Personal Protective Equipment (PPE) Program

1. Purpose

The personal protective equipment (PPE) program has been developed to improve awareness and use of standard personal protective equipment required by all those exposed to health and safety hazards at Kidd Operations.

The information contained in this program has been written to align with Glencore Heath, Safety and Risk Management protocols, the Kidd Operations Safety Management System and to satisfy pertinent requirements within the Ontario Occupational Health and Safety Act and associated regulations.

2. Scope

This program applies to all workers, contract workers, suppliers, and visitors who are performing work at Kidd Operations and are exposed to hazardous environments.

3. Definitions

3.1. Administrative Controls:

Measures aimed at reducing employees' exposure to hazards through training, additional relief workers and breaks and rotation of workers.

3.2. American National Standards Institute (ANSI):

A not-for-profit organization that co-ordinates voluntary standards activities, approves standards, represents U.S. interests in international standardization and provides information and access to the world's standards.

3.3. Arcing Fault:

An arcing fault is the flow of current through the air between phase conductors or phase conductors and neutral or ground. An arcing fault can release tremendous amounts of concentrated radiant energy (arc flash) at the point of the arcing in a small fraction of a second resulting in extremely high temperatures.

3.4. Arc Flash:

The resulting radiant energy released from an arcing fault. Temperatures can achieve instantaneous levels of over 19,000 degrees Celsius. This energy is typically released in a fraction of a second and the intensity diminishes rapidly over distance.

3.5. Canadian Standards Association (CSA):

A not-for-profit, independent, private sector organization that serves the public, governments, and business as a forum for national consensus in the development of standards; offers certification testing and related services.

3.6. Engineering Control:

Design of the work environment, job or work activity to eliminate or reduce exposure to a hazard.

3.7. Ergonomics / MSDs:

An applied science dealing with the relationship between workers and their environment and the equipment they use

3.8. Exposure:

Contact with body or body systems via inhalation, ingestion, absorption or injection.

3.9. Hazard Assessment:

Assessing the work environment for potential dangers which could result in injury or illness.

3.10. IDLH:

Respiratory protection terminology representing atmospheres that are Immediately Dangerous to Life and Health.

3.11. National Fire Protection Association (NFPA 70-E):

NFPA 70-E is the standard for Electrical Safety in the Workplace, as issued by the US National Fire Protection Association. This standard, although not mandatory in Canada, does provide guidance on the subject of Arc Flash protection for workers.

3.12. Personal Protective Equipment (PPE):

Any type of personal equipment worn to minimize exposure to specific occupational hazards (e.g. respirators, gloves, head, eye and foot protection, etc.)

3.13. Standard Personal Protective Equipment:

A term often used to convey the standard of PPE to be used while on Kidd Operations property in routine work situations.

4. Roles & Responsibilities

Kidd Operations is responsible to perform hazard assessments of all work areas to determine if hazards are present, or are likely to be present, which require the use of personal protective equipment (PPE).

If such hazards are present, or likely to be present, Kidd Operations shall:

- Select, provide and require the use of appropriate PPE for employees, and
- Communicate PPE selection decisions to employees and contracting companies.

Management Team is responsible to identify hazards based on operational activities and environments, to minimize risk and prescribe suitable PPE where hazards cannot be eliminated. In addition, the management team is responsible to provide the resources, training and direction necessary to ensure that an effective PPE program is maintained.

Supervisors are responsible to ensure that employees and contractors working on either their crew or within their department, select the appropriate PPE based on the hazards identified by Kidd Operations or anticipated with the work activity. In addition, supervisors are responsible to ensure that the appropriate PPE is being worn correctly.

Employees and contractors are responsible to wear or use personal protective equipment, clothing and devices as necessary to protect themselves from a particular hazard to which they may be exposed. In addition, all workers are required to validate the condition of the PPE and replace if necessary.

Safety Department is responsible for the PPE Program, lead assessments and ensuring the effectiveness of PPE. In addition, the safety department manages and administers the PPE accounts for Kidd Operations.

Procurement is responsible to approve all PPE Suppliers that service Kidd Operations. The 'Preferred Supplier' is to follow all guidelines and procedures as specified by Kidd Purchasing Department and the PPE Committee.

