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Morenci Safe Production Standard	Standard 3.1	
IN-PIT DRIVING	OHSAS 18001:2007	4.4.6
	Revision #	03
	Revision Date	08/2/2013
	Effective Date	04/16/2012
	Document Owner	Mine Operations
Approvals:		
<i>Senior VP Morenci Operations: 3/30/2012</i>	<i>Safety Steering Committee: 2/24/2012</i>	

1.0 PURPOSE:

There are many substantial inherent risks associated with in-pit driving; therefore discipline for driving can only be established through adequate training and verification of competency. This standard establishes the minimum requirements for all left handed mine driving.

2.0 SCOPE:

At the Freeport-McMoRan Morenci site, this standard applies to all employees, contractors, vendors and visitors that may work or travel in the mine.

3.0 TERMS, DEFINITIONS AND ABBREVIATIONS

- 3.1 **Mine** – As used in this standard, includes all areas of the FMI Morenci property where left-hand driving is mandated.
- 3.2 **Mobile Equipment** – means wheeled or track-mounted equipment such as trucks, dump trucks, front-end loaders, dozers, buses, forklifts, light vehicles, etc. utilized as work tool and/or mode moving or transporting either earth material, cargo loads, or passengers.
- 3.3 **Hazardous Zone** – an area in which the likelihood of inadvertent contact between haulage equipment and other forms of equipment is increased due to the design, layout, configuration and traffic flow within the area.
- 3.4 **Heavy Vehicles and Equipment** – As used in this standard, includes all vehicles which would be considered too large to normally travel on public roads and highways.
- 3.5 **Illuminated markers** – a light emitting or reflective component that enhances the visibility of the equipment.
- 3.6 **Light Vehicles** – As used in this standard, includes any vehicle small enough to travel on public roads and highways normally.
- 3.7 **Employee Transport Vehicle** – A light vehicle used to transport employees to various areas of the mine and has the capability of seating more than five passengers.
- 3.8 **Light Vehicle Access Route (LVA)** – In the mine, roadways separated from routine haulage traffic through established berms or barriers specifically designated for light vehicles only. At times heavy equipment may utilize LVAs for activities such as dust control and maintenance.

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4.0 RESPONSIBILITIES:

- 4.1 **Management** will ensure all employees and contractors that work within their respective division understand and adhere to all requirements of this standard. If the manager's primary responsibilities are within the mine, they will ensure road controls are adequate to support safe driving in their areas.
- 4.2 **Health and Safety** will maintain records for in-pit driving authorization in accordance with *Safe Production Standard 3.1.1 - In Pit Driving Authorization*. Health and Safety will also audit to this standard.
- 4.3 **Employees and contractors** will ensure they comply with all requirements of this standard. They must also recognize that non-adherence to this standard may result in revoking driving rights in the mine or even expulsion from the mine.
- 4.4 **Training Department** will develop and provide In Pit Driver Training in accordance with *Safe Production Standard 3.1.1 – In-Pit Driving Authorization*.

5.0 STANDARDS OF PERFORMANCE

- 5.1 Vehicles may only operate on mine haul roads if they meet the following requirements:
 - a. All self-propelled mobile equipment entering or working in the mine, if the height of the vehicle is less than 12 feet, must have a buggy whip.
 1. The buggy whip must extend, at minimum, 12 feet from ground level. This will allow added visibility of light vehicles.
 2. The buggy whip must be equipped with a flag and light at the top. The light must remain functional during operation in the mine and emit light from the front and rear.
 - b. Self-propelled mobile equipment that is higher than 12ft in height must be equipped with illuminated markers visible from all approaches and placed at least 12ft above ground level.
 1. Non-Routine equipment (i.e. short term specialized contractors and rental equipment) may be escorted by equipment that is properly equipped with a buggy whip or illuminated markers.
 - c. Headlights must be on during all vehicle operation in the mine to aid with visibility.
 - d. All vehicles working in or entering the mine must have a discrete identifier, such as a vehicle number. This will allow workers needing to contact the vehicle operator to be able to do so without difficulty.
 - e. Pre-Use equipment inspections will take place once per shift and be documented on approved inspection forms prior to the operation of any vehicle or equipment within the mine. Each Operator shall conduct an inspection prior to operating the vehicle to ensure the vehicle is safe to operate.
 1. The inspection form will identify key safety components which are required to function during operation. If any of these items are identified as non-functional, the vehicle or equipment will be tagged with an "out of service" tag and will not be used until the non-functional item is repaired.
 2. Heavy mine equipment may utilize orange flags to show an out of order state.
 3. On the inspection document, the non-functional items will be accompanied by a description and nature of the problem.

