Initiative for Responsible Mining Assurance

Excerpt from the DRAFT Standard for Responsible Mining and Mineral Processing 2.0

Chapter 3.2 – Occupational Health and Safety

Context & Disclaimer on IRMA DRAFT Standard 2.0

IRMA DRAFT Standard for Responsible Mining and Minerals Processing 2.0 is being released for public consultation, inviting the world to join in a conversation around expectations that drive value for greater environmental and social responsibility in mining and mineral processing.

This draft document invites a global conversation to improve and update the 2018 IRMA Standard for Responsible Mining Version 1.0. It is not a finished document, nor seeking final review, but rather is structured to invite a full range of questions, comments and recommendations to improve the IRMA Standard.

This IRMA DRAFT Standard for Responsible Mining and Minerals Processing (v.2.0) has been prepared and updated by the IRMA Secretariat based on learnings from the implementation of the Standard (v.1.0), experience from the first mines independently audited, evolving expectations for best practices in mining to reduce harm, comments and recommendations received from stakeholders and Indigenous rights holders, and the input of subject-specific expert Working Groups convened by IRMA in 2022.

IRMA's Standard has a global reputation for comprehensive in-depth coverage addressing the range of impacts, as well as opportunities for improved benefit sharing, associated with industrial scale mining. This consultation draft proposes a number of new requirements; some may wonder whether IRMA's Standard already includes too many requirements. The proposed additions are suggested for a range of reasons (explained in the text following), including improving auditability by separating multiple expectations that were previously bundled into a single requirement, addressing issues that previously weren't sufficiently covered (e.g. gender, greenhouse gas emissions), and providing more opportunities for mining companies to receive recognition for efforts to improve social and environmental protection.

Please note, expert Working Groups were created to catalyze suggestions for solutions on issues we knew most needed attention in this update process. They were not tasked to come to consensus nor make formal recommendations. Their expertise has made this consultation document wiser and more focused, but work still lies ahead to resolve challenging issues. We encourage all readers to share perspectives to improve how the IRMA system can serve as a tool to promote greater environmental and social responsibility, and create value for improved practices, where mining and minerals processing happens.

The DRAFT Standard 2.0 is thus shared in its current form to begin to catalyze global conversation and stakeholder input. It does not represent content that has been endorsed by IRMA's multistakeholder Board of Directors. IRMA's Board leaders seek the wisdom and guidance of all readers to answer the questions in this document and inform this opportunity to improve the IRMA Standard for Responsible Mining.

IRMA is dedicated to a participatory process including public consultation with a wide range of affected people globally and seeks feedback, comments, questions, and recommendations for improvement of this Standard. IRMA believes that diverse participation and input is a crucial and determining factor in the effectiveness of a Standard that is used to improve environmental and social performance in a sector. To this end, every submission received will be reviewed and considered.

The DRAFT Standard 2.0 is based on content already in practice in the IRMA Standard for Responsible Mining Version 1.0 (2018) for mines in production, combined with the content drafted in the IRMA Standard for Responsible Mineral Development and Exploration (the 'IRMA-Ready' Standard – Draft v1.0 December 2021) and in the IRMA Standard for Responsible Minerals Processing (Draft v1.0 June 2021).

Chapter Structure

BACKGROUND

Each chapter has a short introduction to the issue covered in the chapter, which may include an explanation of why the issue is important, a description of key issues of concern, and the identification of key aspects of recognized or emerging best practice that the standard aims to reflect.

TERMS USED IN THIS CHAPTER

This is a list of the terms used in the chapter ■ Each term is separated with ■

Terms listed here are identified in the chapter with a dashed underline. And they are defined in the Glossary of Terms at the end of the chapter.

OBJECTIVES/INTENT STATEMENT

A description of the key objectives that the chapter is intended to contribute to or meet.

SCOPE OF APPLICATION

A description of the conditions under which the chapter may or may not be relevant for particular mines or mineral processing sites. If the entity can provide evidence that a chapter is not relevant, that chapter will not need to be included in the scope of the IRMA assessment. A requirement is 'not relevant' if the issue to which a requirement relates is not applicable at the site. For example, requirements related to the use of cyanide would not be relevant at a site at which cyanide is never used.

Chapter Requirements

X.X.X. These are criteria headings

X.X.X.X. And these are the requirements that must be met for an IRMA assessment to be issued and subsequently maintained by a site. Most criteria have more than one requirement. All requirements must be met in order to comply fully with the criterion.

a. Some requirements consist of hierarchical elements:
    i. At more than one level.
    ii. Operations may be required to meet all elements in a list, or one or more of the elements of such a list, as specified.

NOTES

Any additional notes related to the chapter and its requirements are explained here.

GLOSSARY OF TERMS USED IN THIS CHAPTER

Terms used in the chapter are defined here.

ANNEXES AND TABLES

Annexes or Tables are found here.

IRMA Critical Requirements

The 2018 IRMA Standard for Responsible Mining v. 1.0 includes a set of requirements identified as being critical requirements. Operations being audited in the IRMA system must at least substantially meet these critical requirements in order to be recognized as achieving the achievement level of IRMA 50 and higher, and any critical requirements not fully met would need to have a corrective action plan in place describing how the requirement will be fully met within specified time frames.

The 2023 updates to the 2018 Standard may edit some critical requirements in the process of revising and therefore there will be a further review specific to the language and implications of critical requirements that follows the overall Standard review.

Associated Documents

This document is an extract of the full DRAFT IRMA FOR RESPONSIBLE MINING AND MINERAL PROCESSING (Version 2.0) – DRAFT VERSION 1.0, released in October 2023 for a public-comment period. The English-language full version should be taken as the definitive version. IRMA reserves the right to publish corrigenda on its web page, and readers of this document should consult the corresponding web page for corrections or clarifications.

Readers should note that in addition to the DRAFT Standard, there are additional policies and guidance materials maintained in other IRMA documents, such as IRMA's Principles of Engagement and Membership Principles, IRMA Guidance Documents for the Standard or specific chapters in the Standard, IRMA Claims and Communications Policy and other resources. These can be found on the IRMA website in the Resources section. Learn more at responsiblemining.net

Comment on the IRMA Standard

> Comments on the IRMA Standard and system are always welcome.
>
> They may be emailed to IRMA at: comments@responsiblemining.net

Additional information about IRMA is available on our website: responsiblemining.net

Chapter 3.2
Occupational Health and Safety

NOTES ON THIS CHAPTER: We are proposing a significant expansion of this chapter – with 16 more requirements than the previous version. In reviewing this chapter´s content we took into consideration the fact that in June 2022, the International Labour Convention adopted a resolution to include *a safe and healthy working environment* as the fifth of International Labour Organization's (ILO) fundamental principles and rights at work.[1] Even though many in the mining industry have recognized the importance of worker health and safety, and even though IRMA's 2018 standard included such protections, the ILO recognition of safety and health at work as being a fundamental right led us to re-evaluate our requirements related to the rights of workers, such as the right to stop work, the right to training, the right to report accidents and dangerous occurrences, etc., and are proposing revisions to support the realization of those rights.

As part of our review, we also reviewed updates to Mining Association of Canada's Safety and Health Protocol (2021), and other minerals industry standards like the RBA ESG Due Diligence Standard for Mineral Supply Chains (2021) and Responsible Jewellery Council's Code of Practices (2019).

Additionally, first audits revealed some shortcomings with the IRMA chapter – in particular, some requirements were too general, and so more detail was needed to ensure that the intent would be met, and there would be consistent measurement of performance from site to site. While IRMA auditors are required to have competencies on the topics they are auditing, the auditors are not and cannot be experts on all of the particular hazards that may be present at large scale mines or mineral processing operations.

This has prompted IRMA to create proposed Annex 3.2-A, which enumerates the various hazards that are common at mines and mineral processing operations, so that auditors are aware and can determine if sites have adequately considered and controlled the range of hazards that may be present. Without this additional guidance, there is the potential that some entities and auditors may overlook major hazards, which could lead to consequences for workers, and also risks to IRMA if mines that score well on this chapter were to have major occupational health and safety events. This is not meant to place the burden on auditors. The entity being audited bears the sole responsibility for reducing and managing health and safety hazards in the workplace.

Proposed additions and changes:

- We are proposing to remove the flag from this chapter. There was one requirement that was being tested in the first audits, and there was no indication from those first audits that the flagged requirement was problematic. As a result, we are proposing that the requirements be incorporated into this version of the Standard (note that the previously flagged requirement on compensation related to injuries and fatalities has been moved to Chapter 3.1, into criterion 3.1.9 on 'Wages, Benefits, and Other Compensation,' so that all requirements related to payments to workers are consolidate in one place. See requirement 3.1.9.4.a.iv).
- A new policy requirement (3.2.1.1) and setting of performance targets (3.2.1.2.a)
- Addition of contractor requirements to manage contractors (3.2.1.3) and more references to contractors throughout because IRMA received feedback that it was not clear if/when there was a responsibility for an entity to apply OHS-related actions to contractors.
- Additional expectations related to joint health and safety committees (3.2.1.5)

[1] ILO refers to these five principles as "an expression of commitment by governments, employers' and workers' organizations to uphold basic human values - values that are vital to our social and economic lives." https://www.ilo.org/declaration/lang--en/index.htm

The resolution recognizes the Occupational Safety and Health Convention, 1981 (No. 155) and the Promotional Framework for Occupational Safety and Health Convention, 2006 (No. 187) as fundamental Conventions. https://www.ilo.org/wcmsp5/groups/public/---ed_protect/---protrav/---safework/documents/publication/wcms_874743.pdf

- Separation of hazard identification (3.2.2.1) from risk assessment (3.2.2.2)
- Expanded list of mitigation procedures for specific situations (3.2.3.3), including infectious diseases (now 3.2.3.5, moved from Chapter 3.3)
- Emergency response requirements (3.2.3.6) were moved from Chapter 2.5, which now focuses on community emergency preparedness and response
- Added additional procedures relate to stop work authority (3.2.3.7), and reporting and investigations (3.2.3.8)
- Expanded requirements related to first aid requirements (3.2.4.4), and worker accommodations (3.2.4.6), and response to incidents and accidents (3.2.6.1)
- Additional requirements to support worker mental health (3.2.3.4) including after accidents (3.2.6.2.b)
- Significant expansion of worker training requirements (3.2.7.3, 3.2.7.4, 3.2.7.5)
- And additional expectations related to review and reporting on occupational health and safety performance (3.2.8.2 and 3.2.8.3)

Glossary:

- We are proposing new/revised definitions for several glossary terms. The 'Terms Used In This Chapter' box shows which terms are new, and the proposed definitions can be found in the glossary at the end of the chapter requirements. The full glossary is at the end of the document. Feedback on definitions is welcome.

BACKGROUND

Occupational health and safety impacts related to the mining and mineral processing industries may include physical injuries, musculoskeletal disorders, noise-induced hearing loss, hand-arm vibration syndrome, skin cancer, dermatitis, heat exhaustion, hypothermia, eye disorders from radiation exposure, asphyxiation, pneumonia, respiratory disorders and lung diseases such as silicosis, damage to internal organs and other effects related to chemical/metal exposures, decreased mental health and well-being, and others.[2]

Some key hazards related to mining include but are not limited to: exposure to dust, rocks falls, ground subsidence, vehicle collisions, equipment failures, explosions, release of noxious gases, catastrophic failure of mine infrastructure, [3] while key hazards related to mineral processing include, but are not limited to: exposure to dust, chemicals in liquid or gaseous form, exposure to high-temperatures and molten or caustic materials, conveyors and pulleys, equipment maintenance, failure of ventilation systems, drowning, falls and vehicle collisions.

Due to the many hazards and potential impacts associated with mining and mineral processing, a strong focus on occupational health and safety must be present at responsible mines.

In 1995, *Convention 176–Safety and Health in Mines* was adopted by the International Labour

TERMS USED IN THIS CHAPTER

Accident NEW ■ Biological Exposure Indices (BEI) ■ Closure ■ Competent Authority ■ Competent Professionals ■ Comprehensible ■ Consultation ■ Contractor ■ Control ■ Credible Methodology NEW ■ Emergency Scenario NEW ■ Emergency Situation NEW ■ Entity NEW ■ Exploration NEW ■ Facility ■ Gender NEW ■ Grievance ■ Hazard ■ Hazardous Materials NEW ■ Health Surveillance ■ Hierarchy of Controls NEW ■ Inform ■ Lagging Indicators NEW ■ Leading Indicators NEW ■ Mineral Processing NEW ■ Mining NEW ■ Near-miss Incidents NEW ■ Occupational Exposure Limit (OEL) ■ Operations NEW ■ Post-Closure ■ Practicable ■ Project NEW ■ Psychosocial Hazard NEW ■ Root Cause Analysis NEW ■ Safety Data Sheets NEW ■ Supplier ■ Unwanted Events NEW ■ Whistleblower NEW ■ Worker ■ Workers' Health and Safety Representative NEW ■ Workers' Representative

These terms appear in the text with a dashed underline. For definitions see the Glossary of Terms at the end of this chapter.

[2] ICMM. 2009. Good Practice Guidance on Occupational Health Risk Assessment. https://www.icmm.com/website/publications/pdfs/health-and-safety/161212_health-and-safety_health-risk-assessment_2nd-edition.pdf

[3] ICMM website: "Preventing Fatalities." https://www.icmm.com/en-gb/health-and-safety/safety/preventing-fatalities

Organization (ILO).[4] The convention set out international standards for occupational health and safety at mine sites including the need for: safety and health inspections, accident reporting and investigations, hazard assessment and management, and workers' rights to participate in workplace health and safety decisions, be adequately trained in their tasks, be informed of occupational hazards, and to remove themselves from dangerous workplace situations.

In 2022, the right to a safe and healthy working environment was added to the ILO's list of fundamental principles and rights at work, thus elevating the universal importance of health and safety protections in the workplace. [5]

OBJECTIVES/INTENT OF THIS CHAPTER

To identify and avoid or mitigate occupational health and safety hazards, maintain working environments that protect workers' health and working capacity, and promote workplace safety and health.

SCOPE OF APPLICATION

RELEVANCE: This chapter is applicable to all exploration, mining and mineral processing projects and operations.

Requirement 3.2.3.6.d is only relevant for underground mining operations.