5. Safety Objectives

The ultimate safety objective at Kidd Operations is to create and sustain an injury free, safe work environment for everyone onsite. Zero harm is our goal!

In order to accomplish this goal, Kidd Operations has several strategies in place to collectively control and assess hazards. This includes, but is not limited to the safe work permits, fatal hazard protocols, job spot observations, job task observations, workplace inspections (beat inspections & safety tours), training and the PPE Program.

Most importantly, the sites' Risk Register provides opportunities for the site to identify hazards and implement the appropriate controls for workers, which includes PPE.

As a result, all workers exposed to a health and safety hazard that cannot be eliminated through engineering or other controls must adhere to the PPE requirements found in this program. Any deviation from this program must be approved by the PPE Committee.

While many external standards and codes are utilized to formulate 'best practices' at Kidd Operations, none are legally enforced unless specifically adopted by this program or directly referenced by law. If clarification is required on a particular application, advice may be sought from the Manager, Health and Safety, Safety Coordinators, Senior Industrial Hygienist and/or Senior Occupational Health Supervisor.

6. Additional PPE Considerations

Along with the use of personal protective equipment, training is equally important for each user. For that reason, all workers are encouraged to consider the critical error reduction techniques, Look, Analyze, Work on Habits and Self-Trigger and hazard identification through the use of Personal Pre-Task Risk Assessments, adequate work planning and HSEC reviews.

PPE will not eliminate the hazard, but it can reduce or minimize exposure or contact with physical, chemical or biological agents.

Kidd Operations requires that all workers who wear PPE be familiar with the following;

- The potential hazards and the type of protective equipment that is available
- Be aware of the type of protection the PPE provides,
- Wear the PPE which provides a level of protection greater than the minimum required to protect workers from a hazard,
- Knowledgeable to make informed decisions regarding PPE selection for work situations that are not covered by standard operating procedures and
- Are trained in the proper use, maintenance and storage of the PPE.

Workers must abide by the following additional rules:

- Outerwear must not be loose fitting or torn
- Shirts and sleeves must be tucked in or tied
- Hoodies are not permitted to be worn under PPE.
- Jewelry should not be worn when working with electricity or machinery
- Long hair must be pulled back and tied

Contact lenses are only allowed in office environments. Contact lenses are prohibited in areas such as underground, outside on industrial sites, and surface plants.

7. Maintaining PPE

PPE maintenance is the responsibility of both the user and employer. Users must identify defective PPE and repair or replace it as appropriate. PPE training must equip the user with the required knowledge to identify defects and address them before workers put them to use.

At the mine, a PPE wash station facility is set up in the coverall dispenser room and provides amenities to assist in caring for PPE.
Some specific PPE maintenance strategies are listed below. Others may result from specific procedures or manufacturer's recommendations.

Item	Detection Method	Defect	Action
Footwear	Visual, pre-work inspection	Worn tread, worn body, holes, etc.	See Supervisor for replacement instructions
Clothing	Visual, pre-work inspection	Worn, holes, improper fit, inadequate for task.	See Supervisor for replacement instructions.
	Visual, ongoing	Soiled	Worker replaces with clean clothing and has soiled clothing laundered.
Hand Protection	Visual, pre-work inspection	Worn, holes, improper fit, inadequate for task.	See Supervisor for replacement
Eye Protection	Visual, pre-use inspection	Vision impaired	User cleans lenses as required. Replace as necessary. Prescription Glasses - See Superintendent
	Visual, pre-use inspection	Improper fit, Inadequate for task	Report to Supervisor, replace as required
Head Protection	Visual, pre-use inspection	Soiled	User cleans as required
	Visual, pre-use inspection	Suspension system showing signs of wear and tear or has reached the manufacturer recommended replacement date of 1-year	User exchanges hat suspension for new one.
	Visual, pre-use inspection	Hat has been subjected to impact	User exchanges hat for new one.
	Visual, pre-use inspection	Hat has reached the manufacturer recommended replacement date of 5-years	User exchanges hat for new one.
Hearing Protection	Visual, pre-use inspection	Soiled	Disposable ear plugs – replace as necessary. Ear Muffs – user cleans as required.
Respiratory Protection	Visual, pre-use inspection	Soiled	Worker performs minor cleaning as required.
Respiratory Protection	Visual, pre-use inspection	Broken or defective parts	Exchange respirator at satellite or main warehouse. Maintenance or repairs performed by trained personnel only.
Respiratory Protection	Performance	Ineffective / dirty cartridges or filters.	Replace at satellite or main warehouse
Self-Rescuers	Visual, pre-use inspection	Guage indicator is not in green OR case is cracked OR excessive gap between cover and base OR dirt, debris or moisture visible through case.	Advise your Supervisor. Sign out a spare until your unit is replaced.
Ice Grips	Visual pre-use inspection.	Broken or defective parts.	User exchanges for a new pair.

