, implement and maintain a documented planning procedure for hazard and risk identification, assessment and control (as stated in Element 3 and Section 4.3.1 of AS/NZS 4801).
- Ensure that the identification process takes into account:
  - all situations or events or combinations of circumstances that have the potential to give rise to injury or illness
  - the nature of the potential injury or illness relevant to the activity, product or service
  - past injuries, incidents and illnesses.
- Ensure that the identification process also considers:
  - the way the work is organised, managed and done and changes that could occur in it, including the work environment, equipment, materials, staff available and information available
  - the design of workplaces, work processes, materials, plant and equipment
  - the fabrication, installation, commissioning, handling and disposal of materials, plant and equipment
  - the purchasing of goods and services
  - the contracting and subcontracting of plant, equipment, services and labour, including contract specification and responsibilities to and of contractors
  - the inspection, maintenance, testing, repair and replacement of plant and equipment.
- Assess the hazards/risks (once the hazards have been identified) to determine the priorities of the controls.
- Using the results of the hazard/risk assessment, control those hazards/risks requiring controls using the preferred order of control methods (where practicable). This preferred order, commonly known as hierarchy of control, is:
  - Elimination—Modify the process method or material to eliminate the hazard completely.
  - Substitution—Replace the material, substance or process with a less hazardous one.
  - Isolation/engineering control—Isolate the hazard from people by safeguarding, or by space or time separation, or by putting in place engineering solutions (to reduce the need for human intervention).
  - Administrative control (or procedural control)—Adjust the time or conditions of risk exposure.
  - Personal protection—Use, as a last resort (also to be used in conjunction with above measures), appropriately designed and properly fitting equipment where other controls are not practicable.

Additional controls

Consider, in addition, the following controls:

Design and development

- Where practical, the hazards and risks should be eliminated or reduced at the design and development stage. This could cover:
  - overall project design
  - mine/quarry excavation design
  - equipment design
  - civil works design
  - structures design
  - process design.
- The procedure for design could include the planning and implementation of the design and development, design review, verification, validation and changes.
- Design/development plans should be prepared to detail the design processes, responsibilities, use of a competent designer, time frames and resources required.

- The means for effective communication and information flows between management and technical groups should also be included in the design plan. Feedback should be sought and obtained from employees and effectively used.
- All applicable design/development specifications/briefs (inputs) for safety and health parameters (including statutory requirements, standards and design criteria) should be identified and understood prior to the design being completed.
- Design outputs, including documented drawings, reports, calculations and analyses should meet design specifications and address all the safety and health design inputs. This includes potential safety and health hazards for:
  - manufacture
  - construction
  - commissioning
  - operations
  - maintenance
  - disposal
  - decommissioning
  - rehabilitation.
- Pre-design, design and pre-commissioning processes should use risk management methods (e.g. HAZAN and HAZOP).
- Documents should be reviewed by relevant, competent staff and authorised before release for each stage of design. The review should include people involved in:
  - manufacture
  - construction
  - commissioning
  - operations
  - maintenance
  - disposal
  - decommissioning
  - rehabilitation.
- Design/development verification should be done at appropriate stages to ensure that the design meets specifications (inputs).
- The completed design should be validated where appropriate during commissioning.
- Design changes or modifications should be carried out in accordance with original design procedures. They should be:
  - identified
  - documented
  - reviewed and checked for wider implications
  - authorised
  - included in the plant register.

High-risk permits

- Permits should be used for high-risk tasks such as:
  - special work clearances
  - high-voltage access
  - confined-space entry
  - hot work (e.g. cutting, welding)
  - excavation
  - vertical openings.

Supervision

- Work procedures, equipment and the work environment should be supervised and monitored. The level of supervision should be compatible with the ability of workers and level of risk.

Control of people

- Control should exist over:
  - people entering and leaving the site
  - people entering high-risk areas
  - visitors and other members of the public.

Barricades, notices and signs

- Suitable barricades/barriers should be placed and maintained.
- Suitable, legible signs should be placed in appropriate locations.
- Notices and signs should be maintained.
- Electrical cabling, isolation points, pipe work and critical plant should be identified by labels/signs.

Preventive maintenance systems

- The preventive maintenance system should provide assurance that all critical units and components that affect safety and health are working and within specifications.
- Plant and equipment should be identified (e.g. in a register, list or database).
- Resources such as skills, people, equipment and adequate time for the job should be allocated for maintenance.
- Details of each maintenance job should be identified and effective planning carried out to identify hazards and minimise risk during maintenance activities.
- The maintenance system should provide:
  - easy access for reporting defects
  - feedback for corrective action.

