# EXPLOSIVES

# CRITICAL RISK CONTROL STANDARD

# TNCL-OHSS-STD-0010

## APPROVALS:

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## 1. PURPOSE

The purpose of this Explosives Critical Risk Control Standard is to eliminate or minimise the risk of fatalities, injuries and incidents arising from explosives and from uncontrolled explosions — across the procurement, classification, storage, manufacture, handling, use, transport, disposal, destruction and security of explosives, and the prevention of gas, vapour, dust, pressure and electrical (arc-flash) explosions.

This Standard supplements, and does not replace, applicable laws, regulations and other TNCL policies and standards. Where this Standard and any applicable rule, regulation or other standard differ, the most stringent requirement shall apply while always maintaining compliance with legal obligations. The Mining / Operations department shall develop more detailed procedures to give effect to the requirements of this Standard. Fire prevention and fire-fighting are addressed in the TNCL Fire Critical Risk Control Standard; this Standard addresses explosions and the fire–explosion interface only.

## 2. SCOPE AND APPLICATION

This Standard applies to explosives and explosives operations, and to plant, processes and atmospheres with the potential to explode, that could harm people, the environment or the community — whether in an incident involving loss of control or during normal, controlled activities (for example storage, handling, manufacture, transport, use, recycling and disposal).

It applies to all TNCL-controlled sites and activities, and to all TNCL employees, business partners, contractors and visitors involved in those activities. The critical controls in this Standard must be verified as being in place prior to and during work, and through scheduled inspections of relevant equipment and facilities.

## 3. REASONS FOR INCLUSION

Explosives and uncontrolled explosions are low-frequency, high-consequence hazards that have caused single and multiple fatalities. The causes and contributing factors include a lack of understanding of explosive properties and reactions, at-risk transport and storage, insufficient management of risk, equipment failure and inadequate emergency response. Typical explosion scenarios that this Standard guards against include:

**Chemical**

- Flammable-gas, gas-leak and ignition of flammable-chemical explosions;
- Gas-cylinder and fuel-tank explosions;
- Accidental ignition of large quantities of explosives; and
- Incorrect mixing of chemicals and accelerants.

**Mechanical**

- Mechanical failure of a pressure vessel, boiler or air compressor; and
- Mobile-equipment tyre failure.

Electrical

- Electrical arc-flash explosion.

## 4. DEFINITIONS

For the purposes of this Standards, the following definitions apply:

| Term | Definition |
|---|---|
| **Explosive** | Any solid or liquid substance, or mixture of substances, that is capable by chemical reaction of producing gas at such a temperature, pressure and speed as to cause damage to the surroundings, including blasting agents, detonators, boosters, detonating cord and pyrotechnics. |
| **Explosion** | A rapid expansion of gases that occurs when gases are exposed to a source of heat (such as fire, sparks or static electricity), to an increase in pressure, or to a chemical reaction. An explosion may be physical (for example a vessel bursting), physical or chemical (for example a boiler explosion), or a chemical reaction of a gas or particle mixture. Signs may include a loud sound or series of noises and vibrations, fire, heat, smoke and falling glass or debris. |
| **Explosive Atmosphere** | A mixture of flammable gas, vapour, mist or dust with air, under atmospheric conditions, in which combustion spreads throughout the unburned mixture after ignition. |
| **Magazine / Store** | A building, structure or excavation licensed under the Explosives Act for the storage of explosives. A storage box is a box used for the storage of explosives where licensed to do so. |
| **Blasting Licence Holder / Shotfirer** | A person who holds a valid blasting licence/certificate and is authorised and competent to charge, connect and initiate explosive charges. |
| **Competent Person** | A person who, through a combination of prescribed training and job experience, is capable of identifying existing and predictable explosive and explosion hazards and is authorised to take prompt corrective measures to eliminate them. |
| **Misfire** | A charge, or part of a charge, that has failed to detonate as intended after initiation has been attempted. |