8. PPE Requirements at Kidd Operation

Although Kidd is one operation, the hazards associated with both the Mine and Mill sites are considerably different. Therefore, specific PPE requirements identified in this program may vary slightly. For additional clarification of the requirements, please contact the Safety Department.

9. PPE Exemptions

In addition, some areas on site are exempt from the Kidd Operations PPE requirements based on activity and level of risk.

Examples of exemptions from the standard PPE are listed below:

- While traveling between change facilities / offices and the property boundary, this includes building entrance areas while waiting for transportation.
- While inside the Main Gatehouse, or while waiting immediately outside the main gatehouse
- While traveling between the main gatehouse to the concentrator building
- While performing work in an office setting
- While in any designated lunchroom / eating facility for the purpose of lunches or breaks, this includes the waiting room at #2 collar.
- Any additional exemptions must be authorized by the department superintendent and supported by the Manager, Health and Safety; only where written requirements do not exist.

Nevertheless, there may be circumstances when a worker is exposed to an increased risk of injury in one of the above locations. Should risk levels increase, workers are to take the necessary precautions required in order not to expose themselves or any other persons in the area to an increased risk of injury.

Examples may include:

- Tradespersons installing light fixtures in a lunchroom setting.
- Janitorial staff using or transferring hazardous chemicals or cleaners in an office setting.
- Delivery persons coming onto the industrial site.

10. PPE Requirement for Contractors

It is recognized that contract service providers supply most of the PPE requirements for their workers and as such, have not gone through a PPE Committee approval process. PPE provided by contract service providers must be at least equal to or better than Kidd standards in terms of protection and performance. Any questions or concerns from contractors should be directed to their contact persons or the Kidd safety department.

11. Kidd Operations Standard PPE

Kidd Operations standard PPE is a term often used on site to convey the minimum standard of protection required while performing any routine work assignment. All workers should be knowledgeable to make informed decisions regarding PPE selection for work situations that involve standard PPE, along with additional PPE requirements that are covered within specific standard operating procedures.

Standard PPE at Kidd Operations consists of the following;

- Head Protection
- Eye Protection
- Hearing Protection
- Hand & Skin Protection
- High Visibility Clothing
- Foot Protection

11.1. Head Protection

Head protection is a standard PPE requirement at Kidd Operations Every worker who is exposed to the hazard of head injury shall wear a protective hat that consists of a shell and suspension system that will adequately protect a worker's head against impact and from flying or falling small objects.

The Kidd Mine minimum standard for head protection is Class C, Type 1, impact protective headwear, MSA Top guard cap, while the Mill is Class E, Type 1. Class C general usage (non-conducting) protects against maximum voltage of 2200 ± 20 V for 1 minute.