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- f. All vehicles traveling in the mine (beyond the LVA route) must be equipped with two way radios. If a radio is not provided inside the vehicle, a hand held radio must be provided to the vehicle operator.
 - g. If operating employee transport vehicles (man vans, buses), the operator must ensure that all employees are using their PPE (hard hat if not exempt, safety glasses, appropriate dress attire, and hard toe boots), and that they are properly wearing seat belts. The only exception to this is when seat belts are not provided by the manufacturer of the vehicle.
 - 1. If a passenger refuses to comply with this requirement, the employee transport vehicle will not be moved. Any such incident must be immediately reported to a supervisor and corrected.
 - 2. At no time will employees be allowed to move from one place to another within their employee transport vehicle while it is in motion. They must remain seated.
 - 3. Passenger loading and unloading will only take place while the vehicle is at a complete stop.
 - h. ATVs and UTVs are not permitted to operate on mine haul roads. Refer to specific division requirements for operating these types of vehicles.
- 5.2 Driving to work locations or designated parking areas
- a. Driving, unless otherwise posted, is left handed within the boundaries of the mine. Because of the unique rules surrounding left handed driving, all operators must go through and pass a mine driving course before they are allowed to operate a vehicle within the mine. (*Refer to Safe Production Standard 3.1.1 – In-Pit Driving Authorization*)
 - b. Prior to the start up of any self-propelled mobile equipment in the mine, an alarm or equivalent warning device must sound, which will give adequate warning to workers in close proximity to that equipment. Additionally, prior to any movement of any self propelled mobile equipment, there must be an alarm/warning device that sounds.
 - 1. The alarm/warning device must be audible above all surrounding noise.
 - 2. Adequate time (about 5 seconds) should be given between the sounding of the alarm/warning device and the startup and subsequent movement of the vehicle.
 - 3. For all equipment with horns the following rules apply:
 - A. Sound horn once prior to equipment start up
 - B. Sound horn twice prior to movement forward
 - C. Sound horn three times prior to movement backwards, unless a backup alarm is provided.
 - c. The maximum speed limit allowed on haul roads is 45 miles per hour. The maximum speed limit allowed on the Light Vehicle Access Route (LVA) is 35 miles per hour. This speed may be reduced depending on road conditions, visibility factors, and additional department procedures. Reasonable judgment must be exercised when determining adequate speed for the existing conditions. Areas with lower specified speed limits must be observed. The only vehicles that may exceed the 45 mile per hour speed limit are emergency response units, and vehicles carrying emergency responders. If response to emergencies requires exceeding the maximum allowable speed, control of the responding vehicle must be maintained.

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- d. At mine intersections, the right-of-way is always allotted to heavy mining equipment over smaller vehicles because of visibility constraints.
 1. Haul trucks and water trucks have significant visibility restrictions because of the cab location. For this reason all haulage/water trucks have the right-of-way to any other vehicle on the haul road. The only exception to this is for emergency vehicles, vehicles maintaining roadways which are equipped with strobe lights in the on position, and vehicles hauling blasting and explosive material.
 2. All smaller vehicles, if not in an emergency or road maintaining state, must yield to the vehicle on the left.
 3. Refer to specific divisional procedures for additional requirements.
 - e. When following haulage or water trucks, adequate distance must be maintained between vehicles. The established distance in Morenci is at minimum 150 ft, but may increase depending on road conditions.
 - f. When passing vehicles and equipment on a haul road, adequate communication must be maintained between operators.
 1. Passing any heavy mine equipment is strictly prohibited on haul roads when permission is not granted.
 2. If a vehicle wishes to pass heavy mine equipment, that vehicle must transmit the request to pass by radio and receive confirmation by the equipment operator that they are clear to pass.
 - A. The operator making the request to pass must identify themselves by vehicle number and they must clearly identify who they are speaking to by vehicle number. The equipment operator must then confirm receipt of the transmission the same way, and identify if the requestor is clear to pass.
 - B. In cases where radio communication is not established by the operator requesting to pass (example: road maintenance equipment using a different frequency) the following requirements apply:
 - I. The equipment operator must have a clear line of site back to the employee requesting to pass (example: a bull dozer with an un-obstructed view behind him, not needing to rely solely on mirrors to see the vehicle following)
 - II. The equipment operator must give a clear indication, such as an obviously discrete wave, that a pass is allowed.
 - C. The equipment operator granting permission to be passed must ensure that permission is only granted when the road is clear and there is an adequate line of vision in front of the equipment (there must be no blind corners or hills that may restrict visibility). When passing, speed should never exceed 35 miles per hour.
- 5.3 When approaching heavy equipment, it is critical to maintain direct visibility to the equipment cab regardless of if there is an operator in it or not. Approach should occur from the cab/operator side of the heavy equipment and remain outside hazardous areas.

