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Material Handling Conveyance Management Policy	**Task Risk**	X	**High**
			Medium
			Low
			NA
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Contents

1.0 Policy

This document establishes the minimum requirements for the health and safety of Freeport-McMoRan employees and contract personnel working in, and in connection with, material handling systems.

Policy	The intent of this policy is to provide minimum specifications for the safe design, construction, maintenance and operation of material handling systems. The design, installation, and modification of material handling systems shall be done in conjunction with qualified engineers, personnel familiar with material handling systems and meet the requirements established within this policy.
Scope	This policy applies to all Freeport-McMoRan employees, contractors and vendors who work on or near material handling systems. This policy does not prescribe operation, maintenance or installation procedures specific to all material handling systems or system components. Other applicable standards must be reviewed and adhered to in addition to manufacturer specifications and training. The requirements established within this policy apply to the following type of material handling systems: fabric conveyor belts, steel cord conveyor belts, metal conveyor systems (such as apron / pan feeder systems), screw conveyors, bucket conveyors, and drag chain conveyors, tripper cars, shuttle head conveyors, chutes, and the components that make up these systems.

2.0 Responsibilities and Duties

2.1 Management Responsibilities

It is management's responsibility to ensure compliance with this policy and the expectations outlined below.

Maintain Equipment in Good Working Order	Ensure all material handling systems are in good working order and that regular preventative maintenance procedures are in place. Ensure that manufacturer recommendations and engineering requirements are met and followed. Where a defect or equipment issue will not allow safe operation, ensure equipment is not operated until such repairs can be completed.
Ensure Proper Employee Training	Ensure that all personnel involved with material handling systems are properly trained per the requirements outlined within this document and with pertinent regional, federal and state regulations. Ensure employees are competent and qualified to operate the equipment and complete other tasks associated with the system.

Periodic Inspection	Ensure periodic engineering, operations, and maintenance review of material handling systems and any specialized tooling/rigging.
Review Contractor Requirements	Ensure that contractors working on FCX property are aware of these requirements and training has been documented.
Provide Equipment and Resources	Provide all necessary equipment and resources needed to operate and maintain safe material handling systems.
Maintain Document Control	Maintain all completed inspections and documentation according to the FCX records retention policy.
Identify Critical Risks and Critical Controls	Ensure that critical risks associated with material handling systems are identified and critical controls to reduce or mitigate those risks are in place. Ensure that leadership defines a verification process of these controls to verify use and effectiveness.
Perform Periodic Audits	Ensure that regular audits of material handling systems are conducted to ensure compliance.

2.2 Health and Safety Responsibilities

It is the Health and Safety Department's responsibility to support compliance with this policy, procedures and the expectations outlined below.

Health Monitoring and Sampling	When necessary, health and safety departments may be required to monitor potential exposures and consult on appropriate controls and PPE selection as needed.

3.0 Procedures

Each site with material handling systems will ensure that site-specific procedures comply with this policy at a minimum. All employees will comply with site-specific procedures.

3.1 Inspection Requirements

Equipment that is to be used during the shift shall be inspected by a competent person before being placed in operation. Defects must be corrected following site equipment inspection procedures.

Material Handling System Inspection	• Items affecting safety on the material handling system shall be corrected or other controls put in place and approved by site management before placing equipment into service.
	• Sites will develop a process to ensure structural inspections are completed, action items are tracked and addressed per recommendations.
	• Sites will ensure pre-operational inspections, operational inspections, maintenance inspections, and area inspections meet or exceed FCX policies and procedures.
	• When an entanglement hazard exists, sites are required to provide effective controls necessary to mitigate or eliminate the hazard.
	• The site will develop a management plan to manage unplanned conveyor stoppages to prevent injury to personnel and property damage.
	• Sites must ensure all guarding and pull cords meet applicable regulations and requirements.
	• The site will develop a management plan for conveyor chute inspections. Potential risks may include the following:
	  ○ Open chute doors or hatches that create fall of person exposure
	  ○ Fall of material
	  ○ Engulfment
	  ○ Moving machine parts
	  ○ Air blasters
	  ○ Inflatable liners
	  ○ Other energy sources

3.2 General Requirements

Each operation with material handling systems will follow these key operating practices at a minimum. These general procedures are not intended to stand alone. Sites are responsible for drafting and implementing Work Instructions / Procedures that address these topics at a minimum, as well as any additional practices and site specific hazards.

