Mines Inspectorate Compliance Policy
Implementation guide
March 2010
1 Purpose

The purpose of the Mines Inspectorate Compliance Policy Implementation guide is to assist Inspectors and Inspection Officers to adopt a consistent approach to implementing compliance action across Inspectorates, regions and districts. This will promote transparency by demonstrating how Inspectors determine an appropriate compliance response and conduct investigations. An effective compliance policy must maintain community confidence that the legislation is being administered fairly and consistently.

2 Overview

Enforcement options are part of a number of initiatives that may be used to reduce the incidence of work related injury and disease. Responsibility for compliance is with obligation holders (as defined by legislation). Where non-compliance is detected by an officer or brought to an officer’s attention, the officer must use all endeavours, including use of appropriate powers if necessary, to ensure an acceptable level of risk.

The key principles guiding Inspectors and Inspection Officers and underpinning the compliance policy implementation guide enforcement options are:

- **Consistency**: persons with obligations managing similar risks expect a consistent approach from the Mines Inspectorate in the advice given in response to incidents; the use of Substandard Condition or Practice notices (SCP) and directives; decisions on the level of administrative response, including regional site management and head office senior company management accountability meetings and prosecution. Inspectors and Inspection Officers need to ensure that similar circumstances at mines and quarries lead to similar enforcement outcomes which provide greater certainty in the workplace. Consistency of approach does not mean uniformity. It means taking a similar approach in similar circumstances to achieve similar ends.

- **Transparency**: Inspectors and Inspection Officers need to demonstrate impartiality, balance and integrity at all times.

- **Accountability**: Inspectors and Inspection Officers must be able and willing to explain their enforcement decisions.

- **Proportionality**: Enforcement activities must be proportionate to the level of risk and the seriousness of the non-compliance.

There are a number of compliance promotion and enforcement strategies available to Inspectors and Inspection Officers. These range from providing information and advice, recommendations, issuing of infringement notices such as SCP’s and directives, meeting with mine site management at a regional level or senior company management at head office to conduct accountability meetings to prosecution.
Prosecution
Senior Company Management Accountability Meeting
Site Management Accountability Meeting

Level 5
Level 4
Level 3
Level 2
Level 1

Directive
SCP

Recommendation

Advice, supply of information including publications (for example, Safety Alerts Bulletins, Guidance Notes) and training and workshop facilitation.

Figure 1: The enforcement pyramid
3 Five levels of administrative response

The compliance policy provides for five levels of administrative response, ranging from expression of concern to prosecution. These actions may be taken alone or in conjunction with other actions.

Level 1
Advise obligation holder of the opportunity for improvement, or where they are failing to comply with their obligations (usually low to medium risk and/or administrative matters) which would routinely include issuing an SCP notice.

Level 2
Advise obligation holder where they are failing to comply with their obligations (usually an unacceptable level of risk) which routinely includes issuing a directive.

Level 3
Conduct a site management accountability meeting at a regional office with Deputy Chief Inspector/Manager Safety and Health/Regional Inspector and District Inspector.

Level 4
Conduct a senior company management accountability meeting at Safety and Health Head Office with Commissioner for Mine Safety and Health, Chief Inspector, Deputy Chief Inspector/Manager Safety and Health/Regional Inspector.

Level 5
Recommend prosecution.

Any of these options may be taken as a singular response or as a combination of responses. For example, a directive may be issued to reduce risk and it may be appropriate to simultaneously elevate to a senior company management accountability meeting.

Note: In all cases, a mine record entry will be prepared and forwarded to the site senior executive and the mine operator.

Guide for determining appropriate administrative action

<table>
<thead>
<tr>
<th>Non-compliance detected</th>
<th>Consequence non-compliance</th>
<th>Circumstance of non-compliance</th>
<th>Mine history</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Administrative non-compliance</td>
<td>Minor injury</td>
<td>High potential incident</td>
</tr>
<tr>
<td></td>
<td>Safety record</td>
<td></td>
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</tbody>
</table>
Depending on which of the above factors, adopt a selection of the following options:

### Administrative response options

<p>| | | | | |</p>
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<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td><strong>Minor</strong></td>
<td><strong>Major</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Advise obligation holder of opportunity for improvement, or where they are failing to comply with their obligations which may include issuing a SCP notice</td>
<td>Advise obligation holder where they are failing to comply with their obligations which includes issuing a directive</td>
<td>Site management accountability meeting at regional office with Regional Inspector / Manager Safety and Health / Deputy Chief Inspector of Mines</td>
<td>Senior company accountability meeting at Safety and Health Head Office with Commissioner for Mine Safety and Health, Chief Inspector, / Manager Safety and Health, / Regional Inspector</td>
<td>Prosecution</td>
</tr>
</tbody>
</table>

Step 3

Options may be initiated singularly, combined, or varied according to specific circumstances.

Note: In all cases, a mine record entry will be prepared and forwarded to the Senior Site Executive. The mine operator will be notified of all Level 2–Level 4 responses.

### 4 Guidelines for applying appropriate administrative response

#### 4.1 Recommendations, Substandard Condition or Practice Notices and Directives

Levels 1 and 2 of the available administrative responses include officers issuing SCP’s or Directives primarily as a means of reducing the risk of injury or illness to any person resulting from operations to an acceptable level. A recommendation may be made when risk is being adequately controlled.

