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1.0 Policy

This document establishes the minimum requirements and procedures for the health and safety of Freeport-McMoRan employees and contract personnel working in, and in connection with, industrial railroads.

Policy	All Freeport-McMoRan (FCX) locations that have an industrial railroad will adopt this policy and ensure that all site standard operating procedures are aligned with it.
Scope	<p>This policy covers all FCX sites and to the extent possible the rail companies that operate on or within FCX property boundaries.</p> <p>Operation of the Industrial Railroad shall include the movement of all railcars from the point of receiving from external providers and within FCX rail yards, including overseeing safe car handling (such as switching, weighing, spotting and processing railcars for loading), as well as the safe loading and unloading of materials or chemicals and rail maintenance when required.</p>

2.0 Responsibilities and Duties

2.1 Management Responsibilities

It is Management's responsibility to ensure compliance with this policy, site procedure and the expectations outlined below.

Maintain Equipment in Good Working Order	Ensure all equipment utilized in the site industrial railroad is in good working order and that regular preventative maintenance procedures are in place. Where a defect or equipment issue will not allow safe operation, ensure equipment is not operated until such repairs can be completed. For cars not owned by FCX, a procedure for noting issues and reporting to the owner for repairs will be developed by the site and implemented. A process needs to be in place to work with the FCX Transportation group to help coordinate movement and/or repair of any defective cars.
Ensure Proper Employee Training	Ensure that all personnel involved with the industrial railroad are properly trained per the requirements outlined within this document and with pertinent other regional, federal and state regulations. Ensure employees are competent and qualified to operate the train and complete other tasks associated with the rail line.
Review Contractor Requirements	Ensure that contractors working on FCX property are aware of these requirements and have been trained.
Provide Equipment and Resources	Provide all necessary equipment and resources needed to implement and maintain safe industrial railroad operations.

Maintain Documents 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 industrial railroad activities are identified and critical controls to reduce or mitigate those risks are in place. Ensure that leadership conducts periodic audits of these controls to verify use and effectiveness.
Perform Periodic Audits of the Industrial Railroad Operations	Ensure that regular audits of tasks performed with industrial railroad activities are conducted by qualified employees. In conjunction with the Health and Safety department, conduct periodic audits of the overall industrial railroad procedures to ensure compliance.

2.2 Health and Safety Department Responsibilities

It is the H&S Department’s responsibility to support compliance with this policy, procedure and the expectations outlined below.

3.0 Program Elements and Requirements

Each site with an industrial railroad will ensure that site-specific procedures comply with this policy. All employees, contractors, and contract employees will comply with site-specific procedures.

3.1 Equipment Inspection

Self-propelled equipment that is to be used during the shift is to be inspected and documented by the equipment operator before being placed in operation and not operated if any critical items, identified on the checklist by an asterisk (*) is found in bad operating order.

Locomotive (self-propelled equipment) Inspection	Any defects found during inspection with critical safety items, as identified on inspection checklist (example in Appendix) requires that locomotive be taken out of operation until defects are corrected.
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Railcar Inspection	<p>Every railcar brought onto FCX property will be visually inspected by a qualified individual for defects (to include load condition and balance).</p> <p>Railcars involved in a derailment will be inspected prior to being put back in service by a qualified individual.</p> <p>Ensure proper DOT labeling is visible and legible.</p> <p>When locomotives coupled to railcars are being inspected or repaired in field, and persons are required to be on or in the car, the locomotive and train brakes will be fully applied. This will allow for proper brake inspection while preventing movement and protecting persons working in the area.</p>
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If brakes are not working, the cars should be set out for repairs at first available point, or proper procedures for train handling should be followed. After inspection, train ground crew will confirm that brakes are operating properly.

See Appendix for Railcar Inspection criteria.

3.2 Track and Supporting Equipment

Where track is located on FCX property and in its control, these minimum standards will be followed. Where track is not on FCX property but used as access to FCX sites, these standards will be shared with third-party providers for consideration and to set expectations.

Class II standards will be referenced as best practice.

As a communication resource, an Industrial Railroad Steering Team will be developed to facilitate global information sharing and collaboration.

General Track Requirements

At a minimum track shall be maintained to Railroad standards set by the Surface Transportation Board or equivalent local country standards.

Bolt holes on track shall not be torch cut except in emergencies. If torched, there must be a plan in place to replace and repair properly.

Maximum Grade Requirements

Switching on grade shall be avoided. If switching must be done on grade, other controls must be put in place to minimize the risk following the FCX- Global Significant Risk Variance Process.

Special evaluation must be completed when operating on grades based on the load and braking capacity.

Road Bed

Must be maintained to railroad standards set by the Surface Transportation Board or equivalent local country standards.

Supers and Curves

The geometry of curves and supers shall be evaluated by a qualified individual (internal or external) to minimize wear and tear on the equipment and on the track. Speed, make-up of cars, wheel tapers, will also be factored into these evaluations.

Shoulders/ Walkways

A minimum 30" (76.2 cm) shoulder from the end of the tie shall be maintained along the track.

Gauge

The inside gauge of rails shall meet the standards outlined by the Surface Transportation Board railroad standards or equivalent local country standards.

Switches

The employee handling the switch or derail is responsible for the position of the switch or derail. The employee will maintain an appropriate clearance (a minimum of 3') between cars on adjacent tracks. The site shall mark the clearance zone based on specific site configuration.

A switch that is tagged as inoperable (or Bad Order) shall not be operated until repaired and an authorized person has placed the switch back in service.

Switches must be inspected and maintained to a site determined frequency by a qualified individual. Details of the inspection frequency and findings will be documented.

See the Appendix for specific switching requirements.

Control of Movement (Energy Isolation Devices)

Evaluation of specific engineered controls for run-away trains or cars, such as Run Away Switch, shall be conducted. Placement of such physical controls shall consider downhill grades, congestion, exposure to the public, and other relevant exposure areas as well as worse case scenarios (speed of train for example). This evaluation requires involvement of qualified persons and/or an engineer design for appropriate selection of control and placement of physical controls.

Locations where personnel are exposed to rail traffic, such as unloading and loading areas, will be protected by derailleurs or other physical engineered control devices. Ingress into these areas will be coordinated by a site defined procedure.

Derailleurs shall be installed properly for the rail to which it is applied and maintained in good working order. Derailleurs shall be visible to train ground crew.

All derailleurs shall be in the derail position to prevent uncontrolled entry to work areas of trains. Where exposure to personnel exists, a physical control must be in place and incorporated into rail lock-out policy.

Derailleurs utilized as part of a Lockout Tagout Tryout (LOTOTO) must be covered in a site specific procedure and training. Sites shall document the location of all derailleurs and note which fall under the site LOTOTO procedures; this map will be shared with employees, managers and any third parties.

Re-railing

Re-railing shall be done in a manner appropriate to conditions. Pre-job risk assessment will be conducted, including lifting plan review by FMI qualified personnel, and documented to determine the proper equipment and controls that will be utilized for safe re-railing.

Rail Crossings

Sites must evaluate all railroad crossings to determine appropriate signage and or installation of signals.

Definition: Signals are defined as warning bells, lights, and automated railroad crossing arm to be automatically activated as train approaches and de-activated as train travels away from rail crossing. This will be referred to as “signaled rail crossings” in the document.

At signaled rail crossings, if a signal is determined to be inoperable (warning bell, lights or automated crossing arm), then the intersection must be cleared by the train ground crew and controlled prior to the locomotive entering the intersection. When clear to do so the train may proceed at normal speed.

Signaled rail crossings must be inspected monthly, quarterly, and annually for proper operation of all controls by qualified inspectors. Records of the inspections must be retained per the Company's Record Retention policy and be retrievable for review.

See the Appendix for specific switching requirements.

3.3 Rail Cars and Locomotives

Each operation with industrial railroad will follow these key operating practices at a minimum.

**Securing
Parked
Railroad
Equipment**

There shall be no less than two hand brakes set on any train at any time. **If in doubt of percent of grade set all hand brakes.**

Wheel chocks, designed for rail car use, shall also be used in conjunction with handbrakes when it is necessary to protect personnel and/or equipment from runaway or moving railroad cars. Recommended minimum number of handbrakes to be set according to grade percentage:

- 1% grade one brake per 330 tons (300 mt)
- 2% grade one brake per 200 tons (181 mt)
- 3% grade one brake per 111 tons (100 mt)
- >3% shall have all hand brakes set

Where brakes are not functional, railroad cars must be blocked or otherwise secured to prevent movement. Wheel chocks, designed for rail car use, or other adequate means such as chaining to the rail, use of wedges, etc. shall be used. **NOTE:** Single parked cars will have the handbrake set and will be chocked.

Never park cars without air system being set into "emergency" mode.

Sites shall conduct a grade study and sign or mark grades along the track. Sites shall also retain a grade survey document, to be periodically verified and updated should any changes occur.

When shutting down locomotives all handbrakes shall be set. Locomotive shall not be left unattended while on a grade except in the case of an emergency and only with additional controls put into place to prevent movement.

The generator field switch will be left in the "off" position to prevent it from inadvertently being set into motion. Independent brake handle shall be left in the fully applied position when vacating the cab. The locomotive reverser and brake handles must be removed from the control panel when locomotives are left unattended outside the fenced boundary of FCX property.