| | |
|---|---|
| **Exclusion / Clearance Zone** | A demarcated and access-controlled area around blast preparation, charging and blasting activities (including the associated clearance and impact zones) from which unauthorised persons and ignition sources are excluded. |
| **Mobile Manufacturing / Charging Unit (MMU)** | Purpose-built vehicle-mounted equipment used to manufacture, mix and/or load bulk explosives at the blast face. |
| **UN Class 1 / Compatibility Group** | The United Nations classification for explosives (Hazard Class 1), with hazard divisions and compatibility groups used to determine safe storage, separation and transport. |
| **Emergency Management Plan** | A site-based, risk-assessed document for the management and control of the response to site emergencies, containing the controls relevant to managing the response to explosion and related scenarios. |
| **Arc-Flash** | An explosive release of energy from an electrical fault, producing intense heat, pressure and a blast wave. |

## 5. LEGAL AND OTHER REQUIREMENTS

This Standard is designed to align with applicable Tanzanian legislation and with international good practice. Where requirements differ, the most stringent applicable requirement shall apply.

### 5.1 Tanzanian Legal Requirements

- The Explosives Act (Cap. 45) and the Explosives Regulations (GN No. 561 of 1964), which govern the importation, manufacture, storage, transport, sale, handling and security of explosives, including the licensing and construction of magazines and stores (with separation distances, earthing and lightning protection), import and conveyance permits, and the duties of the Commissioner / Inspector of Explosives;
- The Mining Act, Cap. 123, and the Mining (Safety, Occupational Health and Environmental Protection) Regulations, 2010 (GN No. 408 of 2010), which govern the use of explosives in mining — including blasting, shotfiring, blasting licences/certificates, mine magazines, charging, misfire management, exclusion zones and re-entry — and the duties of the Chief Inspector of Mines / Mining Commission;
- The Occupational Health and Safety Act, No. 5 of 2003 (Cap. 297), administered by OSHA, which places general duties on the employer to provide a safe working environment and safe systems of work, and governs the safe operation, examination and certification of pressure vessels, steam boilers and air receivers (relevant to mechanical explosions);

- The Environmental Management Act, 2004, where blasting and explosion hazards (ground vibration, air-blast, fly-rock and fumes) interface with environmental management and community safety; and
- The Workers Compensation Act, Cap. 263, and the Employment and Labour Relations Act, 2004.

### 5.2 International Standards and Good Practice

- The IFC Performance Standards on Environmental and Social Sustainability (2012), in particular Performance Standard 1 (Assessment and Management of Environmental and Social Risks and Impacts), Performance Standard 2 (Labour and Working Conditions, including occupational health and safety) and Performance Standard 4 (Community Health, Safety and Security — which addresses hazardous materials and the management of major hazards such as explosions);
- The World Bank Group / IFC Environmental, Health, and Safety (EHS) Guidelines — the General EHS Guidelines (2007, Section 2: Occupational Health and Safety, and Section 3: Community Health and Safety) and the EHS Guidelines for Mining (2007), which address blasting, the storage and handling of explosives, ground vibration, fly-rock and process-safety hazards, and represent Good International Industry Practice (GIIP); and
- Recognised classification and industry good practice, including the United Nations classification of explosives (Hazard Class 1, with hazard divisions and compatibility groups) and the UN Recommendations on the Transport of Dangerous Goods, and the codes of practice of recognised explosives-industry bodies (for example SAFEX International and the AEISG).

