Safety Sustainability Standards

Revision	Prepared/Reviewed	Approved	Date
1.0	P Power	B Fulker	Dec 2024

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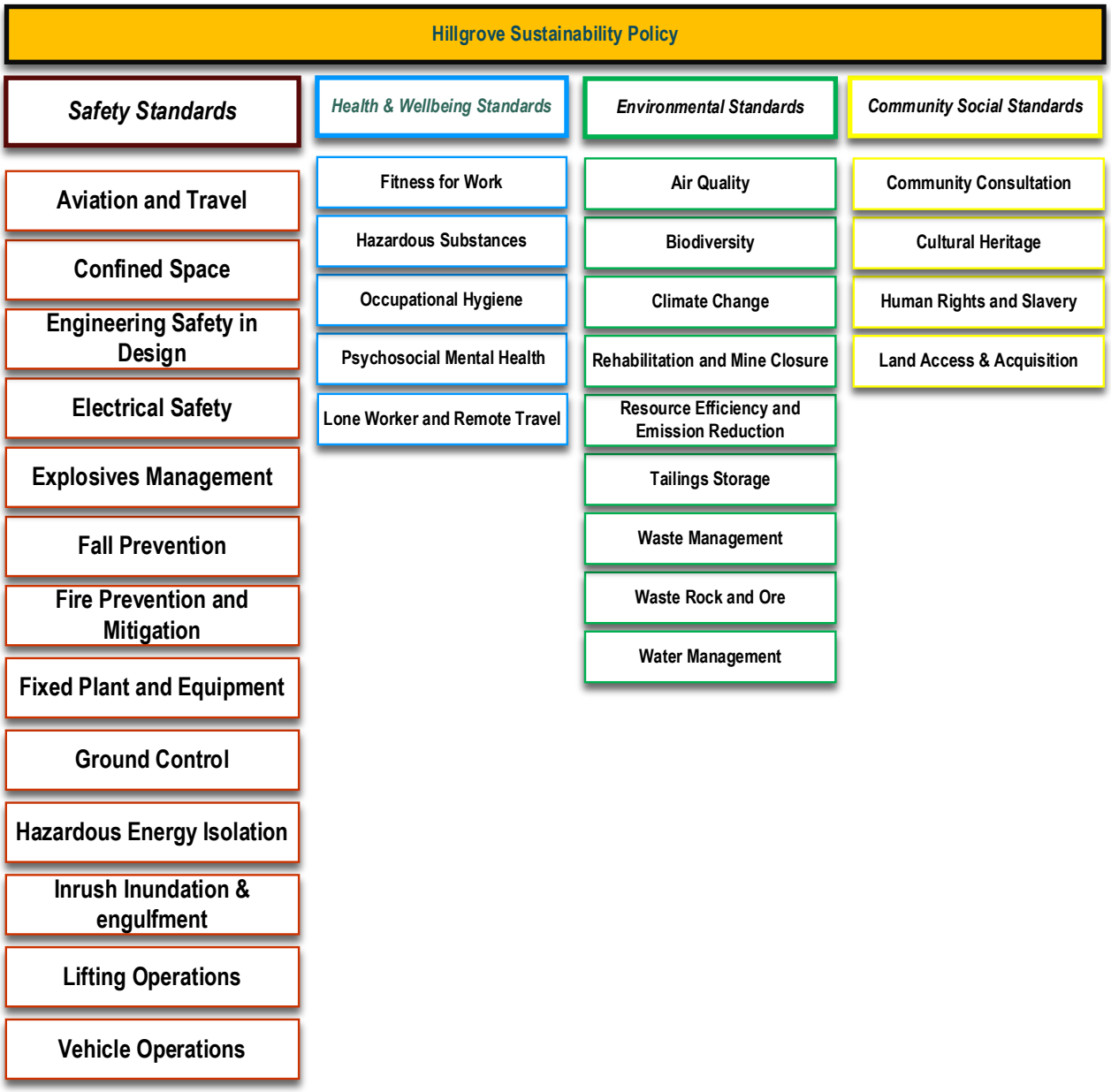
SAFETY STANDARDS

The Safety Standards are one of four performance areas under the Sustainability Policy. The purpose of the Safety Standards is to:

- Achieve an injury free and occupational disease-free workplace by ensuring that hazards are identified and managed appropriately.
- Ensure all safety incidents are thoroughly investigated, learnings shared, and corrective actions implemented.
- Deliver a program of risk-based safety management to protect the safety of our employees, Stakeholders and communities.

