WORKSAFE NEW ZEALAND | MAHI HAUMARU AOTEAROA

FACT SHEET

A HAZARD MANAGEMENT SYSTEM FOR MINING OPERATIONS

ABOUT THIS FACT SHEET

A hazard management system is how you identify and control hazards in your workplace. This fact sheet describes how a hazard management system is developed as part of the mining operation's overall health and safety management system.

The responsibilities contained in this fact sheet only relate to the requirements regarding the hazard management system. They do not cover other parts of the Regulations. Please refer to the Regulations for the full requirements and responsibilities.

THE LEGISLATION - OVERVIEW

Applicable legislation

The Health and Safety in Employment Act 1992 (the HSE Act) covers all workplaces and requires an employer to take all practicable steps to ensure the safety of employees and others while at work. It also places health and safety duties on others, such as mine operators, principals, self-employed persons, and employees.

The Health and Safety in Employment (Mining Operations and Quarrying Operations) Regulations 2013 (the Regulations) have specific provisions for safety in mining operations. This includes underground and opencast coal and mineral operations, and tunnelling operations.

For quarrying and alluvial mining operations the Regulations only address competency requirements but should be looked upon as best practice.

The Health and Safety Management System

The Regulations require a mining operation to develop a health and safety management system (HSMS)[1]. This requires the development and use of a process to identify hazards (risk appraisal) and the controls necessary for management of the hazards (risk assessment).

Hazard management – The HSE Act and the Regulations

The HSE Act[2] refers to significant hazards and the Regulations refer to principal hazards. A principal hazard is one that can cause multiple fatalities, either in a single accident or in a series of recurring accidents. All principal hazards at a mining operation will be significant hazards under the HSE Act. However, there are likely to be many more significant hazards than there are principal hazards. A hazard management system, which is part of the HSMS, must address all hazards in the workplace.

A mining operation must have a principal hazard management plan (PHMP) for each principal hazard, and a principal control plan (PCP) where specified in the Regulations.

[1] See Regulations 52 and 53.

[2] See the HSE Act 1992, sections 7-10 incl, for the full legal wording.

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THE HEALTH AND SAFETY MANAGEMENT SYSTEM

Different approaches and formats may be used to develop a HSMS. Further guidance on the development of the HSMS can be obtained from New Zealand Standards[3], and WorkSafe NZ guidance material[4].

Regardless of the structure adopted for the HSMS, it must include a systematic approach to hazard management. It must also include the elements required by the Regulations[5], summarised as:

- A health and safety policy.
- The processes for identifying hazards and the controls required to manage the risk of harm to workers.
- Reporting and recording of health and safety information.
- The systems or procedures to manage hazards and to respond to increased levels of risk in relation to any hazard.
- The setting of key performance indicators.
- Accident investigation.
- Measures to identify changes to the operation that may create hazards.
- The management structure for the management of health and safety, including competency requirements.
- The monitoring and auditing of the HSMS.
- The monitoring of the health and safety of mine workers.
- The PHMPs and PCPs required for the mining operation.
- The monitoring, assessing and inspecting of working places.
- Any other matter specifically required by the Regulations[6].

The HSMS must be developed in consultation with the mine workers at the site. It must be easily understood and made available to all mine workers.

See page 5 of this fact sheet for a diagram showing the HSMS and the elements of the hazard management system.

RISK ASSESSMENT

The requirements for risk assessment are covered in the Regulations[7]. Risk assessment comprises two parts:

- **Risk appraisal**, which is a process to identify hazards at the mining operation.
- **Risk assessment**, which is a process to assess the inherent risk to harm to mine workers from the identified hazards and to identify the controls required to manage that risk.

Guidance on these processes is available in:

- AS/NZS 4804:2001 "Occupational Health and Safety Management Systems - General guidelines on principles, systems and supporting techniques", section 4.3.4[8]
- WorkSafe NZ's 'A guide to developing safety management systems for the extractives industry', section 6[9]
- Recognised risk management methodologies such as that provided in AS/NZS ISO 31000:2009 "Risk Management – Principles and Guidelines", or MDG 1010:2011 "Minerals Industry Safety and Health Risk Management Guideline"[10].

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[3] See the Standards New Zealand website at www.standards.co.nz for copies of AS/NZS 4801:2001 and AS/NZS 4804:2001.

[4] See the WorkSafe NZ website at www.worksafe.govt.nz for a copy of the guide.

[5] See Regulation 56.

[6] The Regulations should be read and understood in their entirety to establish all of the compliance requirements to be met. See the Regulations for the full text.

[7] See Subpart 2 Risk Assessment, Regulations 54 and 55.

[8] See the Standards New Zealand website at www.standards.co.nz for a copy of AS/NZS 4804:2001.

[9] See the WorkSafe NZ website at www.worksafe.govt.nz for a copy of the guide.

[10] See the NSW Trade and Investment website at www.resourcesandenergy.nsw.gov.au for a copy of MDG 1010:2011.

PRINCIPAL HAZARD MANAGEMENT PLANS (PHMPS)

What are PHMPs?