## 6. ROLES AND RESPONSIBILITIES

| Roles | Responsibilities |
|---|---|
| **General Manager (GM)** | Accountable for implementation of this Standard on site; approves exceptions in writing; ensures magazines are licensed and that the resources for safe explosives management and emergency response are in place. |
| **Mining Manager** | Ensures blast management plans, drill-and-blast designs, exclusion zones and re-entry procedures are developed, resourced and followed, and that only licensed, competent persons conduct blasting. |
| **Explosives / Magazine Manager** | Controls the procurement, classification, licensed storage, issue, inventory tracking, return and disposal of explosives, and the response to any unaccounted loss; maintains magazine licences, inspections and security. |

| | |
|---|---|
| **Engineering Manager** | Ensures electrical arc-flash and overload protection, and the integrity of pressure vessels, boilers, compressors and tyres, are designed, tested and maintained to prevent explosions, and controls ignition sources near explosives and explosive atmospheres. |
| **OHSS Manager (Custodian)** | Maintains this Standard, the emergency management plan and the verification regime, and monitors compliance. |
| **Supervisors** | Confirm on a shift basis that personnel are licensed and competent, exclusion zones and ignition-source controls are in place, atmospheres are tested where required, and equipment is fit for purpose before work proceeds. |
| **Employees, Operators, Shotfirers, Contractors and Visitors** | Work only within their authorisation, training and licence; verify the task is safe before starting; and stop work and report immediately when a critical control cannot be verified. |

## 7. CRITICAL CONTROLS

The following critical controls are mandatory and must be verifiable. Work shall only start when each applicable control can be verified; if a critical control cannot be verified, work must stop.

### 7.1 Critical Control 1 – Competence, Training and Licensing

Personnel exposed to explosives shall receive induction training in explosive and explosion hazards. Only persons trained and assessed as competent, and where required licensed, shall handle or use explosives. Trainees may handle explosives only under the direct supervision of a blasting-licence holder. All workers shall be trained in the site emergency management plan and the evacuation response to explosion scenarios.

### 7.2 Critical Control 2 – Procurement, Classification and Inventory Control

Explosives shall be correctly classified (UN Class 1, with compatibility groups) and accompanied by safety data sheets. A system shall track individual items from receipt through storage, issue, use and return, with a defined immediate response to any unaccounted loss of explosives.

### 7.3 Critical Control 3 – Licensed Storage in Magazines and Stores

Explosives shall be stored only in magazines and stores that are designed, constructed, earthed and lightning-protected, and inspected and licensed before use. Quantity-distance separation shall be maintained, combustible materials and ignition sources shall be excluded from these areas, and the explosives shall be secured against unauthorised access.

### 7.4 Critical Control 4 – Safe Transport, Handling and Use

Vehicles and equipment used to manufacture, transport, mix and charge explosives (including MMUs)

shall be purpose-built and compliant with applicable legislation. Charging and shotfiring shall be carried out by licensed persons, misfires shall be managed under a defined procedure, and re-entry to the blast zone shall be controlled.

### 7.5 Critical Control 5 – Control of Ignition Sources and Explosive Atmospheres

Ignition sources shall be controlled wherever explosives, or explosive atmospheres may be present — including hot work, hot surfaces and exhausts, grinding, friction and static — with particular attention to explosives packaging, fuel and gas, and ground that may emit gas (for example drill holes intersecting gas pockets). Atmospheres shall be tested with gas-measuring instruments for flammable or irrespirable conditions before and during work; on detection of an unsafe atmosphere, personnel shall evacuate to fresh air. Flammable-gas cylinders and combustible/flammable liquids shall be stored separately in well-ventilated areas, secured against falling, and kept away from heat sources.

### 7.6 Critical Control 6 – Electrical and Pressure-System Integrity

Electrical arc-flash and overload protection shall be provided where required, with scheduled reviews and audits of protection settings and coordination, testing by competent persons, and records kept; electrical installations shall be maintained to manufacturer requirements and kept clear of explosives and flammable materials. Pressure vessels, boilers, air compressors and tyres shall be maintained and examined to prevent mechanical explosion.

### 7.7 Critical Control 7 – Blast Management, Exclusion Zones, Security and Emergency Response

Blast management plans shall address potential adverse impacts on the operation, the environment and nearby communities. Access shall be controlled to blast-preparation, blasting, clearance and impact zones, and re-entry shall follow a defined procedure. Explosives shall be secured against theft and misuse, and a risk-based emergency management plan, with evacuation routes, assembly/muster points and regular drills, shall be in place for explosion scenarios.

