

Surface Fire Prevention

I PURPOSE

To establish the minimum requirements for safeguarding life and property against fire and related hazards and to control the risk of fire through effective prevention and detection.

2 SCOPE

This procedure applies to all functional areas, operations, offices, including employees, vendors, visitors and contractors within the scope of the Integrated Management System (IMS)

3 DEFINITIONS AND ACRONYMS

Definitions

Fixed Emergency Systems are emergency systems that are permanent located in one position such as fire hydrants, emergency showers, fire alarms etc.

Impairment of Fire Protection System is any situation in which all or part of a Fire Protection System is turned off, damaged, interrupted, disabled, or otherwise temporarily rendered inoperable. Fire Systems shall include automatic fire sprinklers, standpipe systems, fire alarms and detection systems, under/above ground water supply mains, chemical fire suppression systems, fire doors, stench systems and other alarms used to warn employees of a potential hazard. Impairment includes maintenance, repair, or alteration of a Fire Protection System.

Inspection is a visual examination of fire emergency response equipment to verify that it is in operating condition and is free of physical damage.

Inspection, Testing, and Maintenance Service is a service program carried out by the COMPANY or a qualified contractor in which all fire emergency response equipment and systems are inspected and tested at the required times and the necessary maintenance is provided. This program includes logging and retention of the relevant records.

Portable Emergency Equipment is fire/emergency equipment that can be moved to different locations as needed such as fire extinguishers, fire trucks, dry chemical trailers etc.

Acronyms

HMR HSLP Management Representative

HSLP Health, Safety and Loss Prevention

IMS Integrated Management System

PPE Personal Protective Equipment

4 ROLES AND RESPONSIBILITIES

Document Owner

HMR

Responsible Roles and Position-Holders

Contractors/Vendors

Contractors/Vendors are businesses performing a service for the COMPANY. They are responsible for ensuring their employees working on COMPANY sites understand and comply with the requirements as outlined in this procedure.

Employees and Contracted Employees

All employees in any position whether COMPANY or contracted employees working on any COMPANY site. They are responsible for complying with the requirements as outlined in this procedure.

Visitors

Visitors are anyone not employed by the COMPANY in any capacity but are traveling or touring on a COMPANY site. They are responsible for complying with the requirements as outlined in this procedure.

HSLP

HSLP is any COMPANY employee working under and including the Regional Director of HSLP. They are responsible for periodically auditing for compliance to this procedure.

Supervisor/Foreman or Designee

Supervisor/Foreman or Designee can be a COMPANY employee or a contractor/vendor working or traveling on any COMPANY site. They are responsible for enforcement of all requirements, rules, and established guidelines as outlined in this procedure. They ensure personnel are provided with the necessary training and proper instructions for this procedure.

5 DIRECTION

All employees, vendors, contractors, and visitors traveling/working on site shall comply with and ensure personnel accountable to them comply with the following requirements of this procedure.

Department Managers/Superintendents

Ensure fire risk assessments are undertaken by appropriately trained and qualified personnel.

Ensure suitable pre and post event controls as identified in risk assessments are implemented and monitored for ongoing effectiveness.

Ensure all team members in their area of responsibility receive the appropriate training annually in the requirements of this standard.

Ensure a fire control plan comprising the requirements of this standard is developed, readily available for use and reviewed annually.

Department Managers/Superintendents (Cont.)

Ensure appropriate procedures are developed, implemented and reviewed to reduce the risk of fire.

Ensure as a minimum two fire drills are performed semi-annually for major facilities.

Ensure all fire detection and protection equipment is adequately installed, tested and maintained.

Audits against the requirements of this standard are conducted.

Employees

Participate in fire risk assessments as required.

Undergo training in the requirements of this standard annually.

Maintain sound housekeeping practices.

Participate in fire drills annually.

Follow the requirements of the site work permit system when performing hot work for which there is a likelihood of fire.

Perform pre-use inspections of equipment in their work area daily, including the fire protection equipment available.

Notify a supervisor if emergency fire equipment is damaged or missing.

HSLP

Ensure fire control plans are developed and maintained for each surface mine operation and are included in the Emergency Response Plan.

Train and assess the operation's emergency response team as required in the site Fire Control Plan.

Coordinate and record fire drills semi-annually for major facilities.

Ensure fire detection and protection equipment is maintained and serviced as per the requirements of this standard.