**Recommendation**

A recommendation is an informal mechanism whereby Inspectors, Inspection Officers, District Workers Representatives, Industry Safety and Health Representatives and authorised officers can recommend that the operation undertake a course of action. There is no completion date and no obligation on the operation to comply, however there is the expectation that the operation give due consideration to the recommendation.

Recommendations should only be issued where the risk to persons is adequately controlled and there is compliance with legislation. If there is a risk that the mine has not controlled adequately then issuing a SCP or a directive is an appropriate cause of action. Recommendations should only be used where there is compliance, however there may be a more effective way of achieving compliance.
Substandard Condition or Practice

An SCP notice is an option whereby, Inspectors, Inspection Officers, District Workers Representatives (DWR), Industry Safety and Health Representatives (ISHR) and authorised officers can specify that specified action be taken within a specified time frame to address an issue at a mine. An SCP would usually target low to medium risk and/or administrative matters. Once complied with, the requirement of the SCP ceases.

Directive

Directives are a statutory, enforceable option for Inspectors, Inspection Officers, DWRs can only issue a s164 directive under the *Mining and Quarrying Safety and Health Act 1999* ([MQSHA]) and ISHRs can only issue a s167 directive under the *Coal Mining Safety and Health Act 1999* ([CMSHA]) to direct that, specified action be taken to address and control risk to workers, and that it is carried out within a defined timeframe. These matters would usually target an unacceptable level of risk. Directives remain in force at the operation they were issued to, unless withdrawn in writing. Once issued, directives are not generally withdrawn.

In addition to a Directive to reduce risk, Directives may be issued for the following specific reasons:

- Directive to ensure worker competent
- Directive to carry out test
- Directive to review safety and health management system
- Directive to suspend operations for ineffective safety and health management system
- Directive to isolate site
- Directive to provide independent engineering study

4.2 Ensuring an acceptable level of risk

Inspectors and Inspection Officers must establish the appropriateness of a recommendation, SCP or directive based on the level of risk. Level of risk is determined by considering the consequence or potential impact of the issue under review and deciding what could reasonably be expected to occur.

Examples using a risk matrix:

- During an inspection, workers are found to be routinely working at a development face where there is no ground support. When assessing this, a reasonable outcome from such a fall of ground could be expected to be between ‘major’ and ‘catastrophic’. In this case choose ‘catastrophic’.
- During an audit at a quarry you identify that there is no documented training system for equipment operators, however evidence suggests that all operators are provided comprehensive on the job mentoring by experienced operators. Again consider what the reasonably expected outcome could be. In this case given the level of training provided, the potential consequence could be, in this case choose ‘insignificant’. This is because the personnel are effectively trained on the job, and the lack of a documented system does not have an immediate influence on the consequence.
<table>
<thead>
<tr>
<th>Level</th>
<th>Descriptor</th>
<th>Detail description—consequence or potential impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Insignificant</td>
<td>No injuries, minor damage</td>
</tr>
<tr>
<td>2</td>
<td>Minor</td>
<td>First aid treatment on site (return to work), damage and operational loss limited</td>
</tr>
<tr>
<td>3</td>
<td>Moderate</td>
<td>Medical treatment off site (hospital treatment, disabling or lost time injury), damage and operational loss controlled within 24 hours</td>
</tr>
<tr>
<td>4</td>
<td>Major</td>
<td>Extensive injuries (ICU – prolonged hospitalisation), significant damage with extended operational loss</td>
</tr>
<tr>
<td>5</td>
<td>Catastrophic</td>
<td>Death/s, major damage, significant long term operational impact</td>
</tr>
</tbody>
</table>

**Table 2—Consequence or potential Impact**

Once you have established the consequence then consider the location and nature of identified potential hazards/issues and then decide how likely it would be in those circumstances that the chosen consequence or potential impact would occur.

<table>
<thead>
<tr>
<th>Level</th>
<th>Descriptor</th>
<th>Detail description—likelihood</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Almost certain</td>
<td>Is expected to occur in most circumstances</td>
</tr>
<tr>
<td>B</td>
<td>Likely</td>
<td>Will probably occur in most circumstances</td>
</tr>
<tr>
<td>C</td>
<td>Possible</td>
<td>Might occur at some time</td>
</tr>
<tr>
<td>D</td>
<td>Unlikely</td>
<td>Could occur at some time</td>
</tr>
<tr>
<td>E</td>
<td>Rare</td>
<td>May occur only in exceptional circumstances</td>
</tr>
</tbody>
</table>

**Table 3—Likelihood**

<table>
<thead>
<tr>
<th>Likelihood</th>
<th>Consequences or Potential Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Insignificant</td>
</tr>
<tr>
<td>A (Almost certain)</td>
<td>L</td>
</tr>
<tr>
<td>B (Likely)</td>
<td>L</td>
</tr>
<tr>
<td>C (Possible)</td>
<td>L</td>
</tr>
<tr>
<td>D (Unlikely)</td>
<td>L</td>
</tr>
<tr>
<td>E (Rare)</td>
<td>L</td>
</tr>
</tbody>
</table>
Recommended action analysis matrix

Legend

<table>
<thead>
<tr>
<th></th>
<th>Recommended action analysis matrix</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>E</strong></td>
<td>extreme risk</td>
</tr>
<tr>
<td><strong>H</strong></td>
<td>high risk</td>
</tr>
<tr>
<td><strong>M</strong></td>
<td>moderate risk</td>
</tr>
<tr>
<td><strong>L</strong></td>
<td>low risk –</td>
</tr>
</tbody>
</table>

Using a combination of the above table, experience and discussion with other staff, Inspectors and Inspection Officers can decide what type of corrective action they believe is appropriate to ensure that the risk is adequately managed and proportional to the level of risk.

