FCX Department of Occupational Health and Safety	SOP #		FCX-02
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Working at Heights Policy	**Task Risk**	**X**	**High**
			Medium
			Low
			NA
Revision Date: 10/2/13	**Original Date: 2/13/09**		

Contents

1.0 Policy

This document establishes the minimum requirements and procedures for the health and safety of Freeport-McMoRan Copper & Gold employees and contract personnel when working in areas where fall hazards are present.

Policy	Fall protection must be provided and used 100% of the time whenever persons are exposed to a fall hazard that could reasonably result in an injury to an employee working at height. **This includes:** • Any unguarded walking or working surface (either horizontal or vertical, including ladders) that is 6 ft. (1.8 m) or more above a lower level (if a ladder used for access has a cage fall protection is not required unless work will be performed from this ladder) • Any walking or working surface that is less than 6 ft. (1.8 m), but is above sharp objects, corrosive substances, entrapment hazards, moving machinery, or other significant hazards • Work from a ladder at any height, including levels below 6 ft. (1.8 m) if the person is required to place his center of gravity near one of the ladder rails or lean backward away from the ladder, increasing fall potential **Note:** The prevention of falls through installation and maintenance of permanent barriers is preferred in locations where routine work is conducted. In situations where this is not feasible and during non-routine work, other protective systems described in this document must be applied to prevent fall injuries.
Scope	All employees, contractors, and visitors on FCX property or projects will comply with all elements of this working at heights policy. Contractors working on the property/project may implement their own policy if it meets or exceeds this document's requirements. **Note:** This policy does not apply to emergency response efforts and associated training and drills, providing these activities are conducted according to recognized emergency response procedures and under the direct supervision of a competent person.

2.0 Responsibilities

2.1 Area Management's Responsibilities

It is the Area Management's responsibility to ensure compliance with this policy and the procedures and expectations outlined below.	
Evaluate Fall Hazard Risks and Controls	Employees and supervisors must evaluate each situation to minimize fall hazards and associated risks, and determine which methods will eliminate or control fall hazards for new and existing facilities. Identified hazards and controls must be included in area Risk/Task Registers. (See section **3.1 Hazard Identification**)
Provide and Maintain Protection of Working Edges	Where routine work is conducted, permanent guarding shall be constructed and maintained. Before relying on personal fall arrest systems, demonstrate that no other control method is available to prevent falls.
Maintain Permanently Installed Fall Protection Systems	Permanently installed fall protection systems, such as anchors, horizontal & vertical lifelines, and trolley systems, must be: • Labeled to prevent usage as a lifting apparatus • Placed on a formal preventative maintenance schedule in accordance with manufacturer's recommendations
Provide Equipment and Resources	Provide all necessary resources needed to implement and maintain the requirements outlined within this document.
Meet FCX Training Requirements	Ensure that all personnel and contractors exposed to fall hazards are properly trained per the requirements outlined within this document.
Maintain Document Control	Maintain all records associated with the maintenance of all fall protection components and systems, and all Hazard Identification tools utilized (see section **3.1 Hazard Identification**), according to the **FCX Records Retention Policy** for use in the annual review of the fall protection program.
Perform Annual Review	**In conjunction with H&S annually:** • Review and update Risk/Task Register inventory, and ensure associated rescue procedures are current • Evaluate effectiveness, compliance challenges and make recommendations to the program as it applies to the work that affected employees perform

2.2 Health and Safety (H&S) Department Responsibilities

It is the H&S Department's responsibility to support compliance with this policy and the procedures and expectations outlined below.	
Perform Periodic Program Audits	The H&S Department will audit the use and application of Fall Protection for compliance on a periodic basis per a site-established audit schedule. **These audits will be documented and include:** • Fall protection use (application, anchor points, system selection, etc.) • Component condition and maintenance • Stock of fall protection components (anchors, harnesses, lanyards, etc.) • Permanently installed fall protection systems
Ensure Proper Selection of Components	The H&S Department will ensure fall protection equipment is properly selected by competent and/or qualified individuals and maintain a list of this inventory for periodic review, to ensure availability and effectiveness (i.e. flame resistant harnesses for welders)
Ensure Proper Employee Training	Every individual must be trained at a minimum level of Authorized User before being exposed to a fall hazard. The site H&S department is to ensure that this training is performed by a qualified trainer.
Maintain Rescue Team Capabilities	The H&S Department in conjunction with site management will maintain adequate rescue capabilities (on-site team or third party team), and ensure these teams are trained in accordance with the requirements outlined within this document. **Note:** If a site must rely on third-party rescue, H&S personnel must audit training and rescue capability of the third party.
Annually the H&S Department, in conjunction with area management, will perform a review of the fall protection program.	
Participate in Area Mgmt. Review	Participate in the area management review of program Risk/Task Register inventory, and associated rescue procedures.
Audit Rescue Team	• Review rescue team training and equipment • Evaluate rescue team familiarity with the properties various fall hazard locations or site escort system which would direct rescue personnel to emergency locations • Evaluate rescuers' ability to respond to an unplanned fall emergency simulation (this includes third-party rescuers)
Compile Findings for Review	Compile all findings and recommendations for fall protection program improvement and submit to site management for review.