> NOTE ON SCOPE OF APPLICATION: This proposed version of the IRMA Standard is meant to apply to exploration, mining, and mineral processing projects and operations (see definitions of project and operation), but not all requirements will be relevant in all cases. We have provided some high-level information below, but the IRMA Secretariat will produce a detailed Scope of Application for each chapter that will indicate relevancy on a requirement-by-requirement basis (and will provide some normative language where the expectations may slightly differ for proposed projects versus operations, or for mining versus mineral processing, etc.).

CRITICAL REQUIREMENTS IN THIS CHAPTER

Suitable personal protective equipment and clothing must be provided (3.2.4.3) and workers are informed of the hazards associated with their work, the health risks involved and relevant preventive and protective measures (3.2.7.4).

> NOTE ON CRITICAL REQUIREMENTS: The 2018 IRMA Standard includes a set of requirements identified as being critical. Projects/operations being audited in the IRMA system must at least substantially meet all critical requirements in order to be recognized at the achievement level of IRMA 50 and higher, and any critical requirements not fully met need a corrective action plan for meeting them within specified time frames.
>
> INPUT WELCOME: The proposed revisions to the 2018 Standard have led to new content, as well as edits of some critical requirements in the process. Therefore, there will be a further review of the language and implications of critical requirements prior to the release of a final v.2.0 of the IRMA Standard. During this consultation period we welcome input on any existing critical requirement, as well as suggestions for others you think should be deemed critical. A rationale for any suggested changes or additions would be appreciated.

Occupational Health and Safety Requirements

3.2.1. Policy and Governance

NOTE FOR 3.2.1: This criterion has been created to include requirements related to policy and oversight of health and safety matters. Some requirements are new because a review of other standards demonstrates that a policy

[4] International Labour Organization. 1995. Safety and Health in Mines Convention, 1995 (No. 176). www.ilo.org/dyn/normlex/en/f?p=NORMLEXPUB:12100:0::NO:12100:P12100_ILO_CODE:C176

[5] ILO now recognizes the Occupational Safety and Health Convention, 1981 (No. 155) and the Promotional Framework for Occupational Safety and Health Convention, 2006 (No. 187) as fundamental Conventions. https://www.ilo.org/wcmsp5/groups/public/---ed_protect/---protrav/---safework/documents/publication/wcms_874743.pdf

commitment and performance targets are common expectations (e.g., see Mining Association of Canada Safety and Health Protocol[6]), and some requirements have been moved from elsewhere in the chapter.

3.2.1.1. A health and safety policy (or equivalent) is in place and implemented at the project/operation that:

a. Includes commitments to prioritize the health and safety of workers over production, and to demonstrate continuing improvement in health and safety performance over time, with the objective of achieving zero harm in the workplace;
b. Is approved at the most senior level of the operation;
c. Is communicated to all employees, and relevant contractors;[7] and
d. Is publicly available.

NOTE FOR 3.2.1.1: NEW. This requirement was not in the 2018 Mining Standard.

3.2.1.2. A member of senior management is accountable for the development of a management system to support the achievement of the commitments in the health and safety policy, including:

a. Setting of health and safety objectives and performance targets that include:
    i. Separate targets for health and for safety;
    ii. Separate targets related to lagging and leading indicators;[8]
    iii. Separate targets for employees and, if relevant, contractors; and
b. Implementing measures to support the achievement of health and safety objectives and targets.

NOTE FOR 3.2.1.2: REVISED. This was 3.2.1.1 in the 2018 Mining Standard. It has been revised to include that a member of senior management be accountable (i.e., responsible or answerable) for a health and safety management system that supports achievement of the policy commitments.

Management systems typically include assessment of what needs to be done, development of plans, processes, and procedures to achieve objectives, implementation of plans, and monitoring to ensure that tasks are performed correctly, consistently and effectively, or drive improvement in performance to achieve objectives and targets. Aspects of the management system are captured in subsequent requirements.

We are proposing the following definitions:

Leading Indicators

Measure precursors to harm (e.g., conditions, events or measures that precede an undesirable event, whether it is an accident, near-miss incident, or undesirable safety state), and are associated with proactive activities that identify hazards and assess, eliminate, minimize, and control risk in order to achieve a desired outcome or avoid unwanted outcomes.

Lagging Indicators

Measure outcomes and occurrences (e.g., the extent of harm that has occurred in the past). Reactive, tells you whether you have achieved a desired result (or when a desired safety result has failed) and provides historical information about health and safety performance.

3.2.1.3. A system is developed and implemented to manage the occupational health and safety of all contractors, including:

[6] Mining Association of Canada. 2021. Safety and Health Protocol (Toward Sustainable Mining). https://mining.ca/wp-content/uploads/dlm_uploads/2021/08/Safety-and-Health-2020-EN.pdf

[7] Relevant contractors would be those who physically work at or enter the site (e.g., to deliver goods or services) and, therefore, may be exposed to health and safety hazards.

[8] For more on leading indicators, see: ICMM. 2012. "Overview of Leading Indicators for Occupational Health and Safety in Mining. https://www.icmm.com/website/publications/pdfs/health-and-safety/2012/guidance_indicators-ohs.pdf

a. A signed contract that outlines how occupational health and safety of contractors will be managed in a manner that aligns with the requirements in this chapter.[9] The contract delineates the entity's and the contractor's rights and responsibilities,[10] and addresses at minimum:[11]
    i. Identification of hazards associated with contracted work (see 3.2.2.1), including responsibility to notify the entity if the contractor proposes to introduce new or different tools, equipment, materials, chemicals or work processes that could pose a new hazard or elevated risk to contractors and/or entity personnel;
    ii. Assessment of risks associated with contracted work (see 3.2.2.3);
    iii. Development of controls for high-risk hazards associated with contracted work (see 3.2.3.1);
    iv. Provision and oversight of the proper use of personal protection equipment (see 3.2.4.3);
    v. The right of the entity to carry out inspections of work areas and work being conducted by contractors (see 3.2.5.1);
    vi. Workplace monitoring and health surveillance and evaluation of the effectiveness of the controls (see 3.2.5.2);
    vii. Reporting unsafe conditions and unwanted events to the entity and government authorities (see 3.2.6.1 and 3.2.6.2); and
    viii. Training those carrying out contracted work on hazards, controls and any relevant plans and procedures that apply to them, such as stop work authority, and emergency response and reporting procedures (see 3.2.7.3);
b. Clear stipulation of consequences if occupational health and safety performance of contractors does not meet the entity's expectations;
c. A clear process for communicating with and receiving input from contractors on health and safety matters; and
d. A documented system for monitoring contractor occupational health and safety performance, overseen by a member of senior management of the entity.

NOTE FOR 3.2.1.3: NEW. In the 2018 Mining Standard, only Chapter 1.1 laid out expectations for contractors, and in Chapter 3.2, we included the cross-reference table at the end of the chapter the following statement: "the operating company is responsible for ensuring that contractors involved in mining-related activities comply with the requirements of this chapter of the IRMA Standard, i.e., contract workers and any other workers who provide project-related work and services should be afforded a safe and healthful work environment."

In this revised version of Chapter 3.2, we are seeking to add greater clarity on what the expectations are related to contractors. This is especially important, because contractors make up a substantial proportion of the mining industry workforce, and while entities like mining companies may hire contractors to perform a service, the industry recognizes that this "does not absolve the hiring company of the obligation to provide a healthy and safe place of work."[12]

According to the National Mining Association (NMA) in the United States: "Contractors play a significant role in safety and health management at facilities whether there are contract miners or contractors performing project work. They often face very similar, if not more significant, risk than do company employees. If

[9] The contract may be the same as the one required in Chapter 1.1 (requirement 1.1.3.1), as long as it contains the information in 3.2.1.3.

Management of contractors carrying out work may be done by either the entity or the contractor, or carried out in a collaborative manner. But the responsibilities must be clearly delineated.

[10] Some companies create manuals for their contractors related to health and safety. See, for example, Freeport-McMoran. 2022. Contract Health, Safety and Environmental Manual. https://www.fcx.com/sites/fcx/files/documents/suppliers/csm.pdf

[11] These need to be included unless clearly not relevant to the contracted work.

[12] ICMM. 2022. An Approach to Contractor Engagement. p. 1. https://www.icmm.com/website/publications/pdfs/health-and-safety/2022/briefing_an-approach-to-contractor-engagement.pdf

contractors do not receive the appropriate instruction and direction to work safely, they can introduce new hazards to the workplace that put themselves and company workers at risk."[13]

The International Council on Mining and Metals (ICMM) has found that: "Inefficient, incomplete or inconsistent contractor management practices greatly increase the risk of costly delays, mistakes, and hazards to health, safety, equipment and the environment. At worst, this can lead to serious injury or death of workers and can irrevocably damage corporate reputation. Between 2018-2020 there were 381 fatalities in ICMM member companies, 211 of which were direct employees, and 170 were contractors."[14]

Both the NMA and ICMM have developed guidance related to contractor management as it relates to health and safety. Requirement 3.2.1.3 attempts to incorporate some of that guidance, while also ensuring that the intent expressed in the original 2018 IRMA Standard be upheld (i.e., that contract workers . . . who provide project-related work and services should be afforded a safe and healthful work environment).

3.2.1.4. A joint health and safety committee (or its equivalent) that includes workers' health and safety representatives and entity management is implemented to facilitate dialogue and worker participation in matters relating to occupational health and safety.

NOTE FOR 3.2.1.4. This was included in 3.2.3.4 in the 2018 Mining Standard.

3.2.1.5. The workers' health and safety representatives on the committee:

a. Are selected by workers;[15]
b. Make up 50% of more of the number of members on the joint health and safety committee;
c. Are entitled to take time from regular work duties, with pay, to carry out committee related responsibilities;
d. Receive free training, access to resources, and recourse to advisers and independent experts, as necessary, to participate effectively; and
e. Are provided with the opportunity to:
    i. Participate in inspections and investigations conducted at the workplace by the employer and by the competent authority;
    i. Participate in the design and implementation of workplace monitoring and worker health surveillance programs;
    ii. Monitor and investigate health and safety matters;
    iii. Receive timely notice of accidents and dangerous occurrences; and
    iv. Access the following data and documentation: hazard identification, risk assessments, risk management plans, procedures, training materials, monitoring data, health surveillance results,[16] inspection reports, and reports related to unwanted events (i.e., injuries, diseases, fatalities, accidents, and near-miss incidents) including those submitted to regulatory authorities.

NOTE FOR 3.2.1.5. REVISED. All of the sub-elements in 3.2.1.5.e were included in 3.2.3.5 and 3.2.6.1 in the 2018 Mining Standard.

Additional sub-requirements 3.2.1.5.a through 3.2.1.5.d are being proposed, however, as these joint committees serve as an important oversight role in the workplace, and thus contribute to the overarching goal of reducing harm. The additional sub-requirements are meant to add to the effectiveness of these committees.

[13] National Mining Association. Core Safety, p. 86. https://nma.org/wp-content/uploads/2016/09/CORESafety-Handbook.pdf

[14] ICMM. 2022. An Approach to Contractor Engagement. p. 1. https://www.icmm.com/website/publications/pdfs/health-and-safety/2022/briefing_an-approach-to-contractor-engagement.pdf

[15] This could include representatives selected by workers' organizations, or through elections by workers, or a combination of the two. It does not include workers appointed by the entity.

[16] This would exclude any data protected for medical confidentiality reasons.

NEW elements include that:

- Workers' must be selected by workers themselves, not by the entity, i.e., could be through the workers' organizations, or via another mechanism such as elections (see 3.2.1.5.a).
- Workers have equal or more representation on committees as per ILO Recommendation 164, which states that "in joint safety and health committees, workers should have at least equal representation with employers' representatives."[17] (See 3.2.1.5.b)
- Workers' health and safety representatives be entitled to take time from regular work duties, with pay (see 3.2.1.5.c). This is required by law in some jurisdictions, and is also included in ILO Recommendation 164.[18]
- Workers' health and safety representatives receive training and resources to participate effectively (see 3.2.1.5.d). This is required by law in some jurisdictions, and is recommended practice by others, including ILO and other standard systems.[19]

3.2.2. Health and Safety Hazard Identification and Assessment

3.2.2.1. A process is implemented to identify and document in a hazard register (or equivalent):

a. The hazards that are or may be associated with the project/operation,[20] including:
   i. Safety, chemical, biological, physical, ergonomic, and psychosocial hazards (see Annex 3.2-A);
   ii. Hazards associated with the design of the workplace, organization of work,[21] routine and nonroutine tasks, and foreseeable emergency scenarios; and
   iii. External factors with the potential to exacerbate a hazard or affect the entity's management of hazards;[22] and

b. The groups of people (e.g., workers, contractors, suppliers, visitors) who may be harmed by each hazard, and any individuals or sub-groups who may be particularly susceptible to the hazard (e.g., pregnant women, breastfeeding mothers, people of different ages, genders, health status, physical characteristics, ethnicities, etc.).[23]

NOTE FOR 3.2.2.1. This requirement is NEW. Previously, the hazard identification step was combined with the risk assessment process as a whole. We are proposing to separate it out, primarily because if hazards are not identified in a comprehensive manner, there is the potential that important hazards may be overlooked when considering how best to eliminate and minimize serious health and safety risks to workers and others who

[17] ILO. Occupational Safety and Health Recommendation, 1981 (No. 164) https://www.ilo.org/dyn/normlex/en/f?p=NORMLEXPUB:12100:0::NO::P12100_ILO_CODE:R164

[18] See table in Canadian Center for Occupational Health and Safety. "Health and Safety Committees." https://www.ccohs.ca/oshanswers/hsprograms/hscommittees/creation.html#section-4-hdr; and see next footnote for ILO reference.

[19] ILO Recommendation 164 says: 12 (2) Workers' safety delegates, workers' safety and health committees, and joint safety and health committees or, as appropriate, other workers' representatives should-- (i) have reasonable time during paid working hours to exercise their safety and health functions and to receive training related to these functions" (ILO. Occupational Safety and Health Recommendation, 1981 (No. 164) https://www.ilo.org/dyn/normlex/en/f?p=NORMLEXPUB:12100:0::NO::P12100_ILO_CODE:R164). See also: Canadian Center for Occ. Health and Safety "Health and Safety Committees." Table 2. https://www.ccohs.ca/oshanswers/hsprograms/hscommittees/creation.html#section-4-hdr; United Autoworkers "Launching and Effective health and Safety Committee." p. 10. https://www.osha.gov/sites/default/files/2018-12/fy11_sh-22230-11_HandSCommitteeManual.pdf; and Responsible Business Alliance. 2021. ESG Standard for Mineral Supply Chains. Requirement VI-3. https://www.responsiblemineralsinitiative.org/media/docs/standards/RMI_RMAP%20ESG%20Standard%20for%20Mineral%20Supply%20Chains_June32021_FINAL.pdf

[20] The project/operation would include, for example, all associated processes, facilities, equipment, materials, procedures, infrastructure, systems, and services.