Emergency Preparedness

Each mine shall have a fire control plan in place which has been communicated to all personnel working at the facility and which shall be formally reviewed annually.

The fire control plan shall detail fire risks at the mine and shall address:

- Detection Systems
- Mitigation Systems
- Personnel Protection Systems

Emergency Preparedness (Cont.)

- Key components of the critical systems above shall include:
 - Floor Plans and Utility Shut-offs
 - Evacuation Points
 - Alarm Panels
 - Enunciator Stations
 - Pull Stations
 - Communication Systems
 - Extinguishers
 - Hose Cabinets
 - Hydrants
 - Post Indicator Valves
 - Sprinkler Shut-off
 - Flammable Cabinets
 - Flammable/Hazardous Materials

All mines shall conduct a minimum of two fire drills annually for site facilities equipped with fire alarm systems.

Fire Detection Equipment

Fire detection equipment such as fire alarms, heat detectors, and smoke detectors shall be installed in compliance with the more stringent of either state or local regulations or other relevant codes and standards.

Fire detection equipment shall be placed in locations consistent with the results of risk assessments performed under the requirements of section Fire Risk.

Positioning of such equipment shall be determined so as to ensure early detection of any fire.

Fire Protection Equipment

Fire protection equipment such as fire extinguishers, doors, panels, sprinkler systems, hydrants, hose installations, deluge systems, and foam injection systems shall be installed in compliance with the more stringent of either state or local regulations or other relevant codes and standards.

Inspection and maintenance procedures for the fire protection equipment must be written.

Inspections and maintenance records should be scheduled and maintained in the site maintenance management system.

Fire Protection Equipment (Cont.)

- Portable fire extinguishers shall be provided at any location where there is a potential fire risk and on all mobile equipment and fixed plant as follows:
 - a** At least two portable fire extinguishers located close to main combustible or flammable storage locations or other significant risk areas.
 - b** Two appropriately sized portable fire extinguishers, or one fire extinguisher and a fire suppression system shall be installed on mobile equipment.
 - c** Areas in a fixed plant shall have appropriate and sufficient portable fire extinguishers located on the intake airway-side.

Fire Risk

Assessments to determine fire risks shall be conducted by HSLP or coordinated through HSLP.

Risk assessments shall be performed in accordance with the COMPANY Risk Management Standard and Procedure.

The risk assessment shall be based on but not limited to the following:

- 1** A survey of each location of potential fire risk underground.
- 2** Identification of potential fuel loads in each location including flammable/combustible materials such as:
 - Wood and rags
 - Hoses, rubber, and tires
 - Seats
 - Ventilation ducting
 - Electrical insulation
 - Liquids – diesel fuel, hydraulic fluid, oils, gasoline
 - Flammable gases
 - Explosives and detonators
- 3** Identification of ignition sources in each location including:
 - Heat
 - Electrical
 - Mechanical
 - Chemical energies
- 4** Assessment of fire impact.
- 5** Mine ventilation systems.
- 6** Mine operations and maintenance practices.
- 7** Communications and tracking systems.
- 8** Review of controls, including emergency preparedness.

Fire Risk (Cont.)

The fire risk assessment shall be based on a survey of each location of potential fire risk on the site, identification of potential fuel loads/ignition sources in each location, assessment of fire impact, and review of controls.

The implementation controls shall achieve the pre-event objectives of prevention and detection and emergency preparedness programs shall be strengthened through the implementation of post-event controls.

Fire Protection System Disruption

Each site will follow the Fire Protection System Disruption SOP.

The procedure will ensure appropriate levels of authority are obtained and that a Fire Protection System Disruption Permit is completed prior to taking any fire detection or protection system offline or out of service.

Hot Work Permit Systems

All tasks that create the likelihood of fire shall be conducted in accordance with the Hot Work SOP and the Hot Work Permit completed where required.

Work of this type shall not be performed in areas where the risk of such work has been assessed as having a high or extreme consequence without a Hot Work Permit and the necessary controls in place to manage the risk.

Housekeeping

Spills, leaks, excess lubricants and combustible materials shall not be allowed to accumulate in quantities that could create a fire hazard.

Approved metal receptacles shall be provided where oil soaked wastes or rubbish are not immediately removed to a safe place for disposal.

Maintenance operations shall include written procedures and practices to identify and prevent leakage and accidental escape of flammable or combustible liquids.