Wheels	Locomotive wheels shall be periodically inspected to ensure tolerance of flange, diameter and taper.
Dump Doors	Ensure dump doors on cars are closed after a load is dumped. If a car must be moved short distances with the dump doors open, ensure the doors and chains will clear tracks and crossings.
Maximum Speeds	<p>Equipment operating speeds shall be consistent with conditions of track, grades, clearance, visibility, and congested work areas. Engineers are responsible for exercising caution and good judgment, maintaining safe and reasonable speeds and reducing train speeds for curves, and according to traffic and track condition.</p> <p>The train engineer is to observe all posted speed limits, and to operate based on the conditions present on FCX property as well as on external rail. Speed limits should be posted in key locations. Limits not to exceed:</p> <ul style="list-style-type: none"> • Yard Limit – 5 mph (8 kph) • Scale Limit – 5 mph (8 kph) • Downhill – 10-12 mph (16-19 kph) • Uphill – 15-17 mph (24-27 kph) • Max speed on a Class II track – 25 mph (40 kph)
Shoving Movements	<p>Shove movements occur when rail cars are in the lead and locomotives are in the rear to direction of motion. Details of the shove movements are to be established prior to shoving; including (but not limited to) communication requirements, radio frequency, hand signals, crew positioning. Best practice is to provide dedicated radio frequency to all participating crew members involved in the shove movements. The employee(s) providing direction for the movement also must ensure intersections are secured and shall not engage in any task unrelated to the shove movement.</p> <p>When shoving cars into a spur track, train slack will be controlled by use of an adequate brake application while pushing back to a berm or end of track to prevent damage at the end of the track.</p>
Tonnage /Weight	Limitations shall be set based on rail design, grade of accent/decent, and to locomotive and car manufacturer’s specifications.
Excessive Dimension Loads	<p>Place excessive dimension loads on or near the head of the train for best operator’s vantage point.</p> <p>When handling excessive dimension equipment ensure the equipment will clear nearby objects, buildings or structures, including equipment on adjacent tracks.</p> <p>Flat cars, open top cars or cars with loads that protrude beyond the car ends or if shifted, would protrude beyond the car ends, must have proper tie-downs to secure the load.</p>
Approaching Railroad Crossings	Trains and engines must be prepared to stop when they approach any railroad crossings. Train engineer shall be alert to potential inoperable signaled rail crossings to coordinate with train ground crew to follow procedures listed in Signal Crossing section of this policy.
Sounding Whistle	The whistle must be at 96 dB at 100 feet. The whistle may be used at any time as a warning regardless of any whistle prohibitions.

The required whistle signals are illustrated by “o” for short sounds and “----” for longer sounds.

	Sound	Indication
(1)	Succession of short sounds	Use when persons or animals are on the track at other than road crossings at grade. In addition, use to warn railroad employees when an emergency exists. Such as a derailment. When crews on other trains hear this signal, they must stop their train until it is safe to proceed.
(2)	----	When stopped: air brakes are applied, pressure equalized.
(3)	---- ----	Release brakes. Proceed.
(4)	o o	Acknowledgement of any signal not otherwise provided for.
(5)	o o o	When stopped: back up. Acknowledgement of hand signal to back up.
(6)	o o o o	Request for signal to be given or repeated if not understood.
(7)	---- o	<p>Regardless of any whistle prohibitions:</p> <p>Approaching train ground crew, equipment or other individuals on or near the track.</p> <p>After sounding the initial warning for train ground crew or equipment or other individuals, sound whistle signal (4) intermittently until the head end of the train has passed the men or equipment or other individuals.</p> <p>Whistle warning is not required:</p> <ul style="list-style-type: none"> • When there is an adjacent track and train ground crew or equipment or other individuals are beyond the farthest rail of the adjacent rack • For members of the same crew associated with movement of their engine unless necessary to warn or alert a crew member <p>Do not sound whistle in designated mechanical servicing or repair areas, unless for emergency or when approaching roadway workers.</p> <p>Within designated whistle quiet zones, whistle signal (7) must not be sounded approaching public crossings at grade except when:</p> <ul style="list-style-type: none"> • Necessary to provide warning in an emergency

		<ul style="list-style-type: none"> • Notified automatic warning devices are malfunctioning • Notified automatic warning devices are out of service <p>The whistle quiet zone is not in effect during specified hours.</p>
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Whistle at Railroad Grade Crossings

Two long, one short, and one long sound of the horn shall commence sufficiently in advance to afford warning when approaching all public and permanent railroad crossings.

Ring of locomotive bell shall commence sufficiently in advance to afford warning when approaching all public and permanent railroad crossings and continuing until crossing is occupied.

If impractical to sound a warning, the crossing must be flagged or guarded by qualified train ground crew. If designated railroad crossings are not posted with warning signs or signals, the crossings shall be guarded while trains are approaching into the crossings.

Whistle Failure

If the whistle fails to operate, continue movement with the bell ringing continuously, and ensure that the intersection is cleared and controlled prior to the locomotive entering the intersection. When clear to do so the train may proceed at normal speed.

Protection during Repairs /Maintenance

During maintenance and repairs, railroad LOTOTO procedures specified by work of rail and train shall be utilized by all FCX and contract personnel. A qualified individual will set a blue signal or signage along the line to communicate the track is out of service for any reason. Site procedures shall dictate additional communication and controls.

The blue signal or signage signifies that work crews are on, under, or between equipment and requires that:

- Rolling equipment must not be coupled to or moved, and must be appropriately chocked
- Rolling equipment must not pass a blue signal on a track protected by the signal
- Other rolling equipment must not be placed on the same track so as to block or reduce the view of the blue signal

Blue signals or signage placed by third party service may be removed only by authorized personnel of the same third party.

Brake Inspections

Locomotive and railcar brakes will be visually inspected daily. Locomotive inspections will be documented on a pre-shift inspection. Any defect to a railcar will be documented.

Brake cylinders will be checked on locomotives daily for function and proper travel. Brake cylinders on rail cars shall be checked when entering or leaving property for function and proper travel. Brake shoes should be at least 0.5" with no signs of damage. Brake adjusters shall be locked in place and have no damage or missing parts.

Hand brakes and linkage shall be inspected for proper adjustment and operation. Testing by cinching down, visually inspecting brake shoes and verifying proper chain tension.

Air brake testing must be completed prior to operating the locomotive. See Appendix for air test procedures.

Locomotive dynamic brake (if equipped) shall be inspected prior to use according to the procedure found in the Appendix.

Switches and Switching

Personnel shall ensure that a minimum 3' clearance is maintained between any adjacent tracks and any structures or equipment at all times. Personnel should insure that they maintain clearance from rolling stock, adjacent tracks, structure, and equipment at all times.

Clearance points shall be clearly marked (painted on track or otherwise marked) where two independent tracks are at the 3' minimum distance. This is done to communicate the minimum distance in order to support safe movement of trains.

When engine is coupled to a train or cars standing on a grade, the hand brakes shall not be released until the air brake system is fully charged.

A gravity switch move is not permitted.

Switches will not be thrown under a moving train. Always make sure switch points are closed and that switches are lined with targets indicating correct direction of travel.

Switches that are difficult to throw or excessively dirty shall be reported to the maintenance crew or supervisor for corrective action.

Where runaway switches are present, the site must have a defined procedure in place.

Personnel approaching a switch will check for proper rail alignment.

Coupling and Uncoupling

Before coupling to or moving cars or engines, the cars or engines will be properly secured. Coupling will be made at minimum tram speed.

Clearance of loads will be inspected before coupling or moving cars on tracks where cars are being loaded.

Only qualified personnel will couple and uncouple cars. When personnel must go between uncoupled locomotives, or position themselves next to the knuckle on coupled locomotives, the locomotives shall be stopped, brake set and control centered (neutral), and positive communication shall be made between ground personnel and locomotive operator.

Prior to coupling or uncoupling, all crew members' location shall be confirmed by visual or verbal contact. **Horn will be blown.**

Pulling of railcars with a chain or cables is not allowed.

See Appendix for Coupling Procedure.

Break-in-two Procedures	When it is determined that a train separation has occurred the engineer will immediately place the automatic brake valve in emergency and manipulate independent brake level to prevent sliding of wheels. See the Appendix for detailed procedures.
Clearance of Adjacent Tracks	Railcars shall not be left on side tracks or passing tracks unless the minimum 3' clearance is maintained at all points between adjacent tracks.
Chemical Transport Cars	Any leaks, damage, or odor shall be reported to the supervisor immediately and mitigated as appropriate. The car shall not be utilized until inspected by a qualified person and deemed safe.
Flooring/Doors	Car interior and doors will be inspected for contamination and defects (excluding tank cars). Report any contaminations and defects to the supervisor for repair by a qualified individual. Prior to being released to the railroad, doors shall be closed and latched.
Headlight Display	Headlights shall be used in direction of travel.
Flags and Warning Signs	Flags or cones shall be used to communicate as indicated: <ul style="list-style-type: none"> • A RED flag or cone indicates stop. • A YELLOW flag indicates to proceed with caution. • A BLUE flag or sign indicates do not move or couple for any reason. <p>Warning indicators (flags or signs) shall not be moved unless specifically authorized to do so. Mobile equipment will not be stopped or parked closer than 10 feet from the edge of the nearest active rail track. Only authorized, qualified employees will place and remove railroad flags or warning signs.</p>
Locomotive On-board Control Systems	Site will develop a plan to implement technology options (e.g. GPS, geo-fencing, 'Vigilance'-type auto-braking solutions, Positive Train Control (PTC)) as available and recommended by FCX. These systems are to further enhance monitoring of trains, create automated alerts, or more advanced autonomous control options.