General Safe Production Requirements	• Designated travel ways will be used. • Riding on conveyors is prohibited. No loose garments should be worn and long hair controlled when traveling or working around energized material handling equipment. No attempt should be made to clear obstructions or clean a moving conveyor. Using a conveyor to transport material, other than for the material which it is designed, is prohibited. Examples of prohibited transportation practices include hauling liners, tools, equipment and personnel on a conveyor belt. At no time, without including additional approved control measures, may an employee be allowed to remove guards while conveyance systems are energized to perform interlock tests.

Traveling and Parking Under Conveyors	Traveling and parking underneath overhead conveyor belts is prohibited unless the equipment is effectively protected from falling material and equipment (i.e. return idler).
Blocked or Plugged Chutes	When plugged chute occurs, the subsequent clean- up or repair efforts may constitute high risk work and must be completed in accordance with FCX Guidelines and Policies.
Industrial Hygiene	Dust and noise sampling shall be taken in accordance with FCX guidelines and controls implemented to minimize exposure.
Preventative Maintenance Activities	Appropriate controls shall be in place to protect employees performing preventative maintenance activities (i.e. adequate access for inspections, extended grease lines for lubricating, remote vibration transducers for RCM, etc.).
Securing Conveyor Against Movement	Where the risk exists for conveyor movement to expose employees to potential hazards appropriate controls must be in place (i.e. emptying conveyors, securing with an engineered clamping device, energy isolation, etc.) prior to performing work.
Clean up Around Moving Conveyors	Procedures and training must be locally developed to address cleanup around conveyor systems. These procedures must address proximity to moving belts, chains, screws, and the type of tools used for clean-up. To eliminate the likelihood of a caught tool pulling an employee into a nip point, tools shall not be equipped with closed ended handles.
Material Build-up	When a potential for fall of material exists and cannot be immediately mitigated controls must be in place to restrict access until clean up can occur. Conveyor structure shall be cleaned off periodically to control fall of material risks and prevent overloading of the conveyance structure. Elevated conveyors positioned over designated travel-ways shall be guarded to protect against falling objects such as idlers, conveyed material, etc.
Belt Replacement and Splicing	Prior to performing planned repairs or replacements of the conveyor belt, the system shall be emptied of material and isolated. For unplanned repairs, the site shall implement controls to manage potential hazards. When repairing or replacing a conveyor belt, it is mandatory that the take-up assembly be fully released to remove tension from the belt. Failure to release the belt tension could result in serious injury or death. When using tabs to pull the belt, tabs must be engineered and rated for the greatest expected load. Prior to cutting a belt, it must be securely fastened to a rated and approved structure using an engineered belt clamp so that it cannot move.

	The belt winder must have all moving parts and pinch points guarded. Specific controls must be in place to manage all energy as a result of the belt being wound or pulled to protect the employees along the entire length of the belt.
Handling and Transportation	The transportation and handling of new conveyor belt rolls shall be done by competent employees using properly rated rigging and handling equipment. Conveyor belt rolls shall be secured from inadvertent movement during transportation, storage and while being installed.

3.3 Energy Identification and Control

Material handling systems can expose personnel to many hazards some of which are unique. Site management is responsible for insuring processes are in place to identify and control hazards effectively. It is the employee's responsibility to support these processes.

Hazard Identification and Control Considerations	If controls are removed or bypassed an assessment of hazards must be performed to insure other effective controls are implemented. Examples of hazards unique to material handling systems : • Tripper car or shuttle head drive systems • Pneumatic cannon systems (air blasters) and auxiliary equipment (i.e. belt magnets) • Energy associated with any equipment that might feed material to or from the conveyor. This other equipment may include conveyors, feeders, crushers, screens and slide gates. • When work is required on a conveyor system, it is important to account for the danger presented by residual energy stored within the system. In many cases it is necessary to release, isolate or control the stored energy from the work area. Energy can be introduced into the system and must be controlled (i.e. counterweight tension released).
Communication as Control	Material handling systems may cover great expanses and involve multiple work groups at different locations. Extra planning and attention shall be given to communication systems during any material handling equipment work due to the administrative nature of this control.

3.4 Safe Access

A safe means of access must be provided to all work locations requiring access to operate, perform conveyor system / component maintenance, clean-up or gain entry into chutes, bins and hoppers. Due to the configuration of material handling systems a fall hazard may exist when climbing onto equipment and performing work.	
Crossovers	A means of crossing conveyors shall be provided and used where it is necessary to pass over conveyors.
Working Platform	Access, including temporary access, shall be properly equipped with standard railings, toe boards and have a fixed ladder, ramp or stairway.
Working on top of Conveyor	If the potential exists for an employee to fall while working on the conveyor, the site shall implement controls to perform this work safely which may include permanent or portable tie off points, hand rail and access.