2.3 Contractor Responsibilities

It is a Contractor's responsibility to comply with this policy and the procedures and expectations outlined below.	
Meet FCX Program Requirements	Any contractors working for Freeport-McMoRan Copper & Gold will meet or exceed the requirements of this document.
Provide Trained Contract Employees	Contractors will provide employees who have documented training per the requirements outlined within this document before being exposed to fall hazards.
Provide Fall PPE	Contractors will provide all applicable fall protection equipment to their employees before exposure to fall hazards.

2.4 Fall Protection User Responsibilities

It is the responsibility of all Fall Protection Users to comply with this policy, procedure and the expectations outlined below.	
Follow all Program Requirements	Maintain a working understanding of this policy and subsequent procedures regarding the use of fall protection and rescue systems. Including the suitable application and limitations of any fall protection components utilized.
Communicate Hazardous Conditions	Supervisors and/or Health and Safety Representatives must be immediately contacted if hazardous conditions or actions arise which may cause injury to any employee before proceeding with further workplace activities.
Maintain Training	Training must be completed according to section **6.0 Training** and maintained through refreshers annually, in addition users should never utilize a piece of equipment they have not been trained and authorized to use.
Perform Pre-use Inspections	Each individual who uses fall protection equipment must inspect all components of the system prior to each use. (See section **3.2 Inspections**)
Plan for Rescue	Determine rescue plan before beginning work. In areas where rescue could be difficult, written rescue plans must be outlined in conjunction with supervision or H&S representative including a competent or qualified individual.

3.0 Procedures

Fall protection must be provided and used 100% of the time whenever persons are exposed to a fall hazard that could reasonably result in an injury to an employee working at height.

3.1 Hazard Identification

Before employees are exposed to potential fall hazards; adequate controls must be identified and established to prevent injury and or death.

If individuals are routinely exposed to fall hazards, due to typical tasks functions or work environments, a Formal Risk Assessment must be completed and included within the department **Risk/Task Register** with step-by-step procedures outlined within a Standard Operating Procedure (SOP), utilizing the hierarchy of controls. For infrequent, non-routine or changing tasks, this same method can be applied in a generic SOP or through an informal risk assessment.

Ideally, it is best to completely eliminate the hazard. Since that is often not possible, other measures such as the wearing of personal protection equipment (PPE) are required.

Examples of Various Risk Assessment Formats	• Job Safety Analysis • Risk Analysis • Open-Hole Permit

Items that Must be Addressed	**Whatever method is used it must be generated by a competent or qualified person and address the following:** (Where applicable)
	• The fall protection equipment/system needed to protect authorized persons from each fall hazard
	• The identification of acceptable fall arrest anchorages
	• The fall distance clearance requirements
	• The training requirements of authorized users
	• The limitations of the system, noting:
	  ○ The maximum free fall distance
	  ○ The maximum number of users
	  ○ Any additional hazards
	  ○ The rescue procedures and steps to be taken if a fall occurs

3.2 Inspections

Inspections of fall protection must be completed before each use, according to manufacturer specifications.	
Pre-Use Inspections	Prior to each use, each user of a personal fall protection system must inspect all components of the system for wear, damage, adequate flexibility, and other signs of deterioration. **Pre-use inspections will follow the manufacturer's recommendations and will include inspection of the following:** (Where relevant) • Braids and webbing • Stitching • Conditions of grommets, buckles, and hardware • Presence and legibility of manufacturer's date tag, serial number, and other critical markings • Cleanliness, broken strands, burns, excessive wear, and dirt • Fall indicators (see manufacturer's recommendations) • Wear indicators (for example, some manufacturers include red threading inside webbing to indicate excessive cuts or fraying)
Periodic Inspections	In addition to pre-use inspections, monthly documented inspections of fall protection equipment will be conducted.
Annual Inspections	Permanently installed systems, such as horizontal and vertical lifelines, anchors, and trolley systems, will be placed on formal preventative maintenance schedules in accordance with manufacturer's recommendations.
Defective Components	Defective components will be removed from service and either be secured until repair is completed, or be made inoperable. Any component that is missing the manufacturer's label will be removed from service until the label is replaced under the direction of the manufacturer.