## 8. DEPLOYMENT REQUIREMENTS

### 8.1 Plant and Equipment Requirements

- Every explosives magazine shall be designed and constructed to statutory requirements and inspected and licensed before being put into use, with earthing and lightning protection and the required separation distances;
- Vehicles and equipment used to manufacture, transport and charge explosives (including MMUs) shall be designed for that purpose and meet applicable legislative requirements and standards;
- Surface, underground and business-partner magazines shall be maintained, inspected and operated in accordance with applicable legislation and standards;
- Gas-measuring instruments shall be available and maintained for testing flammable and irrespirable atmospheres;

- Electrical protection devices (arc-flash and overload) and pressure systems shall be installed, tested and maintained to prevent explosion.

### 8.2 Procedural Requirements

Procedures shall be established for at least the following:

- Explosives inventory control, including item-level tracking and the response to any unaccounted loss of explosives;
- The safe and secure manufacture, storage, transport, handling, use and disposal of explosive materials;
- Preparation of blast management plans that recognise potential adverse impacts on the operation, the environment and nearby communities;
- Access controls to blast-preparation areas, blasting areas and the associated clearance and impact zones, and blast-zone re-entry;
- Drill-and-blast design, and the management of misfires;
- Control of ignition sources and hot work near explosives and explosive atmospheres, and testing of atmospheres before and during work;
- Scheduled review, audit and testing of electrical arc-flash and overload protection, and integrity management of pressure vessels, boilers, compressors and tyres;
- Security of explosives against theft and misuse; and
- Emergency preparedness and response for explosion scenarios, including evacuation and drills.

### 8.3 People Requirements

- Induction training in the hazards of explosives and explosions shall be provided to new personnel where there is potential for exposure to explosive products;
- Personnel involved in the handling and use of explosives shall be trained, assessed as competent and, where required, licensed in accordance with legislative requirements;
- Trainees may handle explosives only under the direct supervision of a blasting-licence holder; and
- All personnel shall be trained in the emergency management plan and the evacuation response relevant to their work area.

## 9. VERIFICATIONOF CRITICAL CONTROLS

Critical controls shall be verified using the checklists in the appendices. A “No” response requires action: manager-level verification triggers a system fix, while supervisor or operator verification requires that work stops or does not start until the control is restored. Only start when you can verify; if a critical control cannot be verified, work stops.

- Line Manager — confirms the systems, processes and emergency arrangements are in place (Appendix 1);
- Supervisor — verifies on a shift-by-shift basis before the activity proceeds (Appendix 2); and
- Operator / Shotfirer — verifies on a task-by-task basis before starting work (Appendix 3).

## 10. DESTRUCTION AND DISPOSAL OF EXPLOSIVES

The destruction and disposal of explosives — including surplus, deteriorated, damaged, unserviceable or recovered misfire explosives — shall be carried out in a manner that is safe for personnel and the environment, and in full compliance with the Explosives Act (Cap. 45), the Explosives Regulations (GN No. 561 of 1964) and the Mining (Safety, Occupational Health and Environmental Protection) Regulations, 2010 (GN No. 408 of 2010). No explosives shall be abandoned, buried without authority, disposed of to landfill, discharged to water, or left unattended. All destruction activities shall be pre-authorised, planned, supervised and recorded.