Mining activities by their nature have the potential to impact the safety of people and all risks must be identified, evaluated and managed to mitigate all identified actual and potential adverse impacts so far as reasonably practical.



1. Aviation and Travel

1.1. Scope

Travel and aviation and the use of aircraft by employees and Stakeholders that undertake work associated with HGO.

1.2. Performance Requirements Group

- Provide the services of an internationally recognised organisation for travel-related security and medical information, and for coordination of travel-related emergency recovery and management for all HGO employees.
- Ensure that no more than 75% of Board and Executive Committee combined travels on the same aircraft.

1.3. Performance Requirements Assets and Projects

Planning

- When aviation services are being conducted or contracted for the exclusive benefit of HGO, the **Flight Safety Foundation Basic Aviation Risk Standard** is to be used as the minimum requirement.
- The aircraft charter company/operator must have successfully passed the audit prior to engaging them to provide their services.

Performing

Chartered Non-Commercial Flights

- The aircraft must be as a minimum twin engine, fitted with dual controls and operated by two appropriately licensed and qualified pilots who are fit for work.
- The aircraft operation shall not commence or continue operating in inappropriate weather conditions.
- The aircraft shall only use airstrips of acceptable design and condition for take-off and landing.

Manned and Unmanned Airborne Surveys and External Load Operations

- Ensure all manned and unmanned airborne surveys and external load operations are assessed for risk prior to commencing operations by competent and qualified person(s).
- All flights (Australian based) must follow CASA's UAV operation guidelines for safety, including adhering to the maximum altitude and maintaining visual line-of-sight (VLOS).

Individual Security in High and Extreme Risk Travel

All employees and other parties undertaking HGO business related travel, whether by exception or regularly, to destinations, rated as High or Extreme security or medical risk by an internationally recognised organisation for travel-related security, shall implement a personal safety travel management plan, approved by their manager that includes:

- Use of an airline company with an Acceptable Safety Rating.
- Obtaining the recommended medical vaccinations.
- Identifying security risks and implementing controls to ensure travel and accommodation to reduce security risk exposure.
- A call-in procedure to a nominated HGO employee, daily as a minimum, and a way of ensuring that the traveller's location and movements are known.
- An emergency evacuation plan.
- Ensure employees do not ride in aircraft used for load slinging or aerial survey work without prior express written approval from the Asset or Project lead.

Review

- Ensure all aircraft charter operations are audited prior to use by an approved aviation safety consultant.

2. Confined Space

2.1. Scope

Confined space security, entry and emergency response.

2.2. Performance Requirements Assets and Projects

Planning

Where practicable, select equipment, structures or constructions that are designed to eliminate the need for personnel to enter a confined space.

Develop and implement a risk based **Confined Space Management Plan** that includes consideration of the following requirements:

- Process of eliminating the need to work in a confined space, or where this is not practicable, minimised as much as possible.
- Task specific risk assessment for each and every confined space planned entry.
- Application of a documented work plan based on a confined space permit to work system.
- Rescue plans and emergency rescue equipment approved by the emergency services leader.
- Barricading requirements to prevent inadvertent or unauthorised entry into an open confined space and for when the confined space is closed.
- Duties of a person to act as the sentry while personnel are within the confined space.
- Isolation procedures for contaminants and other energy sources while personnel are working in the confined space.
- A sign-in and sign-out process for tracking personnel entering and leaving the confined space.
- Continuous gas detection capability for potentially compromised oxygen levels, flammable gas concentrations, and noxious gases.
- Provision of a safe atmosphere within the confined space using methods such as cleaning, purging and ventilation, where possible.
- The training and competency of all persons associated with carrying out confined space work.

All permanent confined spaces shall be identified and secured against inadvertent entry with permanent signage provided at the point of entry that states that a permit to work is required.

Performing

- Prior to commencing work in a confined space, a risk based documented work plan and permit to work shall be established. Work is not permitted if a permit has not been issued with a rescue plan approved by a competent person.
- Based on risk, air sampling and monitoring shall be conducted by a competent person using approved gas detection to ensure atmospheric conditions are, and remain safe, for personnel to conduct work in the confined space.
- No person shall enter a confined space to conduct atmospheric testing without a confined space permit.
- Hot work in a confined space can only be performed under a Hot Work Permit and only if the flammable contaminants in the confined space and any noxious contaminants that may be produced from the Hot Work are proven to be at a safe level.
- Atmospheric Monitoring shall be conducted either continuously or at regular intervals based on the risk associated with the types of atmospheres encountered in the confined space and the type of work performed.
- The sentry will maintain continuous communication and where possible visual contact at all times with the personnel in the confined space.