The seriousness of the situation and the immediacy of the problem will determine how the risk assessment process is carried out. Some situations may be so serious that immediate action is necessary; an officer may simply use the guide above to confirm an already implemented response.

For complex situations, a team risk evaluation process may be advisable. Risk evaluation is not a substitute for competent judgement; it is a tool to guide those with the necessary experience and knowledge to a sound decision. Inspectors are confronted by a myriad of unique variables when determining an appropriate compliance response. A simple two dimensional risk calculator cannot capture the complexities of the required discretionary decision making. While risk calculators can provide a framework for improving consistency, transparency, accountability and proportionality it is crucial that an inspector’s discretion is not fettered by artificially constraining all decisions to a model. However, Inspectors must be able to justify their actions and a risk calculator is one method that may assist.

Where legislation mandates a way to achieve an acceptable level of risk, this process must be followed.

It is important when issuing some directives and SCPs where there is an (agreed) period of time to become compliant or meet the conditions, officers must ensure that ‘residual’ risks are adequately managed from the time SCPs and directives are issued through to compliance.

Mine Record Entries of SCPs/directives issued must be made and kept. This includes completion of any remedial actions taken in response to communications.

**Note:** Directives are **legally binding subordinate legislation**; while SCPs are not necessarily legally binding. In some cases where SCPs have been routinely ignored, it may be necessary to escalate to a directive.

After considering immediate risk factors and the appropriate level 1 or 2 response, officers need to determine if further administrative response is required. There are three further levels of administrative response.

4.3 Compliance meetings

Compliance meetings may be categorised as informal enforcement and are an appropriate response where failings identified are:

- not deliberate or not the result of a substantial disregard for safety
- where the person concerned displays a constructive attitude towards safety
• there is no history of similar failings
• a compliance meeting is likely to be a sufficient deterrent.

4.3.1 Level 3 Site management accountability meeting at regional Office

In general terms, a regional accountability compliance meeting would be an appropriate response where an officer considers that the SSE (Site Senior Executive) or other senior management needs to be made aware of the Inspectorate’s elevated level of concern, or where an Inspector believes that response to the level of risk (such as a directive) is not being adequately managed at a level below the SSE.

Typically, a regional accountability compliance meeting would be held for repeated non-compliance by obligation holders; a systemic failure of all or part of the S&HMS leading to an unacceptable level of risk; history of continual minor non-compliances; or continuing occurrence of high-potential incidences (HPIs). This level of compliance meeting is intended to target the local mine management team or other obligation holders at the mine.

The mine should be notified in writing of the concerns so mine management may show how they have, or intend to manage the level of risk. Officers must be able to give actual examples of the non-compliance.

A regional compliance meeting would usually be held between the Deputy Chief Inspector or Manager, Safety and Health or Regional Inspector and District Inspector and the mines local management team including the SSE. In some circumstances, it may be an appropriate response for individual obligation holders. Holding a site management accountability meeting does not preclude the issuing of an SCP or directive. A record of regional compliance meetings must be made in the form of a mine record entry.

4.3.2 Level 4 Senior company management accountability meeting at Head Office

A senior company management accountability meeting would be appropriate when the matter of non-compliance or concern needs to be elevated to senior company management level (operator or holder). For example, when the safety and health management system has failed to such an extent that intervention at the operator level is required, following a serious or fatal accident or when a regional meeting has failed to achieve the desired outcome.

Senior management should be notified in writing of the concerns so they may show how they have, or intend to manage the level of risk. Officers must be able to give actual examples of the non-compliance.

There is an opportunity at this level of accountability meeting to consider what may be achieved by the operator and how they may assist their mine, part of or industry as a whole through initiatives to produce improved safety and health outcomes. For example, an accident occurs at a mine whereby the cause could be partially attributed to a poor quality risk assessment. This may be an industry wide issue and the mine may be prepared to conduct industry workshops, prepare training material for industry, or share their experience at a conference or seminar.

A senior company management accountability meeting would usually be held between the Commissioner for Mine Safety and Health, Chief Inspector of Mines, Deputy Chief Inspector or Manager Safety and Health or Regional Inspector and the operator or holder’s representative and the SSE.

Holding a senior company management accountability meeting does not preclude the issuing of an SCP or directive. A record of the meeting must be made in the form of a mine record entry.

4.4 Recommendation for prosecution
The decision to prosecute can be complex and influenced by a number of competing factors. There are many issues that may influence the final decision which will ultimately be made by the Commissioner for Mine Safety and Health based on recommendations from the review committee.