### 10.1 Legal and Authorisation Requirements

The Explosives Act (Cap. 45) and Explosives Regulations vest authority over the destruction of explosives in the Commissioner / Inspector of Explosives. The Mining Regulations vest equivalent authority over destruction on mine sites in the Chief Inspector of Mines / Mining Commission. The following authorisation requirements apply before any destruction activity commences:

- Written approval from the Commissioner of Explosives (or, on a licensed mine, the Chief Inspector of Mines) shall be obtained before any planned bulk destruction of surplus, expired or deteriorated explosives. For quantities below the threshold defined by the Inspector of Explosives, notification and record-keeping shall satisfy this requirement.
- Only a person holding a valid blasting licence / shotfirer's certificate issued under the Mining Regulations, or as authorised by the Commissioner of Explosives, shall supervise or conduct destruction operations. The authorised Explosives / Magazine Manager shall co-sign all destruction work orders.
- Where quantities or circumstances exceed site capability (for example large volumes of deteriorated bulk emulsion, detonators of unknown condition, or explosives affected by flooding or fire), the mine shall engage a licensed explosives service provider and notify TEMA / relevant authority before proceeding.

### 10.2 Conditions Warranting Destruction or Disposal

A competent person shall assess and document the condition of explosives. Destruction or disposal is required when any of the following conditions exist:

- Explosives have exceeded their manufacturer's specified shelf life or the expiry date on the

packaging;

- Explosives show visible signs of deterioration — including exudation of liquid, crystallisation, unusual odour, packaging damage, deformation, corrosion of detonator shells, or damaged detonating cord;
- Explosives have been exposed to water, flooding, fire, excessive heat, or mechanical shock that may have affected their safety or performance;
- Explosives have been involved in a misfire and cannot be safely recovered and re-used under the applicable misfire procedure;
- Surplus explosives cannot be returned to the supplier and are no longer required for operations; or
- The Inspector of Explosives or Chief Inspector of Mines has directed that certain explosives be destroyed.

### 10.3 Approved Destruction Methods

The method of destruction shall be selected by a competent person based on the type and condition of the explosive, site conditions, environmental constraints and the requirements of the Inspector of Explosives or Chief Inspector of Mines. The following methods are approved, in order of preference:

- **Controlled Detonation (Open-pit Blast or Destruction Pit)** — the preferred method for detonators, initiating systems, boosters and cartridge explosives. Explosives are placed in a designated destruction pit or blast area, initiated by a licensed shotfirer using a detonating cord or electronic initiating system, and the blast managed under standard blast-management-plan requirements including exclusion zones and re-entry controls. Only compatible explosives shall be destroyed together; UN Class 1 compatibility groups shall be observed. Maximum charge per delay shall not exceed the site-approved design.
- **Open Burning** — permitted only for ANFO, emulsions and propellant powders that are not cap-sensitive, and only where controlled detonation is not practicable. Explosives are spread in thin layers (not exceeding 25 kg per burn event, or the manufacturer's recommended limit) on a prepared, non-combustible burning pad positioned at least 300 metres from any magazine, structure or inhabited area. Detonators and cap-sensitive materials shall never be burned. The burn shall be initiated from a safe distance using an extended ignition train, with wind direction assessed prior to ignition to avoid toxic fume exposure. Personnel shall not approach the burning area until it is completely extinguished and cool. Environmental Management Act requirements for open burning apply.
- **Return to Supplier or Licensed Explosives Service Provider** — where contractually or commercially feasible, surplus serviceable explosives shall be returned to the licensed

manufacturer or supplier. Transport shall comply with Explosives Regulations requirements for conveyance permits and vehicle standards. The transfer shall be recorded as a disposal in the inventory system.

- **Prohibited Methods** — the following are strictly prohibited: burial in the ground without regulatory authority; disposal to municipal waste streams, water bodies, drains or the environment; incineration in a standard waste-burning facility; mechanical destruction (shredding, crushing) of any initiating system; and any method not sanctioned by the Inspector of Explosives or Chief Inspector of Mines.

### 10.4 Step-by-Step Procedure for Destruction Operations

- **Identification and Segregation:** The Explosives / Magazine Manager shall identify explosives requiring destruction during routine magazine inspections, post-blast reconciliation, or upon receipt of deteriorated stock. Items shall be physically segregated within the magazine in a clearly labelled "For Destruction" area and removed from the active inventory. UN Class 1 compatibility groups shall be maintained during segregation.