3.4 Train Interaction with the Public

There are inherent risks associated with train operation. As trains travel through our communities there are risks associated with interactions with the public. The following section gives some general practices to minimize the risks. These risks must be evaluated along with the specific risks for each site.

Personnel Conduct Employees shall be strictly prohibited from using any personal communication (e.g. cell phone), gaming or entertainment devices while operating or performing functions on the railroad.

Employees will not sleep while on duty. Sites will consider train operators within fatigue management procedures.

Only authorized FCX and contracted personnel can ride in the cab or on any part of the train at any time. Allowing extra riders is prohibited, unless previously authorized, in writing, by site management.

High Visibility Clothing

Employees working on or around the train will wear a high-visibility vest or shirt with reflective material.

Alert to Train Movement

Employees must expect the movement of trains, engines, cars and other moveable equipment at any time on any track and in either direction.

Employees and others will not stand on the track in front of an approaching engine, car or other moving equipment.

Employees must be aware of location of structures or obstructions where clearances are impaired.

Before initiating movement of the train, a crew member will sound the horn.

Travel Around Railcars

Unauthorized personnel shall not go over, under, or between coupled cars.

Train must be stopped prior to entering a concentrated sulfuric acid red zone (high exposure/high impact to personnel zone) and communication must be made with engineer.

Train ground crews shall work in plain view of the engineer whenever possible and follow established communication procedures.

Train ground crew will advise the engineer when getting on or off the train. Train ground crew will ensure that cars and cargo are clear of all obstructions such as hoses, ramps, etc. prior to movement.

Engineer will not move trains without receiving a signal to do so. Train ground crew shall have knowledge that other coworkers are in the clear before signaling engineer to move the train.

Riding Trains and Locomotives

A site assessment shall be completed to determine the use of alternative means to minimize or eliminate the need for train ground crews to mount/dismount a train in motion.

Train ground crew shall not ride in beds of railcars, or on the top of loads unless provisions are made for secure travel. Train ground crew will not ride in between cars.

When necessary to perform their duties, train ground crew may ride on the leading end of cars but only on the platform. Switch personnel will only ride on

the leading end of railcars during pushing/shoving operations for spotting and only for short distances and slow moving speed (10 mph or less).

Engineers shall inform train ground crew when they will be vacating the cab. Train ground crew shall not ride the lead end of railcars or locomotives on the side that exposes them to insufficient clearance. Train ground crew shall face locomotive or railcars when mounting or dismounting.

Train ground crew will not attempt to get on or off a train traveling in excess of walking speed (running to get on a train is prohibited, except for emergency) and will use proper locations such as switch landings or yards, where the ground is well graded and level for getting on or off a moving train (except for emergency).

Locomotive seating capacity shall not be exceeded.

Communication

The train operator and all ground personnel shall have a radio programmed with the appropriate channels and frequencies to allow communication between the crew as well as with any other personnel necessary for safe operation of the train, including at loading/unloading areas. All personnel will observe FCX communication policies for radio use and transmissions.

When the train is under the direction of the train ground crew, and the engineer cannot clearly recognize the ground crew's signals or communication, the engineer shall bring the train to a stop. The receiving party will ask the delivering party to repeat the transmission message.

Contract companies working with FCX industrial railroads will have established communication methods between workgroups when switching trains or working short lines within FCX property.

Emergency Calls

Emergency calls will be made using the established site emergency protocols (i.e., May Day, May Day, May Day, radio orange button, if equipped). Types of issues considered to be emergency may include:

- Medical Emergencies
- Train Runaways
- Collisions
- Fires
- Spills/Releases

Signals

Train ground crew who gives or displays signals must have the proper signaling equipment. Equipment must be in good condition and ready to use. Proper signals will be used depending on existing conditions.

To recognize and follow signals correctly, train ground crews must:

- Always be on the lookout for signals
- Comply with the intent of the signal

- Not act on any signal that they do not understand or that may be intended for other trains or engines

Any object waved violently by any person on or near the track shall be a signal to stop the train.

Hazardous Materials Certified hazardous material training will be provided to all personnel handling hazardous material. Hazardous material training shall be documented.

In case of a spill, immediately contact supervisor regarding location and size of spill. Safety and Environmental will be notified according to site-specific procedures.

All railcars containing hazardous material will have legible placards clearly visible on all four sides.

3.5 Train Make-up and Transit

Maximum Dynamic Braking Formula If dynamic braking will be utilized, based on site criteria, use the Maximum Dynamic Braking Formula provided in the Appendix to calculate maximum dynamic braking. Under no circumstances should the value exceed 325 ton/axle of operative dynamic brake.

Prior to initial movement the engineer will make a running brake test to give a feel for the braking of the trailing cars and operating dynamic brakes to determine that all locomotives are functioning properly.

Air Test Procedures After coupling locomotives to the standing cars, ample brake charging time must be allowed to permit full brake release.

The locomotive engineer will ensure that the brake pipe pressure is fully charged at 90 PSI. Brake pipe pressure drop **cannot exceed 5 PSI in the first minute**; this indicates problems that must be addressed prior to movement of the train. See Appendix for Air Test Procedures.

Brake Valve Handle Movement Cycle braking (movement of brake handle to service application, then release and then back to service application) shall not be practiced during downgrade movement. Unintentional brake release may set up a critical operating condition.

The amount of service brake pressure reductions shall be limited to permit the train to be powered through minimal grade sections without releasing the air brakes on the cars.

4.0 Equipment

The following equipment and any other equipment necessary for safe railroad operations will be provided and utilized.

Personal Protective Equipment	Personal protective equipment will be specifically selected for the hazards that the employees will be exposed to, so that they may safely-perform the various tasks within the industrial railroad. Employees and contractors shall wear and must be trained and proficient in the use of that PPE.
Communication Devices/System	Communication devices will be provided to ensure direct contact between all industrial railroad engineers, switch personnel, brake personnel and other ground personnel.
Altering Equipment	<p>Without proper authority, employees must not alter, nullify, change the design of, or in any manner restrict or interfere with the normal function of any device or equipment on engines, cars or other railroad property, except in the case of an emergency. Employees must report to the proper supervisor changes made during the emergency so they can be repaired prior to utilizing the equipment again.</p> <p>This will include any hardware, software, or firmware or advanced locomotive controls placed on-board operating locomotive engines or cars.</p>

5.0 Training

Awareness Training	Awareness Training will be provided to all employees and contract employees who may work near, or directly with the industrial railroad. For sites that operate an industrial railroad, awareness training will point out the general risks and hazards of the railroad and define the basic rules that non-railroad employees will follow. This training should be provided upon initial assignment (new employee induction) to the site or facility, and annually thereafter.
GSR Technical Training	<p>Task-specific training will be provided for all industrial railroad employees and contractors who will perform work on FCX property. All training shall be documented and contain the key elements listed below.</p> <p>Training of this policy shall be provided along with general risks associated with industrial railroad as well as site specific hazards.</p> <p>This training should be provided upon initial assignment to the site, area, department or facility. Refresher training should be provided annually.</p> <p>This training must also comply with local, state and federal regulations.</p>

Specialized Training	Task-specific training will be given for each of the functional areas of the industrial railroad. Employees will be qualified in each task before being allowed to perform the work, according to site-specific and regulatory training requirements.
Refresher Training	Must be provided to all employees and contract employees who are authorized, affected, competent or qualified to perform tasks associated with the Industrial Railroad on FCX property. This training is provided annually. It must include a review of existing policies and regulations and should review any new or existing hazards and mitigations.

6.0 Audit Requirements

Periodic unannounced audits and scheduled audits are expected to ensure compliance with the policy and safety of personnel. All audits are to be documented, an action plan developed to address any identified gaps, and action items assigned and tracked to completion. Documents will be retained per the FCX Corporate Record Retention Policy.

Monthly	A minimum of one monthly audit is to be scheduled and performed. The audit should witness a representative sample of industrial railroad operational tasks and interaction areas where non-railroad employees could be impacted. These audits shall have a specific focus on critical controls to verify use and effectiveness.
Quarterly	A site internal audit will be conducted quarterly utilizing, at a minimum, the Gap Analysis tool. The objective is to review critical components of this GSR against actual events and practices observed in the field.
Joint Periodic Scheduled Audits	FCX site leadership will develop a schedule with the leaders of third party rail providers to jointly audit or perform inspections of selected work areas where industrial railroad activities occur. This will be a formalized pre-determined schedule based on the site volume of delivery and frequency of exposure to personnel.
Annual	<p>An annual GSR compliance and general industrial railroad safety audit will be conducted by a Freeport-McMoRan cross-functional team.</p> <p>Audits will include review of compliance with FCX policies, training, site industrial railroad SOPs, and field practices. Follow-up audits may be conducted more frequently depending on site compliance performance.</p> <p>A standard format will be used for the annual site audits.</p>

7.0 Variance Process

If any part of this policy cannot be followed, an approved variance is required. The FCX GSR Variance Policy will be followed. [GSR Variance Process.pdf](#)

8.0 Definitions

Definitions of terms used in this policy.

