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	Industrial Railroad Policy	Task Risk
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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 at a minimum 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 when required.</p>

2.0 Responsibilities and Duties

2.1 Management Responsibilities

It is management's responsibility to ensure compliance with this policy, 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 and implemented.
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 industrial railroad 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 Procedures

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.

3.1 Equipment Inspection

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.

Locomotive (self-propelled equipment) Inspection

Items affecting safety on the locomotive safety inspection list shall be corrected before placing equipment into operation by either calling a mechanic to the field, taking to the shop for repairs, or setting aside until repairs can be made:

- Automatic air brakes
- Engine (independent) brake
- Air leakage test
- Dynamic brake (if applicable)
- Missing or damaged handrails or steps
- Manual handbrake
- Bell and horn
- Fire extinguishers
- Dead-man switch
- Throttles
- Gauges (water, oil fuel, pressure, etc.)
- Couplers

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 by a qualified individual prior to being put back in service.</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> <p>If brakes are not working, the cars should be sent out for repairs at first available point, or proper procedures for train handling should be followed. After inspection, trainmen will confirm that brakes are operating properly.</p> <p>See Appendix for railcar inspection criteria.</p>
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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.

General Track Requirements	<p>At a minimum track shall be maintained to railroad standards set by the Surface Transportation Board or equivalent local country standards.</p> <p>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.</p>
Maximum Grade Requirements	<p>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 Risk Exemption Process.</p> <p>Special evaluation must be completed when operating on grades based on the load and braking capacity.</p>
Road Bed	<p>Must be maintained to railroad standards set by the Surface Transportation Board or equivalent local country standards.</p>
Supers and Curves	<p>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. Speed, make-up of cars, and wheel tapers will also be factored into these evaluations.</p>
Shoulders/ Walkways	<p>A minimum 30" shoulder from the end of the tie shall be maintained along the track.</p>
Gauge	<p>The inside gauge of rails shall meet the standards outlined by the Surface Transportation Board railroad standards or equivalent local country standards.</p>

Switches	<p>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> <p>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>See the Appendix for specific switching requirements.</p>
Derailer for Control of Movement	<p>Derailers shall be installed properly for the rail to which it is applied and maintained in good working order. Derailers shall be visible to train crew.</p> <p>All derailers shall be in the derail position to prevent uncontrolled movement of trains. Derailers utilized as part of a lockout tagout tryout (LOTOTO) process may have different requirements and will be included in site-specific training.</p>
Re-railing	<p>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.</p>
Signal Crossings	<p>Signal crossings must be inspected monthly, quarterly, and annually for proper operation by qualified inspectors. Records of the inspections must be retained for review.</p> <p>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.</p> <p>See the Appendix for specific switching requirements.</p>

3.3 Rail Cars and Locomotives

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

Securing Parked Railroad Equipment	<p>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 operable hand brakes.</p> <p>Wheel chocks 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:</p> <ul style="list-style-type: none">• 1% grade - one brake per 330 tons• 2% grade - one brake per 200 tons• 3% grade - one brake per 111 tons• >3% shall have all hand brakes set
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Where brakes are not functional, railroad cars must be blocked or otherwise secured to prevent movement. Wheel chocks 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 key areas along the track.

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 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 turned periodically and evaluated by a qualified individual to ensure within tolerances (flange, diameter, and taper).

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.

When overheated wheels are found on a train, the train must be stopped and held a minimum of 10 minutes to allow the heat to dissipate.

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

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.

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.

Suggested limits, not to exceed:

- 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

Shoving Movements

Communication must be established prior to shoving. This may be in the form of radios and/or hand signals.

Cars and engines must not 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.

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.

Tonnage/Weight

Limitations should be set based on grade per manufacturer’s specifications.

Excessive Dimension Loads

Place excessive dimension loads on or near the head of the train for best operator’s vantage point.