- Hard hats must have reflective tape on them in a pattern that gives them visibility from all sides. One 3" stripe located on each side of the lamp bracket holder or Kidd Operations logo, one 3" stripe located on each side of the ridge on the top of the hat, one 3" stripe located on each side of the ridge at the back of the hat, one 2" stripe located on each side of the hat right beside the ear muff holder and one reflective stripe or circular patch located on each ear muff.
- Hard hats must have the employees name with $^{1}/_{4}$" high lettering on the front of the hard hat located under the lamp bracket or Kidd Operations logo.
- Hard hats must have the emergency phone number and employees' payroll number located on the inside of the hat.
- Any hat subjected to impact must be changed out immediately.
- When used underground, a hard hat must have a proper means for affixing an approved light and fastening the lamp cord. In addition, when used underground, a hard hat must have ear muffs attached.
- Ball caps are not to be worn beneath hard-hats. Sweatbands and bandanas are allowed provided they don't interfere with the function of the hat and suspension.
- Nothing may be stored in the void between the suspension and shell that will affect the performance of the hat and suspension.
- MSA Kidd approved hard hats are not designed to be worn with the suspension reversed unless specifically designed to do so and display the manufacturer's reverse orientation mark.

11.2. Eye Protection

Selection of safety eyewear shall be determined in accordance with a personal pre-task risk assessment of the work area or associated task. Please refer to the Safe Work Permit Process (KOP-SAF-PRG-00016) for information related to hazard recognition for specific activities.

All protective eyewear at Kidd Operations is required to meet the CSA Z94.3-92 or ANSI Z87.1 Standards.

11.2.1. General

Eye protection is a standard PPE requirement at Kidd Operations. Any workers exposed to the potential risk of eye injury, shall wear safety glasses that consist of polycarbonate lenses and plastic frames with permanently affixed side shields.

Class 1A
Spectacles with side protection

Class 1B
Spectacles with side and radiation protection

Employees requiring corrective lenses can obtain Prescription Safety Glasses from authorized vendors following approval by the Occupational Health Center. Please obtain an authorization form from OHC prior to visiting an optometrist.

11.2.2 Sunglasses & Photochromatic Lenses

Photo-chromic (transition) lenses may be approved for certain workers based on a pre-task risk assessment completed by the supervisor on form KMN-09-HS-FRM-22231 Request for Photo-Chromic Lenses. Once complete, the form is returned to Occupational Health.

Safety Style Sunglasses are also permitted when there is a risk of glare. Please refer to CSA Z94.595 Non-prescription Sunglasses.

11.2.3 Goggles & Faceshields

Workers exposed to chemical substances that can cause mechanical or chemical irritation of the eyes must wear goggles instead of safety glasses to prevent liquid or chemical splash, irritating mists, vapors or fumes from contacting the eyes. Additionally, when working with high hazard substances, workers must also wear a face shield to protect the entire face against inadvertent exposure.

11.2.4 Full Face Respiratory Protection

Full face respiratory protective equipment shall be used to protect the eyes and face when a substance is an eye or facial and respiratory hazard. (i.e. ammonia, dusty conditions in an NVR, sulfur dioxide, etc.). For further information, consult the Respirator Selection Matrix in the Respirator Protection Program or consult the Health and Safety Department.

11.2.5 Welding Eyewear

Safety eyewear used during welding, cutting or grinding shall conform to the requirements of 12.6.

11.3. Hearing Protection

Hearing protection is a standard PPE requirement at Kidd Operations and is required whenever noise levels exceeds 85 decibels (dBA).

Where noise elimination or other controls are not practical or reasonably attainable, PPE must be used to protect workers. In order to ensure that all workers subjected to noisy environments are protected from undue risk associated with noise exposure, including permanent hearing loss, Kidd Operations requires all workers to use disposable ear plugs, custom moulded ear protection or cap mounted ear muffs. All hearing protection at Kidd Operations is required to meet the CSA Z94.2-94 standard.

- The “Classic E-A-R” (yellow) foam plug provides a noise reduction factor of 28 decibels
- The “Howard [eight” (red/orange) foam plug provides a NRR of 33 decibels
- The “Howard [eight” (green) foam plug provides a NRR of 30 decibels
- Custom made hearing protection is also available. See the Occupational Health Centre Nurse for information on scheduling your appointment.

11.3.1. Double Hearing Protection

In some cases, use of single hearing protection alone is not sufficient to reduce noise exposure. Double hearing protection is required whenever noise levels exceed 105 decibels (dBA). Double hearing protection (plugs + muffs) must be worn in the following instances:

- Wherever indicated by double hearing protection signage,
- Within three meters (ten feet) of any operating main or auxiliary fan,
- Within three meters (ten feet) of operating equipment such as:
  - Drills (Jumbo, MacLean, Production),
  - LHDs, mobile rock breakers,
  - Utility (haulers, boom trucks, transmixers, shotcrete shooters)
  - Vacuum trucks
  - Any air arc gouging cutting
  - Within Remote Drilling barricades.