Air Brake System	All of the mechanisms and components necessary to formulate a pneumatic brake for retarding and stopping a locomotive and/or the individual cars of a train. Air compressors, reservoirs, control valves, piping, brake cylinders and brake rigging are the major components of such a system.
Brake Personnel	An employee or contract employee responsible for the safe and efficient switching of railcars and assisting with train operations.
Deadman Switch	A “deadman” switch typically is a physical switch, but can also be a computer program, that is automatically activated if the train operator becomes incapacitated. These switches are usually used as a form of ‘fail-safe’ to stop a locomotive when the operator is incapacitated for some reason.
Derailment	Anytime the wheels of a rail car or engine come off the rails.
Engineer	The operator of a locomotive. Can also be known as Train or Locomotive Operator.
Flat Car	An open car without sides, ends, or top.
Grade	The rate of rise or fall of track elevation.
Hand Brake	The brake apparatus used to manually apply the brakes on a car or locomotive.
Hazardous Material	Any item or agent (biological, chemical, radiological, and/or physical), which has the potential to cause harm to humans, animals, or the environment, either by itself or through interaction with other factors.
Head End	Beginning or forward portion of any train.
Hopper Car	A car with a sloping floor which will discharge its load by gravity through the hopper doors.
Knuckle (Part of the Coupler)	The pivoting hook-like casting that fits into the head of a coupler and rotates about a vertical pin to either the open position or to the closed position.

	Coupler knuckles must conform to a standard dimensional contour specified by the Association of American Railroads.
Knuckle Pin	The pin holding the knuckle in the jaws of the coupler. Sometimes called pivot pin.
Locomotive	A self-propelled unit of equipment, or combination of units operated under a single control, and designed solely for moving other equipment.
Qualified Individual	An individual who, through combined education, training, experience, and process knowledge, has demonstrated that he/she is capable of recognizing, evaluating, and effectively identifying controls.
Red Zone	Also known as the 'Hot Zone'. It is the area around a concentrated sulfuric acid tanker where specialized acid PPE must be correctly worn at all times. Risk of serious injury to personnel is high when direct contact is made with concentrated sulfuric acid or acid spray should a leak occur.
Surface Transportation Board	A United States agency charged with overseeing and governing railway services. The agency has authority to investigate rail service matters of regional and national significance.
Switching	The process of putting cars in a specific order (as in a classification yard), placing cars for loading or retrieving empties (industrial switching); or the process of adding or removing cars from a train at an intermediate point; or the movement of cars from one point to another within the limits of an individual plant, industrial area, or a rail yard.
Tank Car	A car the body of which consists of a tank for carrying liquids such as chemicals and compressed gases.
Terminal	As used in this policy, is the location where a locomotive stops to load/unload cars with product to be received by FCX or transported away from FCX property. Such locations are staffed by employees interacting with the industrial railroad operation.
Train ground crew	A train service employee responsible for the safe and efficient switching of railcars and assisting with train operations.
Yard	A system of tracks other than main tracks and sidings. A yard is used for making up trains, for storing cars, and for maintenance.

9.0 References

References	General Code of Operating Rules 6 th Edition, Apr 2010
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Class II Railroad Standards – Surface Transportation Board

FCX GSR Variance Policy

10.0 Records

The following records must be retained according to the FCX Records Retention Policy

- Employee Training Records
 - Annual program review
 - Equipment inspection records
 - Audit documents and associated action item tracking
 - Variance Documents
-

11.0 Revision History

Details of the Rev. 1 revisions made can be found in the Industrial Railroad Policy Supplemental Document 1

Appendix A Forms and Permits

LOCOMOTIVE SAFETY INSPECTION

DATE: _____ SHIFT: _____

Operator _____ # In Consist _____

**EVERY OPERATOR MUST PERFORM
INDIVIDUAL INSPECTION**

Locomotive #

Write NA if the item is not applicable

CRITICAL ITEMS	OK	BO										
Hand Brakes												
Automatic Brake												
Independent Brake												
Dynamic Brake												
Air Leakage Test												
Horns												
Bells												
Hand Rail and Steps												

If these items are defective, the Locomotive is not to be moved.

GENERAL ITEMS	OK	BO										
Head Light												
Nose/Ditch Lights												
Step and Ground Lights												
Seats and Seat Stands												
Windshield Wipers												
Speed Recorder												
Fire Extinguisher (Cab)												
Fire Extinguisher (House)												

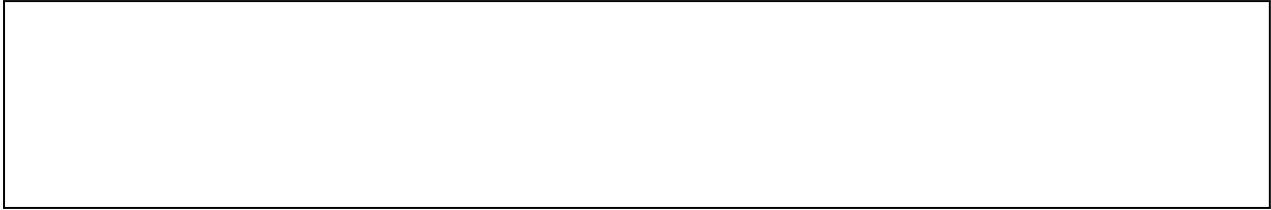
If these items are defective contact mechanic for repairs

Additional Items	OK	BO										
Housekeeping												
Wheel Chocks												
Sand												
Red Flags												
Eye Wash												
2-Way Radio												

Fuel:

Remember to check fluid periodically, especially Engine Oil, Engine Coolant also air test system with each new train.

OBSERVATION OR COMMENT



Appendix B Detailed Procedures

Railcar Inspection Procedures

Inspection should include, but not limited to:

- Prior to coupling, inspect hoses for worn glad-hands, cracked hoses, missing glad-hand gaskets, and damaged knuckles and knuckle lock pins or any other obvious defect on the car being coupled to others
- When coupled, a rolling inspection of cars to be put into service will be performed (observe for obvious defects)
- Check for continuity of air at tail end of train with conformation from locomotive operator
- While weighing cars:
 - Visually inspect for proper working brakes and piston travel
 - Check brake retainers for broken pipes, missing valve handles, and air leaks
 - Ensure brake release lever is intact and functional
 - Audibly check air system for leaks
 - Ensure brake shoes make contact with the wheels
 - Check to ensure brake cut out cock is in proper position (this can be a reason for brakes not functioning)
 - Check wheels for defects (flat spots, high or sharp flanges, chips on wheel, etc.)
 - Check bearing caps
 - Check drawbars for damage
 - Check knuckles, pins, and pin lifters for damage
 - Ensure doors on hoppers are closed and locked
 - Check side walls of hoppers for damage
 - Check handrails and ladders for damage
 - Check hand brakes and rigging for damage
 - Check hoses, glad-hands, and angle cocks for damage and leaks
 - Audible leaks due to glad-hand gaskets will be repaired by gasket replacement
- Check for cutting out brakes – if two or more railcar brakes are out consecutively, it may negate emergency braking
- Upon completion of weighing (where railcars have been uncoupled) an air continuity check will be performed.

Cars will be checked for:

- Leaning
- Sagging
- Improper position on the truck
- Objects hanging or dragging from the car or extending from the side
- Insecurely attached doors
- Broken or missing safety items*
- Contents leaking from placarded hazardous material car
- Insecure coupling device
- Overheated wheel or journal
- Broken or cracked wheel
- Brake that fails to release
- Staff type brake not in fully raised position
- Any apparent hazard that could cause an accident

Switching Requirements

Employees handling switches and derails must ensure:

- Switches and derails are properly lined for the intended route
 - The points fit properly and the target, if so equipped, corresponds with the switch's position
 - When the operating lever is equipped with a latch, they do not step on the latch to release the lever except when throwing the switch
 - After locking a switch or derail, the lock is tested to ensure secured
1. Self-aligning type switches: When raising the handles on self-aligning type switches, assume a position that will allow safe lifting to avoid muscle strains and being hit by the switch handle.
 2. Spring tension switches: When releasing the handles on spring tension switches, always stand opposite from the direction of handle travel to avoid being struck by the switch handle.
 3. Never attempt to throw a switch under a moving train.
 4. When train has not passed completely through a switch, ensure that the switch is lined for direction of travel before moving in opposite direction.
 5. Straight throw switches must be lined for the direction of travel. (Switches will not flop) Assume a safe position when locking and unlocking switch handle.
 6. Always make sure switch points are closed and that switches are lined with targets indicating correct direction of travel.
 7. Switches that are difficult to throw or excessively dirty should be reported to the track crew or supervisor for adjustment and oiling.
 8. Protective Switch Alignment.
 - A.) Runaway switches shall be left lined in runaway position, and locked.
 - B.) Locomotive Shop switch will be left aligned for the main and derailer in up position.
 - C.) When possible all switches will be left lined to main line traffic. Notification of deviated switch position will be given.
 9. When traveling on lead end of a train, the engineer is responsible for checking that switches are properly aligned. When train ground crew are riding trailing unit as lead end, they are responsible for checking that switches are properly aligned.
 10. When train ground crew are provided a vehicle to aid in their duties, the train ground crew are responsible to assure that the engineer has the train under control prior to alignment of runaway switches ahead of the on-coming train.