A principal hazard is one that can cause multiple fatalities, either in a single accident or in a series of recurring accidents. The Regulations list specific principal hazards (see the diagram on page 5 for the list). However, there may be more principal hazards at a mine than are listed in the Regulations.

A PHMP sets out the measures that will be used to effectively manage a particular principal hazard. It must be documented and include[11]:

> The nature of the principal hazard
> A description of:
  - how risk assessments will be conducted and the results of any risk assessment completed
  - the control measures to be implemented to manage the hazard and the risk of harm it presents
  - how any specific requirements in the regulations (if any) will be complied with
  - emergency preparedness
  - the review and audit processes for the PHMP.
> The roles, responsibilities and competencies required to implement the PHMP
> any other matter required by the regulations in relation to particular principal hazards.

See the Regulations for the full requirements, including requirements specific to each PHMP.

Some of the controls required by a PHMP may be contained in a PCP rather than in the PHMP.

When are PHMPs needed?

A PHMP is required for each principal hazard regardless of the level of risk determined by a risk assessment.

If a particular principal hazard is not present at the mine, a PHMP will not be required for that particular hazard, with the following exceptions:

> A PHMP for fire or explosion is required for:
  - Underground coal mines
  - Underground metalliferous or tunnelling operations where methane is detected.
> A PHMP for explosives is required wherever explosives are used.
> A PHMP for tips, ponds and voids is required if a tip at the mining operations is:
  - located on a slope, and
  - greater than 15 metres in height, and
  - greater than 100,000 cubic metres in volume.

PRINCIPAL CONTROL PLANS (PCPS)

What are PCPs?

Some control measures may be used to control the risks associated with more than one hazard. This may include principal hazards and other significant hazards. These can be put together as a PCP which will have overriding application to the whole mine. The PCP should explain the control measures to be taken.

A PCP will not necessarily provide all of the controls for a particular hazard. For example, the controls needed for a principal hazard may be provided by one or more PCP, plus specific controls in the PHMP.

A PCP should demonstrate that the residual risk (i.e. after application of the controls) meets the requirements of "all practicable steps" in the HSE Act[12].

When are PCPs needed?

Not all PCPs are required for all mining operations and you will need to refer to the Regulations for the specific details. See the diagram on page 6 for the list of PCPs that may be required by the Regulations.

Although not listed in the Regulations, WorkSafe NZ is of the view that surveying requirements are best covered by a PCP.

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[11] See Regulation 68.

[12] See the HSE Act 1992, Part 2.

TIMELINE

New mining operations

The HSMS, PHMPs and PCPs must be in place and implemented before the operation commences.

The mine operator must give all draft PHMPs and PCPs to WorkSafe NZ not less than 2 months before operations commence.

Existing mining operations

The HSMS, PHMPs and PCPs must be in place by 1 January 2015. The HSMS, PHMPs and PCPs for existing mines do not need to be submitted to WorkSafe NZ, however, the HSMS, and the PHMPs and PCPs as part of the HSMS, must be available for examination by a WorkSafe NZ inspector on request[13].

REVIEW AND AUDIT

What to review?

The HSMS is to be reviewed twelve months after operations commence and then at least every three years. Additional reviews are required if a material change is made to the mining operation, a notifiable accident occurs, or for other reasons set out in Regulation 59.

PHMPs and PCPs are to be reviewed at least every two years and after any relevant accidents or material changes to the operation[14].

Records relating to a review must be available to a WorkSafe NZ inspector or Site Health and Safety Representative (SHSR) on request.

What to audit?

All PHMPs and PCPs must be audited by a competent independent external person once every three years.

Records of all audits are kept for at least twelve months after the date on which a mining operation is abandoned.

ROLES AND RESPONSIBILITIES

The Site Senior Executive (SSE) must[15]:

> develop, implement and maintain the HSMS
> ensure the risk appraisal and risk assessment processes are in place and used identify all principal hazards at the mining operation and ensure there is a PHMP in place for each principal hazard
> ensure there is a PCP where required
> ensure the HSMS, PHMPs and PCPs are reviewed as required by the Regulations
> develop the HSMS, PHMPs and PCPs in consultation with the workforce, including the SHSR
> ensure the HSMS is easily understood by all mine workers.

The mine operator must[16]:

> ensure the SSE develops, implements and maintains a HSMS
> ensure mine workers and contractors are given certain documents[17]
> submit all draft PHMPs and PCPs to WorkSafe NZ
> ensure audits of the PHMPs and PCPs are conducted
> ensure records are kept of all audits
> ensure mine workers are given a written summary of the HSMS, and given access to the HSMS, relevant PHMPs and PCPs, and other plans or processes relating to hazard management
> ensure mine workers are made aware of any revision to the HSMS
> ensure mine workers are provided with suitable instruction in relation to the HSMS[18]
> ensure records of the HSMS are kept[19].

CONTACT DETAILS

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[13] See Regulation 61(3).

[14] See Regulations 69 and 94.

[15] The list of responsibilities is not complete and relates only to the HSMS, PHMPs and PCPs.

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[17] See Regulations 62 and 63.

[18] See Regulation 64.

[19] See Regulation 61.

THE ELEMENTS OF A HAZARD MANAGEMENT SYSTEM