- **Condition Assessment and Method Selection:** A competent person (blasting licence holder) shall assess each item's type, condition and quantity and select the appropriate destruction method in consultation with the Explosives / Magazine Manager. Where the condition is unknown or the material is highly sensitive (for example crystallised or phase-separated explosives), the Inspector of Explosives or a specialist service provider shall be consulted before handling.

- **Regulatory Notification and Approval:** The Explosives / Magazine Manager shall notify the Inspector of Explosives (and the Chief Inspector of Mines for mine-site operations) of the planned destruction, providing type, quantity, method and proposed date. Written approval or written acknowledgement of notification shall be obtained and retained on file before the destruction date.

- **Site Preparation and Risk Assessment:** A task-specific risk assessment and destruction work order shall be completed and approved by the Mining Manager (or equivalent) before the operation. The destruction site shall be inspected and confirmed fit for purpose: appropriate separation distances from people, structures, roads and water bodies shall be established and access controlled. Meteorological conditions (wind speed and direction, thunderstorm risk) shall be assessed. The emergency management plan shall be briefed to all personnel on site.

- **Transportation to the Destruction Site:** Explosives shall be transported to the destruction site in accordance with Critical Control 4 (Safe Transport, Handling and Use). The quantity transported shall not exceed that which can be destroyed in a single operation. No more explosives than required for that session shall be brought to the destruction site at one time.

- **Execution:** The licensed shotfirer shall conduct the destruction in accordance with the approved method, the destruction work order and site blast-management-plan requirements. The exclusion zone shall be established and confirmed clear before initiation. Re-entry shall follow the standard re-entry procedure applicable to blast operations. Post-destruction, the site shall be inspected to confirm complete detonation or combustion; any unreacted material shall be treated as a misfire and managed accordingly.
- **Community and Environmental Controls:** Blast management plan requirements for ground vibration, air-blast, fly-rock and fumes (including toxic fume from burning) shall apply to destruction operations. Where communities are within the impact zone, prior notification shall be given in accordance with the site's community engagement protocol. Environmental monitoring (including post-burn soil and water assessment where open burning is used) shall be conducted as required by the Environmental Management Act 2004 and the IFC EHS Guidelines for Mining.
- **Record and Inventory Update:** On completion, the Explosives / Magazine Manager shall update the inventory to record all items destroyed, including type, quantity, lot number, method, date, location, supervising shotfirer and witness. The destruction record shall be signed by the supervising shotfirer and a second witness. Copies shall be retained and submitted to the Inspector of Explosives / Chief Inspector of Mines as required. Any discrepancy between items issued for destruction and items confirmed destroyed shall be investigated and reported immediately as an unaccounted loss of explosives under Critical Control 2.

### 10.5 Special Situations

- **Misfire Recovery Explosives:** Explosives recovered from a misfire that cannot be re-used shall be treated as sensitised material and handled with maximum care. Re-drilling adjacent to a misfired hole is prohibited. Recovered misfire explosives shall be destroyed by controlled detonation at the earliest practicable opportunity under the supervision of the licensed shotfirer responsible for the misfire.
- **Flood- or Fire-damaged Explosives:** Where explosives have been involved in a fire or flood event in the magazine, no person shall re-enter or handle any explosive until the Inspector of Explosives and a specialist adviser have conducted an assessment. Destruction shall proceed only under their direction using methods they specify.
- **Mine Closure and Decommissioning:** At mine closure or upon surrender of the explosives licence, all explosives stocks shall be destroyed or transferred to another licensed site in full compliance with the Explosives Act (Cap. 45) and the Mining Act (Cap. 123). The closure destruction plan shall be submitted to and approved by the Inspector of Explosives and the Chief

Inspector of Mines as part of the closure and rehabilitation process. Magazine structures shall be decommissioned only after all explosives are confirmed removed and accounted for.