Coupling Procedures

1. Prior to being put into service, an inspection will be performed. Items found to be defective in reference to locomotive safety inspection list shall be handled accordingly.
2. Prior to coupling or uncoupling, locomotives shall come to a complete stop and proceed at minimum tram speed until coupling or uncoupling is complete.
3. Inspect draw bars:
 - a) Check knuckle for cracks or excessive wear.
 - b) Make sure knuckle pin is in place.
 - c) Make sure pin lifter is hooked-up properly and in good working order.
 - d) Make sure draw bar is properly lubricated to ease lateral movement.
 - e) Verify that knuckles are closed and locked.
4. After it is determined that it is safe to couple, and couple is complete, prior to connecting hoses, cable, and chains, stretch locomotives to ensure couplers have locked. **NOTE:** Prior to connecting hoses, inspect all airlines for defects, notify locomotive engineer, and proceed to couple of hoses and slowly open angle cocks.

5. Couple main equalizing reservoir, actuating, and independent M.U. hoses and open valves.
6. Position cab controls according to position of locomotive.
7. Engineer shall observe the train line gauge indicator for movement when trainman conveys signal that the angle cock has been opened. Check tail locomotive/train for air continuity before moving.
8. Prior to uncoupling locomotives, trains shall come to a complete stop.
9. Reverse coupling procedures of hoses, chains, and M.U. cable.
10. Position body to avoid being hit by debris or air.
11. Once uncoupling is complete, secure parked railroad equipment.
12. Assure that all unused multiple unit air hoses are properly positioned on hanger brackets that are provided.
13. Store all unused multiple unit power cables in the long end of locomotives or place in cans where provided. **Do not leave cables obstructing walkways.**

Break-in-two Procedures

1. When it is determined that a train separation has occurred engineer will immediately place automatic brake valve handle in emergency, and manipulate independent brake lever to prevent sliding of wheels.
2. On level track, train ground crew will close train-line angle cock at the separation, inspect cars for damage, if no damage is found, proceed to recouple with standard coupling procedures.
3. If damage is found, follow procedures to repair or set out damaged cars.
4. If separation is due to (or has caused) track damage take appropriate steps to repair prior to recoupling.
5. When on a grade, engineer will immediately place automatic brake valve handle in emergency and manipulate independent brake lever to prevent sliding of wheels due to loss of dynamic brake. Set all handbrakes.
6. At separation: Close train-line angle cock and notify engineer of steps taken.
7. Set handbrakes on separated portion of train. If unsure of grade percentage, set all handbrakes.
8. Train ground crew will inspect cars and track for damage and relay information to locomotive engineer.
9. Engineer will ensure that slack has been controlled before placing automatic brake valve in the release position. (Ensure train line is fully recharged before reinitiating travel).
10. Depending on grade make appropriate service brake pipe reduction and keep independent brake valve fully applied.
11. Prior to releasing handbrakes, proceed with standard coupling procedures. If coupling uphill handbrake release may be necessary.
12. Once coupling of separated railcars is complete, engineer will follow appropriate train handling procedures.
13. Release handbrakes and proceed in direction of travel.

Dynamic Braking Formulas

Computing tons per axle of dynamic brake is:

- Multiply number of cars by weight (130 tons for loads) and (30 tons for empty hoppers and acid tanks), (35 tons for boxcars, diesel, and oil tanks)
- Divide weight of train (excluding locomotives) by number of axles for operative dynamic braking (4 axles per locomotive)

EXAMPLE: $\frac{2600 \text{ tons}}{16} = 162$ (for 20 loads with 4 locomotives)
(= 162 tons/axle of dynamic braking)

Computing tons per operative brake- Gross trailing tonnage of the train divided by the total number of cars having operative brake.

EXAMPLE: $\frac{3900 \text{ tons}}{30 \text{ loads}} = 130 \text{ tons/ operative brake}$

Air Test Procedures

The locomotive engineer will ensure that the brake pipe pressure is fully charged at 90 PSI. Make a 20 PSI service reduction with automatic brake valve then:

- 1.) Wait until brake pipe air exhaust ceases.
- 2.) After exhaust ceases wait no less than 30 seconds, then cut out pressure maintaining valve.
- 3.) Check brake pipe pressure gauge for leakage, no less than one minute. The pressure drop **cannot exceed 5 PSI in first minute**. (If the pressure drop is more than 5 PSI, take appropriate measures to correct.)
- 4.) After confirmed air leakage test, call for train ground crew to slightly open the angle cock on the trailing car to confirm continuity of air; while observing train line gauge for movement, and acknowledge to train ground crew for angle cock closure. Maintain brake set while train ground crew walk from tail end to the head end, inspecting to verify that all brakes are working properly. Refer to "Equipment Inspection" section for specifics.
- 5.) Release brakes and recharge brake pipe pressure to 90 PSI.

Downgrade Speed Procedures

- 1.) The aim of the engineer is not to exceed 10-12 mph during the decent.
- 2.) If the engineer feels the speed is excessive at any time, the automatic brake valve is to be placed in the emergency position immediately in order to bring the train to a stop.
- 3.) An ample safety margin of braking capacity must be kept in reserve to allow stopping the train anywhere within reasonable stopping distances on the grade.
- 4.) Improper judgment in braking may permit the speed to get out of control in a very short time. When there is doubt as to whether or not the train can be properly controlled "go into Emergency". The engineer should evaluate the possible effects of an emergency application versus the effects of a service application and apply the method of which appears to be the safest. (Service applications react more slowly, but will retain the dynamic brake whereas emergency applications nullify the dynamic brake)
- 5.) After the train is brought to an emergency stop, (after it is deemed that the air in reserve for additional reductions is insufficient to bring the train to a stop):
- 6.) Place independent brake valve in full application position.
- 7.) Set handbrakes on cars according the following: A sufficient number of hand brakes shall be applied when there may be a possibility of movement. Recommended number of operable hand brakes for railcars to be applied according to grade percentage is; 1% grade, 1 brake per 330 tons. 2% grade, 1 brake per 200 tons. 3% or higher grade, 1 brake per 111 tons. With no less than 2 hand brakes set on any train at any time. If in doubt of percent of grade set all operable hand brakes.
- 8.) Place automatic brake valve in release position and recharge brake pressure.
- 9.) Allow time to ensure train brake pipe pressure is fully recharged.
- 10.) Depending on grade on which train is stopped, make appropriate service brake pipe reduction and keep independent brake valve in full application.

11.) Release handbrakes and proceed down grade, releasing the independent brake and varying the dynamic brake as required.

Global Significant Risk Industrial Railroad Gap Analysis

Team Participants:

Date:

Location:

Comments/Recommendation

A. Policy
Yes
No

1. Does the site have an established industrial railroad policy? (Use of corporate policy is acceptable)
2. Have high risks tasks for the industrial railroad been identified and placed on site risk register?
3. Are contractors/third party providers made aware of requirements for industrial railroad during the bidding process and/or prior to working on site?

B. Procedure
Yes
No

Comments/Recommendation

1. Have risk assessments been completed for industrial railroad tasks?
2. Have the significant risks of industrial railroad work been identified?
3. Have critical controls been identified using the hierarchy of controls to address the significant railroad risks?
4. Is information on the significant risks and critical controls communicated to employees?
5. Are equipment inspections conducted and document?
6. Do inspection checklists note the safety items that render equipment inoperable until repaired?
7. Does the site have a process for noting defective railcars and reporting to the owner for repairs?
8. Are tracks and supporting areas maintained to a minimum of Class II standards?
9. When parking railcars are handbrakes set according to the grade of the parking area?
10. Are wheels turned periodically and evaluated for flat spots?
11. Are dump doors closed when train is in motion?
12. Are maximum speed limits established and posted according to the area and risks?
13. Are whistle signals utilized according to established RR guidelines and understood by train crew?
14. Are tonnage limits of rail equipment known and followed?
15. Is a LOTOTO procedure established for repairs and maintenance work?

16. When shoving cars, is a 150 foot clearance from the end of track established?			
17. Are there established brake inspection procedures?			
18. When switching is there a process for checking clearances of other structures, adjacent tracks or other obstructions that could cause damage to equipment or injury to personnel?			
19. Is "bottling" of air only conducted in parked cars on level ground?			
20. Are switches always closed, left lined with the direction of travel and locked for security?			
21. Are only qualified individuals coupling and decoupling cars?			
22. Does the site have established procedures for break-in-two situations?			
23. Are headlights on only in the direction of travel?			
24. Are color-coded flags or signs used for warning communication?			
25. Is there an established procedure for railroad crossings where vehicle or foot traffic is possible?			
C. People	Yes	No	Comments/Recommendation
1. Are personal communication devices (smart phones, gaming devices, etc.) prohibited while operating or working on or around the train?			
2. Do train employees wear high visibility clothing or vests?			
3. Is travel in or around the train and its components restricted to authorized, qualified personnel?			
4. Are trainmen restricted to only the leading end of the train when riding is necessary?			
5. Is the train restricted to only authorized passengers?			
6. Do personnel have a radio or other form of communication with the engineer and other train employees?			
7. Does the site have established signals known by all affected personnel?			
8. Are placards and other necessary information on hazardous materials known and utilized by employees?			
D. Train Make-up and Transit	Yes	No	Comments/Recommendation
1. Are maximum braking formulas utilized when setting up the make-up of a train?			
2. Are air brake test procedures established to ensure proper pressure?			
3. Is a max speed of 10-12 mph established for travel downgrade?			
E. Training	Yes	No	Comments/Recommendation
1. Do all employees receive general awareness training and refresher regarding safety around trains, if applicable for the site?			
2. Is there task training established to qualify train personnel?			