Materials and equipment

- Materials should be uniquely identified and, where necessary, traceable. Those with limited shelf-life should be managed to ensure that they are not used after the expiry dates.
- Appropriate lifting equipment should be available so that the need for manual handling is minimised.

Hazardous, toxic, flammable or explosive substances

- Procedures should be in place for safe handling, storage and transport of hazardous, toxic, flammable or explosive substances.
- An inventory should be prepared and kept up to date.
- Updated material safety data sheets (MSDS) should be readily available, particularly to people handling hazardous substances.
- Hazardous, toxic, flammable or explosive substances should be clearly labelled and signposted.
- Storage facilities should be designed and constructed in accordance with relevant standards or codes.
- Safe disposal methods should be used for hazardous, toxic, flammable or explosive substances.

Control of suppliers, contractors and subcontractors

- Procedure/s to ensure safety and health requirements of purchased materials and equipment should be in place. These include:
  - evaluation and selection of suppliers, contractors and subcontractors to meet safety and health requirements
  - ensuring that critical information is provided prior to delivery of the goods or services
  - allowing for materials, parts and equipment to be verified upon receipt
  - monitoring or supervising services provided (with the degree of control provided by the contractors or subcontractors).

Facilities for employees

- Suitable transport for employees should be provided as necessary.
- Onsite facilities should be of a standard that promotes general health and wellbeing. They include aspects such as:
  - accommodation
  - messing
  - change houses
  - fitness and entertainment amenities
  - storage of foods and supply of clean drinking water.
- The processes for hazard and risk identification, assessment and control should be evaluated. Documentation of each evaluation should be maintained and should include any changes resulting from the evaluation.

Element 12 Emergency preparedness and response

Objective

A thorough risk management system that identifies potential emergency situations and is prepared to respond effectively where necessary.

The procedure must include processes for identification, evaluation, preparedness, management and response to potential emergencies and accidents that may cause injuries, illnesses, diseases or property damage.

Legal obligations

- Establish, implement and maintain a procedure to identify and prevent or effectively control any potential emergencies and accidents.
- Establish and test response to deal with immediate control of dangerous situations or withdrawal of people from the identified scenarios of emergency events and accidents. The main ones that could occur in mines and quarries are:
  - injuries to people, ranging from minor (first aid) to serious (hospitalisation)
  - fires to plant, equipment and infrastructure, ranging from minor to major (underground or surface)
  - people suffering from:
    - inundation and/or inhalation of gases, smoke or fumes
    - poisoning
    - heat exposure or sunstroke
    - high-pressure fluid injection (e.g. of hydraulic oil, water)
  - explosion (caused by dust, gas or other explosives)
  - vehicle collision (heavy–heavy, light–heavy, or light–light)
  - single-vehicle uncontrolled movement (e.g. mechanical failure, skidding, moving over drop-off)
  - bus or aircraft crash
  - trapped or missing person (surface or underground)
  - person falling into and being inundated by water or other fluid
  - failure of ground (roof, backs, high-wall, low-wall or bench)
  - mud rush (or rush of other fluidised material)
  - person being hit by a moving vehicle, caught in equipment or machinery
  - severe climatic event (high wind, lightning, heavy rain, cyclone)
  - winding and other shaft incidents
  - electrical faults or power failures
  - chemical spill (on a person or in the workplace in general)
  - security threat.
- Install and test suitable warning and alarm systems (e.g. fire/evacuation alarm, stench gas alarm, flashing lights in noisy areas).
- Ensure emergency response teams are fully trained.
- Make available appropriate and fit-for-purpose emergency and rescue equipment.
- Train all people in their roles in response procedures.
- Conduct regular drills.
- Coordinate emergency procedures with outside organisations—that is, if a mine or quarry is fully or partly reliant on an external agency (e.g. local fire, ambulance or other mine emergency response resources), ensure a formal agreement is in place.
- Review emergency procedures regularly. They should also be reviewed whenever significant changes are made to the workplace as well as after accidents and emergencies.

Element 13 Monitoring and measurement

Objective

Appropriate procedures for inspecting and testing plant to ensure that safety and health requirements are met.

The work environment and employee health must be monitored. Equipment used for inspection, testing and monitoring must be suitable, accurate and reliable and operated by competent people. Monitoring programs must be adequately resourced.