4.0 Equipment

The safety of personnel and the integrity of material handling systems are largely dependent on the correct specification, installation, maintenance and operation of these devices	
Start-up Warnings	Where applicable, material handling systems must be equipped with a warning system that provides a pre-start notification prior to initiating motion.
Conveyor Alignment	Conveyor alignment shall be maintained to prevent damage to structure, belts or chains and to prevent spillage.
Belt Scrapers/ Cleaners	Belt scrapers or cleaners shall not be adjusted manually where adjustment exposes employees to hazardous belt movement.
Metal Detection/ Removal Systems	Where applicable, metal detection and removal systems shall be installed at strategic locations along material handling systems to prevent accumulation or passage of unwanted metallic substances into feeders, chutes, crushers or screens. Employees who use a heart pacemaker or have other health concerns should consult their personal physician about potential risks prior to working in these areas. Adequate warning signs shall be installed in readily identifiable locations near the magnet assemblies. “Warning” and “Caution” plates and decals on the magnet must not be removed or painted over.
Pull Cords (E-Stop)	Travelways adjacent to unguarded conveyors must be equipped with pull cords along the entire length of each accessible side.

Backstops	Where applicable, backstops or brakes shall be installed, inspected, and tested on the drive units of inclined and declined conveyors and feeders in accordance with manufacturer recommendations. On inclined and declined conveyors and feeders, and where applicable, backstops or brakes shall be installed, inspected, and tested on the drive units in accordance with manufacturer recommendations. Backstops or brakes shall be installed on inclined and declined conveyors and must be inspected and tested in accordance with manufacturer recommendations.
Fire Protection	Conveyor belt material and some ore types can burn and give off noxious gasses that can be particularly hazardous in tunnels, underneath feeders or other confined poorly ventilated areas. Conveyor belts (which may be limited to only portions of the material handling system) shall be evaluated and equipped with fire detection and/or suppression systems as necessary. When hot work is performed around conveyance systems, appropriate controls must be in place to prevent potential ignition sources from contacting conveyors or conveyed material. This must be in accordance with FCX Policies and Procedures. Site emergency response procedures shall specify response to fires on material handling systems. It is recommended not to stop a belt if a pulley fire is identified as it is then more likely to burn and catastrophically fail the belt.
Counterweights	When counterweights are suspended above the working surface, weights shall be confined in a secured enclosure to prevent personnel from traveling underneath the suspended load. In addition when counterweight system can be accessed via travelways or ladders they shall be guarded to prevent personnel from contacting the counterweight assembly. Counterweight systems shall be inspected annually by a competent person to identify and correct any defects in the suspension system.
Guarding	Material handling systems components shall be guarded to prevent individuals from contacting moving machine parts. Guarding shall be readily identifiable as a guard and properly secured. They shall be maintained in a condition that is not easily defeated by intentional or accidental behavior of employees.
Personal Protective Equipment	Personal protective equipment (PPE) will be specifically selected for the hazards that the employees may be exposed to so that they may safely perform the various tasks within the material handling system. Employees and contractors shall wear and must be trained in the proficient use of that PPE.

Communication Devices/System	Communication systems will be provided to ensure continuous contact between all affected personnel.
Rail Mounted Equipment	Equipment shall be provided with a rail clamp, brake or other engineered position locking device for each motion where movement could present a hazard to persons (examples of movement include luffing, slewing and traversing). Rail mounted mobile conveyances shall be provided with both limit switches and rail stops to prevent over travel. The tracks of mobile conveyor systems shall be equipped with pull cord assemblies/ E-Stops positioned around the track segment so that a person falling on or towards the track can readily de-energize the system. Sweeps shall be provided on all rail mounted mobile conveyor systems to deflect objects ahead of the nip points (between the wheel and the track) where a hazard to personnel exists.
Altering Equipment	A Management of Change, or similar process, will be used to document any permanent alterations in accordance with site practices. Any temporary changes made during an emergency must be reviewed and approved by site leadership according to local policy. Any equipment or logical bypasses or jumpers that are implemented must be registered and tracked so as to be removed as soon as possible, considering the appropriate temporary controls that are implemented.

5.0 Training

Awareness training will be provided to all employees and contractors who will work near or directly with the material handling systems. Task-specific training will be provided for all material handling systems employees and contractors who will perform work on our property. All training shall be documented.