FCX Department of Occupational Health and Safety	SOP #	FCX-22
	Revision #	Rev. 1
	Supersedes	Rev. 0
Industrial Railroad Policy Supplemental Document 1	Task Risk	X High
		Medium
		Low
		NA
Approval Date: June 13, 2017		Original Date: 3/01/15

Contents

1.0 Revision History2

1.0 Revision History

This supplemental document is a companion document to the Industrial Railroad Policy, Rev. 1, documenting the changes made from Industrial Railroad Policy Rev. 0 to the current Industrial Railroad Policy Rev. 1. This document is to be retained

2014 Rev 0	Section / Sub-section	
2017 Rev 1	1.0 Policy / Policy Statement	Removed the words “at a minimum” from the paragraph.
2017 Rev 1	1.0 Policy / Scope	<p>Changed paragraph “ ... within FCX rail yards, including overseeing safe car handling such as switching, weighing, spotting, and processing railcars for loading when required.”</p> <p>To read “...within FCX rail yards, including overseeing safe car handling (such as switching, weighing, spotting and processing railcars for loading), as well as the safe loading and unloading of materials or chemicals and rail maintenance when required.”</p>
2017 Rev 1	2.1 Management Responsibilities / Maintain Equipment in Good Working Order	Inserted the following at the end of the paragraph, “A process needs to be in place to work with the FCX Transportation group to help coordinate movement and/or repair of any defective cars.”
2017 Rev 1	2.1 Management Responsibilities / Perform Periodic Audits of the Industrial Railroad Operations	Changed the wording “... are conducted by industrial railroad employees.” To read “...are conducted by qualified employees.”
2017 Rev 1	3.0 Procedures	3.0 Program Elements & Requirements
2017 Rev 1	3.0 Program Elements & Requirements description	<p>Changed the text, “Each site with an industrial railroad will ensure that site-specific procedures comply with this policy at a minimum. All employees will comply with site-specific procedures.”</p> <p>To read, “Each site with an industrial railroad will ensure that site-specific procedures comply with this policy. All employees, contractors, and contract employees will comply with site-specific procedures.”</p>

2017 Rev 1	3.1 Equipment Inspection / description	<p>Changed text, “Self-propelled equipment that is to be used during the shift shall be inspected by the equipment operator before being placed in operation and defects corrected following site equipment inspection procedures.”</p> <p>To read, “Self-propelled equipment that is to be used during the shift is to be inspected and documented by the equipment operator before being placed in operation and not operated if any critical items, identified on the checklist by an asterisk (*) is found in bad operating order.”</p>
2017 Rev 1	3.1 Equipment Inspection / Locomotive (self- propelled equipment) Inspection	<p>Replaced all text (because the specifics of locomotive inspection are found on inspection cards),</p> <p>To read, “Any defects found during inspection with critical safety items, as identified on inspection checklist (example in Appendix) requires that locomotive be taken out of operation until defects are corrected.”</p>
2017 Rev 1	3.2 Track and Supporting Equipment / description	<p>The following sentence was added to the blue box description of this section, “As a communication resource, an Industrial Railroad Steering Team will be developed to facilitate global information sharing and collaboration.”</p>
2017 Rev 1	3.2 Track and Supporting Equipment / Maximum Grade Requirements	<p>Changed the following text, “... other controls must be put in place to minimize the risk following the FCX-Global Risk Exemption Process.”</p> <p>To read, “... other controls must be put in place to minimize the risk following the FCX- Global Significant Risk Variance Process.”</p>
2017 Rev 1	3.2 Track and Supporting Equipment / Supers and Curves	<p>Changed to following text, “The geometry of curves and supers shall be evaluated by a qualified individual to minimize wear and tear on the equipment and on the track.”</p> <p>To read, “The geometry of curves and supers shall be evaluated by a qualified individual (internal or external) to minimize wear and tear on the equipment and on the track.”</p>
2017 Rev 1	3.2 Track and Supporting Equipment / Shoulders/Walkways	<p>Included metric conversion of minimum shoulder measurement.</p>
2017 Rev 1	3.2 Track and Supporting Equipment / Switches	<p>Changed first paragraph from, “The employee handling the switch or derail is responsible for the position of the switch or derail. The employee must not allow movement to foul an adjacent track until the hand-operated switch is properly lined.”</p>

		To read, "The employee handling the switch or derail is responsible for the position of the switch or derail. The employee will maintain an appropriate clearance (a minimum of 3') between cars on adjacent tracks. The site shall mark the clearance zone based on specific site configuration."
2017 Rev 1	3.2 Track and Supporting Equipment / Switches	<p>Changed the paragraph from, "A switch that is tagged as inoperable (or Bad Order) shall not be operated until repaired. If the switch is spiked do not remove the spike unless authorized by the person or crew that placed it."</p> <p>To read, "A switch that is tagged as inoperable (or Bad Order) shall not be operated until repaired and an authorized person has placed the switch back in service."</p>
2017 Rev 1	3.2 Track and Supporting Equipment / Switches	Added the following paragraph, "Switches must be inspected and maintained to a site determined frequency by a qualified individual. Details of the inspection frequency and findings will be documented."
2017 Rev 1	3.2 Track and Supporting Equipment / Derailer for Control of Movement	<p>Subsection title changed from: "Derailer for Control of Movement"</p> <p>To: "Control of Movement (Energy Isolation Devices)"</p>
2017 Rev 1	3.2 Track and supporting Equipment / Control of Movement (Energy Isolation Devices)	<p>Changed the following text, "All derailleurs shall be in the derail position to prevent uncontrolled movement of trains. Derailleurs utilized as part of a lockout tagout tryout (LOTOTO) process may have different requirements and will be included in site-specific training."</p> <p>To read, "All derailleurs shall be in the derail position to prevent uncontrolled entry to work areas of trains. Where exposure to personnel exists, a physical control must be in place and incorporated into rail lock-out policy."</p>
2017 Rev 1	3.2 Track and supporting Equipment / Control of Movement (Energy Isolation Devices)	Inserted the following text: "Derailleurs utilized as part of a Lockout Tagout Tryout (LOTOTO) must be covered in a site specific procedure and training. Sites shall document the location of all derailleurs and note which fall under the site LOTOTO procedures; this map will be shared with employees, managers and any third parties."
2017 Rev 1	3.2 Track and Supporting Equipment / Re-railing	Changed the following text, "Rerailing shall be done in a manner appropriate to conditions. Pre-job risk assessment will be conducted to determine the proper equipment and controls that will be utilized for safe re-railing."

		To read, "Re-railing shall be done in a manner appropriate to conditions. Pre-job risk assessment will be conducted, including lifting plan review by FMI qualified personnel, and documented to determine the proper equipment and controls that will be utilized for safe re-railing."
2017 Rev 1	3.2 Track and Supporting Equipment / Signal Crossings	Subsection title changed from: "Signal Crossings" To: "Rail Crossings"
2017 Rev 1	3.2 Track and Supporting Equipment / Rail Crossings	Inserted the following text: "Sites must evaluate all railroad crossings to determine appropriate signage and or installation of signals. Definition: Signals are defined as warning bells, lights, and automated railroad crossing arm to be automatically activated as train approaches and de-activated as train travels away from rail crossing. This will be referred to as "signaled rail crossings" in the document."
2017 Rev 1	3.2 Track and Supporting Equipment / Rail Crossings	Changed the following text, "If a signal is determined to be inoperable then the train must stop prior to entering the crossing. A crew member must disembark from the train and enter the crossing to warn approaching highway traffic. When clear to do so the train may proceed at normal speed." To read, "At signaled rail crossings, if a signal is determined to be inoperable (warning bell, lights or automated crossing arm), then the intersection must be cleared by the train ground crew and controlled prior to the locomotive entering the intersection. When clear to do so the train may proceed at normal speed."
2017 Rev 1	3.2 Track and Supporting Equipment / Rail Crossings	Changed the text, "Signal crossings must be inspected monthly, quarterly, and annually for proper operation by qualified inspectors. Records of the inspections must be retained for review." To read, "Signaled rail crossings must be inspected monthly, quarterly, and annually for proper operation of all controls by qualified inspectors. Records of the inspections must be retained per the Company's Record Retention policy and be retrievable for review."
2017 Rev 1	3.3 Rail Cars and Locomotives / Securing Parked Railroad Equipment	Modified the first sentence of the second paragraph beginning, "Wheel chocks shall also be used..." To read, "Wheel chocks, designed for rail car use, shall also be used ..."