For additional information see KMN-09-HS-STD-00001 Kidd Mine Hearing Protection Standard and KOP-OCH-PRG-00005 Hearing Conservation Program.

11.4. Hand Protection

All workers on the industrial sites shall wear hand protection suitable for the work that is being performed.

Use of gloves is a mandatory requirement while working underground. There may be situations where the wearing of gloves during a task could represent an additional hazard such as slow rotating equipment or intricate electrical or instrumentation work. In these instances, the worker will need to demonstrate that a personal pre-task risk assessment was conducted and that gloves do not need to be used for that particular task. The risk assessment is to be recorded on the worker's SafeWork card.

In addition, gloves must be worn when leaving the cage or vehicle, and apart from the tasks noted above, gloves shall be worn at all times other than inside a vehicle, refuge station or lunchroom.

Standard hand protection consists of a full-grain leather palmed work glove with a canvas backing, commonly known as a general purpose glove. This type of glove provides good abrasion protection and is suitable for dry, chemical-free applications.

Depending on risk assessment performed by the area superintendent and/or supervisor, alternative hand protection may be required. (i.e., chemical resistant, cut resistant, disposable and specialty gloves)

11.4.1. General Purpose Gloves

Typically designed for the work but may have ventilated or 'breathable' backs for operator comfort. Examples of general purpose gloves are:

- Full grain leather, canvas backed work gloves, (Kidd Standard Work Glove)
- Split grain leather, canvas backed work gloves (split leather resists deformation when exposed to moderate heat and allows improved grip over full grain leather).
- Split grain leather, cotton backed work gloves (better performance in moderate heat environments).
- Nitrile, PVC or Rubber Coated or palm coated cotton gloves (good grip with limited chemical protection on palm or coated area only; should not be used where impermeable chemical protection is required).
- Winter-lined, any of the above units may be used with a winter lining for cold applications.

11.4.2. Chemical Resistant Gloves

Chemical resistant gloves are designed to provide impermeable protection from potentially heavy exposure to chemicals. Chemical resistant gloves may be purchased in lined and un-lined versions. Typically, lined versions give better cut-resistance and improved wear, while sacrificing some dexterity. Unlined chemical resistant gloves provide good dexterity (better for handling small parts) but are not suited to cut and tear risks.

Chemical resistant gloves come in various materials:

- Neoprene
- Natural Rubber
- Natural Latex
- Nitrile
- PVC

Neoprene and PVC gloves offer excellent protection against acids. Neoprene is the preferred choice for handling liquid propane (propane dissolves natural rubber). Nitrile gloves provide protection from a large range of chemical combinations.

When choosing an appropriate chemical glove it is important to consult specific SDS sheets and glove manufacturer's specifications. All new chemical products brought on site are reviewed and glove recommendations are provided on the New Product Alert Inter-office Memo that is attached to the product listing in the 3E online system (View SDS & Attachments, Product Notes). Assistance in glove selection can also be obtained from members of the PPE Committee or the Safety Department.

11.4.3. Cut Resistant Gloves

Some glove models are designed specifically for cut resistance. These gloves may contain steel strands, steel chain, Kevlar or other materials with cut-resistant properties. Some chemical or general purpose gloves also have improved cut-resistance. Any applications requiring enhanced cut protection should be referred to the PPE Committee for consideration and recommendations.

11.4.4. Disposable Gloves

Gloves made of natural rubber, latex or vinyl can be purchased in single use (disposable) weights. These are acceptable for light laboratory work, medical examinations, light janitorial work etc. Disposable gloves do not have good wear characteristics but allow great dexterity for the user.

11.4.5. Specialty Gloves

Specialty gloves include ergonomically designed gloves, impact resistant gloves, impact resistant glove inserts, anti-vibration gloves and inserts, thermal protective (extreme heat or cold), aluminized (radiant heat resistant), flame resistant (arc flash, welding applications). Specialty gloves should be chosen based on specific hazards identified in the workplace or procedure.