Spillage of flammable or combustible liquids shall be cleaned up.

All work areas shall be kept neat and orderly.

Combustible Materials

Storage of combustible materials shall be neat and orderly.

Combustible material shall not be stored beneath a building or structure unless specifically constructed or protected for this purpose.

Combustible material shall not be stored in boiler rooms, mechanical rooms or electrical equipment rooms.

Combustible Materials (Cont.)

If a hazard to persons could be created, no combustible materials shall be stored or allowed to accumulate within 25 feet of the following:

- a** Electric substations.
- b** Unburied, flammable or combustible liquid storage tanks.
- c** Any group of containers used for storage of more than 60 gallons of flammable or combustible liquids

Outside combustible storage shall be kept a minimum of 10 ft. from buildings.

Outside combustible storage shall not exceed 20 ft. in height.

Combustible vegetation shall be kept clear from all buildings for a distance of 30 ft. minimum.

Ceiling Clearance

Storage shall be maintained 2ft or more from the ceiling in non-sprinklered areas of buildings.

The clearance between the deflector and the top of storage shall be 18 in. or greater.

Means of Egress

Combustible material shall not be stored in exits.

Equipment Rooms

Combustible material shall not be stored in boiler rooms, mechanical rooms or electrical equipment rooms.

Ignition

Precautions shall be taken to prevent the ignition of combustibles, flammable, and combustible liquid vapors.

Smoking and open flames shall be prohibited in areas or locations where fire or explosion hazards exist.

In areas where smoking is permitted, non-combustible ashtrays shall be provided.

Possible sources of ignition shall include:

- Open Flames
- Smoking
- Cutting
- Welding
- Hot Surfaces
- Frictional Heat
- Static, Electrical, and Mechanical Sparks

Ignition (Cont.)

- Spontaneous ignition, including heat producing chemical reactions
- Radiant Heat

Where a fire risk assessment determines the need, ventilation air volume and velocity shall be designed to dilute and carry away flammable or explosive concentrations of vapors before they reach 25 percent of the lower explosive limit.

Portable heaters shall be UL listed and kept a minimum of 3ft. away from combustibles.

Candles shall not be left unattended and used in a manner to prevent the ignition of combustible material through any form of heat transfer.

Inspections, Testing, and Maintenance

Fire detection and protection equipment, fixed and mobile operations equipment, and rescue equipment shall be regularly inspected to ensure that the equipment is accessible, available, and operable at all times.

All fire protection equipment shall be included in preventative maintenance programs that include, but are not limited to:

- a Regular servicing in accordance with the Original Equipment Manufacturer (OEM) specifications as a minimum.
- b Testing of fixed fire suppression systems and fire suppression systems which are carried on equipment.
- c Documentation of all inspection, testing and maintenance results.
- d Pre-use equipment inspections that include checks of fire protection equipment, presence of flammable materials, and leakage of flammable materials.

Post-Emergency Activities

Following every emergency response event and emergency response exercise a review shall be conducted to identify deficiencies and communicate these to the appropriate personnel.

Actions identified from the review shall be included in the facilities corrective action system.

Training and Competency

As a minimum annual requirement, the following competency training shall be provided to all personnel:

- Basic fire prevention methods including identification of fire hazards
- Use of basic fire fighting equipment, including portable extinguishers
- Methods for Reporting Fire Emergencies
- Emergency and Evacuation Procedures

Training and Competency (Cont.)

A higher level of competency training shall be provided to operations and maintenance personnel as appropriate in the control of fire risk.

All mobile equipment operators shall receive training on equipment suppression systems as part of their formal task training.

If the Mine Rescue Emergency Response Team is trained for offensive fire attack, members should receive annual training which shall consist of classroom lecture, hands on practicals, live fire ground training, emergency response and evacuation drills and including:

- Surface Fire Potentials and Basic Fire Prevention Methods
- Pre-Incident Planning and Management of Specific Fires
- Associated Risks Identified in the Risk Assessment Processes in Fire Risk
- Basic Firefighting Equipment Including Fire Extinguishers
- Hydrants, Hose Lines, Hose Streams, and Fire Control
- Fire Truck and Pump Operations if Applicable
- Structure Entry Procedures
- Ventilation
- Salvage and Overhaul
- Wild land/Forrest Fire Training
- Emergency Communications