2017 Rev 1	3.3 Rail Cars and Locomotives / Securing Parked Railroad Equipment	Included metric conversions, in metric tons (mt) for each brake tons specified per percent grade given.
2017 Rev 1	3.3 Rail Cars and Locomotives / Securing Parked Railroad Equipment	Modified the second sentence or the third paragraph with the following qualifying statement around wheel chocks: “designed for rail car use”
2017 Rev 1	3.3 Rail Cars and Locomotives / Securing Parked Railroad Equipment	<p>Modified the following sentence, “Sites shall conduct a grade study and sign or mark grades along the track.”</p> <p>By adding the following, “Sites shall also retain a grade survey document, to be periodically verified and updated should any changes occur.”</p>
2017 Rev 1	3.3 Rail Cars and Locomotives / Wheels	<p>Changed the following text, “Locomotive wheels shall be turned periodically and evaluated by a qualified individual to ensure within tolerances (flange, diameter, and taper).</p> <p>To read, “Locomotive wheels shall be periodically inspected to ensure tolerance of flange, diameter and taper.”</p>
2017 Rev 1	3.3 Rail Cars and Locomotives / Wheels	<p>Deleted the following text, “If a wheel on a piece of equipment has a flat spot more than 2 ½ inches long, or if the wheel has adjoining flat spots that are each at least 2 inches long, the equipment must not be moved faster than 10 mph. This equipment shall be set out at the first available point.”</p> <p>Deleted the following text “When overheated wheels are found on a train, the train must be stopped and held a minimum of 10 minutes to allow the heart to dissipate.”</p>
2017 Rev 1	3.3 Rail Cars and Locomotives / Maximum Speeds	<p>Changed the text, “The train operator is to observe all posted speed limits or to the conditions on FCX property as well as on external rail. Speed limits should be posted in key locations. Limits will be set based on the specific hazards of the area.</p> <p>Suggested limits, not to exceed:</p> <ul style="list-style-type: none"> • Yard Limit – 5 mph • Scale Limit – 5 mph • Downhill – 10-12 mph • Uphill – 15-17 mph • Max speed on a Class II track – 25 mph” <p>To read, “The train engineer is to observe all posted speed limits, and to operate based on the conditions present on FCX</p>

property as well as on external rail. Speed limits should be posted in key locations. Limits not to exceed:

- Yard Limit – 5 mph (8 kph)
- Scale Limit – 5 mph (8 kph)
- Downhill – 10-12 mph (16-19 kph)
- Uphill – 15-17 mph (24-27 kph)
- Max speed on a Class II track – 25 mph (40 kph):”

2017 Rev 1	3.3 Rail Cars and Locomotives / Shoving Movements	Replaced the following text: “Communication must be established prior to shoving. This may be in the form of radios and/or hand signals.
		“Cars and engines must be shoved until the operator knows who is protecting the movement and how protection will be provided. The employee providing protection for the movement shall not engage in any task unrelated to the movement.
		“When cars or engines are shoved, crew members must be in position and provide visual protection.”
		With the following text, “Shove movements occur when rail cars are in the lead and locomotives are in the rear to direction of motion. Details of the shove movements are to be established prior to shoving; including (but not limited to) communication requirements, radio frequency, hand signals, crew positioning. Best practice is to provide dedicated radio frequency to all participating crew members involved in the shove movements. The employee(s) providing direction for the movement also must ensure intersections are secured and shall not engage in any task unrelated to the shove movement.”
2017 Rev 1	3.3 Rail Cars and Locomotives / Tonnage/Weight	Replaced the following text, “Limitations should be set based on grade per manufacturer’s specifications.” To read, “Limitations shall be set based on rail design, grade of accent/decent, and to locomotive and car manufacturer’s specifications.”
2017 Rev 1	3.3 Rail Cars and Locomotives / Approaching Railroad Crossings	Replaced the following text, “Trains and engines must be prepared to stop when they approach railroad crossings at grade.
		If a gate is lined against the intended route, trains and engines must stop and remain at least 50 feet from the gate, berm, signs, LOTOTO device, etc.”

		To read, "Trains and engines must be prepared to stop when they approach any railroad crossings. Train engineer shall be alert to potential inoperable signaled rail crossings to coordinate with train ground crew to follow procedures listed in Signal Crossing section of this policy."
2017 Rev 1	3.3 Rail Cars and Locomotives / Whistle Failure	<p>Replaced the text, "If the whistle fails to operate, continue movement with the bell ringing continuously. Stop the train before each public crossing so that a crew member on the ground can provide warning until the crossing is occupied by the train."</p> <p>To read, "If the whistle fails to operate, continue movement with the bell ringing continuously, and ensure that the intersection is cleared and controlled prior to the locomotive entering the intersection. When clear to do so the train may proceed at normal speed."</p>
2017 Rev 1	3.3 Rail Cars and Locomotives / Protection during Repairs/Maintenance	<p>Modified second sentence of first paragraph from, "A qualified individual will set a signal along the line..."</p> <p>To read, "A qualified individual will set a blue signal or signage along the line ..."</p>
2017 Rev 1	3.3 Rail Cars and Locomotives / Protection During Repairs/Maintenance	<p>Replaced the following text, "The blue signal signifies that workmen are on, under, or between equipment and requires that:</p> <ul style="list-style-type: none"> • Rolling equipment must not be coupled to or moved • Rolling equipment must not pass a blue signal on a track protected by the signal • Other rolling equipment must not be placed on the same track so as to block or reduce the view of the blue signal. <p>Blue signals may be removed only by the crew that placed them.</p> <p>With the following text, "The blue signal or signage signifies that work crews are on, under, or between equipment and requires that:</p> <ul style="list-style-type: none"> • Brake cylinders will be checked on locomotives daily for function and proper travel. Rolling equipment must not be coupled to or moved, and must be appropriately chocked • Rolling equipment must not pass a blue signal on a track protected by the signal • Other rolling equipment must not be placed on the same track so as to block or reduce the view of the blue signal

		Blue signals or signage placed by third party service may be removed only by authorized personnel of the same third party.
2017 Rev 1	3.3 Rail Cars and Locomotives / Brake Inspections	<p>Modified first sentence of second paragraph, “Brake cylinders will be checked for function and proper travel.”</p> <p>To read, “Brake cylinders will be checked on locomotives daily for function and proper travel.”</p>
2017 Rev 1	3.3 Rail Cars and Locomotives / Brake Inspections	Added the following text to the second paragraph, second sentence: “Brake cylinders on rail cars shall be checked when entering or leaving property for function and proper travel.”
2017 Rev 1	3.3 Rail Cars and Locomotives / Brake Inspections	<p>Modified second sentence of third paragraph,” (Testing by cinching down, placing it in gear and check to see if brake holds.”</p> <p>To read, “Testing by cinching down, visually inspecting brake shoes and verifying proper chain tension.”</p>
2017 Rev 1	3.3 Rail Cars and Locomotives / Brake Inspections	Deleted the sentence, “Brake retainers shall be inspected prior to operation based on procedures found in Appendix.”
2017 Rev 1	3.3 Rail Cars and Locomotives / Switches and Switching	<p>Replaced the following text, “Personnel switching rail cars shall ensure that neither the locomotive, nor the freight carried in or on the cars is damaged during switching. Personnel shall ensure that a minimum clearance is maintained between any adjacent tracks and any structures or equipment at all times.”</p> <p>To read, “Personnel shall ensure that a minimum 3’ clearance is maintained between any adjacent tracks and any structures or equipment at all times.”</p>
2017 Rev 1	3.3 Rail Cars and Locomotives / Switches and Switching	<p>Amended the following text, “Clearance points shall be clearly marked to support safe movement of trains.”</p> <p>To read, “Clearance points shall be clearly marked (painted on track or otherwise marked) where two independent tracks are at the 3’ minimum distance. This is done to communicate the minimum distance in order to support safe movement of trains.”</p>
2017 Rev 1	3.3 Rail Cars and Locomotives / Switches and Switching	Replaced the following text, “A gravity switch move is permitted only where specifically approved through an exemption (See Appendix). Additional controls to prevent runaway must be identified and documented on the exemption form (ex., tethering, derailed, etc.).”