Review

- Maintain a register/inventory of all confined spaces and update annually or when new equipment or facilities are commissioned.

3. Engineering Safety in Design

3.1. Scope

Application of safety in design principles to all engineering designs, including mechanical, structural, geotechnical, electrical, chemical and mining.

3.2. Performance Requirements Assets and Projects

Planning

Engineering design must include protocols that provide for consideration of the following requirements:

- Certification and registration of engineering design if required by law.
- A way to achieve compliance with acceptable international and local standards and legislative requirements.
- Process for safety design review at each major stage of design with an appropriate range of disciplines.
- Competency and the qualifications of personnel appointed to the role of engineering designer including any requirement for competency recognition under law.
- Computer aided design systems to manage and control design drawings and records.

Performing

- Perform hazard identification and safety in design analysis with the intention to eliminate risk where possible, or provide a way to reduce potentially damaging energy sources to as low as reasonably achievable, in the various design stages.
- Utilise qualitative and quantitative risk assessment methods in accordance with industry standards and requirements.
- Apply safety in design principles throughout each phase of design.
- Ensure that the risk associated with the constructability, operability and maintainability is considered in the safety in design analysis.
- Eliminate reliance on human factors where possible with regard to controlling any potentially catastrophic hazards in the constructability, operability and maintainability of the engineering design.
- Plant and equipment must be designed to fail safely where catastrophic failure is not able to be eliminated through the design.
- Conduct safety design reviews with an appropriate cross section of operators, maintainers, engineers and other key people, including consultants, to ensure that the design will be the most appropriate in terms of fitness for its intended application.
- The person accountable for leading the engineering design must be recognisable, at a local industry level, as competent and qualified in their field or discipline to perform engineering design or otherwise an Engineer of Record.

Review

- Each design must be checked by a competent person other than the person who produced the design to determine if it is suitable and compliant for its intended purpose and that any risk associated with the design and its intended application is as low as reasonably achievable.
- Undertake a review of the engineering management procedures on a regular basis to ensure that they are suitable and appropriate for their intended purpose.

4. Electrical Safety

4.1. Scope

Management of electrical energy and electrical equipment safety to eliminate and prevent exposure to arch flash, harmful electrical energy, direct contact with energised electrical conductors or indirect contact due to earthed conductive parts becoming live under fault conditions.

4.2. Performance Requirements Assets and Projects

Planning

Develop and implement a Risk-based **Electrical Safety Management Plan** that includes consideration for the following requirements:

- Appointment of a competent and experienced person to control all electrical work.
- An electrical management system to address hazard identification, risk management, instruction and training, consultation, supervision and monitoring and reassessment.
- Competency, licensing and authorisation of persons conducting electrical work and high voltage work.
- Electrical safety devices such as overload protection and earth leakage protection on final distribution circuits with settings established by trained, competent and licensed personnel.
- Capacity to isolate electrical energy and lock out.
- A system to procure only quality compliant electrical equipment from a reputable designer and manufacturer.
- Commissioning of new electrical equipment.
- Removing electrical equipment from service that is unfit or unsafe for purpose.
- Maintaining current single line diagrams, with supporting documentation showing system fault calculations, arc flash incident energy levels, equipment details, electrical protection discrimination curves and cable ratings.
- A system to mitigate the hazards associated with working in close proximity to overhead and buried power lines to prevent contact by personnel or equipment.
- Electrical distribution panels/ switchgear must be identified and uniformly labelled.
- Arc flash protection plan to define arc flash protocols.
- Portable electrical equipment and electric hand tool safety.
- Procedure for lightning detection for the protection of people and equipment.

Performing

- Where energised electrical work or work near live parts is to occur, a risk assessment must be conducted by a competent electrical person on the potential shock and arc flash hazards and a documented work plan established. Note: Access is prohibited to electrical cabinet or enclosure with exposed energised terminals in excess of 1,000 volts.
- Electrical panels, enclosures, motor control centres, substations and equipment must be appropriately guarded and labelled, with access restricted to authorised personnel. These locations are classified as “controlled areas” and any work to be performed in these areas must be carried out under a risk based work plan and permit system.
- The isolation, access, maintenance or repair of any high voltage equipment must only be performed by an authorised high voltage electrician under a risk based documented work plan and HV permit.
- Where sparking or lightning hazards are identified, a grounding system will be installed, inspected and tested regularly.