The Coal Mining Safety and Health Act 1999 and the Mining and Quarrying Safety and Health Act 1999 contain provisions for initiating the prosecution of persons or entities with obligations under the legislation for non-compliance with the legislation. These provisions empower the Commissioner for Mine Safety to initiate a prosecution. The legislation also contains provisions to allow certain (empowered) persons to recommend to the Commissioner for Mine Safety that persons or entities with obligations under the legislation be prosecuted. A recommendation to prosecute may come from 3 sources:

- An inspector or other officer/s investigating a single fatality or other significant event
- Inspectors - for matters other than a fatality or serious incident. Some incidents may be the result of continually and deliberately neglecting to meet requirements of the legislation. Not all recommendations to prosecute will be associated with fatal or serious injuries or high potential.
- Industry Safety and Health Representatives (ISHR), DWRs and SSEs who are empowered by the legislation to recommend prosecution.

4.5 Determining a recommendation for prosecution

Prosecution should be considered when a directive is not complied with or when failure to meet obligations:

- pose a serious or potentially serious risk to a worker or endangered their life (HPI)
- are the result of deliberate or fraudulent action or demonstrate a reckless disregard for safety
- result in a fatality or an incident causing grievous bodily harm.

4.5.1 Situations that could result in prosecution

Situations that could result in prosecution include situations where:

- non-compliance has resulted in a fatal injury or grievous bodily harm
- non-compliance has resulted in a situation that may have resulted in a fatal injury or grievous bodily harm
- an Inspector alleges that a person has repeated the same offence
- an Inspector alleges that a person has been advised of the legislation but fails to comply
- a person has failed to meet the requirements of a directive issued under the provisions of the legislation.

4.5.2 Factors influencing decisions to prosecute

Initiating a prosecution and charging a person with an offence is a significant step which in most cases is a costly option and may cause emotional and economic stress to the person being prosecuted. A decision to prosecute, or otherwise requires careful consideration and must consider the three primary factors listed below:

- The case to answer. Does the evidence establish a prima facie case? Whether or not the evidence establishes the elements of the offence i.e. creates a prima facie case which identifies:
  - Particulars of what measures the obligation holder could have taken but did not take. There must be some identification of the act/s or omission/s which constitutes a contravention of the section of legislation alleged to have been breached, and the causal connection between the injury and the act or omission.
  - There is an obligation on the part of the prosecutor to satisfy the court, to the high standard of beyond any reasonable doubt, a causative link between any failure of the defendant, in relation to safety and health obligations and the event in order to satisfy the circumstance of aggravation.
  - The admissibility of evidence that supports the recommendation, remembering that it must be proved beyond a reasonable doubt.
• **The likelihood of conviction.** Where there is no or very little chance of conviction it is not in the interest of any party to pursue a prosecution.

• **The public interest.** Public interest is satisfied when the public is satisfied with the decision or outcome. Factors to be considered include:
  - Any mitigating or aggravating circumstances
  - Maintenance of public confidence in the legislation
  - Punishment and deterrence
  - Circumstances of the alleged non-compliance
  - Trivial or technical nature of the alleged breach
  - Age, physical or mental health of the alleged offender
  - Alleged offender’s previous history regarding safety and health obligations
  - Time elapsed since the alleged breach
  - Public concern
  - Co-operation of the alleged offender in the prosecution of others
  - Impact on safety and health strategies
  - Relationship of victim to the alleged offender
  - Penalty already imposed or loss suffered by the alleged offender
  - Whether consequences of conviction would be unduly harsh or oppressive
  - The availability and appropriateness of any alternatives to prosecution.

These factors can be at odds with each other; a balanced view has to be taken.

4.5.3 Additional factors to consider when determining if prosecution should be recommended

Additional factors that should be considered when determining if prosecution should be recommended include:

- whether the worker feared the loss of livelihood if he/she did not continue acting in breach of the legislation
- the seniority of the worker in the scope of the worker’s duties
- whether, having regard to the above point, the worker had taken reasonable steps to draw the attention of the operator or any other relevant person to the impropriety of the practice
- whether the worker had taken reasonable steps to try to mitigate or prevent any harm (if it was in the worker’s power to do so).

Refer to Appendix 1 HFACS code descriptions for additional information on errors and violations.

4.5.4 Factors that must not influence the decision to prosecute include

There are several factors that must not influence the decision to prosecute an operator or individual. These include:

- any elements of discrimination against the person such as ethnicity, nationality, political associations, religion, gender or belief
- personal feelings towards the offender or the victim
- possible political advantage or disadvantage to a government or any political group or party
- potential financial advantage or disadvantage

4.5.5 Review committee

Once an Inspector recommends to either prosecute, or other compliance options in the case of a fatality or other significant event to the Chief Inspector, a review committee is established and will make a recommendation in writing to the Commissioner for Mine Safety and Health.

The review committee consists of both Chief Inspectors for coal and metalliferous mines, a representative from legal services and a senior industry representative with contemporary safety and health experience (not associated with the person or entity that the recommendation to prosecute has
been made). The alternative Chief Inspector will chair the review committee. For example, if it is a metal mine matter, the Chief Inspector of Coal Mines will be the chair, alternatively if it is a coal mining matter the Chief Inspector of Mines (Metalliferous) will chair the review committee meeting.

The review committee will be provided with the following information in relation to the event:

- the ‘nature and cause’ investigation report
- the compliance matrix
- a recommendation to prosecute or not to prosecute in the case of a fatality or other significant event.