Legal obligations

- Inspect and test the workplace regularly. This will ensure that safety and health requirements are met and will identify any new potential hazards. A routine workplace inspection should include:
  - workplace conditions
  - work practices
  - emergency facilities (e.g. fire extinguishers, first aid boxes, safety showers).
- Inspect and/or test critical plant. Plant includes:
  - structures, tanks and pipes
  - boilers
  - pressure vessels
  - lifting equipment, including chains and wire ropes
  - winding installations and shaft equipment
  - electrical apparatus and installations, including wires
  - mobile equipment, including forklift and trucks.
- Establish a procedure to tag or mark items inspected/tested to ensure that the test status is clearly visible to all users. Test records should be established and maintained.
- Document procedures for work environment monitoring and measurement schemes to test for:
  - atmospheric contaminants (e.g. dust, asbestos, fumes, smoke)
  - noise
  - air quality (e.g. O^2 levels)
  - ventilation
  - temperature
  - flammable and noxious gas
  - spontaneous combustion
  - fire
  - radiation (radioactive levels or leaks)
  - ground/strata movement
  - ground stress.
- Calibrate all measuring equipment (or otherwise verify its ongoing accuracy) and use, maintain and store to ensure accuracy is not compromised between test periods.
- Establish, implement and maintain a documented procedure for monitoring and measuring the status of each objective and target.
- Establish a documented procedure of health surveillance and monitoring. The health of employees should be monitored where there is potential for them to be exposed to hazards that could have short-term and/or long-term consequences.
- Document and maintain procedures to analyse safety and health data.
- Identify trends for:
  - injuries
  - incidents
  - near misses
  - plant and infrastructure damage
  - substandard conditions and/or practices
  - defects in plant and equipment
  - hazards

  - medical treatment
  - illness
  - disease
  - workers compensation claims
  - audit results
  - compliance with legal and other requirements.
- Circulate clear reports on safety and health performance to all mine workers.
- Establish and implement a documented procedure for regularly evaluating compliance with legal and other requirements placed upon, or subscribed to, by the organisation. Records of such evaluations should be maintained.

Element 14 Incident investigation, corrective action and preventive action

Objective

Established procedures for investigating safety and health incidents and non-conformances and for implementing corrective and preventive action to address them.

These procedures will help to ensure that safety and health problems do not recur and/or are prevented.

Legal obligations

- Put in place formal procedures to investigate the occurrence of and trends in relation to:
  - injuries
  - incidents
  - near misses
  - damage
  - substandard conditions and/or practices
  - defects in plant and equipment
  - hazards
  - illness
  - disease
  - departures from requirements of procedures (non-conformances)
  - variations in the analysis of safety and health data.
- Ensure investigation procedures determine:
  - immediate and underlying causes
  - corrective/preventive action
  - action to prevent recurrence or occurrence of potential incidents and non-conformances.
- Develop action plans and assign responsibilities clearly.
- Put in place follow-up procedures to ensure that effective corrective and preventive action is taken—that is, the reporting documents integrate identification, reporting, investigation, corrective action and preventive action.
- Ensure managers, supervisors and workers are involved in the investigations.
- Ensure investigators are trained and competent.
- Have an effective employee rehabilitation scheme for returning employees to productive work as soon as possible after injury or after contracting disease.
- Have an employee assistance program (e.g. professional counselling) in place to help ensure general employee wellbeing.

Element 15 Safety and health records

Objective

An effective records procedure for safety and health management.

Safety and health data need to be identified, collected, filed, maintained and controlled.

Legal obligations

- Put in place procedures for identifying, collecting, filing, maintaining, controlling and disposing of safety and health records.
- Ensure these records demonstrate:
  - the standard of safety and health achieved
  - the implementation and effectiveness of the safety and health system, including the results of audits and reviews.
- Records should be:
  - legible
  - identifiable
  - traceable (to the activity)
  - stored to allow for easy retrieval
  - protected from damage, deterioration or loss
  - retained for a specified time to meet legal and internal organisation requirements
  - disposed of in a controlled way.
- Ensure your organisation has access to contractor safety and health records.
- Records should include:
  - minutes of safety committee meetings and all communication, consultation and reporting incident and non-conformance investigation and improvement records
  - inspection, testing, monitoring and measurement records, including health surveillance
  - hazard/risk identification, assessment and controls
  - audit reports
  - testing and calibration records
  - training, competency and awareness records
  - employees' work history
  - management review records
  - other legal records as required.
- Maintain strict confidentiality and security of sensitive records (such as employees' personal and health records).