[21] For more context, see: Organization of Work Taxonomy. https://www.cdc.gov/niosh/topics/workorg/taxonomy.html

[22] External factors could include political, economic, social, technological, environmental or legal (PESTEL) influences.

[23] For example, see "Consideration of vulnerable populations in risk assessment." https://www.canada.ca/en/health-canada/services/chemical-substances/fact-sheets/consideration-vulnerable-populations-risk-assessment.html

may be present at a site. Furthermore, separating out this step ensures that it will be given adequate attention and review during audits.

The proposed requirement includes content from 3.2.2.2 (a), (b), and (d) in the 2018 Mining Standard, but has been reorganized and supplemented.

Sub-requirement 3.2.2.1.a.i now refers to six common categories of hazards experienced at industrial operations like mines and mineral processing facilities. We have created Annex 3.2-A to provide a summary of known hazards and classes of hazards associated with mining and mineral processing operations, with the idea that during audits the auditors would expect to see that that consideration has been given to whether or not these hazards are applicable for a particular project/operation.

CONSULTATION QUESTION 3.2-1: Are there major potential hazards that have been missed in Annex 3.2-A or that you believe are not applicable to mining and/or mineral processing operations?

Sub-requirement 3.2.2.1.a.iii is NEW. External factors can exacerbate hazards. In particular, climate-related events such as high heat waves, or unusually large precipitation events can lead to an increase in heat-related illnesses, flooding-related safety issues, or increase in vector-borne disease, etc.[24]

Sub-requirement 3.2.2.1.b replaces 3.2.2.3 from the 2018 Mining Standard which said "The operating company shall pay particular attention to identifying and assessing hazards to workers who may be especially susceptible or vulnerable to particular hazards." Instead of using the phrase 'pay particular attention' we are clear that susceptible workers, if any, need to be identified in relation to each hazard.

3.2.2.2. A risk assessment process is implemented that follows a credible methodology for industrial operations.

NOTE FOR 3.2.2.2. REVISED. Requirement 3.2.2.1 from the 2018 Mining Standard required that entities follow a recognized risk assessment methodology. We have changed that to credible methodology, as this is consistent with changes throughout the IRMA Standard.

We are proposing to define **credible methodology** as:

> A method/methodology that is widely recognized, accepted, and used by experts and practitioners in a particular field of study.

3.2.2.3. The entity consults with workers' health and safety representatives and relevant workers and contractors[25] to:

a. Identify hazards (as per 3.2.2.1);
b. Determine the potential severity of consequences and probability of occurrence of identified hazards;
c. Identify any existing controls for the hazards;
d. Identify high-risk (or equivalent) hazards for which additional controls should be prioritized, including but not limited to those that have caused or have a reasonable potential to cause a life-altering or fatal injury or disease; and
e. Identify key potential emergency scenarios including, but not limited to, all potential accidents that have a moderate or high severity or probability of occurrence.[26]

NOTE FOR 3.2.2.3. REVISED. This requirement combines 3.2.2.1 and 3.2.3.4.a from the 2018 Mining Standard.

Sub-requirement 3.2.3.4.a in the 2018 Mining Standard required that workers representatives be engaged in hazard identification and risk assessment. We are proposing to add that workers and contractors should also be consulted, as there will be cases where workers and contractors who perform tasks that are linked to

[24] For example, see: Centers for Disease Control and Prevention. 2014. "Climate Change and Occupational Health and Safety." https://blogs.cdc.gov/niosh-science-blog/2014/09/22/climate-change/

[25] Workers and contractors who are most likely to be exposed or susceptible to particular hazards should be consulted during the risk assessment of those hazards, and in the development of controls.

[26] These scenarios will feed into the emergency preparedness and response plans in 3.2.3.6.

particular hazards will be best placed to provide input on the natural of the hazards, the existing controls, the likelihood that hazards will lead to events, etc.[27] When there are sub-groups of workers who or contractors susceptible to harm from particular hazards, they could also be consulted during this process.

Requirement 3.2.2.1 in the 2018 Mining Standard mentioned the assessment of significant/consequence of hazards. Our proposed language here acknowledges that some prioritization will likely need to occur related to the development of controls (e.g., prevention, mitigation), given that there are many hundreds of hazards associated with large-scale mining and mineral processing operations. We refer to the prioritized situations as "high" risk hazards, although other systems use other terms (e.g., serious, key, critical, priority risks, principal or high consequence hazards, material unwanted events). We have included that high-risk hazards include those that have caused or have a reasonable potential to cause a life-altering or fatal injury or disease. This is consistent with many other standards and regulations.[28]

3.2.2.4. Risk assessments are documented, including:

a. Any assumptions made in relation to the number of people at risk, the probability, and severity of consequences for each hazard that inform the level of risk assigned to each hazard; and
b. Any criteria used to determine the high-risk activities or conditions for which additional controls should be prioritized, and criteria to determine the key potential emergency scenarios.

NOTE FOR 3.2.2.4. NEW. This requirement specifies and expands some documentation requirements related to 3.2.2.1 from the 2018 Mining Standard.3.2.2.5. Hazard identification and risk assessments are reviewed and, if necessary, updated at least annually, and more frequently if changes in the workplace, in activities, processes or services, resources, operational context, or external factors have the potential to introduce new hazards or change the risk rating of any existing hazards.[29]

3.2.2.5. Hazard identification and risk assessments are reviewed and, if necessary, updated at least annually, and more frequently if changes in the workplace, in activities, processes or services, resources, operational context, or external factors have the potential to introduce new hazards or change the risk rating of any existing hazards.

NOTE FOR 3.2.2.5. REVISED. Requirement 3.2.2.3 in the 2018 Mining Standard stipulated that the risk assessment process be "ongoing" process. This requirement seeks to provide clarification for what is meant by ongoing. We are proposing an annual review, as this corresponds to guidance provided by some mining jurisdictions.[30]

Updates to risk assessments were also mentioned in a second requirement, 3.2.5.3, which has been deleted as it overlapped with this requirement.

3.2.3. Health and Safety Management Plans and Procedures

[27] The U.S. Occupational Health and Safety Administration recommends that employers, "Collect, organize, and review information with workers to determine what types of hazards may be present and which workers may be exposed or potentially exposed." (Source: OSHA. "Hazard Identification and Assessment." https://www.osha.gov/safety-management/hazard-Identification#ai1)

[28] For example: The reference to life-altering injury or occupational disease is from Mining Association of Canada. 2021. Safety and Health Protocol. p. 15. https://mining.ca/wp-content/uploads/dlm_uploads/2021/08/Safety-and-Health-2020-EN.pdf; WorkSafe BC says "key risks are those that have resulted or might result in serious injury, fatality or disease. (https://www.worksafebc.com/resources/health-safety/books-guides/creating-key-risk-inventory?lang=en)

[29] External factors could include political, economic, social, technological, environmental or legal (PESTEL) influences.

Changes in workplace or operational context may include, for example, changes in personnel, organization or work, processes, facilities, equipment, materials, services, procedures, laws, regulations, environmental conditions, etc.)

[30] For example, in Ontario, Canada, the risk assessment must be reviewed as often as necessary and at least annually, as per subsection 5.3(1) of the Mines and Mining Plant regulation (available at: https://www.ontario.ca/laws/regulation/900854#BK0).

The annual or more frequent review "is to ensure that new hazards, or existing hazards that may have changed during the intervening period, are addressed, and that the controls that have been adopted to mitigate workplace risks continue to remain effective."

3.2.3.1. They entity consults with workers' health and safety representatives and relevant workers and contractors to develop controls for high-risk hazards in a manner that aligns with the widely accepted hierarchy of controls. The process of selecting controls is documented, including:

a. Documentation that the hierarchy of controls have been considered in proper sequence, beginning with serious consideration of the most effective strategies, even if they are the most expensive;[31] and

b. Rationale for rejecting higher hierarchy controls.[32]

NOTE FOR 3.2.3.1. REVISED. Requirement 3.2.2.4 in the 2018 Mining Standard mentioned hierarchy of controls (in a footnote), and specifically mentioned that elimination of hazards be a priority, but did not provide a way for that to be consistently audited. By requiring documentation of controls considered and rationale for the final selection of controls, it provides a way for entities to demonstrate that they are following the hierarchy of controls, or have a good reason (not solely based on cost) for not accepting the most effective strategies in all cases.

We propose the following definition of **hierarchy of controls**:

A step-by-step approach to eliminating or reducing workplace hazards that ranks controls from the most effective level of protection to the least effective level of protection as follows: Elimination (physically remove the hazard), Substitution (replace the hazard with something safer), Engineering Controls (use equipment or other means to isolate people from the hazard), Administrative Controls (change the way people work via procedures), Personal Protective Equipment (protect the worker using personal protective equipment).[33]

3.2.3.2. A health and safety risk management plan (or equivalent) is developed and implemented for managing high-risk hazards that:

a. Outlines specific controls to address the high-risk hazards identified through the assessment process;

b. Includes performance criteria or indicators of effectiveness for each control;[34]

c. Includes specific actions to be taken if the controls are not working within established criteria;

d. Assigns implementation of controls or actions, or oversight of implementation, to responsible staff;[35]

e. Includes an implementation schedule;[36] and

f. Includes estimates of human resources and budget required and a financing plan to ensure that funding is available for the effective implementation of the plan.

NOTE FOR 3.2.3.2. REVISED to be more consistent with management plans in other chapters.

3.2.3.3. If not covered in the plan for managing high-risk hazards, the entity demonstrates that documented procedures or measures are in place and implemented to address occupational health and safety hazards associated with the following, if relevant to the operation:

a. Any unique occupational health and safety risks to specific groups of workers (e.g., pregnant women, children, HIV-positive, etc.) identified in the risk assessment;

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[31] United Steelworkers. 2022. Bargaining for Stop Work Authority To Prevent Injuries and Save Lives. https://m.usw.org/act/activism/health-safety-and-environment/resources/bargaining-for-stop-work-authority-to-prevent-injuries-and-save-lives

[32] New Zealand Ministry of Business, Innovation and Employment. 2013. Guidance for a Hazardous Management System. https://www.worksafe.govt.nz/assets/dmsassets/zero/188WKS-2-excavations-hazard-management-system-for-mines.pdf

[33] Province of British Columbia. WorkSafe BC web site: "Controlling Risks." https://www.worksafebc.com/en/health-safety/create-manage/managing-risk/controlling-risks

[34] Appropriate performance criteria or indicators must include those required by host country law (e.g., maximum concentrations of certain chemicals in air), and, as relevant, those associated with external standards (e.g., IRMA references the ACGIH for occupational exposures), and any indicators agreed with workers.

[35] If work is carried out by third party contractors, then there needs to be a staff employee responsible for overseeing the quality of work, timelines, etc.

[36] Timelines may reflect a prioritization – i.e., those presenting the greatest risk are addressed first. Note, however, that entities have an ongoing obligation to control all serious recognized hazards and to protect workers. (https://www.osha.gov/safety-management/hazard-Identification)

b. Ground control and physical stability;[37]
c. Electricity;
d. Chemicals and hazardous materials;[38]
e. Gases and dust;[39]
f. Explosives;[40]
g. Mobile (powered) equipment/vehicles;
h. Equipment, including hand tools, and machinery;
i. Pressurized systems or vessels;
j. Confined spaces;
k. Inundation and inrush of water or other substances;
l. Working at heights; and
m. Materials handling.[41]

NOTE FOR 3.2.3.3. REVISED. This requirement combines 3.2.4.2 and 3.2.2.5 from the 2018 Mining Standard. Requirement 3.2.2.5 drew directly from language in the ILO Safety and Health in Mines Convention (176), Article 7,[42] which specifies that employers must take all necessary measures to eliminate or minimize risks associated with a number of known risk areas or issues in the mining industry. Thus, there was an expectation that over and above any plan to manage the "high-risk hazards" identified through risk assessment, that procedures also be in place to manage a set of known risks.

This approach is not unique. For example, the New Zealand government requires mining entities to develop Hazard Management Plans for all "principal" mining hazards regardless of the level of risk determined by a risk assessment. They include as principal hazards: ground or strata instability; inundation and inrush of any substance; mine shafts and winding systems; roads and other vehicle operating areas; tips, ponds and voids; air quality; fire or explosion; explosives; gas outbursts; spontaneous combustion (for underground coal mines).[43]

Based on a review of various sources that identify major hazards in the mining and mineral processing industries (see list of sources for Annex 3.2-A), and also a consultation question in the draft IRMA Mineral Processing Standard, we have identified common areas of known hazards. These are now listed in 3.2.3.3. Not all will be relevant at every operation.

CONSULTATION QUESTION 3.2-2: Do you agree with this approach? If so, do you agree with the categories of hazards listed, or would you suggest other types of hazards that should always have procedures or controls (if relevant at the operation)?

3.2.3.4. The entity collaborates with worker health and safety representatives to:

a. Review psychosocial hazards and identify those that are priority concerns for workers. The identification process includes consultations with workers and contractors;

[37] Management of physical stability is addressed in proposed Chapter 4.X. There may be some overlap, as some of the controls/mitigation measures applied there may help to protect worker health and safety. However, 3.2.3.3 would have much more work/task-specific measures to control hazards.

[38] These are required to be identified and characterized in Chapter 4.1.

[39] These are requirement to be identified in Chapter 4.3.

[40] These are required to be identified in Chapter 4.1.

[41] Procedures may have been developed for some materials handling in Chapter 4.1.

[42] International Labour Organization. 1995. Safety and Health in Mines Convention, 1995 (No. 176). www.ilo.org/dyn/normlex/en/f?p=NORMLEXPUB:12100:0::NO:12100:P12100_ILO_CODE:C176

[43] New Zealand Ministry of Business, Innovation & Employment. 2013. Guidance for a Hazard Management System for Mines. https://worksafe.govt.nz/dmsdocument/188-guidance-for-a-hazard-management-system-for-mines

b. Develop and implement programs to support the mental health of workers and contractors;

c. Develop and implement programs to encourage and promote overall health and wellness in the workplace; and

d. Review the effectiveness of the programs developed under (b) and (c) above and update them as necessary.