The review committee will be given a presentation by the author of the nature and cause report and the person making the recommendation to the Chief Inspector, usually not the same person. These persons are not part of the review committee, their primary role is to provide an overview and answer questions from the review committee. The review committee will submit a report to the Commissioner for Mine Safety and Health with their recommendation.

5 Investigation

This section sets out the general principles and approach that mines inspectorate personnel are expected to follow when deciding on an appropriate response to accidents, serious accidents (including all deaths on mine sites), incidents (including high potential incidents – HPI), diseases or complaints at mines, coal mines and operations. It also defines the roles and responsibilities of those involved in the investigation process. (See Figure 2 Investigation and Response Protocol)

Legislation requires that an Inspector must investigate and report on all serious accidents causing death at a mine. To meet this requirement, officers will be allocated to determine the nature and cause of the accident, and to detect any associated non-compliance. The level of resources allocated will be appropriate for the significance and complexity of the investigation. In addition, teams may also be established to investigate serious accidents or HPIs, particularly where an Inspector believes these are of especial significance.

The great majority of reported events will warrant a low level response and an investigation that is generally accomplished through a range of options, including telephone inquiries and making observations at future site visits/inspections; to over-viewing the mines own investigation rather than a dedicated site inspection/investigation.

In all cases, the objective is to ensure that an adequate level of investigation has been undertaken; that effective timely actions to restore an acceptable level of risk are carried out; to assist in preventing recurrence; to disseminate any safety information to industry through established mechanisms; and to address any non compliance.

Effective compliance investigative outcomes are made up of many different pieces of information. From the outset, information needs to be gathered in a comprehensive and professional manner so that it remains admissible if later used as evidence. There are well established protocols to ensure lawful gathering of information and effective initial investigative activities when attending accident/incident scenes, so that information gathered and investigative activity outcomes can later be relied upon as evidence in judicial proceedings.

Legislation only specify that the place of an accident must be inspected by an Inspector when a serious accident causing death at a mine has occurred, although it is a ‘function’ of Inspectors and Inspection
Officers to investigate other serious accidents and HPIs and complaints about matters relating to safety or health resulting from operations.

Section 196 of the MQSHA and Section 199 of the CMSHA both refer to a serious accident causing death. Although not a legislative requirement, Safety and Health senior management have made an administrative decision that all deaths on mine sites will be investigated. In the case of suspected death by natural causes, an investigation should be commenced and continued until it has been established by the relevant medical authority/coroner’s office that the death was not work related. Such cases should be investigated initially as a work related death.

If there is uncertainty that the death is a result of natural causes, the investigation should as a minimum proceed to the preliminary report stage. At this time a preliminary report will be produced and submitted to the Chief Inspector and a review of any further investigation activity undertaken within the region. An investigation hiatus can sometimes be caused by delay in autopsy and/or toxicology results. When delays occur, the investigation process will remain open until appropriate medical advice confirms the facts about the cause death.

In addition to an immediate death as a result of a serious accident, there is another situation whereby injuries sustained may be so severe that a reasonable assumption may conclude that death may occur sometime after the serious accident. Such cases will also need to be investigated and initially be treated as if a death has occurred, in relation to the response and intensity of the investigation.

5.1 Serious accident/incident response
When determining the appropriate level of response and subsequent action, it is helpful to divide accidents and incidents into two distinct categories:

1. those designated to be investigated under the legislation (Tier 1)

2. those not designated to be investigated under the legislation, whereby an investigation is discretionary. These are nominally called ‘referred’ accidents or incidents (Tier 2).

5.1.1 Tier 1 Serious accidents and complaints (Figure 1)
Tier 1 includes:
- all deaths on mines sites (including natural causes)
- all serious accidents that may result in death
- all complaints

Initial investigations into complaints are usually undertaken by a sole Inspector, Inspection Officer, or DWR. The predominant reason for this level of response is that complaints are frequently low risk (consequence) events or a failure to comply with administrative obligations and the legislative requirement for maintaining confidentiality with respect to the complainant.

If the initial investigation uncovers serious non-compliance, or other elements including wilful, reckless, or negligent behaviour then a reassessment of the response should be undertaken that may include attendance of the Principal Investigation Officer.

5.1.2 Tier 2 - Accidents/Incidents (Figure 1)
Tier 2 includes:
- All serious accidents (excluding deaths on mine sites) that cause a person to be admitted to a hospital as an in-patient for treatment for the injury.
Because of the above mentioned definition, this category needs to be carefully scrutinised. In some cases persons are evacuated from remote mine sites by the RFDS as a normal response to any injury without consideration of the seriousness of the injury.
Investigation response and reporting protocol

**Tier 1 Incident**
Death on mine, serious accidents that may result in death, complaints

- Notification to DCIM, Mgr S&H, and CIM
- Team based investigation co-ordinated by a Principle Investigation Officer. Site controlled by Lead Inspector

**Tier 2 Referred Incident**
Serious accident causing permanent or significant injury or illness. Incident refers to any other accident, high potential incident

- Notification to DCIM/Mgr S&H/Regional Inspector/CIM
- Investigation to proceed DCIM/Mgr S&H/RI

**Nature and Cause Report (Lead Inspector)**
- DCIM/Mgr S&H/RI for review
- CIM for review
- Coroner for fatal accident

**Compliance Report and Compliance Matrix (PIO)**
- DCIM/Mgr SH/RI for review and recommendation
- CIM for review, comment and transmission to the Review Committee
- Legal Services or other Legal Advice