		With the following text, "A gravity switch move is not permitted."
2017 Rev 1	3.3 Rail Cars and Locomotives / Switches and Switching	<p>Replaced the following text, "Runaway switches shall be left lined in runaway position, and locked for security purposes, if applicable."</p> <p>With the following text, "Where runaway switches are present the site must have a defined procedure in place."</p>
2017 Rev 1	3.3 Rail Cars and Locomotives / Switches and Switching	<p>Replaced the following text, "When traveling on lead end of a train, the engineer is responsible for checking that switches are properly aligned. Trainmen riding trailing unit as lead end are responsible for checking that switches are properly aligned. Trainmen provided a vehicle to aid in their duties are responsible to assure that the engineer has the train under control prior to alignment of runaway switches ahead of the on-coming train."</p> <p>To read, "Personnel approaching a switch will check for proper rail alignment."</p>
2017 Rev 1	3.3 Rail Cars and Locomotives / Coupling and Uncoupling	<p>Deleted the word, "trained" from the following "Only qualified, trained personnel will couple and uncouple cars."</p> <p>Modified the following text, "When personnel, the locomotives shall be stopped and the locomotive engineer notified and the notice acknowledged prior to any movement."</p> <p>To read, "When personnel, the locomotives shall be stopped, brake set and control centered (neutral), and positive communication shall be made between ground personnel and locomotive operator."</p> <p>Modified the following text, "Prior to coupling location shall be confirmed."</p> <p>To read, "Prior to coupling Location shall be confirmed by visual or verbal contact."</p> <p>Modified the sentence, "Pulling of railcars with a chain or cables will only be allowed in emergency situations."</p> <p>To read, "Pulling of railcars with a chain or cables is not allowed."</p>

2017 Rev 1	3.3 Rail Cars and Locomotives / Clearance of Adjacent Tracks	<p>Modified first paragraph, “Railcars shall not.... unless ample clearance is provided for through traffic on adjacent mainline or passing tracks.”</p> <p>To read, “Railcars shall not unless the minimum 3’ clearance is maintained at all points between adjacent tracks.”</p> <p>Deleted the last paragraph, “Sufficient clearance will be left while parking railcars. If an inspection tower is utilized, limited clearance between top of cars and bottom of platform will be evaluated.”</p>
2017 Rev 1	3.3 Rail Cars and Locomotives / Chemical Transport Cars	<p>Changed the following text, “Any obvious leaks, damage, or odor shall be corrected before continuing operation. The car shall not be utilized until inspected by a qualified person and deemed safe to move or repaired.”</p> <p>To read, “Any leaks, damage, or odor shall be reported to the supervisor immediately and mitigated as appropriate. The car shall not be utilized until inspected by a qualified person and deemed safe.”</p>
2017 Rev 1	3.3 Rail Cars and Locomotives / Flags and Warning Signs	<p>Modified the last paragraph, second sentence from, “Mobile equipment will not edge of the nearest rail track.”</p> <p>To read, “Mobile equipment will not edge of the nearest active rail track.”</p> <p>Modified the sentence, “Only authorized, qualified employees will climb over/under/between rail cars or get on rail cars or locomotives.”</p> <p>To read, “Only authorized, qualified employees will place and remove railroad flags or warning signs.”</p>
2017 Rev 1	3.4 People	Renamed section 3.4 People to 3.4 Train Interaction with the Public
2017 Rev 1	3.4 Train Interaction with the Public / Personnel Conduct	<p>Added the following text to the second sentence, “Sites will consider train operators within fatigue management procedures.”</p> <p>Modified the following sentence, “Only authorized ... are to be in the cab or on any part of the train at any time.”</p> <p>To read, “ ... can ride in the cab or on any part of the train at any time.”</p>

		<p>Modified the following sentence, “Allowing extra ... authorized by site management.”</p> <p>To read, “ ... authorized, in writing, by site management.”</p>
2017 Rev 1	3.4 Train Interaction with the Public / Alert to Train Movement	<p>Modified the sentence, “Employees must be aware of location clearances are close.”</p> <p>To read “... clearances are impaired.”</p>
2017 Rev 1	3.4 Train Interaction with the Public / Travel Around Railcars	<p>Modified the second paragraph, “Train must be stopped prior to entering a red zone and communication must be made with engineer.”</p> <p>To read, “Train must be stopped prior to entering a concentrated sulfuric acid red zone (high exposure/high impact to personnel zone) and communication must be made with engineer.”</p>
2017 Rev 1	3.4 Train Interaction with the Public / Travel Around Railcars	<p>Modified the third paragraph, “Trainmen shall work in plain view of the engineer whenever possible and remain in continual communication at all times.”</p> <p>To read, “Train ground crews shall work in plain view of the engineer whenever possible and follow established communication procedures.”</p> <p>Modified the sentence, “Trainmen will advise the engineer when getting on or off in blind spots or limited visibility.”</p> <p>To read, “Train ground crew will advise the engineer when getting on or off the train.”</p>
2017 Rev 1	3.4 Train Interaction with the Public / Riding Trains and Locomotives	<p>Inserted the following sentence, “A site assessment shall be completed to determine the use of alternative means to minimize or eliminate the need for train ground crews to mount/dismount a train in motion.”</p> <p>The following text was modified, “Switchmen will only ride only for short distances and slow moving speeds.”</p> <p>To say, “Switch personnel will only ride only for short distances and slow moving speed (10 mph or less).”</p> <p>Modified the sentence, “Trainmen shall face locomotive ... , ensuring clothing does not catch on protruding train parts.”</p>

By deleting the words, “,ensuring clothing does not catch on protruding train parts.”

Modified the sentence, “Trainmen will not attempt ... in excess of 10 mph and will use proper locations”

To read, “Train ground crew will not attempt in excess of walking speed (running to get on a train is prohibited, except for emergency) and will use proper locations”

Deleted the sentence, “Trains will come to a complete stop when authorized non-railroad personnel are mounting or dismounting.”

Replaced the sentence, “All persons riding locomotives shall be provided with proper seating in the cab.”

With the following sentence, “Locomotive seating capacity shall not be exceeded.”

**2017
Rev 1** 3.4 Train Interaction
with the Public /
Communication

Added the following text to the end of the first sentence in the first paragraph, “, including at loading/unloading areas.”

Replaced the following text, “An employee who does not understand radio communication or who receives a communication that is incomplete must not act upon that communication and must treat it as if it was a “stop” signal. The receiving party will ask the delivering party to repeat the transmission message.”

With the following text, “When the train is under the direction of the train ground crew, and the engineer cannot clearly recognize the ground crew’s signals or communication, the engineer shall bring the train to a stop. The receiving party will ask the delivering party to repeat the transmission message.”

Modified the following text, “Contract companies communication between workgroups when switching trains”

With the following text, “Contract companies established communication methods between workgroups when switching trains”

**2017
Rev 1** 3.4 Train Interaction
with the Public /
Emergency Calls

Modified the text, (i.e., May Day, May Day, May Day).

By adding the following text (...,radio orange button, if equipped).

2017 Rev 1	3.4 Train Interaction with the Public / Signals	<p>Modified the paragraph, “Employees who give or display signals must have the proper signaling equipment.”</p> <p>To read, “Train ground crew who gives or displays signals must have the proper signaling equipment.”</p>
2017 Rev 1	3.5 Train Make-up and Transit / Maximum Braking Formula	<p>Replaced first paragraph, “For transporting cars a recommended maximum of 325 tons per axle of operative dynamic brake and 130 tons of operative brake will be used as a guideline.”</p> <p>With the following text, “If dynamic braking will be utilized, based on site criteria, use the Maximum Dynamic Braking Formula provided in the Appendix to calculate maximum dynamic braking. Under no circumstances should the value exceed 325 ton/axle of operative dynamic brake.”</p> <p>Deleted the sentence, “See Appendix for formulas.”</p> <p>Replaced the last paragraph, “After the number of cars to be transported has been determined, the locomotive engineer will ensure that all operative systems on the locomotives are working properly.”</p> <p>With the following text, “Prior to initial movement the engineer will make a running brake test to give a feel for the braking of the trailing cars and operating dynamic brakes to determine that all locomotives are functioning properly.”</p>
2017 Rev 1	3.5 Train Make-up and Transit / Air Test Procedures	<p>Modified the sentence, “Brake pipe pressure drop cannot exceed 5 PSI.”</p> <p>To read, “Brake pipe pressure drop cannot exceed 5 PSI in the first minute; this indicates problems that must be addressed prior to movement of the train.”</p>
2017 Rev 1	3.5 Train Make-up and Transit / Initial Movement of Train Departure	Deleted this sub-section.
2017 Rev 1	3.5 Train Make-up and Transit / Downgrade Speed	Deleted this sub-section.
2017 Rev 1	3.5 Train Make-up and Transit / Brake Pipe Pressure	Deleted this sub-section.

2017 Rev 1	4.0 Equipment / Communication Devices/Systems	<p>Modified the sentence, “Communication devices will be provided to ensure continuous contact between all industrial railroad engineers, switchmen, brakemen and other ground personnel.”</p> <p>To read, “Communication devices will be provided to ensure direct contact between all industrial railroad engineers, switch personnel, brake personnel and other ground personnel.”</p>
2017 Rev 1	4.0 Equipment / Altering Equipment	<p>Added the sentence, “This will include any hardware, software, or firmware or advanced locomotive controls placed on-board operating locomotive engines or cars.”</p>
2017 Rev 1	5.0 Training	<p>5.0 Training section was restructured to include requirements for</p> <ul style="list-style-type: none"> • Awareness Training • GSR Technical Training • Specialized Training <p>And adding the training section titled:</p> <ul style="list-style-type: none"> • Refresher Training
2017 Rev 1	6.0 Audit Requirements	<p>A new section detailing Audit Requirements was added.</p>
2017 Rev 1	7.0 Variance Process	<p>Modified this section to bring in alignment with revised GSR format for the Variance Process section.</p>
2017 Rev 1	8.0 Definitions	<p>The definitions section was modified to clarify definition of terms used within the policy.</p>
2017 Rev 1	General	<p>General terms indicating gender were modified to be gender neutral where possible. All others not modified are intended to mean the indicated employee or contractor, regardless of gender.</p>