Review

- A system to ensure all electrical equipment is being maintained appropriately.
- Electrical safety devices and equipment are to be inspected and/or tested (with a current inspection tag) on a defined scheduled basis and records are to be kept.

5. Explosives Safety

5.1. Scope

Procurement, storage, transportation, handling and use of explosives. Competency and security requirements.

5.2. Performance Requirements Assets and Projects

Planning

Develop and implement a risked based **Explosives Management Plan** which must include the following defined processes and procedures to effectively and compliantly manage explosives:

- Initial and ongoing police background checks and security clearances, and competency and licensing for personnel who are to be authorised to handle, use, transport or store explosive products and for those who hold roles of supervision regarding explosives management.
- The design of surface and underground magazines giving consideration for the safety and security requirements of the explosive products in storage including, but not limited to:
    - Segregation of incompatible products.
    - Security controls and theft detection.
    - Stock inwards and outwards movement and reconciliation, rotation and disposal methods.
    - Magazine housekeeping.
    - Licensing and permitting for explosive storage.
    - Location from populated areas.
- The selection, purchasing, receipting and inventory control of explosives.
- Explosives transport vehicle equipment specifications, maintenance and operations.
- Safe and efficient drill blast and design requirements.
- Dealing with simultaneous operations in the use of explosives.
- Managing misfires and the destruction of old explosives.
- Identifying and managing the hazards of blasting in hot or reactive ground.
- Controlling access to areas designated for blasting and re-entry following blasting and gas detection.
- Operating equipment near loaded holes, misfires or explosives remnants.
- Crisis and emergency management for dealing with credible emergency scenarios involving explosives.

Performing

- Maintain equipment used to transport, store and blast with explosives in accordance with OEM requirements and established maintenance program.
- Review and verify the ongoing suitability of authorised persons who have unsupervised access to explosives
- Maintain an explosive register containing the following information:
- Name and type description, manufacturer, Safety Data Sheet (SDS) reference number and unique registration number.
    - Approved supplier, transporter and storage locations and maximum permitted storage quantities.
- Ensure detection of actual or potential theft is reported immediately to the appropriate authorities.
- Induct all new personnel in the risk management requirements for explosives.
- Establish blast clearance zones and ensure all personnel in a safe location prior to blasting.
- Ensure only authorised personnel are to conduct blast re-entry and checking for misfires.

Review

- Authorised persons to undertake regular stock take and reconciliation of explosives movement in and out of the magazine and to maintain a stock rotation system.
- Drill and blast engineers to review the blasting results following a blast to ensure blasting effectiveness.

6. Fall Prevention

6.1. Scope

Preventing falls from height and hazards from falling objects.

6.2. Performance Requirements Assets and Projects

Planning

Where there is a requirement to procure new plant or equipment ensure that the designer eliminates, as far as reasonably possible, the requirement to work at height for the personnel who use or maintain the plant or equipment.

Implement a risk-based **Fall Prevention Management Plan** that includes the following:

- Process of eliminating work at height, or where this is not practicable, minimised as much as possible.
- Process of managing the risk where there is a potential to fall that could result in a significant incident, or where there is the risk of dropped objects from the work being performed.
- Requirement to provide a secure working area of suitable design, that considers; material's strength, floor security, railings or solid barriers, toe boards and the prevention of objects falling.
- Requirement for scaffolding, work platforms and working at height equipment to be risk assessed for suitability, safety and integrity. Equipment shall be erected, operated and maintained in accordance with the manufacturer's requirements and risk-based work plan.
- People working at height are to use full body harness fall arrest, or fall restraint equipment, where provision of a secure working area is not reasonably practicable, attached to suitably designed anchor points.
- Fall arrest or fall restraint equipment to have double acting snap-hooks and achieve 100 percent tie-off 100 percent of the time.

Performing

No person is permitted to be within 3m of an unprotected opening (stope, void or other) or unguarded structure (building) where the fall is greater than 2.0m or where the fall is less but represents a high risk without working at height protection protocols in place.