11.5. Skin Protection

Kidd Operations' requires the use of long sleeves and full-leg coverage for any clothing worn on the industrial sites or underground. Additional protective clothing such as protective sleeves, disposable coveralls, and slickers are available when conducting tasks that may soak or saturate permeable clothing. If in doubt, please consult with the Safety Department.

Hard-hat neck shades and neck coverings are available for outside workers who are required to be in direct sunlight. Sunscreen (SPF30) and zinc oxide cream is also available. All workers required to be outside, industrial or non-industrial, should be aware of the forecast UV (ultraviolet index) index.

Environment Canada has developed a UV Index to inform about the strength of the sun's UV (ultraviolet) rays. The higher the UV Index number, the stronger the sun's rays, and the greater the need to take precautions. The table below outlines the sun protection actions recommended at different levels of the UV Index.

UV Index	Description	Sun Protection Actions
0-2	Low	• Minimal sun protection required for normal activity • Wear sunglasses on bright days. If outside for more than one hour, cover up and use sunscreen • Reflection off snow can nearly double UV strength. Wear sunglasses and apply sunscreen
3-5	Moderate	• Take precautions - cover up, wear a hat, sunglasses and sunscreen especially if you will be outside for 30 minutes or more • Look for shade near midday when the sun is strongest
6-7	High	• Protection required - UV damages the skin and can cause sunburn • Reduce time in the sun between 11 a.m. and 4 p.m. and take full precautions - seek shade, cover up, wear a hat, sunglasses and sunscreen
8-10	Very High	• Extra precautions required - unprotected skin will be damaged and can burn quickly • Avoid the sun between 11 a.m. and 4 p.m. and take full precautions - seek shade, cover up, wear a hat, sunglasses and sunscreen
11+	Extreme	• Values of 11 or more are very rare in Canada. However, the UV Index can reach 14 or more in the tropics and southern U.S. • Take full precautions. Unprotected skin will be damaged and can burn in minutes. Avoid the sun between 11 a.m. and 4 p.m., cover up, wear a hat, sunglasses and sunscreen • White sand and other bright surfaces reflect UV and increase UV exposure

11.6. High-Visibility Safety Apparel (HVSA)

High visibility clothing is a standard PPE requirement at Kidd Operations. In order to increase visibility, all workers and contractors at Kidd operations, either underground or on surface in the industrialized sites, are to wear Class 3 level 2 safety apparel as defined by CSA Z96-15

All workers and contractors at Kidd operations shall wear either coveralls or pant and shirt combinations that shall be:

- Of a bright colored background; either blaze orange or international yellow on both pant and shirt or entire coverall with retro-reflective material for stripes;
    - Vertical stripes on the front of the torso from shoulder to waist
    - X stripe pattern across the back
    - Stripe around waist
    - Right and left sleeves, horizontal stripe extending entirely around the arm near the cuff.
    - Right and left leg, horizontal stripe extending entirely around the leg, below the knee.
    - All reflective stripes or bands shall be a minimum of 2” wide

11.6.1. Class 3 Coveralls

Note: Kidd Standard Coveralls are bright orange, however, bright yellow is acceptable.

11.6.2. Class 3 Jacket and Pants –

Note: The jacket (or shirt) must be long-sleeved as short-sleeved shirts are not permitted on the industrial site.

11.6.3. Class 3 Long coat or slicker

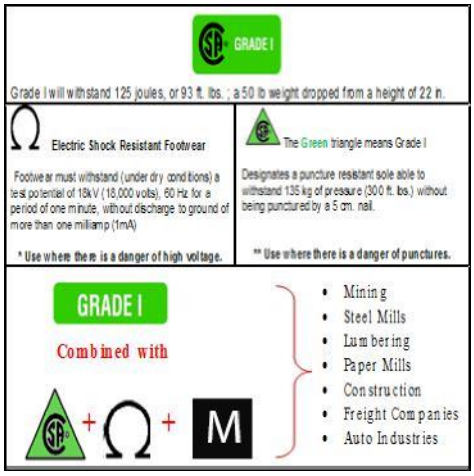
11.7. Foot Protection

Foot protection is a standard PPE requirement at Kidd Operations. Every worker who is exposed to the hazard of foot injuries shall wear protective footwear consisting of a boot or shoe that is Certified Grade 1 Footwear with internal metatarsal protection.