**Non-prosecution compliance option**

**Compliance Review Committee**
1. Chair: Chief Inspector*
2. Chief Inspector
3. Legal Services (or delegate)
4. Independent industry person

**Legal Services or other Legal Advice**

**Recommendation for Prosecution**

**Decision**

*Chief Inspector not directly involved in incident

**Legend**
RI: Regional Inspector
Mgr S&H: Manager Safety and Health
DCIM: Deputy Chief Inspector of Mines
CIM: Chief Inspector of Mines
PIO: Principal Investigation Officer
In allocating resources, the inspectorate should have regard for the need to maintain a balance between investigation and other activities including audit and inspection. It is vital that Inspectors have wide discretion to exercise their professional judgement, so that action appropriate to each situation can be taken.

Quick reference
Accident and incident response and investigation guide

<table>
<thead>
<tr>
<th>Level</th>
<th>Event</th>
<th>Full investigation including Nature and Cause</th>
<th>Investigation including preliminary report</th>
<th>Investigation including site inspection, eyewitness discussion and contemporaneous note</th>
<th>Review SSE investigation report.</th>
<th>Follow-up effectiveness of corrective actions</th>
<th>Follow up recommendations of SSE report during routine inspection/ audit</th>
<th>Coroner’s recommendations. Follow-up implementation and effectiveness</th>
<th>Compliance matrix and report</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Extreme outcome / risk event</td>
<td>✓</td>
<td>✓</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
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<td></td>
</tr>
<tr>
<td>2</td>
<td>High outcome / risk event</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>3</td>
<td>Medium outcome / risk event</td>
<td></td>
<td>✓</td>
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Any level 2 response may change (likely upgraded response) when considering:

- elements of wilful, reckless or negligent behaviour
- The attitude and competence of management
- Any history of incidents or breaches involving obligation holders, and previous compliance action.

Figure 3: Accident/Incident Response and Investigation Guide

5.2 Roles and responsibilities

An investigation team should consist of an Inspector, designated Lead Inspector and a Principal Investigation Officer designated the Investigator. Depending on the complexity of the matter under investigation, the investigation team may be supplemented by additional Inspectors, Inspection Officers, DWRs, principal investigations officers or appropriate experts. Deaths on mine sites investigations will always involve a Principal Investigations Officer. The roles and responsibilities of those participating in investigations are determined by required outputs and skills.
The primary output for the Lead Inspector is the nature and cause report. This role must also consider some more immediate issues, including making the site safe, preventing a similar incident and compliance with legislation. Other issues for consideration as the investigation progresses include lessons to be learnt that will influence industry response; the legislation, guidance material and an appropriate compliance response. Control of the accident site and onsite activities rests with the Lead Inspector.

The primary output for the Principal Investigations Officer is the compliance matrix while their primary role is to manage the investigation process. The Principal Investigations Officer’s role is, among other duties, to coordinate aspects of the investigation including methodologies being utilised throughout the process; administrative and legal matters of the investigation of deaths at mines; accidents causing permanent significant injury or illness; and other ‘referred’ incidents, which include some HPI’s and some complaints.

There are two measured outputs from an investigation into a serious accident causing death and other referred incidents where a full investigation has been decided upon. These are:

- the nature and cause report compiled by the Lead Inspector
- the compliance report including the “compliance matrix” compiled by the Principal Investigation Officer.
6 Appendix I HFACS Category Diagram

Organisational influences

- Resource management
- Organisational Climate
- Operational process

Unsafe leadership

- Inadequate leadership
- Planned inappropriate operations
- Failed to correct known problem
- Leadership violations

Preconditions for unsafe acts

- Environmental factors
  - Physical environment
  - Technological environment
- Condition of operators
  - Adverse physiological state
  - Physical / mental conditions
- Team/individual factors
  - Communication coordination
  - Fitness for duty

Unsafe acts

- Errors
  - Decision errors
  - Routine disruption or skill-based errors
  - Perceptual errors
- Violations
  - Routine
  - Exceptional
7 Appendix II

HFACS code descriptions

Unsafe acts of operators
This first level of HFACS-MI describes the unsafe acts of the operator that directly lead to an incident/accident. This level is typically referred to as operator error and is where most accident investigations are focused. Unsafe acts typically dominate accident databases as they are easy to identify and place the blame on a select few people. Unsafe acts of the operator are classified into two categories, errors and violations. Errors refer to activities that fail to achieve the desired outcomes whereas violations are the conscious disregard of established rules and regulations. In the HFACS framework, errors are divided into three basic types (decision, routine disruption, and perceptual) and violations are divided into two forms (routine and exceptional).

Errors

Decision errors—
Decision errors represent intentional actions that proceed as intended, but the plan proves inadequate or inappropriate for the situation. Decision errors occur during highly structured tasks and are divided into three types, rule-based errors, knowledge-based errors, and problem-solving errors.

Rule-based errors occur when a situation is either not recognized or is misdiagnosed and the wrong procedure is applied.

Knowledge-based errors occur when an operator chooses between various action plans but selects the incorrect procedure for the situation. This error form can be exacerbated by factors such as time pressure, inexperience or stress.