Work at heights shall be conducted under a risk based documented work plan or permit system which covers the following criteria:

- Anchor point integrity, strength and location.
- Safety equipment suitability and integrity including inspection prior to commencing work.
- Competency of people working at height meets risk based requirements.
- Protecting people and equipment from falling objects through fall zone protection.
- Establishing a fall arrest emergency evacuation plan for suspended person and escape route methodology. The fall arrest emergency procedure shall include:
    - A plan and timeframe for rescue.
    - Emergency equipment required to carry out the rescue including rapid response kit.
    - Installation of individual fall-arrest systems and rope access systems for quick rescue.
    - Information, training and instruction requirements for relevant workers in rescue techniques and requirements of operational rescue equipment and emergency procedures.
    - Emergency testing procedures to ensure effectiveness.

Review

- All working at height personal safety equipment is to be inspected on a regular basis, or following a fall from height, or other incident that may affect the integrity of the equipment and removed from service where found to be faulty.
- Where work at heights safety equipment including scaffold, temporary work at height platforms and working at height equipment is in use it shall be regularly inspected to ensure the equipment remains safe to use.

7. Fire Prevention and Mitigation

7.1. Scope

Buildings, structural and equipment fires, design and mitigation.

7.2. Performance Requirements Assets and Projects

Planning

- All new buildings and facilities must include an appropriate level of fire risk analysis through the safety in design process for identification and mitigation of potential fire threats in accordance with risk-based requirements.
- All mobile equipment procured, or obtained, for use at a HGO site must have been designed to an appropriate standard that gives consideration to separation of electrical power and hot areas from flammable fluids, sheathing and routing of cables and fuel lines, safety critical equipment and fire suppression.
- All fire alarms are to be classified as the highest-level alarm and require immediate response.
- All mobile explosives transport equipment and heavy mobile equipment and vehicles fitted with turbo chargers that operate underground must be fitted with fire detection and a fire suppression system in addition to fire extinguishers.
- A risk assessment of the potential for fire of all buildings and facilities at the Asset or Project must be conducted and a risked based **Fire Management Plan** implemented with a Trigger Action Response Plan (TARP) for fire utilising the best available knowledge.

The risk assessment and **Fire Management Plan** shall include consideration for the following as a minimum:

- A register of a survey of each location where there is a potential fire threat including surface and underground facilities.
- Identification of potential fuel loads/ignition sources in each location including bushfires and assessing the potential fire impact
- Automatic fire suppression systems on high risk plant and facilities.
- Identified required fire protection equipment and required installation location.
- Fire mitigation capability in terms of resources and controls including as a minimum, firefighting equipment capability, training and competency of personnel and response procedures.
- Appointment of Fire Wardens.
- Impairment of fire protection and prevention systems.
- Training requirements for all personnel in terms of fire prevention and fire extinguisher operation.
- Hot work permit requirements.
- The fire prevention and suppression systems for mobile equipment.

Performing

- All flammable waste and flammable products are to be stored in segregation from potential sources of ignition
- Use the permit to work process to control hot works.
- All fire protection equipment shall be included in preventative maintenance programs and a process implemented to document all inspection, testing and maintenance results.
- Induct all new personnel in the risk management requirements for fire prevention, detection and fire extinguisher use.
- Appoint fire wardens.

Review

- Ensure installed fire detection, suppression and protection equipment is regularly inspected and tested to ensure that the equipment is accessible, available, and operable at all times.
- Monitor the effectiveness of the hot work permit process.
- Undertake regular fire drills to test the fire prevention and mitigation systems.

8. Fixed Plant and Equipment

8.1. Scope

Conveyors, workshops, processing plants, remote controlled equipment, drilling. Mechanical, hydraulic, pneumatic, chemical, thermal or gravitational energy control.

8.2. Performance Requirements Assets and Projects

Planning

Develop and implement **Fixed Plant and Equipment Management Plan** that requires consideration for the following:

- Procurement of fixed plant or equipment from reputable and competent designers and manufacturers, whether new, second hand or leased.
- Requirement for designers, or original designers if second hand, to apply safety in design principles in their plant and equipment design and to meet the relevant engineering standards
- Guarding of all plant and equipment, where there is a danger of entanglement or impact, with guards that prevent all personnel coming into contact with potentially damaging energy. If guards are removable during operations, they must be interlocked with the energy source or otherwise positive isolation of all potentially damaging energy sources must be in place.
- Conducting risk assessments in collaboration with an appropriate cross section of workers, specialists and maintainers and engineers, of the fitness for purpose of the intended service duty of plant and equipment and, as appropriate, developing risk treatment controls for operating and maintaining.
- Development of life cycle maintenance plans for all critical safety plant and equipment with consideration of the OEM specifications and requirements.
- Development of risk-based procedures by competent personnel for all maintenance work carried out for repair on plant and equipment with potentially damaging energy sources.
- The use of competent people to supervise and perform mechanical and structural maintenance and repair activities consistent with the complexity of the work and the level of risk associated with a task.
- Commissioning planning of plant and equipment.
- Development of isolation plans for relevant plant equipment such as conveyors, drills, mills, electric motors, hydraulic and pneumatic, hot or cold equipment etc. where if the contained energy source was released in an uncontrolled manner it has the potential to cause harm and or serious injury.
- Decommissioning of plant and equipment.