NOTE FOR 3.2.3.4: REVISED. The idea of developing promotional programs to support wellness and mental health was addressed in two requirements in the 2018 Mining Standard (3.2.3.4.d and 3.2.4.2).[44] However, neither requirement clearly articulated a need for such programs to always be developed, which made it difficult for auditors to interpret if and when such programs would be required.

The identification of psychosocial hazards (i.e., those that may affect workers' metal or emotional health or wellbeing) occurs in a previous requirement (3.2.2.1.a.i). But there is no guarantee that a risk assessment will prioritize such hazards as being high-risk. In 3.2.3.4, we are proposing that programs to promote and support worker mental health and promote wellbeing more generally be required regardless of the outcome of the risk assessment, though we are not prescriptive about the content of such programs, as different types of programs will be more or less useful in different contexts.

This approach is taken in the Mining Association of Canada's Safety and Health Protocol (2021). For example, they require at the AA level that sites demonstrate that "The facility's programs promote and encourage health and wellness, including mental health, and a healthy lifestyle."[45]

In order to determine priority programs, we are proposing that collaboration occur with worker health and representatives and workers and contractors.

We are proposing a definition of **psychosocial hazards:**

> Hazards that can have an impact on the psychological health or mental or emotional wellbeing of a person.

If this requirement is approved, we can add guidance related to psychosocial hazards. For example, the Western Australia Department of Mines, Industry Regulation and Safety has a website that outlines examples of psychosocial hazards that include: work demands, low levels of control, inadequate support from supervisors or coworkers, lack of role clarity, poor organizational change management, low recognition and reward, poor organizational justice, extreme environmental conditions, remote work, isolated work, inappropriate behaviors, traumatic events, fatigue, alcohol and other drug use and poor physical health.[46]

3.2.3.5. If the risk assessment demonstrates a significant risk of worker exposure to HIV/AIDS, tuberculosis, malaria, or SARS-CoV-2 (COVID-19) or another infectious disease, the health and safety risk management plan (or equivalent) integrates the following:

a. In relation to HIV/AIDS (if relevant), the entity:

   i. Provides free, voluntary and confidential HIV testing and counseling for all workers and employees;

   ii. Provides HIV/AIDS treatment for workers and employees where not covered by public or private insurance schemes at an affordable rate; and

[44] 3.2.3.4.d required that there be a formal health and safety committee to ensure consultation and participation in matters relating to OHS, including "Development of appropriate assistance and programs to support worker health and safety, including worker mental health." And 3.2.4.2 required that, "If the risk assessment process reveals unique occupational health and safety risks for certain groups of workers (e.g., pregnant women, children, HIV-positive, etc.) the entity shall ensure that additional protective measures are taken, and trainings and health promotion programs are available to support the health and safety of those workers."

[45] Mining Association of Canada. 2021. Safety and Health Protocol. p. 9. https://mining.ca/wp-content/uploads/dlm_uploads/2021/08/Safety-and-Health-2020-EN.pdf

[46] Government of Western Australia. Department of Mines, Industry Regulation and Safety web site: "Psychosocial hazards overview." https://www.dmp.wa.gov.au/Safety/Psychosocial-hazards-overview-25390.aspx

iii. Provides contractors with access to education and other preventative programs, and works with contracting companies to identify ways for contractors to access affordable treatment.

b. In relation to tuberculosis (if relevant), the entity provides free and voluntary testing for workers/employees where it is not reasonably likely to be provided by public or private health programs at an affordable rate.

c. In relation to malaria (if relevant), the entity:

i. Has a vector control plan;

ii. Takes action to prevent facilities from becoming breeding environments for malaria-carrying mosquitoes; and

iii. Provides protection from infection by malaria-carrying mosquitoes in company facilities and any company-provided housing.

d. In relation to SARS-CoV-2 (Covid-19) or any emerging infectious diseases (if relevant), the entity:

i. Provides no-cost training for workers and contractors on preventative measures to reduce the risk of infection and spread of the disease;

ii. Provides health screening of workers, contractors and visitors;

iii. Provides testing, and, if available, a voluntary vaccination program at no cost to workers;

iv. Cleans and disinfects the working environment based on best international guidance;

v. Provides suitable personal protective equipment to workers, contractors and visitors at no cost;

vi. Modifies shift patterns and changeover times to minimize close contact between workers and/or contractors;

vii. Provides for isolation and/or medical treatment of workers where infection is suspected or confirmed; and

viii. Suspends non-essential activities, or all activities, if necessary.

NOTE FOR 3.2.3.5: REVISED. 3.2.3.5 (a), (b) and (c) were previously in the Community Health and Safety chapter. The worker-related requirements have been separated out and added into this chapter, as they are more relevant here.

Sub-requirement 3.2.3.5.d is a NEW requirement borne out of experiences with Covid-19. However, these plans would also be appropriate if there is the potential for other infectious diseases. Our proposal is that all sites should have a plan in place that covers general elements of how to respond to outbreaks of known potential diseases. For new diseases, having a general plan in place will enable operations to more quickly adapt and develop disease-specific responses.

The action plan is geared toward management of infectious diseases in the workplace, but also seeks to minimize risks to nearby communities by reducing the potential for significant outbreaks at the mineral processing site. If sites respond quickly when cases are found, and implement controls to limit the spread, then there will be less potential for movement of viruses/diseases between facilities and communities). See also Chapter 3.3 – 'Community Health and Safety,' where a similar action plan is required to be implemented if infectious diseases are found.

3.2.3.6. They entity consults with workers' health and safety representatives and relevant workers and contractors to develop emergency preparedness and response systems and procedures, including:[47]

a. An emergency response plan that:

i. Outlines the appropriate actions, including evacuation plans if relevant, to be taken for all reasonably foreseeable health and safety emergencies identified in the risk assessment process (see 3.2.2.3); and

[47] See Chapter 4.1, criterion 4.1.7, which outlines spill preparedness and response procedures. These may be integrated into this OHS Emergency Preparedness and Response plan.

ii. Is accessible to all workers and contractors in languages that are comprehensible to them.

b. Exercises to test emergency response plans and documentation of lessons learned, including:
   i. Table top emergency response simulations on an annual basis or more frequently; and
   ii. A full emergency simulation drill conducted every three years or more frequently;

c. Equipping the workplace with emergency response equipment in sufficient quantities and in working condition to respond appropriately to foreseeable emergencies, and inspecting equipment on an annual basis;

d. Ensuring that relevant first responders receive training in first aid, fire-fighting, and handling of hazardous chemicals and materials, as relevant;[48]

e. Implementing a system to identify and track at any time the probable locations of all individuals who are underground, if relevant; [49]

f. Implementing mechanisms to alert workers and contractors about emergency situations, and testing the mechanisms annually; and

g. Reviewing the plan every two years, or sooner, if there are changes that may affect the scope, nature or scale of potential emergency scenarios or the ability to respond to potential emergencies (e.g., changes in the organization, hazards, resources, external factors, etc.).[50]

NOTE FOR 3.2.3.6: REVISED. 3.2.3.6.a and 3.2.3.6.b incorporate workplace-focused emergency preparedness and response requirements from Chapter 2.5 (that chapter now focuses on emergency preparedness and response planning that occurs with affected communities). 3.2.3.6.e, the requirement to be able to identify and track locations of individuals underground, was 3.2.4.1.f in the 2018 Mining Standard.

We have expanded on the expectations beyond what was in the 2018 Mining Standard.

- 3.2.3.6.c, providing sufficient emergency response equipment and inspecting that equipment, was added based on similar requirements in the RBA/RMI ESG standard for Mineral Supply Chains.[51]
- 3.2.3.6.f, having mechanisms to alert workers in emergency situations is based on similar requirements in Mining Association of Canada (MAC) Crisis Management Protocol.[52]
- 3.2.3.6.g, the frequency of review (and the frequency of tabletop and drills) aligns with MAC protocol.[53]

3.2.3.7. A stop work authority procedure (or equivalent) is developed and implemented that provides workers and contractors with the right, the responsibility, and the authority to either refuse to undertake or to stop work if they believe that conditions or behaviors pose an imminent and serious danger to the health or safety of themselves or others, or serious risk of harm to the environment. The procedure:

a. Is clear that the authority to stop work with reasonable justification may be exercised by workers or contractors without fear of reprisal by the entity, and that retaliation by other workers will not be tolerated;[54]

b. Outlines:
   i. The conditions whereby workers or contractors may initiate a stop work action;

[48] See also requirement 4.1.7.1 (spill preparedness and response) in Chapter 4.1.

[49] This is only relevant at underground mines.

[50] External factors could include political, economic, social, technological, environmental or legal (PESTEL) influences.

[51] Responsible Business Alliance. 2021. Environmental, Social and Governance Standard for Mineral Supply Chains. Requirement VI-20. https://www.responsiblemineralsinitiative.org/media/docs/standards/RMI_RMAP%20ESG%20Standard%20for%20Mineral%20Supply%20Chains_June32021_FINAL.pdf

[52] Ibid. Also, Mining Association of Canada. 2021. Crisis Management and Communications Planning Protocol. See p. 4. (Toward Sustainable Mining). https://mining.ca/wp-content/uploads/dlm_uploads/2023/04/Crisis-Protocol.pdf

[53] Ibid. p. 6.

[54] Retaliation could include penalizing, dismissing, disciplining, suspending or threatening to do any of these things to a worker.

ii. Who needs to be notified of the stop work action;

iii. The investigation process to determine validity of the stop work action (see 3.2.3.8.c);

iv. A process for coming to agreement on any containment actions and verifying that those actions have been implemented;

v. Who has authority to restart work, and any monitoring that need to occur after work has resumed to ensure that corrective actions remain effective; and

vi. Follow-up steps for communicating the event to relevant workers, contractors and management, and integrating learning from the stop work event (e.g., into risk assessment updates, management plans or procedures, or training materials).

NOTE FOR 3.2.3.7: NEW. The 2018 Mining Standard (3.2.3.1.e) included the workers' right to remove themselves from unsafe situation, as this right is embedded in ILO conventions such as 176-Safety in Mines and 155-Occupational Safety and Health,[55] in many national laws,[56] and in company codes or policies.[57]

The 2018 Mining Standard, however, did not outline any obligations of the entity beyond informing workers of this right. There can be numerous reasons that workers may be reluctant to exercise their stop work authority, and if they do not understand the bounds within which they can exercise this right, or do not believe there is support from company leadership, then dangerous conditions may persist.

The importance of communicating this authority to workers so that they understand their rights and responsibilities has been written into voluntary standards such as the American Society of Safety Professionals Standard Z10-2019 Occupational Health and Safety Management Systems, which was developed with the cooperation of United Steelworkers along with corporations and trade associations, including Alcoa, Chevron, Nucor, Siemens, United Technologies, the American Chemistry Council, and the American Foundry Society.[58]

We are proposing that there be both a procedure (3.2.3.7), and, later in the chapter, training on the procedure (3.2.7.4.d) to address this gap in the IRMA Standard.

3.2.3.8. A reporting and investigation procedure (or equivalent) is developed and implemented that outlines the steps to be taken by workers, contractors, internal inspectors, or others to inform the entity of unwanted events or unsafe working conditions. The procedure outlines, at minimum:

a. The rights and responsibilities of workers, contractors, and internal inspectors to report unwanted events (e.g., accidents, near-miss incidents, injuries, illness or fatality), ineffective controls or unsafe working conditions (e.g., uncontrolled hazards) without fear of reprisal by the entity, and that retaliation by other workers for reporting unwanted events will not be tolerated;[59]

b. The process to be followed when reporting unwanted events or unsafe working conditions, including who to contact, how to contact them, what types of information to include, and any forms that need to be submitted as part of the process; and

[55] ILO. 1995. C176-Safety and Health in Mines Convention.; and C155-Occupational Health and Safety Convention. Available at: https://www.ilo.org/dyn/normlex/en/f?p=1000:12000:::NO:::

[56] "Under federal law in the United States and similar laws written in other countries, employers must provide employees with a safe and healthy workplace free of recognized hazards. Workers have the right to refuse to perform dangerous work and, if they do so, are protected against employer retaliation." (Source: https://ohsonline.com/Articles/2019/12/02/Stop-Work-Authority-A-Principled-Based-Approach.aspx)

[57] Anglo American. 2022. p. 7. Our Code of Conduct. https://www.angloamerican.com/~/media/Files/A/Anglo-American-Group-v5/PLC/sustainability/code-of-conduct-2022-english-1.pdf

ArcelorMittal. 2023. Health and Safety Policy. https://corporate.arcelormittal.com/media/y5zkt40r/health-and-safety-policy-2023.pdf

Teck. 2020. Our Approach to Health and Safety. https://www.teck.com/media/teck_approach_to_Health_and_Safety_2020.pdf

Barrick. Health & Safety. https://www.barrick.com/English/sustainability/health-and-safety/default.aspx

[58] United Steelworkers. 2022. p. 7. Bargaining for Stop Work Authority to Prevent Injuries and Save Lives. https://www.usw.org/get-involved/hsande/resources/publications/StopWorkAuthority_July2022.pdf

[59] Retaliation could include penalizing, dismissing, disciplining, suspending or threatening to do any of these things to a worker.

c. The investigation process to be followed for different situations (e.g., validating stop work actions by workers or inspectors, investigating accidents, near miss incidents or observations of hazards in the workplace, etc.) including:

   i. A provision that any use of stop work authority by workers or internal inspectors is investigated promptly;

   ii. Expected timelines for commencing investigations of other reported unwanted events or unsafe working conditions;

   iii. Who participates in different types of investigations; and

   iv. How the outcomes of investigations are communicated to workers, contractors, and others.

NOTE FOR 3.2.3.8. NEW. We are proposing this requirement because it seems reasonable to expect that there be clear procedures for how safety-related issues are reported and investigated. Having written procedures will help to promote consistency and predictability in the process, and provide reassurance to workers and others that when potential health and safety hazards or actual impacts are reported, there is a process for following up. Also, if protection of worker health and safety is a priority, then actions should be taken in a prompt manner (and having a procedure in place with clear timelines and responsibilities will help to facilitate those actions).