Problem-solving errors occur when an individual is put in a situation where the problem is not well understood and no formal procedure exists. A novel solution is required for these situations. During these situations individuals must resort to reasoning and thought-processing which is often time consuming and mentally taxing.

Routine disruption errors
Unlike decision errors, routine disruption errors occur with little conscious effort during highly automated tasks. As tasks become more familiar to an individual, they also become more automated. After some time, it does not take much conscious thought for an individual to navigate a car home following the same route everyday. The routine disruption error would arise when the person simply drives past his desired turn without noticing.

Routine disruption errors are susceptible to failures of memory or attention. In the example given above, a loss of attention to where one is going could lead to the error. Failures of attention have been linked to breakdowns in visual scanning, task fixation, and inadvertent activation of controls. Consider an operator who is busy checking the status of the ground support and activates the incorrect control on the jumbo. Memory failures often appear as missed steps in checklist, forgetting intentions, or place losing. Most people can relate to others that get somewhere only to realize they have no idea what they came to get. In everyday situations, these failures have minimal consequences. Consider the pedestrian on a mine site who forgets to wait for radio confirmation before proceeding into an area with heavy vehicles. The consequence of this action could quite literally lead to death. These errors increase during emergency situations when stress levels increase.
Routine disruption errors are also caused by the technique employed to carry out a task. Even with similar backgrounds in training and experience, the way an individual operates equipment can cause an increased likelihood of an error occurring. An operator may move controls using tactile clues only when deciding which lever to move. When compared with other techniques for operation, such as the added use of visual clues, this way could lead to more unintentional errors being committed.

**Perception errors**
Perceptual errors occur when sensory input is degraded, usually in an impoverished environment. The error is not the degraded input being used, but the misinterpretation of the input itself.

In the mining industry, the effect of a degraded physical environment has seen very little research. Operators, especially those working underground are often in areas with limited lighting and constantly changing ground conditions.

**Violations**

Violations represent the wilful disregard of established rules or regulations. They can manifest in two distinct forms, routine or exceptional violations. The difference between the types of violations does not reflect the seriousness of the act, but rather the frequency and the reaction of management.

**Routine violations**
Routine violations refer to the wilful disregard of rules and regulations that are condoned by persons in positions of authority. These violations tend to be habitual and accepted as part of what goes on in the organisation.

Consider for example, the operator who continually drives above the posted speed limit on the haulage roads. As this is normal on city roads, many people do not think anything of driving 5–10km over the posted speed. Since this act occurs frequently and there are few adverse events as a result, the enforcement of the rule is not a priority. In order to prevent routine violations from occurring, one must look to the members of authority to begin enforcing all the rules.

**Exceptional violations**
Exceptional violations are isolated departures from rules and regulations. These departures are not condoned by management nor are they indicative of an individual’s behaviour. For example, imagine an operator who violated regulations by operating a piece of equipment that he or she is not authorised to use. Exceptional violations are difficult to correct because they are unpredictable due to their departure from normal behaviour.

**Preconditions for unsafe acts**

While the unsafe acts of the operator have continually been linked to accidents, the preconditions to the unsafe acts must also be understood. Preconditions are generally latent system failures that lay dormant for long periods of time before ever contributing to an accident. Understanding the preconditions that an individual is placed under will help identify other areas for organisational improvements. Preconditions for unsafe acts include environmental factors, conditions of the operator, and personnel factors.
Environmental factors

Physical Environment
The physical environment is often looked at and cited in accident databases. The physical environment refers to both the operational (tools, machinery, etc.) and ambient (temperature, weather, light, etc.) environments. Mining operations, especially those underground, take place in adverse environmental conditions. Miners are often exposed to high temperatures which can lead to a decrease in attention, dusty conditions that reduce visibility, and dehydration, all of which can contribute to unsafe acts.

Technological environment
The technological environment deals with the design of equipment and the interaction between operators and equipment. The displays and control designs within equipment play a critical part in human error.

Within Australia, differences in control locations may become a major issue. Most equipment is designed and manufactured overseas where standards are different. Even the side on which an operator sits in the truck will change depending on whether the truck was designed on the American standard of drivers sitting on the left, or if the design was modified to be driven from the right as is standard in Australia. This change in seat position can have an effect on operators who are inexperienced and unfamiliar with the new layout or who are constantly switching between left and right hand drive vehicles.

Conditions of Operators

Adverse mental state.
The adverse mental state of the operator covers a broad range of mental conditions that can affect the performance of an operator. These conditions include mental fatigue, monotony, distraction, inattention, inherent personality traits, and attitudinal issues such as overconfidence, frustration, and misplaced motivation.

Adverse physiological state
Adverse physiological state refers to medical and physiological conditions that affect performance.

Physiology refers to the normal functioning of an organism and in this case of an individual person. It may be part of an individual's normal body function to have an overactive sweat gland. While this in itself will not preclude safe operation, combined with a hot humid environment and restricted water access, dehydration could be a major problem. It is important to identify these conditions in order to ensure that actions are taken to ensure individuals are not at an increased risk of harm due to medical or physiological conditions. This category also covers temporary medical conditions such as colds, headaches, etc. and the affects of the over-the-counter medications that people take to relieve these conditions.