Performing

- Commission new plant and equipment in accordance with commissioning plans.
- Do not place any plant or equipment into service until all quality and safety checks are satisfactorily completed.
- Train personnel in the use and operation and safety requirements for plant and equipment.
- Conduct testing, inspections and maintenance in accordance with life cycle maintenance requirements.
- Stand down plant and equipment from service if unsafe to continue to operate.
- Positively isolate all potentially damaging energy sources if carrying out repairs or disassembling plant or equipment that exposes personnel to the energy source.

Review

- Regularly verify compliance of plant and equipment with local standards requirements.
- Conduct inspections of the life cycle maintenance effectiveness and compliance with requirements.
- Conduct inspections of plant and equipment safeguards and controls for effectiveness.
- Conduct investigations on failed plant or equipment and review current controls for suitability.
- Any changes to OEM equipment design or maintenance specifications, or replacement parts for critical safety components must be approved by a competent Engineer of Record.

9. Ground Control

9.1. Scope

Geotechnical analysis, ground control design, rock fall protection, pit wall stability, waste dumps and trenching.

9.2. Performance Requirements Assets and Projects

Planning

Implement a risked based **Ground Control Management Plan** for life of mine that includes consideration of the following:

- Geotechnical domains, structures of interest, design sectors, and geotechnical stability analysis.
- Geology and rock stress regimes, hydrogeology and pore pressures and seismicity.
- Voids and past mining legacies.
- Blast design and damage mitigation.
- Corrosion and erosional effects on installed ground control elements.
- Mining entry methodology to separate and protect personnel from unsecured ground.
- Ground control and support designs.
- How changes to ground conditions will be communicated effectively to affected personnel.
- Implementing ground control/movement monitoring systems congruent with the level of risk.
- Trigger Action Response Plan (TARP) based on monitoring systems.
- The competency and qualification requirements for personnel who undertake geotechnical engineering design and monitoring activities.
- The training and competency of all personnel involved in ground control related work.
- Waste dump designs for LOM.
- Risk-based procedures for installation of ground control, scaling, blasting and monitoring activities.

Performing

- Personnel not to work under unsupported ground at any time.
- Personnel not to work within the fall zone of open voids.
- Use only fit for purpose equipment for earth moving, drilling, blasting, scaling and ground control that prevents the requirement for any person to work under unsecured ground.
- Install ground control in accordance with approve ground control designs.
- Personnel working in a trench greater than 1.5m or in an unstable trench must have hoarding or trench support system to prevent engulfment of the person.
- No person is to be present at the toe of any waste dump or in a location of threat from rock fall.
- Waste dumps to have a berm installed at the base where practicable to prevent roll out of rocks and material where personnel are likely to be located.
- Conduct monitoring of geotechnical warning systems such as radar and seismicity in accordance with site based risk profile.
- Implement a mine signage system to control and restrict access to unsecured and unsafe areas.

Review

Implement a quality assurance program for control of ground support materials including:

- Monitoring and analysis of ground condition data.
- Checking excavation stability and deformation.
- Reviewing effectiveness of installed ground support.
- Ground support material testing.
- Development of ground control remediation plans where the installed ground control has failed or is compromised or otherwise barricade the location from entry to personnel.

10. Hazardous Energy Isolation

10.1. Scope

Managing uncontrolled potential hazardous energy sources during repair and maintenance.