We are proposing the following definition of **unwanted event**:

A situation or condition where there may be or is a loss of control of a hazard that leads to harm.[60]

CONSULTATION QUESTION 3.2-3: Is it common to have a procedure related to the reporting and investigation of health and safety issues in the workplace? If not, do you believe this is something that would be useful or not? Are there any elements you would add or remove from such a procedure?

3.2.4. Specific Measures to Protect Workers

3.2.4.1. The entity communicates with workers on health and safety matters as follows:

a. Systems or processes are in place to communicate information to workers and contractors and receive input and respond to them on matters relating to occupational health and safety;[61] and

b. Health and safety data sheets, labels, and signage (e.g., warning signs, exits, evacuation routes) in the workplace are: [62]

   i. In formats and languages that are understandable to the workers and contractors;

   ii. Maintained in legible condition; and

   iii. Kept up to date.

NOTE FOR 3.2.4.1. REVISED. This was 3.2.3.3 in the 2018 Mining Standard. It has been revised to make it clear that there are two elements in the requirement. One is communication from the entity to the workers (and this includes all workers, not just workers' health and safety representatives), and the other is from workers to the entity.

There is overlap between 3.2.4.1 and 4.1.4.1 in Chapter 4.1 – 'Waste and Materials Management.' Chapter 4.1 covers procedures related to hazardous chemicals and wastes. That chapter requires procedures related to hazardous chemicals that include informing workers about how to access the information on chemicals. This requirement, 3.2.4.1, however, makes it clear that that information must be in a format that is clear and understandable to workers.

[60] Source: Adapted from the Government of Western Australia, Department of Mines, Industry Regulation and Safety. https://www.dmp.wa.gov.au/Safety/What-is-a-hazard-and-what-is-4721.aspx

[61] See also Chapter 1.2, requirement 1.2.4.1, relating to communications with stakeholders, which should also apply to workers (e.g., that communications be timely, and culturally appropriate).

[62] See also requirement 3.2.4.4 and requirements in Chapter 4.1 (4.1.4.1.e and 4.1.5.1.e).

3.2.4.2. Every shift has supervision at a level commensurate with the risks and the competence of workers.[63] Supervision includes:

a. Oversight and enforcement of adherence to relevant procedures and controls related to the tasks being carried out; and

b. Consistent and correct usage of personal protective equipment and clothing appropriate to the working environment.

NOTE FOR 3.2.4.2: REVISED. This was 3.2.4.1.e in the 2018 Mining Standard. Previously the requirement stipulated that there needed to be "adequate supervision and control" on each shift. We have added more clarity here as to what supervision entails.

3.2.4.3. (Critical Requirement)
Personal protective equipment and clothing:

a. Provided, at no cost, to workers and contractors when exposure to adverse conditions or adequate protection against risk of accident or injury to health cannot be ensured by other means;[64]

b. Is fit for purpose, and the size and fit are gender-appropriate and provide adequate protection; and

c. Is maintained by the entity in clean and good working condition, and replaced as necessary.

NOTE FOR 3.2.4.3: REVISED. Sub-requirement 3.2.4.3.a was 3.2.4.1.b in the 2018 Mining Standard. This was a critical requirement in the 2018 Mining Standard (for more on critical requirements see the note that accompanies 'Critical Requirements In This Chapter,' above).

- Sub-requirement 3.2.4.3.b was added based on recommendations from IRMA's Expert Working Group on Gender.
- Sub-requirement 3.2.4.3.c was added based on a review of PPE-related requirements in other standards.

3.2.4.4. First aid is available on site as follows:

a. All workers and contractors receive basic first aid training;

b. Workers and contractors have unrestricted access to first aid and rapid response equipment appropriate to the work area;[65]

c. In areas where chemicals are stored, handled and used, safety data sheets, and instructions on first aid for all potential exposure routes (e.g., inhalation, ingestion, eye or skin contact) are available (see also 3.2.4.1.b).[66]

NOTE FOR 3.2.4.4: NEW. In the 2018 Mining Standard, the site was responsible for providing first aid to workers who suffered injury or illness, however, there was no mention of having first aid provisions/equipment easily accessible to workers. A similar expectation is included in other mining-related standards.

For example, Responsible Business Alliance's ESG Standard requires that all employees receive basic first aid training, and Responsible Jewellery Council requires that there be trained first-aid personnel on site.[67]

[63] The competence of workers is determined as part of the training program (see 3.2.7.3).

[64] Example of guidance: inventories should be such that PPE is always immediately available to workers, contractors and visitors when required - this could be checked by assessing the inventory and interviews with workers and contractors. Adverse conditions include extremes of temperature, exposure to chemicals, etc.

[65] Example of guidance rapid response equipment may include eye wash stations and showers in areas where chemical handling could lead to contact with the eyes and skin). Document regular inspections, tests and refills of first aid equipment and supplies.

[66] Requirement 3.2.4.1.b is also relevant in these situations, i.e., safety data sheets must be accessible in areas where chemicals are stored, handled and used, and be understandable, etc.

[67] For example: Responsible Jewellery Council. 2019. Code of Practices. Requirement 23.7. https://www.responsiblejewellery.com/wp-content/uploads/RJC-COP-2019-V1.2-Standards.pdf; and Responsible Business Alliance. 2021. Environmental, Social and Governance (ESG) Standard for Mineral Supply Chains. Requirement VI-23.

Also, we have added that first aid instructions be available where chemicals are stored or used, so that workers have information to understand the appropriate actions to take if exposures occur.

CONSULTATION QUESTION 3.2-4: In 3.2.4.4.a, we are suggesting that all workers have at least basic training in first aid. Should there also always be others on site who have a higher level or depth of first aid training or certification (e.g., supervisors)? Also, mine sites and mineral processing operations can be extremely large complexes. Do you have a suggestion for what might be an adequate number of on-site employees/workers with certified first aid on site at all times?

3.2.4.5. Workplaces include:

a. Safe, potable water that is readily accessible to workers and contractors;
b. Clean toilet, washing and locker facilities commensurate with the number and gender of employees and contractors;
c. Sanitary facilities for eating and storing food;
d. Primary and emergency power supply and lighting;
e. Adequate ventilation, in particular for confined spaces and underground workings;
f. Fire safety equipment and alarms; and
g. Clearly marked, unlocked and unblocked evacuation routes and emergency exits, including, for any underground workplace, two exits that are each connected to separate means of egress to the surface where practicable.

NOTE FOR 3.2.4.5: REVISED. The requirement has been refocused on general elements of the workplace that should be in place to provide a healthy and safe environment for workers. Previously, many of the requirements were in a single paragraph. They have been separated out here to make the expectations clearer. In the 2018 Mining Standard, most of these expectations were included in requirement 3.2.4.3, except for the provisions of two exits for underground workplaces, and adequate ventilation in sub-requirements (g) and (f), which were 3.2.2.5.d and 3.2.2.5.e, respectively, in the 2018 Mining Standard.

Also, we are proposing to add three NEW sub-requirements - 3.2.4.5 (d), (f) and (g). These are all expectations in the Responsible Jewellery Council's Code of Practices (2019).[68]

And we removed references to accommodations, as these are now included in 3.2.4.6, below.

3.2.4.6. Any accommodations for workers or contractors provided by the entity adhere to best international practices including:[69]

a. During time spent in workers' accommodations, workers are able to enjoy their fundamental human rights, including the freedom of association and freedom of movement;
b. Any fees for rent or services are discussed during recruitment, specified in employment contracts, and never lead to a worker becoming indebted to the employer;
c. All accommodations provide:
    i. Safe and potable water in the dwelling in quantities sufficient to provide for all personal and household uses;
    ii. Adequate sewage and garbage disposal systems;
    iii. Appropriate protection against heat, cold, damp, noise, fire, and disease-carrying animals and insects;

https://www.responsiblemineralsinitiative.org/media/docs/standards/RMI_RMAP%20ESG%20Standard%20for%20Mineral%20Supply%20Chains_June32021_FINAL.pdf

[68] Responsible Jewellery Council. 2019. Code of Practices. Requirement 23.2. https://www.responsiblejewellery.com/wp-content/uploads/RJC-COP-2019-V1.2-Standards.pdf

[69] See Chapter 3.1 for more requirements related to rental fees for accommodations (requirement 3.1.9.9)

iv. Adequate sanitary and washing facilities, ventilation, cooking and storage facilities and natural and artificial lighting; and

v. A reasonable degree of privacy both between individuals within the household, and for the members of the household against undue disturbance by external factors;

d. Where accommodations are provided for single workers or workers separated from their families:

i. A separate bed for each worker;

ii. Safe accommodations and toilet/bathroom facilities separated by gender; and

iii. Common dining rooms, canteens, recreation rooms and health facilities, where not otherwise available in the community.

NOTE FOR 3.2.4.6. REVISED. Requirement 3.2.4.3 in the 2018 Mining Standard included a single sub-requirement that, "Any accommodations provided by the operating company shall be clean, safe, and meet the basic needs of the workers." It was not clear what was meant by safe, or "meet the basic needs of workers," and so a review was undertaken of international practices related to workers' accommodations.

Several international instruments recognize a right to an adequate standard of housing as part of respecting human rights,[70] and the ILO and IFC/EBRD have produced separate guidance on adequate housing standards and practices when accommodations are provided by employers.[71] This more detailed requirement includes provisions that have been drawn from those sources.

CONSULTATION QUESTION 3.2-5: There are many more specific requirements that could be added based on the ILO and IFC/EBRD guidance. Do you have suggestions for additional or different requirements that should be viewed as the most material when it comes to worker accommodations?

3.2.5. Inspections, Workplace Monitoring and Health Surveillance

3.2.5.1. The entity and workers' health and safety representatives if they so choose[72] perform joint inspections of the working environment to identify any hazards to which workers or contractors may be exposed and evaluate the effectiveness of occupational health and safety controls and protective measures. The joint inspection program:

a. Includes a plan that outlines the frequency of inspections for different work areas/tasks/equipment, ensuring coverage of the entire site and all high-risk hazards each year;

b. Empowers those carrying out inspections to use stop work authority if a hazard is uncovered that poses an imminent threat to the health or safety of any person(s); and

c. Documents, in an inspection report, any observed unsafe conditions and actions, recommended containment and/or corrective actions, and a priority level for actions (e.g., immediate action, short-term action or long-term action).[73]

[70] According to the UN Special Rapporteur on Housing website, "The United Nations Committee on Economic, Social and Cultural Rights has underlined that the right to adequate housing should not be interpreted narrowly. Rather, it should be seen as the right to live somewhere in security, peace and dignity. The characteristics of the right to adequate housing are clarified mainly in the Committee's general comments No. 4 (1991) on the right to adequate housing and No. 7 (1997) on forced evictions." (Source: "The human right to adequate housing." https://www.ohchr.org/en/special-procedures/sr-housing/human-right-adequate-housing)

[71] See: ILO Helpdesk Factsheet on Workers' Housing. https://www.ilo.org/wcmsp5/groups/public/---ed_emp/---emp_ent/---multi/documents/publication/wcms_116344.pdf; and ILO. 1961. Workers Housing Recommendation 115. https://www.ilo.org/dyn/normlex/en/f?p=NORMLEXPUB:12100:0::NO::P12100_ILO_CODE:R115; and IFC and EBRD. 2009. Workers' accommodations: processes and standards. A guidance note by IFC and the EBRD. https://www.ebrd.com/downloads/about/sustainability/Workers_accomodation.pdf

[72] As per requirement 3.2.1.5.e, workers' health and safety representatives must be given the opportunity to participate in these inspections.

[73] Note that these inspections reports are reviewed by the entity and inform continual improvement of the health management system. See requirements 3.2.8.1 and 3.2.8.2.

NOTE FOR 3.2.5.1: REVISED. Workplace inspections are a critical component of occupational health and safety management. The 2018 version of the Mining Standard did not provide much detail on either the expectations or outcomes of these inspections.

We are proposing a short-list of elements based on a review of guidance,[74] including in 3.2.5.1.b. that inspectors to have the authority to stop work when there is an imminent threat to worker safety.

3.2.5.2. A workplace monitoring and health surveillance program is in place to measure exposures to hazards, and to evaluate the effectiveness of the controls being implemented to protect health and safety as follows:

a. Workplace monitoring and worker health surveillance are designed and conducted by certified industrial hygienists or other competent professionals;
b. Workers' health and safety representatives have the opportunity to suggest improvements to the design, and to participate in the implementation of workplace monitoring and worker health surveillance programs;
c. Health surveillance is carried out in a manner that protects the right to confidentiality of medical information, and is not used in a manner prejudicial to workers' interests;
d. Samples collected for workplace monitoring and health surveillance purposes are analyzed in an ISO/IEC-17025-certified or nationally accredited laboratory, if available in the host country;
e. Sample results are compared against national occupational exposure limits (OELs) and/or biological exposure indices (BEIs), if they exist,[75] or OELs/BEIs developed by the American Conference of Governmental Industrial Hygienists (ACGIH);[76] and
f. If an OEL/BEI is exceeded:
    i. Affected people (i.e., workers, contractors, supervisors, etc.) are informed immediately, and provided with instructions on the appropriate actions to take (e.g., evacuation, machinery stoppages, etc.);
    ii. Any supervisors and management not present at the affected location are informed as soon as possible; and
    iii. Controls are reviewed and revised in a timely manner to ensure that future exposure levels remain within safe limits.

NOTE FOR 3.2.5.2: REVISED. Sub-requirement 3.2.5.2.b used to be 3.2.3.4.b. It was moved here. Minor revisions were made to:

- 3.2.5.2.d (Added that certified labs must be used if available in the host country, recognizing that not all countries will have certification/accreditation systems).
- 3.2.5.2.f (Added that in addition to being informed immediately, affected are provided with instructions on appropriate actions to take; and added that supervisors and management is informed as soon as possible so that they are made aware of the situation.

CONSULTATION QUESTION 3.2-6: Is the selection of factors to be monitored and surveilled solely based on the outcomes of the risk assessment? Or should IRMA be requiring separate assessments (e.g., an exposure assessment or baseline monitoring) to help inform the monitoring program? For example, the ESG Standard developed by the RBA/RMI requires documentation of temperature exposure hazards, which presumably

[74] For example, see: Canadian Center for Occupational Health and Safety. Effective Workplace Inspections. https://www.ccohs.ca/oshanswers/prevention/effectiv.html; OSHA. Guide To Evaluating Safety And Health Management System Attributes.