### 10.6 Packaging and Residue Management

Empty or contaminated explosives packaging (boxes, bags, tubes, caps, detonator shells) shall be treated as explosive residue until confirmed clean by a competent person. Contaminated packaging shall be destroyed by burning or detonation at the destruction site along with the parent explosive. Clean, confirmed-empty packaging shall be disposed of through the site's hazardous waste stream in accordance with the Environmental Management Act 2004. Post-blast site residue (including plastic wrapping, wire fragments and packaging) shall be collected and disposed of in accordance with the site environmental management plan and shall not be deposited in watercourses.

## 11. SYSTEM EVALUATION

This standard shall be reviewed at least after two years by members of the OHS department and presented to the Standard Committee for approval, or when organizational changes take place or are required as part of internal and external audits. The TNCL Document Controller will monitor compliance with the document control system on an ongoing basis.

## 12. DISTRIBUTION

List physical locations which require a controlled copy of this document.

Table 1: Distribution

| Copy | Controlled Document Folder Location |
|---|---|
| Master | Controlled Documents Central Filing System |

## 13. CONTRAVENTION

Any breach of this standard shall be regarded as refusal/failure to carry out a lawful instruction and will be dealt with as per the disciplinary procedure.

## 14. DOCUMENT CHANGE PROCESS

The process of document change starts when the document custodian identifies there is a need to make changes within the document. The document custodian/ owner shall complete the document change request form, sign it off and submit it to the Document Controller.

The Document controller shall issue the controlled word copy of the document to the respective document custodian/owner so that changes may be made. The document custodian/owner shall resubmit the updated document to the document controller so that the document can be controlled and updated within the Filing system ready for use by the end users.

### 14.1 Reason for Change

Table 2: Reason for Change

| | | | |
|---|---|---|---|
| A | As a result of incidents | F | Change in training requirements |
| B | As a result of the audit findings | G | Results of risk assessments |
| C | New / changes in governance documents | H | Change due to spelling or grammatical error |
| D | Changes in legislation | I | New document format |
| E | Changes in technology | J | To integrate special instruction into the document control system |

### 14.2 History of Change

Table 3: History of Change

| Date of Change | Revision No | Revised Item (paragraph Number reference if required) | Reason Code | Name of Reviewer |
|---|---|---|---|---|
| 04 Jun 2026 | 02 | All sections — content development; definitions, legal/IFC alignment, roles, critical controls and verification appendices added (explosion content) | C, D, G | |

## 15. RECORD CONTROL

Table 4: Record Control

| Document Title: | Document ID: | Responsible for Maintenance: | Responsible for Filling: | Location of Storage: | Retention Period: | Method of Disposal: |
|---|---|---|---|---|---|---|
| Explosives Critical Risk Control Standard | TNCL-OHSS-STD-0010 | Document Controller | Document Controller | OHSS Department | Hard Copy two Years | Hard copy shared file electronic |

## 16. DECLARATION

I hereby declare that I have taken part in the discussion of this standard, and I understand its contents and do commit that I shall ensure compliance hereto:

| | Name and Surname | Company Number | Designation / Role | Signature | Date Signed |
|---|---|---|---|---|---|
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## 17. APPENDIX 1 – LINE MANAGER VERIFICATION CHECKLIST

Review each critical control at its specified frequency. If any answer is "No", take immediate action to find a suitable temporary or permanent solution and communicate it to supervisors and operators (Go = Yes;

No-Go = stop and fix).