10.2. Performance Requirements Assets and Projects

Planning

Develop and implement a risk-based procedure for isolation and lockout of potentially hazardous energy sources, that includes, but not limited to, the following considerations:

- Identification process for all equipment, plant and processes that contains potentially harmful damaging energy sources that will require the application of an isolation and lockout procedure and or energy dissipation prior to any work, repair or maintenance being carried out.
- Identification and suitability of isolation points and systems.
- A Permit to Work system. The Permit Issuer must be a different person to the Permit Applicant.
- Types of Isolations that will be used and when they will be applied and when a Permit to Work system shall be applied.
- Authorisation process for electrical, mechanical and other types of energy.
- Training program for all personnel and the various roles involved in isolation.
- Method of de-energising sources of energy and confirming zero energy.
- Method of re-energising plant and equipment.
- Colour coding of isolation locks with single keys only.
- Danger tags, Isolation tags, Out of Service tags and Commissioning tags and their application.
- Process for removing an Isolation Lock when the owner of the lock cannot be located or is unable to remove the lock.
- Where an IT system is used to control a process, approved software overrides, hard-wire bridging or interlock bypassing must be developed and maintained. This procedure must have an activity log included.

Performing

- Isolation of high voltage equipment shall only be carried out by an approved and authorisation high voltage operator under a high voltage permit.
- All heavy mobile equipment must be isolated during pre-start checks.
- A JSA or a risk based work procedure must be completed for all live testing of mobile equipment and approved by Supervisor.
- Plant and equipment is not to be operated with guards or interlocks removed or isolated unless under an isolation procedure and documented work plan.
- Isolation training shall be included in inductions and task-specific training.

Review

- All isolation points shall be included in the site based maintenance program to ensure that they remain in a serviceable condition.
- All fail to safe switches and devices shall be tested regularly for correct operation.

11. Inrush Inundation and Engulfment

11.1. Scope

Overflow or failure of storage vessels, levies and dam structures, backfill structures and subsidence caused by the uncontrolled mass movement of materials, extreme weather events or structural failure, drilling into perched water voids or old workings

11.2. Performance Requirements Assets and Projects

Planning

Develop and implement a risked based **Inrush, Inundation and Engulfment Management Plan** that includes consideration of the following:

- Identification and assessment of the level of risk associated with all potential inrush, inundation and engulfment sources including but not limited to:
  - Water/hydraulic inrush from back filled stopes, potential crown failures, perched aquifers or old workings.
  - Water inrush and inundation on the surface and its impact on mine personnel and equipment.
  - Engulfment from mud rush from waste and ore passes or from raise bore cuttings.
  - Drill and bore holes that have the potential to connect to water sources.
  - Liquid vessel storage failure.
  - Regulatory requirements for water storage dams and reservoirs.
  - Natural water courses.
  - The impact of high precipitation events.
- Trigger Action Response Plans for withdrawal of personnel to places of safety due to inrush, inundation or engulfment.
- Process of ensuring and verifying that old mine plans or legacy survey plans are an accurate account of the extent of underground mine workings.
- Large dams (for TSF see TSF Standard) must be subject to an engineering dam break study, by a competent external party to determine the risk categorisation of the dam and the risk treatment controls required for managing the dam.

Performing

- Ensure all levies, dams and liquid retention devices comply with requirements.
- All paste plugs, paste and CHF walls, bulkheads and backfill shall be designed by a competent engineer to acceptable factors of safety.
- Personnel must not be permitted to be in a potential engulfment zone during backfilling of a stope.
- Personnel shall not be permitted to enter areas of potential risk from inrush, inundation or engulfment and are to be withdrawn from areas where the risk of potential inrush, inundation or engulfment is unacceptable.
- Personnel must not be permitted to be next to or in a location where they are in danger of engulfment, including stockpiles, waste dumps, raise bore holes or passes.
- Test and conduct inspections regularly of the structural integrity of all liquid storage tanks, that would present as an unacceptable level of risk if failure occurred.

Review

- Ensure all liquid storage tanks are inspected by qualified and competent personnel on a regular basis for structural integrity and are decommissioned where they are found to be deficient.
- Regularly review the specifications of backfill to ensure it meets engineering design.
- Undertake regular review of levies and dam structures to ensure that they remain safe.

12. Lifting Operations

12.1. Scope

Cranes, forklifts, mobile work platforms, slings, shackles, personnel lift/work boxes and lifting hooks.

12.2. Performance Requirements Assets and Projects

Planning

Develop, implement and maintain a risk-based **Lift Management Plan**. The plan will include, as a minimum, consideration of the following:

- Inspection and certification requirements for mobile and stationary lifting equipment.
- Procedures for the slinging, lifting and movement of loads.
- Criteria and processes for undertaking simple and complex lifts.
- Training, competency and licensing requirements for personnel who conduct slinging/rigging of loads, lifting of loads and directing lifting operations.
- Marking and certification of slings, hooks, shackles, anchor points and other associated ancillary lifting equipment with a unique identification number and their safe working load.