[75] Some countries have developed occupational hygiene standards for workplaces. The International Labour Organization website provides links to agencies responsible for establishing exposure limits in various countries. www.ilo.org/safework/info/publications/WCMS_151534/lang--en/index.htm

[76] The American Conference of Governmental Industrial Hygienists is a member-based organization composed of independent knowledgeable experts that advances occupational and environmental health. ACGIH develops Threshold Limit Values (TLVs) (akin to OELs) and BEIs through a committee process that involves review of peer-reviewed literature and public input. www.acgih.org/

requires some monitoring of the workplace, and an "ergonomic assessment of workplace jobs, tasks and activities."[77]

CONSULTATION QUESTION 3.2-7: Should we be separating out workplace environmental monitoring from health surveillance activities, and adding more specific expectations for both? For example:

1) Environmental monitoring in the workplace (e.g., sampling for chemicals/toxins in air, measuring noise levels, monitoring temperatures in the workplace, evaluating ergonomics); and

2) Worker health testing and surveillance (e.g., routine physical examinations, chest x-rays, pulmonary function tests (PFT), testing blood, hair for chemicals, etc.)?

CONSULTATION QUESTION 3.2-8: If certain known hazards are identified during the entity's hazard identification process (e.g., known carcinogens or hazardous substances, or potential that certain noise decibel levels will be exceeded) should the IRMA Standard outline specific monitoring and/or health surveillance actions to be taken? For example, OSHA in the United States has developed guidance related to a number of known hazards.[78] Or, if normative requirements are not added, should IRMA add some guidance on what might be appropriate monitoring and health surveillance actions?

3.2.6. Response to Unsafe Working Conditions and Unwanted Health and Safety Events

NOTE FOR 3.2.6: NEW criterion heading.

3.2.6.1. If unsafe working conditions are observed and reported by workers, contractors, supervisors, inspectors or others, they are investigated in a timely manner,[79] and if an investigation verifies that there is an imminent and serious threat to human health:

a. In cases where an area is affected:
    i. All workers and contractors are evacuated immediately;
    ii. Workers or contractors re-entering the affected area to reinstate safe working conditions are protected from harm; and
    iii. Working conditions in the affected area are verified as safe before general workers and contractors are allowed to enter.
b. In cases where machinery or equipment is the cause of unsafe working conditions:
    i. Use of the machinery or equipment ceases immediately;
    ii. The equipment or machinery is fixed or replaced by an appropriate trained specialist; and
    iii. The equipment or machinery is verified as safe before being put into service.

NOTE FOR 3.2.6.1: NEW. The requirement that work be stopped if dangerous conditions exist was not explicitly stated in the 2018 Mining Standard, and was an oversight that we are seeking to correct in this version of the Standard.

We have proposed a stop work authority procedure (see 3.2.3 7), and this requirement follows on that – i.e., it evaluates whether or not that procedure is actually being followed – i.e., that when unsafe conditions are observed by workers, internal or external inspectors, or others (e.g., it could be an IRMA auditor), that work is stopped and appropriate follow-up actions taken.

3.2.6.2. Whenever a near miss incident, accident, injury, illness or fatality occurs in the workplace:

[77] Responsible Business Alliance. 2021. Environmental, Social and Governance (ESG) Standard for Mineral Supply Chains. https://www.responsiblemineralsinitiative.org/media/docs/standards/RMI_RMAP%20ESG%20Standard%20for%20Mineral%20Supply%20Chains_June32021_FINAL.pdf

[78] U.S. Occupational Health and Safety Administration. 2014. Medical Screening and Surveillance Requirements in OSHA Standards: A Guide. https://www.osha.gov/sites/default/files/publications/osha3162.pdf

[79] As per the reporting and investigations procedure in 3.2.3.8.

a. Workers or contractors who have suffered an injury or illness are provided with first aid, and, if necessary, prompt transportation from the workplace to appropriate medical facilities;
b. Affected workers or contractors, including those present at the time of an accident, are offered counselling or other forms of psychological support;
c. The events are reported to the joint health and safety committee and accountable member of senior management, and, if required, to the competent authority;
d. The events are investigated by the entity, including a root cause analysis;
e. Corrective action plans are developed and implemented; and
f. The circumstances surrounding the event, the investigation, the corrective action plans and the outcomes are documented.

NOTE FOR 3.2.6.2: REVISED. This was requirement 3.2.5.4. Previously, all steps were included in a single paragraph. We have separated out the steps to make it clear that response to events such as injuries, illness, accidents, fatalities, etc. require a series of actions and documentation. Audits should ensure that all of these steps are taken for each health and safety event.

Proposed definitions:

Accident

An event that results in injury, ill health, fatality or damage to property or the environment

Near Miss Incident

An unexpected event that disrupts regular work activity and there was the potential for injury, ill health, fatality or damage to property or the environment, but no actual harm occurred. Also known as a 'close calls', 'injury-free event', 'near accident'.

Sub-requirement 3.2.6.2.b is NEW. We are proposing this to address the potential psychological stress or trauma that may occur when experiencing or witnessing an accident, injury or fatality. Although few studies have been conducted on post-traumatic stress disorder (PTSD) in the mining industry, a 2013 study found that PTDS "is a reality in the South African mining industry."[80] That study found that between 2006 and 2010 there were 671 claims for PTSD filed with the Rand Mutual Assurance Company for compensation benefits. Of those, 451 (66.9%) were from the mining sector. The mining industry claims filed by mine workers included those who directly experienced traumatic mine accidents and sustained physical injuries (87.8%) and those who witnessed the events 55 (12.2%).

Some mining and mineral processing companies offer counseling support to employees and even their families following accidents that have led to fatalities.[81] Note that a requirement to offer to pay for counselling for families of workers killed on the job is being proposed in Chapter 3.1, requirement 3.1.9.4.b.iii.

CONSULTATION QUESTION 3.2-9: Do you support the addition of sub-requirement 3.2.6.2.b? Do you agree that some form of counseling or psychological support be provided even if accidents don't result in fatalities? Should all employees (not just those who experienced or witnessed the accident be eligible for counseling or support?

[80] Zungu, L. 2013. "Prevalence of post-traumatic stress disorder in the South African mining industry and outcomes of liability claims submitted to Rand Mutual Assurance Company," Occupational Health Southern Africa. Vol.19, No. 2. https://uir.unisa.ac.za/bitstream/handle/10500/8996/Prevalence%20of%20PTSD%20in%20the%20South%20African%20mining%20industry.pdf?sequence=1&isAllowed=y

[81] For example, see: ABC Pilbara. 2022. "Worker dies at Rio Tinto port facility at Cape Lamber in WA's Pilbara region," https://www.abc.net.au/news/2022-04-21/rio-tinto-worker-dies-port-pilbara/101005660; Salt Lake Tribune. 2017. "Kennecott worker dies from explosure to sulfur dioxide at smelter,"https://www.sltrib.com/news/business/2017/10/11/kennecott-worker-dies-from-exposure-to-sulfur-dioxide-at-smelter/; Newmont News. 2018. "Newmont Ghana provides update on Ahafo mill expansion accident," https://www.newmont.com/investors/news-release/news-details/2018/Newmont-Ghana-Provides-Update-on-Ahafo-Mill-Expansion-Accident/default.aspx; APNews. 2017. Steelworker dies at ArcelorMittal's Indiana Harbor complex. https://apnews.com/article/d1d88fe48d7f47e38a0fa7495bd490a1

CONSULTATION QUESTION 3.2-10:

Background: There are different ways to classify incidents, for example there are those that did cause an injury or fatal and those that may have (but didn't) caused an injury or fatality. This chapter currently uses the term "near miss incident", which IRMA defines as: "An unexpected event that disrupts regular work activity and there was the potential for injury, ill health, fatality or damage to property or the environment, but no actual harm occurred. Also known as 'close calls', 'injury-free event', 'near accident'."

However, it has been suggested that this chapter should focus on High Potential Incidents (HPI) rather than Near Miss Incidents. The Global Reporting Initiative 2018 Standard uses both terms. GRI recommends that entities report on the number of "high-potential worker-related incidents," which are defined as "work-related incident with a high probability of causing a high-consequence injury." (A high-consequence injury is a work-related injury that results in a fatality or in an injury from which the worker cannot, does not, or is not expected to recover fully to pre-injury health status within 6 months). GRI also recommends that entities report on the number of "close calls", which corresponds to IRMA's current definition of "near miss incident".

Question: Should IRMA include requirements for entities to investigate and report on high-potential incidents instead of near miss incidents? Or in addition to near miss incidents? Or not at all? Please provide a rationale for your opinion.]

3.2.7. Education and Training

NOTE FOR 3.2.7. NEW criterion heading.

The 2018 Mining Standard included training and retraining in a single requirement (3.2.4.1.d). By including it at a sub-requirement of a larger requirement it failed to capture the importance of ensuring that all workers understand potential hazards and how to protect themselves in the workplace. Training is now being covered in three separate requirements 3.2.7.3, 3.2.7.4 and 3.2.7.5) to elevate the importance of training in the creation and maintenance of safe and healthy workplaces.

This is aligned with other mining standards, such as Mining Association of Canada's Health and Safety Protocol, updated in 2020, which includes a larger focus on worker health and safety training than what was included in IRMA's 2018 Mining Standard.

3.2.7.1. Workers and contractors are informed of their rights to:[82]

a. Know and be informed of workplace hazards that may affect their safety or health;
b. Collectively select safety and health representatives;
c. Report accidents, dangerous occurrences and hazards to the entity and to the competent authority;
d. Request and obtain inspections and investigations by the entity and the competent authority where there is cause for concern on safety and health grounds; and
e. Obtain personal data and information held by the entity or the competent authority that is relevant to their safety or health.[83]

NOTE FOR 3.2.7.1: REVISED. This was 3.2.3.1 in the 2018 Mining Standard. We removed one sub-requirements (i.e., the right to remove themselves from locations when there is a danger to safety or health), as this is specifically part of the training program, and so the auditors will determine there if the workers have not only been informed but also trained (which goes further than informing) on that rights/authority (see requirements 3.2.7.4.e.ii).

We have revised 3.2.7.1.e to make it clear that this refers to personal data for each individual worker, and added a footnote that personal data or information may be related to accidents, near-miss incidents,

[82] Rights may be outlined host country laws, and/or outlined in a collective bargaining agreement, and/or established by the joint health and safety committee.

[83] This includes personal information and data related to accidents, incidents, inspections, investigations and remedial actions, workplace monitoring, health surveillance and medical examinations.

inspections, investigations and remedial actions, workplace monitoring, health surveillance and medical examinations. This content was previously included in requirement 3.2.6.3 of the 2018 Mining Standard.

3.2.7.2. In all cases a worker attempting to exercise in good faith any of the rights referred to in 3.2.3.1 are protected from reprisals of any sort.

NOTE FOR 3.2.7.2: This was 3.2.3.2 in the 2018 Mining Standard.

3.2.7.3. A training program is in place on workplace health and safety as follows:

a. All workers and contractors receive an initial general training before they are allowed to commence their work;[84]
b. All workers and contractors receive specific task training under supervision for a required period before they are deemed qualified to undertake the work without immediate supervision;
c. Periodically, retraining takes place;
d. Worker competency for conducting work safety is verified using a variety of techniques such as training comprehension evaluation, observation of workers performing tasks correctly and safely, and incorporating results of workplace evaluations and incident tracking to assess effectiveness of training;
e. Records of worker and contractor attendance and competency evaluations are maintained;
f. Trainings are conducted by competent professionals;
g. Trainings are in formats and languages that are comprehensible to all workers and contractors;[85] and
h. Trainings are free for workers and contractors.

NOTE FOR 3.2.7.3: REVISED. See note for 3.2.7, above. Requirement 3.2.7.3 contains elements from requirements in 2018 the Mining Standard (e.g., the requirement that instruction be provided in a comprehensible manner, now 3.2.7.3.g was previously covered in 3.2.4.1.a). But most of the content is new.

CONSULTATION QUESTION 3.2-11: What is an appropriate periodicity for retraining workers, and would the retraining programs cover the same information as the initial training?

3.2.7.4. (Critical Requirement)
The content of the training program includes:

a. The range of specific health and safety hazards associated with specific job/tasks, as identified through the hazard identification and risk assessment process;
b. How to perform routine and non-routine tasks in a manner that avoids placing themselves or others at risk;
c. Control measures that have been developed to prevent and respond to high-risk hazards relevant to specific jobs/tasks;
d. Procedures that have been developed that are specific to their work area/job/tasks;[86]
e. The proper use and fitting of personal protective equipment; and
f. Instruction on:

[84] Although 3.2.7.3.a is a time dependent requirement (i.e., training needs to occur before the workers begin working), our proposal is that the entity be scored on its performance in the previous three years only. So, for example, if there are workers who have been with an operation for six years who were not trained prior to commencing work, but a program has since been implemented to train all new workers before they begin work, then a site could fully meet this expectation (if the workers who were not trained at the appropriate time did eventually receive training upon commencement of the program).

[85] Guidance will make it clear that by comprehensible we mean that all procedures, signs and instructions for using equipment and machinery, material safety data sheets, emergency response evacuation routes and instructions, first aid equipment, and control measures to address unsafe conditions must be in local language(s). Example of guidance training and retraining in appropriate language(s) for the workforce should include at least basic first aid and refer to proper use and fitting of PPE, safe use of equipment and vehicles, working in confined spaces, working at height (preventing falls, preventing falling objects), instructions on proper handling of hazardous materials, and emergency response instructions. All new employees should receive induction training covering any activities that require training before commencing work.

[86] E.g., some may need training on chemical safety, or fire safety, or working at heights, etc.

i. How to identify workplace hazards;
ii. Emergency response plans, including evacuation plans if relevant; (see 3.2.3.7)
iii. The stop work authority procedure (see 3.2.3.8);
iv. The reporting and investigations procedure (see 3.2.3.9); and
v. How to access first aid and medical assistance.

NOTE FOR 3.2.7.4: NEW. See note for 3.2.7, above. In the 2018 Mining Standard, there was a critical requirement that entities inform workers, in a comprehensible manner, of the hazards associated with their work, the health risks involved and relevant preventive and protective measures. We are proposing that this training requirement replace that critical requirement, as it is the requirement that most closely matches the intention of the 2018 Mining Standard requirement (for more on critical requirements see the note that accompanies 'Critical Requirements In This Chapter,' above).