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- a. If there is an operator in the cab, permission to approach must be granted, either by radio or with a clear visible signal. When receiving permission by radio, the vehicle operator approaching the heavy equipment must identify themselves by vehicle number and identify the equipment they are wishing to approach. The heavy equipment operator must respond using vehicle numbers in the same manner.
- b. If an operator is not seen in the cab, the approaching personnel will continue to maintain a clear line of sight to the cab and stay out of blind spots.
- c. Prior to approaching any equipment that has a swing-radius; permission must be granted in the same manner unless other operational controls are in place to prevent inadvertent contact.
- d. When leaving the equipment, communication with the operator must be made.

5.4 Procedures for parking equipment in the mine

- a. For general parking in the mine, refer to the FMMO Parking Standard.
- b. Wheel chocks or ditches will be utilized for all wheeled and track mounted equipment parking in the mine on a grade, regardless of size, except when ground engagement devices (buckets, blades, ripper shanks, etc.) are set firmly on the ground.
- c. Vehicles shall not park within blind areas of heavy mine equipment unless controls are in place to prevent inadvertent movement of the equipment. When practicable light vehicles shall park away from heavy equipment within designated parking areas.
- d. Equipment shall not be left unattended within hazardous zones of active mining areas (i.e. dumps, Q points, shovel pits, fueling stations and haulage roads) normally traveled by haulage equipment unless the following controls are in place:
 1. The location and status of the unattended equipment is communicated to all haulage traffic reasonably likely to be affected by the equipment (if the equipment will remain in the hazardous area for multiple shifts the communication must be given to each affected crew); and
 2. The equipment is identified using methods that will increase the likelihood that haulage traffic is able to readily identify the location of the equipment; and
 3. The vehicle is removed from the hazardous area within 12 hours of placement or the equipment is segregated from haulage traffic through the use of berms, tires or other substantial barriers.

If unattended equipment is identified which does not conform to the requirements established above, employees are responsible for contacting the command center or a mine management representative so the unsafe condition can be resolved.

- e. Persons shall not work, travel or park between machinery or equipment and a highwall or bank where the machinery or equipment may hinder escape from falls or slides of the highwall or bank. Travel is permitted when necessary for persons to dismount. Unless barricades, catch berms or other controls exist no persons shall park within 50ft or the height of the first bench (whichever is higher) of a highwall. Where work is required within 50ft of a high wall the workgroup shall inspect the work location and complete a high wall permit.

5.5 Restricted areas for driving

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- a. Restrictions to specific areas of the mine may be established based on existing or potential hazards, and will be controlled through physical barricades where feasible.
- b. For most closed off areas, physical barricades will be of the type and configuration to restrict access to the largest piece of prohibited equipment (example: haul truck tires blocking a dump prohibit haul trucks from entering, but they do not prohibit pickup trucks from entering).
- c. Where physical barricades are not used, signage shall be posted in a readily identifiable location warning of the hazards, restrictions, and appropriate contact information.

6.0 REFERENCE DOCUMENTS

- 6.1 Morenci safe operating procedure – *Haul Truck Operation Around Heavy Duty Shop Areas*
- 6.2 Morenci safe operating procedure – *Driving in the Pit*
- 6.3 Morenci Safe Production Standard 3.1.1 – *Procedure for Pit Driving Authorization*

7.0 RECORDS

Name of the Document	Responsible for Control	Records Retention
In Pit Driving Standard	Health and Safety	Permanent
Pre-Operation (Pre-use) Inspection of Vehicle	Each Department	10 Years
In-Pit Driving Training Records	Training Department	Duration of Employment + 10 Years

8.0 APPENDICES

- 8.1 APPENDIX 8.1 – Haulage Equipment Blind Zones

9.0 REVIEW AND CHANGE

All changes, modifications and/or revisions must be documented on the table below:

Description of Changes to this Document
04/16/2012 – corrected reference 6.3 – from FMMOP -00011 to Morenci Safe Production Standard 3.1.1 – S. Elias
06/18/2012 – Removed dead hyperlinks to Safe Production Standard 3.1.1
Corrected name of Safe Production Standard 3.1.1 in accordance with the name on the actual document “In-Pit Driving Authorization” - S. Elias Rev. 2
06/24/2013 – Updated Records Table – S. Elias Rev. 3
Revised illuminate marker requirements section 5.1(b) and added definition – B.L. 8/2/2013 (in response to July Golden Rule Audit Findings)

APPENDIX 8.1 – Haulage Equipment Blind Zones

A blind area is the area around a vehicle or piece of construction/mining equipment that is not visible to the operators, either by direct line-of-sight or indirectly by use of internal and external mirrors

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