When handling excessive dimension equipment, ensure the equipment will clear nearby objects, buildings or structures, including equipment on adjacent tracks.

Flat cars, open top cars, or cars with loads that protrude beyond the cars ends or if shifted, would protrude beyond the car ends must have proper tie-downs to secure the load.

Approaching Railroad Crossings

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.

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 men or equipment or other individuals on or near the track.</p> <p>After sounding the initial warning for men 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 men 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 • 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>

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.

Ringling 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 trainmen. If designated railroad crossings are not posted with warning signs or signals, the crossings shall be guarded while trains are approaching into the crossings.

When pushing railcars, trainmen will maintain visual contact with the end car until the train is stopped.

Whistle Failure

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.

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 signal 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 signifies that workmen are on, under, or between equipment and requires that:

- 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

Blue signals may be removed only by the crew that placed them.

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 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, placing it in gear and check to see if brake holds.)

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

Brake retainers shall be inspected prior to operation based on procedures found in Appendix.

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

Switches and Switching

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. Personnel should ensure that they maintain clearance from rolling stock, adjacent tracks, structure, and equipment at all times.

Clearance points shall be clearly marked 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 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, derailer, etc.).

“Bottling” of air shall only be allowed in parked railcars on level track. Appropriate procedures must be followed to ensure air continuity through the entire train when cars are coupled. Air shall not be “bottled” within parked railcars on grades.

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 are excessively dirty should be reported to the maintenance crew or supervisor for corrective action.

Runaway switches shall be left lined in runaway position, and locked for security purposes, if applicable.

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.

Coupling and Uncoupling	<p>Before coupling to or moving cars or engines, the cars or engines will be properly secured. Coupling will be made at minimum tram speed.</p> <p>Clearance of loads will be inspected before coupling or moving cars on tracks where cars are being loaded.</p> <p>Only qualified, trained 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 and the locomotive engineer notified and the notice acknowledged prior to any movement.</p> <p>Prior to coupling or uncoupling, all crew members' location shall be confirmed. Horn will be blown.</p> <p>Pulling of railcars with a chain or cables will only be allowed in emergency situations.</p> <p>See Appendix for coupling procedure.</p>
Break-in-two Procedures	<p>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.</p> <p>See the Appendix for detailed procedures.</p>
Clearance of Adjacent Tracks	<p>Railcars shall not be left on side tracks or passing tracks unless ample clearance is provided for through traffic on adjacent mainline or passing tracks.</p> <p>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>
Chemical Transport Cars	<p>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>
Flooring/Doors	<p>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.</p> <p>Prior to being released to the railroad, doors shall be closed and latched.</p>
Headlight Display	<p>Headlights shall be used in direction of travel.</p>
Flags and Warning Signs	<p>Flags or cones shall be used to communicate as indicated:</p>

- 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.

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 rail track. Only authorized, qualified employees will climb over/under/between rail cars or get on rail cars or locomotives.

3.4 People

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.

Only authorized FCX and contracted personnel are to be in the cab or on any part of the train at any time. Allowing extra riders is prohibited, unless previously authorized 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 close.

Before initiating movement, 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 red zone and communication must be made with engineer.

Trainmen shall work in plain view of the engineer whenever possible and remain in continual communication at all times.

Trainmen will advise the engineer when getting on or off in blind spots or limited visibility. Trainmen will ensure that cars and cargo are clear of all obstructions such as hoses, ramps, etc. prior to movement.

Engineers will not move trains without receiving a signal to do so. Trainmen shall have knowledge that other coworkers are in the clear before signaling engineer to move.

Riding Trains and Locomotives

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

When necessary to perform their work trainmen may ride on the leading end of cars but only on the platform. Switchmen will only ride on the leading end of railcars during pushing/shoving operations for spotting and only for short distances and slow moving speeds.

Engineers shall inform trainmen when they will be vacating the cab. Trainmen shall not ride the lead end of railcars or locomotives on the side that exposes them to insufficient clearance. Trainmen shall face locomotive or railcars when mounting or dismounting, ensuring clothing does not catch on protruding train parts.