Awareness Training Requirements	For sites that operate material handling systems, new employee and refresher training will point out the general risks and hazards of the conveyance systems and define the basic rules that employees and contractors will follow.
Area Specific Training	The specific risks associated with areas of the material handling systems as well as site-specific hazards will be covered in training.
Task Training	Task-specific training will be given for each of the functional areas of the material conveyance systems. Employees will be qualified in each task before being allowed to perform the work, according to site-

	specific and regulatory training requirements.

6.0 Audits

Sites shall establish an audit schedule to ensure compliance with the policy. All audits and action item tracking are to be documented and retained per the FCX corporate record retention policy.

7.0 Variance

If any part of this policy cannot be followed an approved variance is required.

Variance	Special circumstances may exist that prevent all aspects of this policy to be completely followed. Where this policy cannot be followed, for both routine and non-routine work, a Variance form found in the FCX – Global Significant Risk Variance Guideline must be completed, approved and kept on file with an SOP / WI or other work procedure established for future work.

8.0 Definitions

Definitions	
Accessible	Having the characteristic that allows employees to intentionally or inadvertently gain entry into or nearby an unguarded conveyor or hazardous components thereof.
Backstop	A mechanical device to prevent reversal of a loaded conveyor under action of gravity when forward travel is interrupted.
Belt Clamp	Engineered/ stamped, beams, clamps, chains or metal plates secured transversely and capable of holding the conveyor belt in a desired position.
Bin / Hopper	A funnel-shaped chamber or reservoir from which solid materials can be discharged under gravity into a conveyor below. (i.e. 400 ton holding bin feeding concentrate onto a feed conveyor).
Chute	A vertical or horizontal chamber transfer point that allows for material to flow from one conveyor to another or component of the material transportation system.
Competent Person	An individual with the requisite knowledge, documented training, skills, abilities and experience to identify hazards and perform the desired task in a safe manner.

Conveyor	A mechanical system used for the transportation of minerals or materials along a material handling / conveyance system. For this standard, drag chain conveyors, screw conveyors, conveyor belts, Pan and Apron feeders, and others with similar functions and hazardous characteristics are considered conveyors and require the same protective measures as outlined within the standard.
Crossover	Any designed safe work platform equipped with standard railing and stairs designated as a place to cross over a conveyor safely.
Energy Isolation	Specific practices and procedures to safeguard employees from the unexpected energization or startup of machinery and equipment, or the release of hazardous energy during service or maintenance activities.
Guarded By Location	When moving machine part hazards are located out of reach (in all directions) from the working surface. The working surface includes any travelways, permanent safe work platforms and temporary access devices such as ladders, man lifts and scissor lifts.
Head End	The discharge end of conveyor.
Inclined/Declined Conveyor	Conveyor designed to transport material up or down a defined slope.
Locked Out	As used in this standard refers to the act of identifying energy sources, isolating power, placement of a point of operation energy control device and trying out or testing the equipment to verify a zero energy state (LOTOTO).
Magnets	Designed to catch (unwanted) metal before entering feeders, crushers or other areas.
Mobile Conveyor	A conveyor supported by a structure that is capable of moving under its own power and includes but is not limited to, radial stackers and super-portable stackers.
Portable Conveyor	A conveyor supported by a structure that is capable of being moved (not under its own power)
Power Supply	Any energy source feeding the drive motor of a conveyor installation. Other energy sources may be present and must be evaluated prior to work commencing.
Pull Cord (E-Stop)	Pull cord switch also known as Rope Operated Emergency Switch is used as a safety switch to stop the conveyor in case of an emergency. It is also known as pull switch cord. An emergency stop device which includes a steel cable connected to 'kill' switches along the entire unguarded section of an accessible conveyor system

Return Idler	Idler roller which supports the empty/return side of the conveyor belt.
Readily Accessible	Referring to pull cord (conveyor belt) location, means that the emergency stop device is positioned so that persons falling on or against the conveyor belt can easily reach and initiate the stop function associated with the device. The rapid visual contact, recognition and physical availability of an emergency stop device for actuation.
Tail End	The end of the conveyor opposite the direction of material flow.
Take-up	A device used to apply tension to conveyor examples; counterweight, adjustable tail pulley / sprocket.
Trestle	An engineered structure designed to support an elevated conveyor.

9.0 References

OEM Operation Manuals
Government Regulations
FCX and Site Specific Policies and Procedures

10.0 Records

Records applicable to this policy must be retained according to the FCX Records Retention Policy

11.0 Revision History

2016	Initial Release