**Systems, Competence and Emergency Preparedness**

| Verification Question | Yes | No |
|---|---|---|
| Is an Emergency Management Plan for explosion scenarios in place and up to date, with evacuation routes, assembly/muster points and regular drills? | ☐ | ☐ |
| Is there a training and competency-records system for explosives handling, blasting licences and emergency procedures? | ☐ | ☐ |
| Are all magazines and stores licensed, constructed, earthed/lightning-protected and inspected as required? | ☐ | ☐ |
| Is there an explosives inventory and item-level tracking system, with a defined response to unaccounted loss? | ☐ | ☐ |
| Are blast management plans in place that address impacts on the operation, environment and nearby communities? | ☐ | ☐ |

**Ignition Sources, Electrical and Pressure Systems**

| Verification Question | Yes | No |
|---|---|---|
| Is there a system to control ignition sources (hot work, hot surfaces, grinding, friction, static) near explosives and explosive atmospheres? | ☐ | ☐ |
| Is there a gas-monitoring system to detect flammable or irrespirable atmospheres before and during work? | ☐ | ☐ |
| Does the site schedule reviews and audits of electrical arc-flash/overload protection settings and coordination, with testing by competent persons and results recorded? | ☐ | ☐ |
| Are pressure vessels, boilers, air compressors and tyres examined and maintained to prevent mechanical explosion? | ☐ | ☐ |
| Are flammable-gas cylinders and fuels stored, separated, ventilated and secured correctly, away from heat sources? | ☐ | ☐ |

## 18. APPENDIX 2 – SUPERVISOR CHECKLIST (SHIFT-BY-SHIFT)

Use the questions below to assess whether it is safe to perform the activity. If any answer is "No", work must stop or not start until a suitable solution is implemented; report any "No" to the line manager. Work should start only if all questions are answered "Yes".

| Verification Question | Yes | No |
|---|---|---|
| Are the persons handling or using explosives trained, competent and, where required, licensed? | ☐ | ☐ |
| Have the operators been trained in the emergency evacuation procedure, and do they know the assembly/muster points? | ☐ | ☐ |
| Are magazine issue, return and reconciliation controls being followed for this task? | ☐ | ☐ |
| Are exclusion / clearance zones demarcated and access-controlled for blast preparation, charging and blasting? | ☐ | ☐ |
| Have ignition sources been controlled and the atmosphere tested (where required) before charging or work in a potentially explosive atmosphere? | ☐ | ☐ |
| Are flammable-gas cylinders and fuels stored and secured correctly? | ☐ | ☐ |
| Are arc-flash/overload protection and isolation systems in place and operational for the equipment involved? | ☐ | ☐ |
| Is the equipment fit for purpose (not tampered with or damaged) and the misfire procedure understood? | ☐ | ☐ |

## 19. APPENDIX 3 – OPERATOR / SHOTFIRER STOP CARD

On a task-by-task basis, confirm it is safe to start work. If any answer is "No", do not start work — report it to your supervisor. Only start when you can verify; if a critical control cannot be verified, the work must STOP.

**Before the Task**

| Verification Question | Yes | No |
|---|---|---|
| Training, competence and (where required) blasting licence valid? | ☐ | ☐ |
| Fatigue level acceptable (rested)? | ☐ | ☐ |
| Task risk assessment / blast permit completed? | ☐ | ☐ |

**Explosion and Ignition controls**

| Verification Question | Yes | No |
|---|---|---|
| Is the work area free of uncontrolled ignition sources, and is hot work controlled near explosives or explosive atmospheres? | ☐ | ☐ |
| Where required, has the atmosphere been tested and confirmed safe (not flammable/irrespirable)? | ☐ | ☐ |
| Are flammable-gas cylinders, fuels and chemicals correctly stored, separated and secured? | ☐ | ☐ |
| For electrical work, are arc-flash protection and isolation in place? | ☐ | ☐ |

**Blasting and Emergency Readiness**

| Verification Question | Yes | No |
|---|---|---|
| Is the exclusion / clearance zone clear and access-controlled before charging or initiation? | ☐ | ☐ |
| Is positive communication with the control room established? | ☐ | ☐ |
| Is the misfire procedure understood and the re-entry control known? | ☐ | ☐ |
| Is the emergency evacuation process understood and the assembly/muster point or refuge location known? | ☐ | ☐ |