3.2.7.5. The training program is reviewed and updated when there are changes to procedures, risk assessments or management plans, or if evaluations of the operation's occupation health and safety performance suggest areas that need attention.

NOTE FOR 3.2.7.5: NEW. See note for 3.2.7, above.

3.2.7.6. All visitors and other third parties accessing the operation's premises (e.g., suppliers, service providers):

a. Receive an occupational health and safety briefing;
b. Are provided with clean personal protective equipment, at no cost, that is relevant to the areas of the site that they will be entering; and
c. Receive instruction on proper use and fitting of personal protective equipment and the entity's expectations for when and where the equipment must be used.

NOTE FOR 3.2.7.6: This was 3.2.3.6 in the 2018 Mining Standard. Previously, all requirements were in a single paragraph. They have been separated out here to more clearly delineate the expectations.

3.2.8. Health and Safety Performance Evaluation and Reporting

3.2.8.1. On an ongoing basis:

a. The entity reviews inspections reports, industrial hygiene monitoring information, occurrences of stop work actions, hazards, accidents, near-miss incidents, injuries and fatalities; and
b. If performance criteria or indicators related to control measures are not being met, the entity:
    i. Collaborates with workers to carry out a root cause analysis, develop corrective actions and modify controls;
    ii. Revises the management plan and/or relevant procedures and training materials, accordingly; and
    iii. Includes the information in the annual occupational health and safety management review (see 3.2.8.2).

NOTE FOR 3.2.8.1: REVISED. Requirement 3.2.2.4 in the 2018 Mining Standard required that the company "systematically update a risk management plan." Requirement 3.2.8.1 replaces 3.2.2.4, and provides more context for what information should feed into a review process that would inform the revision of management plans and other aspects of the OHS management system (e.g., procedures listed above, training, procedures, etc.).

We replaced systematically with ongoing, because rather than a regular or systematic approach, the information coming in from various sources will occur at different times (e.g., incidents to not occur on a schedule) and management plans and procedures should be updated in a timely manner to reflect learning from those incidents.

Updates to management plans were also mentioned in 3.2.5.3 of the 2018 Mining Standard, which has been deleted due to overlap with this and other requirements.

3.2.8.2. Annually, the member of senior management accountable for the health and safety management system reviews the operation's health and safety record for the year (e.g., unwanted events, monitoring and inspection results, worker and contractor grievances, etc.) and if the entity's goals and performance targets are not being achieved, documents and implements changes to policies or procedures to improve performance.

NOTE FOR 3.2.8.2: NEW. This requirement fills a gap in the 2018 Mining Standard, where there was no requirement for annual review of OHS performance even though the very first requirement in the chapter outlined an expectation that they entity measure and improve its health and safety performance.

We are proposing, here, a concrete step for how entities can demonstrate that they are measuring health and safety performance and taking steps to improve it. A review process is included in the TSM Health and Safety Protocol, and includes comparing results against targets.[87]

3.2.8.3. On an annual basis, or more frequently, the entity publicly reports the following information, disaggregated by direct employees and contractors:

a. Number of near-miss incidents;
b. Number of accidents;
c. Total number of injuries;
d. Number of lost-time injuries; and
e. Number of fatalities.

NOTE FOR 3.2.8.3: NEW. Based on input on the IRMA draft Mineral Processing Standard, companies routinely report incident statistics publicly, although which statistics are report varies by country to country. We are proposing that the entity report the same statistics that are being collected in relation to the performance targets in 3.2.1.1, and that the statistics be reported in relation to those targets.

CONSULTATION QUESTION 3.2-12: Are there any other health and safety statistics that may be relevant to publicly report?

3.2.9. Health and Safety Data Management

NOTE FOR 3.2.9: REVISED. This criterion was previously called 'Health and Safety Data Management and Access to Information'. We moved the access to information expectations for workers' health and safety representatives into 3.2.1.5, and moved those related to workers into 3.2.7.1.

3.2.9.1. The entity maintains the following records:

a. Workplace monitoring (e.g., air quality, noise levels, temperatures, etc.) and health surveillance results (e.g., physical and biological assessments and testing);
b. All data on unwanted events (i.e., injuries, diseases, fatalities, accidents, and near-miss incidents) collected by the company; and
c. Reports on unwanted events submitted to competent authorities;

NOTE FOR 3.2.9.1: In the 2018 Mining Standard, all of these expectations were in a single paragraph in requirement 3.2.6.1. They have been separated out here to make the expectations clearer. Also, the original requirement also stated that workers' representatives have access to the data. This is now included in 3.2.1.5.e.v.

[87] Mining Association of Canada. Safety and Health Protocol. Criterion 5. p. 13. https://mining.ca/wp-content/uploads/dlm_uploads/2021/08/Safety-and-Health-2020-EN.pdf

3.2.9.2. A data management system is implemented that enables worker health data to be readily located and retrieved. The system:

a. Is overseen by a responsible custodian;

b. Securely stores data that are protected by medical confidentiality; and

c. Retains data on workers for a minimum of 30 years.[88]

NOTE FOR 3.2.9.2: In the 2018 Mining Standard, all of these expectations were in a single paragraph in requirement 3.2.6.2. They have been separated out here to make the expectations clearer.

NOTES

Many of the requirements in this chapter are based on International Labour Organization Convention C176 - Safety and Health in Mines. A small number of requirements align with expectations in the Mining Association of Canada's Safety and Health Protocol (2021), and other minerals industry standards like the RBA ESG Due Diligence Standard for Mineral Supply Chains (2021) and Responsible Jewellery Council's Code of Practices (2019).

CROSS REFERENCES TO OTHER CHAPTERS

This table will be added when the new content for all chapters is finalized and approved.

GLOSSARY OF TERMS USED IN THIS CHAPTER

PROPOSED NEW DEFINITIONS

Accident

An event that results in injury, ill health, fatality or damage to property or the environment.

Credible Method/Methodology

A method/methodology that is widely recognized, accepted, and used by experts and practitioners in a particular field of study.

Emergency Scenario

A description of a possible unwanted event or emergency situation that could pose an immediate risk to health, safety, life, property, or environment.

Emergency Situation

Any situation arising from a sudden and unexpected event that poses an immediate risk to health, safety, life, property, or environment and requires immediate corrective action to restore normal operation.

Entity

A company, corporation, partnership, individual, or other type of organization that is effectively in control of managing an exploration, mining or mineral processing project or operation.

Exploration

[88] The intention is not that the data should be destroyed after 30 years. Rather, where possible it should be retained indefinitely as the data may be important for future medical research or legal purposes. If a company is sold, provisions should be made for successor custodianship, i.e., transfer of records to the successor company. If a company ceases to operate, it is good practice (and may be mandatory in some jurisdictions) to notify current employees of their right to access their records before the company goes out of business. (See: U.S. Dept. of Labor. 2020. "Access to Medical and Exposure Records," https://www.osha.gov/Publications/osha3110.pdf)

A process or range of activities undertaken to find commercially viable concentrations of minerals to mine and to define the available mineral reserve and resource. May occur concurrent with and on the same site as existing mining operations.

Gender

Gender refers to the norms, responsibilities, and social structure enforcing pre-defined roles for women, men, girls, boys, and gender-diverse people. As a social construct, gender varies from society to society and can change over time. Regarding mineral development (i.e., exploration, mining, mineral processing), issues of gender equality often focus on women in particular because they face a heightened risk to adverse effects from mining-related activities, due in large part to patriarchal gender norms and differences in women's access to and control over resources relative to men.

Source: Adapted from World Health Organization, Health Topics: Gender, https://www.who.int/health-topics/gender#tab=tab_1

Hazardous Materials

Chemicals and materials with properties or characteristics that make them a physical, health, or environmental hazard.

Hierarchy of Controls

A step-by-step approach to eliminating or reducing workplace hazards that ranks controls from the most effective level of protection to the least effective level of protection as follows: Elimination (physically remove the hazard), Substitution (replace the hazard with something safer), Engineering Controls (use equipment or other means to isolate people from the hazard), Administrative Controls (change the way people work via procedures), Personal Protective Equipment (protect the worker using personal protective equipment).

Source: WorkSafe BC. https://www.worksafebc.com/en/health-safety/create-manage/managing-risk/controlling-risks

Leading Indicators

Measure precursors to harm (e.g., conditions, events or measures that precede an undesirable event, whether it is an accident, near-miss incident, or undesirable safety state), and are associated with proactive activities that identify hazards and assess, eliminate, minimize and control risk in order to achieve a desired outcome or avoid unwanted outcomes.

Source: Adapted from Grabowski. 2006. https://citeseerx.ist.psu.edu/document?repid=rep1&type=pdf&doi=23b29d1d38d57b741e65a371b0854c43d1c40e29

Lagging Indicators

Measure outcomes and occurrences (e.g., the extent of harm that has occurred in the past). Reactive, tells you whether you have achieved a desired result (or when a desired safety result has failed) and provides historical information about health and safety performance.

Mineral Processing

Activities undertaken to separate valuable and non-valuable minerals and convert the former into an intermediate or final form required by downstream users. In IRMA this includes all forms of physical, chemical, biological and other processes used in the separation and purification of the minerals.

Mining

Activities undertaken to extract minerals, metals and other geologic materials from the earth. Includes extraction of minerals in solid (e.g., rock or ore) and liquid (e.g., brine or solution) forms.

Near-Miss Incident

An unexpected event that disrupts regular work activity and there was the potential for injury, ill health, fatality or damage to property or the environment, but no actual harm occurred. Also known as a 'close calls', 'injury-free event', 'near accident'.

Operation

The set of activities being undertaken for the purpose of extracting and/or processing mineral resources, including the running and management of facilities and infrastructure required to support the activities, and the ongoing legal, environmental, social and governance activities necessary to maintain the business endeavor.

Project

The development phases before a mining or mineral processing operation can begin (e.g., exploration, pre-feasibility, feasibility, conceptual design, planning, permitting). Includes all desk-top and field-based activities, including exploration activities, needed to inform and develop a project proposal, support the environmental and social impact assessment of a proposal, generate information necessary to fulfill regulatory and permitting requirements, engage with stakeholders and rights holders, and maintain the entity's business endeavor.

Psychosocial Hazard

Hazards that can have an impact on the psychological health or mental or emotional wellbeing of a person.

Root Cause Analysis

Root cause analysis seeks to identify the primary cause of a problem that allowed a NC to occur. By identifying the root cause, a NC can be effectively addressed and recurrence can be avoided.

Source: Adapted from Aluminum Stewardship Initiative Glossary. https://aluminium-stewardship.org/wp-content/uploads/2022/05/ASI-Glossary-V1-May2022.pdf

Safety Data Sheets

A document giving information on the properties of hazardous chemicals and how they affect health and safety in the workplace.

Source: RJC. https://www.responsiblejewellery.com/wp-content/uploads/RJC-COP-2019-V1.2-Standards.pdf

Site

An area that is owned, leased, or otherwise controlled by the entity and where mining-related activities are proposed or are taking place.

Unwanted Event

A situation or condition where there may be or is a loss of control of a hazard that leads to harm.

Source: Adapted from the Government of Western Australia, Department of Mines, Industry Regulation and Safety. https://www.dmp.wa.gov.au/Safety/What-is-a-hazard-and-what-is-4721.aspx

Whistleblower

A person who raises concerns regarding the unlawful or unethical activity or behavior of a person or organization.

Workers' Health and Safety Representative

A worker chosen to facilitate communication with senior management on matters related to occupational health and safety, and to participate in and/or have access to information on health and safety risk assessments, monitoring, inspections and investigations. A representative is selected by other workers, or in unionized facilities may be selected by a recognized trade union.

EXISTING DEFINITIONS

Biological Exposure Indices (BEI)

The concentration of chemicals in the body that would correspond to inhalation exposure at a specific concentration in air.

Closure

Refers to the post-reclamation activities that are required to close and secure a site to maintain compliance with environmental and health and safety regulations. It includes interim fluid and site management in addition to post-reclamation monitoring and maintenance during the period when the success of reclamation measures to achieve site-safety, stability, revegetation, and water quality as well as other reclamation objectives is measured and maintained. The closure period is finite and typically no more than ten years in duration.

REVISED. Changed term from 'Mine Closure' to 'Closure', as the term can also apply to stand-alone mineral processing facilities, and some language changed to be less mining-specific.

Competent Authority

The government department or other authority having power to issue and enforce regulations, orders, or other instructions having the force of law in respect of the subject matter of the provision concerned.

Competent Professionals

In-house staff or external consultants with relevant education, knowledge, proven experience, and necessary skills and training to carry out the required work. Competent professionals would be expected to follow scientifically robust methodologies that would withstand scrutiny by other professionals. Other equivalent terms used may include: competent person, qualified person, qualified professional.

REVISED. Deleted reference to Chapter 4.1.

Comprehensible

In forms and languages that are easily understood by workers and/or other stakeholders.

REVISED. This used to be 'Comprehensible Manner'. Changed to make applicable to more situations.

Consultation

An exchange of information between an entity and its stakeholders that provides an opportunity for stakeholders to raise concerns and comment on the impacts and merits of a proposal or activity before a decision is made. In principle the entity should take into account the concerns and views expressed by stakeholders in the final decision.

Contractor

An individual, company, or other legal entity that carries out duties related to a project/operation that are subject to a contractual agreement that defines, for example, work, duties or services, pay, hours or timing, duration of agreement, and that remains independent for employment, tax, and other regulatory purposes. It also includes contracted workers hired through third party contractors (e.g., brokers, agents, or intermediaries) who are performing mining-related activities at the project/operation site or associated facilities at any point during the project/operational life cycle (including prior to or during construction phase). See also 'Mining-Related Activities.'

REVISED. Added contracted worker as a type of contractor. Changed wording from mining project to project/operation.

Control

An act, object (engineered), or system (combination of act and object) intended to prevent or mitigate an unwanted event.

Facility

Refers to any land, building, installation, structure, equipment, conveyance, or area that alone or together serve a particular purpose. In the IRMA Standard, the term may be associated with a specific type of facility that is self-described (e.g., tailings facility), but other examples of facilities are open pits, access roads, water dams, waste

disposal sites, underground mine workings, beneficiation plants, brine ponds, slag piles, etc. See also 'Associated Facility'.