This is signified by the distinctive green 'triangle' patch with the CSA stamp, the black square patch with the M along with the Greek 'Omega' symbol for electric shock resistance located on the right boot/shoe tongue or side.

The table below shows the Kidd Standard PPE requirement safety foot wear.

All Kidd Operations workers who perform work on non-industrial sites (such as office settings) are required to wear footwear that consists of a shoe that has complete coverage of the entire foot and is reasonably flat or heel-less.



12. Hazard Specific PPE Requirements at Kidd Operations

In addition to the standard PPE requirements at Kidd Operations, there are several other hazard related work activities performed on site that require PPE. Additional PPE requirements shall be referenced in more detail in each applicable standard operating procedure (SOP).

12.1. Shower Sandals

For hygienic and slip and fall prevent purposes, Kidd Operations requires all workers to use shower sandals while in the men's and lady's dry.

12.2. Respirator Protection

Kidd Operations requires that all workers wear respiratory protection to control exposure or potential exposure when working in hazardous atmospheres.

Supervisors must ensure workers under their watch are appropriately fit tested and trained for the type of respirator worn by filling out the Fit Test Request Form available from the Occupational Health Center.

12.3. Self-Rescuers

All workers underground must carry a self-rescuer on their person at all times when working underground. All workers must have received self-rescuer training from the Training Department.

12.4. Ice Grips

When working on surface at Kidd properties it is mandatory to have ice grips on your work boots. This requirement is in effect every year between October and April, as weather conditions dictate.

12.5. Drowning Prevention

Any worker travelling on or near open water or ice is required to wear a lifejacket or immersion suit with PFD. All lifejackets and immersion suits must be approved by the Canadian Coast Guard, Transport Canada, or Fisheries and Oceans Canada; as per KOP-SAF-PRG-00008 Drowning Prevention Program.

12.6. Chainsaw Use

Additional PPE such as cut resistant closed leg chaps and visors must be worn while operating chainsaws. Workers using chainsaws must also wear footwear that displays the green ‘fir tree’ symbol, signifying approval for the use with chainsaws. All operators must have received chainsaw training from the Training Dept.

12.7. Working with Energy Sources

Electrical workers at Kidd Operations routinely perform work where the risk of Arc Flash exposure is present. All workers who are exposed to Arc Flash hazards or within Arc flash boundaries must be protected with appropriate PPE.

- Category 2 Flame retardant clothing that protects against energy exposures of 8 calories per centimetre squared (cal/cm2)
- Type 1, Class E Hard-Hat
- Face shields, hoods, coats and other PPE may be required based on the Arc Flash Rating of the equipment.
- Employees who work in close proximity to live electrical current may require a variety of electrically insulating protective equipment including CSA approved slot mount di-electric ear muffs (PEL H7P3E01)
- Refer to the KOP-MTC-PRG-00007 Workplace Electrical Safety Management Program for more details pertaining to additional PPE.

12.7.1. Arc Flash Hazard/ Risk Category Matrix

Hazard /Risk Category	Arc Flash Protection (Clothing Description / Number of Clothing Layers in parentheses)	Required Minimum Arc Rating of PPE (J/cm2 (cal/cm2))
0	Non melting, flammable material (untreated) Cotton, wool, rayon, silk or blends of these materials with fabric weight of at least 4.5 oz/yd2 (1)	N/A
1	FR shirt and FR pants or FR Coveralls (1)	16.74 (4)
2	Cotton underwear-conventional shorts sleeve and brief / shorts, plus FR shirt and FR pants (1 or 2)	33.47 (8)
3	Cotton underwear, plus FR shirt and FR pants, plus FR coverall, or cotton underwear, plus two FR coveralls (2 or 3)	104.6 (25)
4	Cotton underwear, plus FR shirt and FR pants, plus FR 4 multilayer flash suit (3 or more)	167.36 (40)

- Electrical protective gloves that meet the requirements of the electrical work being performed
- High Voltage gloves used on construction projects must comply with section 193 of OHSA Reg. 213/91 Sec (193).
- Refer to KOP-MTC-PRG-00007 Workplace Electrical Safety Management Program for more details.