Operating manuals and load charts shall be in a language understandable to the personnel who conduct lifting operations.

Performing

- Lifts should be planned prior to any lifting or movement of loads.
- Never exceed a crane or forklift Working Load Limit (WLL).
- All lifting equipment shall be inspected by a competent person prior to use to ensure it is fit for purpose
- Only trained, competent and, where required by law, licensed operators are permitted to operate, inspect, test, maintain and certify lifting equipment.
- The slinging and rigging of a load shall be checked by a competent person prior to the lifting of the load
- The threat of sling roll-out from the hook shall be eliminated.
- Do not operate a crane in high winds or on unstable ground, if unsure obtain and engineering test of ground compaction strength.
- Do not travel in man baskets or EWPs except for creeping.
- Loads are not to be lifted over people and personnel are not permitted to stand under a suspended load.
- Lifting equipment should be maintained in accordance with the OEM specifications, and in consideration of the service duty and environmental operating conditions.
- Certification of equipment modification should be in accordance with the OEM's approved engineering design and carried out by a competent and qualified engineer, with a formal risk assessment.
- Records shall be maintained, where applicable, for each lifting appliance containing documentation relating to design, manufacture, testing, examinations, repairs and modification.

Review

- Based on risk and OEM specifications, mobile and stationary lifting equipment shall be inspected and examined and certified at regular intervals by a qualified and competent inspector and withdrawn from service where they are found to be unfit for purpose.
- Any changes to OEM equipment design or maintenance specifications, or replacement parts for critical safety components must be approved by a competent Engineer of Record.

13. Vehicle Operations

13.1. Scope

Heavy mobile equipment and light vehicle procurement, operation and maintenance. Both types are referred to as vehicles in this standard unless designate otherwise in the section.

13.2. Performance Requirements Assets and Projects

Planning

Develop and implement a risk-based **Vehicle Operations Plan** that includes the following considerations:

- Vehicle equipment minimum equipment specifications for both heavy and light vehicles.
- Vehicle pre-inspection and commissioning process and authorisation.
- Life cycle maintenance plan informed by OEM specifications and requirements for critical safety components.
- Pre-start criteria and defect notification and management.
- Vehicle driver/operator training, competency, fitness for work, licensing and authorisation.
- Traffic management plans that include:
    - Speed Limits, signage control, right of way rules, passing and overtaking rules
    - Separation distances and Positive Communications requirements
    - Parking, towing other equipment and vehicle incident response.
- Separation of light and heavy mobile equipment during operations.
- Tyre and rim management.
- Traffic change notifications and environmental conditions and hazards.
- Remote-controlled and automated mobile equipment. Persons shall not enter an area where this type of equipment is in use.
- Isolated and remote journey plans.
- Road design and construction specification and maintenance requirements that includes, as a minimum, specification for:
- Road materials and cross section design based on california bearing ratios (surface haul roads only)
    - Gradients, cross fall and superelevation
    - Vertical curves & horizontal curves, sighting and stopping distances.

Where multiple parties intend to operate heavy and light mobile equipment at the same location, each party is required to provide a risk-based assessment of how their vehicle operations and procedures are integrated with the Asset's or Projects' **Vehicle Operations Plan.**

Performing

- Conduct pre-mobilisation checks to ensure the vehicle's suitability for the task required and their compliance with minimum requirements prior to the equipment being permitted to operate at the Asset or Project.
- Carry out maintenance and inspection programs, including structural integrity audits on critical safety componentry, that take into account the equipment's service life and duty with consideration of the installed monitoring program and OEM recommendation.
- Risk based pre-start checks shall be carried out on each piece of equipment prior to operation.
- Vehicles with critical safety equipment defects shall not be operated, or withdrawn from service, and not operated until the vehicle is in a serviceable condition.
- Drivers must not use mobile phones, except hands free, while driving.
- Driver and passengers must wear seat belts.
- Drivers must not operate a vehicle under the influence of alcohol or drugs that render the driver unfit.
- All mobile equipment will have fixed seats belts for driver and all passengers.

Review

- Inspect and maintain roads to ensure ongoing compliance with design criteria and environmental conditions.
- Conduct regular reviews of operator competency and compliance with operating rules and conditions.
- Any changes to OEM equipment design or maintenance specifications, or replacement parts for critical safety components must be approved by a competent Engineer of Record.