Physical/mental limitations
While many people are sometimes unwilling to admit it, there are occupations that are simply beyond the capabilities of some individuals. All of us cannot aspire to be test cricket players in a week, and similarly may not have the physical or mental capabilities to operate complex, heavy-duty machines in often adverse environments with limited experience. This category refers to situations when individuals’ capabilities are exceeded by the demands of the job. This category takes into account many different forms of incompatibility. Some of these incompatibilities are possessed by all humans. The human visual system is known to be limited in dark environments so precautions must be taken to account for this decrease in visual acuity. Other areas of incompatibility are often overlooked simply because people do not want to offend others.
These incompatibilities are those referring to physical and mental aptitude. Some people do not possess the mental aptitude to correctly react to novel situations or to memorise different procedures. Some individuals lack the physical ability to safely perform a job. This includes not having the physical strength to operate the controls, having incompatible anthropometric measurements for machines and poor physical health to complete strenuous aerobic tasks.

**Personnel Factors**

**Communication and coordination**
Communication and coordination within an organisation is vital for safe operations. Poor coordination between personnel, management, and contractors leads to confusion in responsibilities and overall breakdowns in organisational pathways. Communication breakdowns can occur between varieties of people within the work site—within workgroups; between workgroups; between management and personnel; and between management and contractor.

**Fitness for duty**
It is the responsibility of an employee to arrive for work in a condition that allows them to work safely. To a large extent, mine sites have taken measures to ensure that workers show up to work not under the influence of drugs and/or alcohol.

Unfortunately, other factors play a significant part of being fit for duty. These factors include attending work having had adequate sleep; avoiding physical over-exertion during free hours; and maintaining a healthy diet. Within the mining industry, shift work is very common. Engaging in shift work can lead to poorer sleep patterns and nutrition which can negatively affect circadian rhythms and may result in lack of fitness for duty.

**Unsafe leadership**

According to Reason (1990), the actions of people in leadership positions can influence the performance and actions of operators. As such, the causal chain in accident investigation should include factors at this level. Unsafe leadership is divided into four categories:

- inadequate leadership
- planned inappropriate operations
- failure to correct known problems
- and leadership violations.

**Inadequate leadership**
Leadership is responsible for providing personnel with the opportunity for safe operation. This is done through adequate training, overseeing correct processes, incentives and guidance. While leadership has the responsibility to provide these things, it is not always done.

Training issues are dependent on leadership to arrange and authorise training programs. When employees are not given the opportunity to attend training sessions, decision making abilities are not developed which could lead to an increase in decision errors. Overseeing process is also an important part of leadership responsibilities. While it is important to trust the competency of operators, leadership must still be present to prevent the breeding of violations within the system.

**Planned inappropriate operations**
The category of planned inappropriate operations refers to situations where actions are initiated that put personnel at an unacceptable level of risk. While these actions may be acceptable during emergency situations, they are unacceptable during normal operation.
Consider for example, leadership that allows a worker to pick up extra shifts in order to cover poor shift scheduling. However, allowing an operator to continue to work after completing a 12-hour shift will possibly lead to drowsiness and increase the potential for human error.

**Failure to correct known problem**
The third category—failure to correct known problems—refers to instances where unacceptable conditions or behaviours are identified but actions are not taken to correct them. While most correction measures are usually left to those in authority, instances of unacceptable behaviours are more likely to surface when authority figures are not present. It is therefore vital that everyone in the organisation take an active role in correcting known problems. Inconsistent actions or discipline promotes violation of rules and regulations.

**Leadership violations**
The final category, leadership violations, is reserved for situations in which established rules and regulations are wilfully disregarded by those in positions of leadership. Leadership violations are rare in nature, but their effects can permeate throughout the organisation. When employees witness the mine leadership disregarding rules and regulations, a culture is created where following the rules is not a priority.

**Organisational influences**
Organisational failures can be further traced to deficiencies within the highest levels. Latent conditions within the organisational level often go unnoticed during accident investigations. These factors are difficult to find unless a clear understanding of the organisation's framework is understood and a consistent accident investigation framework used. Identification of causal factors at this level can also be hindered by the unwillingness to apportion blame to the company for fear of liability. Organisational influences are divided into three categories, resource management, organisational climate and organisational process.

**Resource management**
The most obvious corporate decisions are those that related to the allocation of resources. Organisational resources include equipment, facilities, money, and humans. The allocations of these assets often are based on two conflicting objectives, safety and profit. Part of resource management deals with the allocation and availability of personnel. Failures of resource management can occur when there an unfavourable ratio of leadership to workers exist.

**Organisational climate**
An organisation’s climate refers to a range of variables that affect performance, including the organisational structure, culture, and policies. Organisational structure is most often viewed as the chain of command that is employed within the company. The way that different levels of management and employees interact and relate with one another is all part of the organisation’s climate. Culture refers to the attitude, values, beliefs, and customs that are used as guidance. In many organisations, the culture reflects the manner in which tasks are carried out regardless of the rules and policies that should be followed. A company’s policies refer to both the written procedures that are used and the unwritten policies that are embedded in the organisation.

**Organisational process**
The final category of organisational influences—organisational process—refers to the decision making that governs the day-to-day operations of an organisation. Organisational process includes the creation and dissemination of standard operating procedures, roster selections, and the establishment of safety programs.
APPROVAL

Approving Authority:

Date Approved:

Division Responsible: Safety and Health

Branch/Unit Responsible:

Contact Officer: Mick O’Donoghue

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