All high voltage gloves must be used and maintained as per the manufacturer's recommendations which include periodic tests to confirm performance of the glove. Any required records of testing must be maintained by the Electrical Supervisor in charge of the equipment. Gloves rated for use with voltages above 5000 volts AC (20,000 volts DC) must be tested and certified periodically to ensure they can withstand the voltages for which they are rated (applied to gloves in service). Gloves in stock (not in use) must be retested.

12.8. Welding, Cutting & Grinding

12.8.1. Face Shields

Face shields are mandatory at Kidd Operations when workers are performing any abrasive cutting or grinding operations (hand grinders, cut-off saws, pedestal grinders etc.). Face shields must be constructed of polycarbonate material when exposed to high heat environments. Face shields are not considered a primary means of eye protection; therefore approved safety glasses must be worn with face shields.

Acetate face shields may be used in certain chemical applications where radiant heat is not a hazard. Tinted or light-filtering face shields may be used in situations where light radiation hazards are present. Examples of this are oxy-acetylene cutting applications. Tinted face shields must not be used when it interferes with normal vision or creates an additional hazard.

Some specialty helmets contain integrated face-shields. These shields must meet the impact protection requirements of CSA Z94.3-92.

12.8.2. Welding Filter Plates

Workers who arc weld must use appropriate head-gear or hand-held welding shields equipped with tinted filter plates of shade 10-14 as defined by CSA Z94.3-92. Safety glasses must be worn in conjunction with welding helmets and hand-held welding shields.

12.8.3. Cutter's Goggles

Oxy-Acetylene cutting generates lower levels of radiation than does arc welding, however workers engaged in this activity must wear appropriate eye protection. Welder / cutter goggles equipped with filter shades in the 3-6 range are acceptable.

12.9. Working at Heights

Any worker who could fall 1.8 meters or more must be trained in the use of, and wear the appropriate fall restraint/prevention equipment. All fall restraint/prevention equipment must meet CSA Standard Z259.1-95. "Safety Belts and Lanyards" or Z259.10-M90 "Full Body Harnesses".

Full-Body Harness Systems must be used in fall arrest applications. They must meet CAN/CSA-Z259.10-M90 (R1998): Full Body Harnesses.

Safety belts may be used in travel restraint applications at the mine site and must meet CAN/CSA-Z259.1-95 (R1999): Safety Belts and Lanyards. They may not be used for fall arrest in any circumstances.

Lanyards (lifelines) must meet CAN/CSA-Z259.1-95 (R1999): Safety Belts and Lanyards. Scaffold lanyard hooks are prohibited in fall protection applications at Kidd Operations with the exception of Scaffold erection or disassembly activity. Any deviation from this requirement must be approved by the Safety Department and accompanied by a procedure or written instruction to workers.

Shock absorbers must be used in all fall arrest applications unless their use would in itself create a hazard. Shock absorbers must meet CAN/CSA-Z259.11-M92 (R1998): Shock Absorbers for Personal Fall-Arrest Systems. Ensure the correct absorber is used for body weight.

Connecting components (Karabiners, links, hooks etc) must meet CAN/CSA-Z259.12-01: Connecting Components for Personal Fall Arrest Systems.

13. Reference Documents

CSA Standards
Occupational Health and Safety Act
American National Standards Institute
KMN-09-HS-FRM-22231 Request for Photo-Chromic Lenses
KMN-09-HS-STD-00001 Kidd Mine Hearing Protection Standard
KOP-OCH-PRG-00005 Hearing Conservation Program
KOP-SAF-PRG-00008 Drowning Prevention Program
KOP-MTC-PRG-00007 Workplace Electrical Safety Management Program
KMN-08-HS-PRG-00003 Self-Rescuer Program