Element 16 Safety and health audits

Objective

Established procedures to ensure that regular and effective audits of the safety and health management system are undertaken.

Safety and health auditing enables you to assess the performance of your management system, identify any problems, set up a system to manage the problems, then follow up to ensure that the corrective action has been effective.

Legal obligations

- Establish, implement and maintain procedures for audits to:
  - verify that activities comply with the safety and health management system
  - determine the effectiveness of the system
  - identify opportunities for improvement in the system.
- Ensure that the procedures include requirements for planning, preparing, conducting, reporting, following up and retaining records of the audit.
- Plan and schedule the audits in priority according to level of risk, including the risks identified in previous audit results.
- Ensure that the audits are carried out by competent people who are trained in auditing techniques and are able to carry out an objective review and report findings honestly without fear of consequences.
- Document audit results and ensure the audit report states (at least):
  - systems that are working well
  - deficiencies found
  - requirements for corrective action.
- In response to the audit:
  - bring the audit results to the attention of all people responsible for the activities (including executives, managers, supervisors and workers)
  - determine the requirements for corrective and preventive action
  - establish a time frame for corrective and preventive action
  - notify the people responsible for corrective and preventive action.
- Ensure management with the relevant responsibility takes timely corrective action following audit results.
- Through a follow-up review by the auditor, verify that corrective and preventive actions were implemented and effective.

Note: The mine operator has a legal obligation [under section 41(1)(f) of the *Coal Mining Safety and Health Act 1999* and section 38(1)(e) of the *Mining and Quarrying Safety and Health Act 1999*] to 'audit and review the effectiveness and implementation of the safety and health management system to ensure the risk to persons from (coal mining/mine and quarrying) operations is at an acceptable level'. DEEDI has published Guidance note QGN09, *Reviewing the effectiveness of safety and health management systems*, to assist companies with this requirement.

Element 17 Management review

Objective

Regular review by senior management of the safety and health management system to ensure its continual suitability and effectiveness.

These reviews will ensure the current safety and health management system is suitable and effective, and will ensure continual improvement to the system and performance.

Legal obligations

- Implement procedures for periodic reviews to:
  - determine the continuing suitability, adequacy and effectiveness of the management system
  - determine any changes needed to the management system (including the policy, objectives, responsibilities and resources)
  - confirm the status of the current improvement and provide for any improvement to the management system and safety and health performance.
- Ensure that the frequency of the reviews is adequate and that they are conducted by senior management. Maintain records of reviews.
- Ensure the effectiveness of the review by using the following inputs:
  - the current safety and health performance
  - the status of objectives and targets
  - views of interested parties (including employees and contractors)
  - recommendations for improvement
  - the current status of incidents, corrective action and preventive action
  - follow-up from the last management review
  - changes required.

Part 2 Safety and health self-assessment

How to use the SafeGuard self-assessment chart

SafeGuard includes a quick and easy self-assessment. The self-assessment chart provided is designed for both large and small organisations and suits a wide range of management structures and activities.

The chart can be used to help in the initial development of a safety and health management system or when improving a current system. It will show how an organisation is performing in safety and health. The chart can also be used to develop subsystems that ensure improvements are carried out and to identify areas where the system is performing to expectation.

To be effective, self-assessment must be honest. Not all the details may apply, especially to smaller organisations, so it is important to be realistic and consider how the principles fit into an organisation. The self-assessment is designed for managers, supervisors and workers at all levels of an organisation. They should all be actively involved in assessing the safety and health management system. To use the self-assessment chart:

1. Work through each element, comparing the performance of the organisation's safety and health management system with the information listed.
2. Assess the policies and procedures the organisation has in place to meet safety and health requirements, and rate each from 1 to 5. Use the 'key to self-assessment ratings' as a guide.
3. Determine the organisation's strengths and weaknesses.

A completed self-assessment will help you establish an effective safety and health management system. It can also be used to perform a detailed self-audit of the existing safety and health management system (Part 1 of the document).

Both Part 1 and Part 2 relate to the elements required for safety and health. Note that these elements vary in importance, so while all of them should be addressed, some are absolutely vital.

Contacts

The Mines Inspectorate at DEEDI provides help and advice to industry and employees on safety and health management systems, self-auditing and auditor training. For more information, visit **www.deedi.qld.gov.au**

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