REVISED. Updated to be more descriptive

Grievance

A perceived injustice evoking an individual's or a group's sense of entitlement, which may be based on law, contract, explicit or implicit promises, customary practice, or general notions of fairness of aggrieved communities. For the purposes of the IRMA Standard, the words grievances and complaints will be used interchangeably.

REVISED. Added that IRMA Standard uses grievances and complaints interchangeably.

Hazard (in relation to the workplace)

A potential source of harm or adverse health effect on something or someone under certain conditions at work.

Health Surveillance

Procedures and investigations to assess workers' (or others') health in order to detect and identify an abnormality. The results of surveillance should be used to protect and promote health of the individual, collective health at the workplace, or the health of exposed working population. Health assessment procedures may include, but are not limited to, medical examinations, biological monitoring, radiological examinations, questionnaires, or a review of health records.

Source: Adapted from ILO. 1997. *Technical and Ethical Guidelines for Workers Health Surveillance*. OSH No. 72.

REVISED. Added to Chapter 3.3, and revised to be applicable to the workplace and communities.

Inform

The provision of information to inform stakeholders of a proposal, activity, or decision. The information provided may be designed to help stakeholders in understanding an issue, alternatives, solutions or the decision-making process. Information flows are one-way. Information can flow either from the company to stakeholders or vice versa.

Mitigate

Action taken to reduce the likelihood of a certain adverse impact occurring.

Occupational Exposure Limit (OEL)

An upper limit on the acceptable concentration of a hazardous substance in workplace air for a particular material (e.g., gases, vapors and particles). It is typically set by competent national authorities and enforced by legislation to protect occupational safety and health.

Post-Closure

The period after reclamation and closure activities have been completed, and long-term management activities (e.g., ongoing monitoring and maintenance, and, if necessary, water management and treatment) are occurring to ensure that a site remains stable and ecological restoration objectives continue to be achieved. This phase continues until final sign-off of site responsibility and relinquishment of post-closure financial assurance can be obtained from the regulator.

REVISED. Changed to be less focused on financial assurance and provide more description of the activities that are taking place.

Practicable

Practicable means giving equal weight to environmental, social, and economic benefits and costs. This is not a technical definition. It is the discussion between the affected parties on the balance between these interrelated costs and benefits that is important.

Suppliers

Providers of goods, services, or materials to a project/operation.

Worker

All non-management personnel directly employed by the entity.

REVISED. Added that personnel are directly employed by the entity.

Workers' Representative

A worker chosen to facilitate communication with senior management on matters related to working conditions or other workers' concerns. A representative is selected by other workers, or in unionized facilities may be selected by a recognized trade union.

REVISED. Removed reference to occupational health and safety, as that is now covered by workers' health and safety representative, and revised second sentence.

ANNEXES AND TABLES

ANNEX 3.2-A – Potential Workplace Hazards

NOTE ON ANNEX 3.2-A: As mentioned in the NOTE ON THIS CHAPTER, the first audits suggested that more detail was needed to ensure that there would be consistent measurement of performance from site to site. While IRMA auditors are required to have competencies in the topics that they are auditing, the auditors are not and cannot be experts on all of the particular hazards that may be present at large scale mines or mineral processing operations.

This has prompted IRMA to create proposed Annex 3.2-A, which enumerates the various hazards that are common at mines and mineral processing operations, so that auditors are aware and can determine if sites have adequately considered and controlled the range of hazards that may be present. Without this additional guidance, there is the potential that some entities and auditors may overlook major hazards, which could lead to consequences for workers, and also risks to IRMA if mines that score well on this chapter were to have major occupational health and safety events. This is not meant to place the burden on auditors. The entity being audited bears the sole responsibility for reducing and managing health and safety hazards in the workplace.

As mentioned in the NOTE FOR 3.2.2.1, requirement 3.2.2.1.a.i now refers to 6 common categories of hazards experienced at industrial operations such as mines and mineral processing facilities (i.e., safety, chemical, physical, ergonomic, psychosocial, biological). We have created Annex 3.2-A to provide a summary of known hazards within the six categories, drawn from a number of mining and general occupational health and safety sources.

The idea is that during audits the auditors would expect to see that that consideration has been given to whether or not these hazards are applicable for a particular project/operation, and for those that are applicable, whether appropriate steps have been taken to control the hazards.

CONSULTATION QUESTION 3.2-1 (repeated from requirement 3.2.2.1): Are there major potential hazards that have been missed in Annex 3.2-A or any that you believe are not applicable to mining and/or mineral processing operations? Would you suggest a different way of organizing the information?

Hazard Type[89]	Examples	Sources of information
Safety	Unsafe conditions in the workplace that can cause injury, illness and death.	[1], [2], [3], [4], [5], [6], [8], [9], [12]
	Safety hazards are associated with many types of work, including: • Blasting (e.g., post-blast gases, falls of ground, damage to ground support, lack of barricades, lack of visibility) • Confined spaces (e.g., poor ventilation, exposure to toxic gases and dust, unguarded machinery, live wires, heat stress, excessive noise, potential for inrush or being crushed when working underground, or in or around tanks, vessels, pits, tunnels, pipelines, equipment house) • Driving (e.g., distractions, seasonal factors, ergonomic considerations, poor technique, blind spots) • Electrical (e.g., frayed cords, missing ground pins, improper wiring) • Explosives/explosions (e.g., improper storage, inadvertent ignition, lack of inventory management/quality degradation) • Fatigue (e.g., from sleep deprivation, shift work, overtime, seasonal production pushes) • Fires (e.g., spontaneous combustion, improper storage of flammable, combustible or explosive materials) • Machinery (e.g., lack of or improper lockout or guarding of machinery and moving machinery parts; guards removed or moving parts that a worker can accidentally touch; jammed materials); lack of worker training and experience) • Materials Handling (e.g., slings, cranes, hoists, forklifts – all come with their own safety hazards, but issues include poor maintenance of equipment, poor technique, improper signaling, blind spots, improper loads, improperly-secured loads, volume of traffic or obstacles) • Mobile equipment (e.g., lack of maintenance, lack of tire safety, brake failures, being struck or crushed due to lack of visibility or poor traffic management, falling off equipment, driving into an unguarded open hole) • Non-routine tasks (e.g., stuck conveyance, crusher bearing changes, kinked hoist rope, rehabilitation after sizable ground fall, retrieving undetonated explosives) • Pressurized vessels (e.g., poisonings, suffocations, fires, and explosions from leaks or ruptures) • Slips, trips and falls (e.g., from poor housekeeping such as spills on floors, tripping hazards such as blocked aisles or cords across the floor, uneven ground, poor footwear, inappropriate pace of walking; falling into operating machinery, water or other liquid, onto a hazardous substance or object, through an opening – see also working from heights, below) • Tools (e.g., poor maintenance, poor technique, lack of or inappropriate personal protective equipment while using, wrong tool for the task) • Working at heights (e.g., falling from ladders, platforms, scaffolds, raised work areas, cliff edges)	
Chemical	Unsafe conditions that may occur when a worker is exposed to a chemical preparation in the workplace in any form (solid, liquid or gas).	[7], [8]
	Chemical hazards include: • Exposure to toxic processing chemicals, paints, adhesives, acid mists, organic vapors and solvents, toxic gases, soluble oil (e.g., due to lack of training in handling,	

[89] U.S. Occupational Health and Safety Administration. https://www.osha.gov/sites/default/files/2018-11/fy10_sh-20839-10_circle_chart.pdf

Hazard Type[89]	Examples	Sources of information
	transport, lack of or improper use/fitting of personal protective equipment, lack of proper labeling, signage, usage instructions)	
Physical	Factors within the environment that threaten physical safety and can harm the body.	[2], [3], [4], [7], [8], [9], [10], [11], [13]
	Physical hazards include: • Air quality (e.g., in adequate ventilation, excessive dust, diesel exhaust, dust, welding fumes and other metallic particulates, asbestos, synthetic mineral fibers, toxic, metals) • Ground instability (e.g., fall of rock/ground, rock outbursts, too steep excavations, unstable slopes, excessively high bench heights, adverse geology, elevated water table) • Ground subsidence (e.g., due to removal of solid or fluids from underground) • Inrush/inundation (e.g., failures of levies or dam structures, inrush from mine workings, surface water bodies, seams, faults, boreholes) • Noise, vibration or blast concussion (e.g., constant loud noise, too many blasts, working in too close of proximity to blast areas) • Radiation: including ionizing, non-ionizing (EMF's, microwaves, radiowaves, etc. • Temperature extremes – hot and cold • Unsecured mine openings • Water (e.g., excessive accumulation in open pits or floors, runoff of water or water-saturated materials, hazards around ponds, drowning, musculoskeletal disorder injuries from hidden hazards in accumulated water)	
Ergonomic	Occur when the type of work, body positions and working conditions put strain on the body. Short- term exposure may result in "sore muscles" the next day or in the days following exposure, but long-term exposure can result in serious long-term illnesses and musculoskeletal disorders.	[2], [7], [13]
	Ergonomic hazards include: • Manual lifting (frequent lifting, lifting heavy objects) • Poor posture • Improperly configured workstations (e.g., presence of obstacles, unstable surfaces) • Repeating the same movements over and over • Awkward movements, especially if they are repetitive • Being in the same position for long periods of time • Having to use too much force, especially frequently • Poorly lit areas	
Psychosocial	Aspects of the work environment and the way that work is organized that are associated with a negative impact on mental health and/or physical injury or illness	[1], [4], [12]
	Psychosocial hazards include: • Working alone, working long hours, physically demanding work, work in remote areas, performing hazardous tasks • Poor physical environment (e.g., unpleasant conditions cause by noise, odors, temperatures, working with poorly maintained or uncomfortable personal protective equipment) • Stress (e.g., caused by harassment, bullying, violence, inadequate training, lack of support to do work safely, or stress external to work, etc.)	

Hazard Type[89]	Examples	Sources of information
	• Lifestyle (e.g., drug or alcohol use/abuse) • Trauma (e.g., from witnessing fatalities or being involved in work-related accidents)	
Biological	Bacteria, viruses, fungi, other microorganisms, insects, plants and animals and their associated toxins. They have the ability to adversely affect human health in a variety of ways, ranging from relatively mild, allergic reactions to serious medical conditions—even death. Some organisms, including various types of mold and Legionella bacteria, are found readily in the natural and built environment.	[1], [2]
	Biological hazards include: • Infectious diseases • Insect-borne or rodent-borne diseases or bites • Microbiological agents (bacteria, mold) • Foodborne illnesses	

List of Sources

[1] Canadian Centre for Occupational Health and Safety. "Hazards" (includes chemical, ergonomic, health, physical, psychosocial, safety, with examples and fact sheets on each hazard type). https://www.ccohs.ca/topics/hazards/

[2] U.S. Occupational Health and Safety Administration. Safety and Health Topics. https://www.osha.gov/topics/text-index

Biological agents: https://www.osha.gov/biological-agents

Confined Spaces: https://www.osha.gov/confined-spaces

Ergonomics: https://www.osha.gov/ergonomics

Pressure vessels: https://www.osha.gov/pressure-vessels

Toxic metals: https://www.osha.gov/toxic-metals

[3] NIOSH Mine and Mine Works Charts. "Number and percentage of nonfatal lost-time injuries by accident class, 2021. https://wwwn.cdc.gov/niosh-mining/MMWC/Injuries/Count

[4] Workplace Safety North web site. "Mining surface – Top Risks."

Risk categories overview: https://www.workplacesafetynorth.ca/industries/mininghttps://www.workplacesafetynorth.ca/sites/default/files/uploads/Mining-surface-risk-categories_FullListRanked_Overview-2016-MLTSD.pdf

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[5] International Council on Mining and Metals (ICMM). 2015. Health and Safety Critical Control Management. "Table 2. Typical Mining- and Metals-Related Material Unwanted Events Based on Historical Analysis." p. 11. https://www.icmm.com/website/publications/pdfs/health-and-safety/2015/guidance_ccm-good-practice.pdf?cb=39952

[6] ICMM. 2022. Safety Performance: Benchmarking Progress of ICMM Company Members in 2021. https://www.icmm.com/en-gb/research/health-safety/benchmarking-2021-safety-data

[7] U.S. National Mining Association. CORESafety Handbook. pp. 23, 61. https://nma.org/wp-content/uploads/2016/09/CORESafety-Handbook.pdf

[8] New Zealand Government. Worksafe. 2013. Guidance for a Hazard Management System for Mines. https://worksafe.govt.nz/dmsdocument/188-guidance-for-a-hazard-management-system-for-mines

[9] Government of Ontario web site: Hazards in the Mining Sector:

Ground control, water management, remote control equipment, explosives, mobile equipment, occupational illness and diseases: https://www.ontario.ca/page/hazards-mining-sector#section-2

Non-routine hazardous tasks in mines: https://www.ontario.ca/page/non-routine-hazardous-tasks-mines

Post-Blast examinations: https://www.ontario.ca/page/post-blast-examinations-mines

[10] Best Practices for Assessing Ground Control Hazards in the Workplace. https://www.workplacesafetynorth.ca/sites/default/files/resources/WSN-Best-Practices-for-Assessing-Ground-Control-Hazards-in-the-Workplace.pdf

[11] Testing undiluted exhaust in underground mines. https://www.ontario.ca/page/testing-undiluted-exhaust-underground-mines

[12] SafeWork Australia. Psychosocial hazards. https://www.safeworkaustralia.gov.au/safety-topic/managing-health-and-safety/mental-health/psychosocial-hazards/traumatic-events-or-materials

[13] Institution of Occupational Safety and Health (IOSH). Website.

Chemical hazards: https://iosh.com/health-and-safety-professionals/improve-your-knowledge/occupational-health-toolkit/chemical-hazards/

Musculoskeletal disorders: https://iosh.com/health-and-safety-professionals/improve-your-knowledge/occupational-health-toolkit/musculoskeletal-disorders/

Noise: https://iosh.com/health-and-safety-professionals/improve-your-knowledge/occupational-health-toolkit/noise/

Vibration: https://iosh.com/health-and-safety-professionals/improve-your-knowledge/occupational-health-toolkit/vibration/

Psychosocial hazards: https://iosh.com/health-and-safety-professionals/improve-your-knowledge/occupational-health-toolkit/psychosocial-hazards-including-stress/