Trainmen will not attempt to get on or off a train traveling in excess of 10 mph 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).

Trains will come to a complete stop when authorized non-railroad personnel are mounting or dismounting.

All persons riding locomotives shall be provided with proper seating in the cab.

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. All personnel will observe FCX communication policies for radio use and transmissions.

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.

Contract companies working with FCX industrial railroads will have communication 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). Types of issues considered to be emergency may include:

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

Signals Employees who give or display 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, employees 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.

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 Braking Formula For transporting cars a recommended maximum of 325 tons per axle of operative dynamic brake and 130 tons per operative brake will be used as a guideline.

See Appendix for formulas.

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.

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 . See Appendix for air test procedures.
Initial Movement of Train Departure	Prior to initial movement, the operator 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.
Downgrade Speed	Maximum speed on a decent shall not exceed 10-12 mph. See Appendix for Downgrade Speed Procedures.
Brake Pipe Pressure	Initial brake pipe pressure shall be 90 PSI. (For every reduction, the brake cylinder pressure increases 2.5 times. Ex: 10 lb. reduction means a 25 lb. brake cylinder pressure.)
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 rail road 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 continuous contact between all industrial railroad engineers, switchmen, brakemen and other ground personnel.
Altering Equipment	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.

5.0 Training

Awareness training will be provided to all employees and contractors who may work near, or directly with the industrial railroad.

Awareness Training Requirements For sites that operate an industrial railroad, new employee and refresher training will point out the general risks and hazards of the railroad and define the basic rules that non-railroad employees will follow.

Task-specific training will be provided for all industrial railroad employees and contractors who will perform work on our property. All training shall be documented and contain the key elements listed below.

General Safety Requirements The general risks associated with tasks of the industrial railroad as well as site-specific hazards will be covered in training.

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.

6.0 Variance Process

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

Variance Periodically there may be special circumstances that will take place and not allow all aspects of this policy to be completely followed. Where this policy cannot be followed, for both routine and non-routine work, variance form found in the FCX – Global Significant Risk Variance Guideline must be completed, approved and kept on file with a SOP or other work procedure established for future work.

7.0 Definitions

Definitions

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.

Brakemen An employee or contractor responsible for the safe and efficient switching of railcars and assisting with train operations.

Derailment Anytime the wheels of a rail car or engine come off the rails.

Engineer	The operator of a locomotive.
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	A substance or material, which is capable of posing an unreasonable risk to health, safety, or the environment.
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.
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 in which the body consists of a tank for carrying liquids such as chemicals and compressed gases.
Trainman	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.

8.0 References

References	General Code of Operating Rules 6 th Edition, Apr 2010
	Class II Railroad Standards – Surface Transportation Board
	FCX – Global Significant Risk Variance Process

9.0 Records

The following records must be retained according to the FCX Records Retention Policy	<ul style="list-style-type: none">• Employee training records• Annual program review• Equipment inspection records• Variance documents
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10.0 Revision History

Mar 2015 Rev 0	Initial Release
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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	OK	BO	OK	BO	OK	BO	OK	BO	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	OK	BO	OK	BO	OK	BO	OK	BO	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	OK	BO	OK	BO	OK	BO	OK	BO	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

Rail Car 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. All switches in Clifton Yard are straight throw switches.
 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 when traveling uphill from Clifton.
 - 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 trainmen are riding trailing unit as lead end, they are responsible for checking that switches are properly aligned.
 10. When trainmen are provided a vehicle to aid in their duties, the trainmen 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 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, trainmen 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. Trainmen 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.

Maximum 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**. (If the pressure drop is more than 5 PSI, take appropriate measures to correct.)
- 4.) After confirmed air leakage test, call for trainmen 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 trainmen for angle cock closure. Maintain brake set while trainmen 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.