3.3 Exemption Process

It is expected that all aspects of this policy be followed and that individual site and contactor policies will meet or exceed this policy. It is recognized though that there may be specific issues at a site or for a certain task that does not allow compliance with the entire policy. For these situations, an exemption must be approved.	
Exemption Process	An engineer or other qualified individual must complete the **Exemption Form** in **Appendix A** to determine what controls must be implemented. Management must then review the exemption form for approval. Once an exemption is approved it can be utilized for future tasks as long as all aspects of the work are the same.

3.4 Rescue Planning

Prior to work at heights commencing, a rescue plan must be developed for prompt rescue of personnel in the event of a fall, or fall protection equipment that allows for self-rescue shall be utilized.

Rescue Planning	In situations that might result in difficulty rescuing a person who falls (i.e. extreme height or suspension over hazardous conditions) a written rescue plan must be developed before beginning work. If rescue might be delayed more than six minutes, a step loop or similar device should be incorporated into the harness to minimize the risk of suspension trauma.

4.0 Fall Protection Systems

4.1 Passive Fall Protection Systems

4.1.1. Permanent Barriers

Where routine work is conducted, permanent barriers shall be constructed and maintained. Permanent guarding shall not be removed unless the fall hazard is controlled by other means, utilizing the hierarchy of controls (elimination/substitution, engineering design, administrative, PPE).

Note: The working edges of standard loading docks and rail platforms are excluded from this requirement. See the **Open-Hole Policy (FCX-01).**

Handrail Specifications	**Permanent barriers must be:** • 39-45 inches (99-114 cm) from the working platform • Include a mid-rail and have the ability to support 200 lbs. (90 kg) of horizontal force • Include a standard toe board on all exposed sides
Handrail & Permanent Barricade Removal	If removing a permanent barrier leaves an opening through which a person can fall to a lower level, the barrier must not be removed until the fall hazard is controlled by other means. (Refer to the FCX-Open Hole Policy) **These are defined as:** • **Walkway openings:** 12 inches or more in its least dimension, in any floor, walkway or platform • **Wall openings:** 30 inches or more high and 18 inches or more wide, in a wall, partition, or handrail

4.1.2. Other Fall Protection Systems

Other fall protection systems are described in the OSHA standards noted in section 8.0 References of this document (i.e. safety watch, warning line systems, nets and others).

Permitted Use

These systems are permitted in special circumstances, such as roof repair or steel erection, provided that:

1. The use is consistent with the requirements of the relevant OSHA standard
2. The user develops a written plan for the specific application
3. A thorough risk assessment identifies that this method is acceptable and no other means of protection is available
4. An exemption form is completed by a qualified person and approved by management.

4.2 Fall Restraint/Positioning Systems

Fall restraint systems are used to prevent the user from reaching a fall hazard. Positioning systems are used to hold an individual in place while allowing them to use both hands on an elevated vertical surface, such as a wall or a power pole.

Note: Positioning systems are not designed for fall arrest, and therefore a back-up fall arrest system must be used. (Sites should review their Transmission Linemen tasks and complete the exemption process if applicable. See section **3.3 Exemption Process**)

Fall Restraint Components

Component	Specification
Full Body Harness or Body Belt	Body belts may be used for fall restraint as long as there is no potential for fall from a height; in that case a full body harness is required
Anchorage	Capable of supporting at least one thousand 1000 lbs. (454 kg) of force Capable of supporting at least twice the maximum expected force must be utilized to restrain the person from exposure to the fall hazard. (In determining this force, a Qualified Person should consider site-specific factors such as the force generated by a person walking, leaning or sliding down the work surface) See Appendix D for fall clearance distances
Lanyard	Lanyards must be a fixed length to ensure that the user cannot reach the fall hazard. **Note:** Deceleration devices and self-retracting lifelines **may not** be used in fall restraint systems because of their changeable length.

Note: Fall restraint systems shall be limited to a working surface that is at or less than a slope of 4:12 from horizontal.

Fall Restraint Configuration	• The fall restraint system must be arranged in a way that eliminates the possibility of free fall. • If the user is able to reach an edge and fall any distance, the system must be reconfigured (e.g. shorter lanyard) or a fall arrest system must be used.

Positioning System Components

Component	Specification
Full body Harness or Body belt	A body belt may be utilized for positioning purposes but if fall arrest is needed then a full body harness is required.
Anchorage	Must withstand 3000 lbs. (1400 kg) of force At least twice the potential impact load of a person's fall
Lanyard	Lanyard or other connection that limits free fall to 2 feet (0.6 m) or less

Note: This system may only be used for work on vertical surfaces. This is not an acceptable personal fall protection system for horizontal surfaces, such as platforms, aerial lifts and similar; fall arrest or fall restraint systems are appropriate for use on horizontal surfaces.

Positioning Free Fall Limits	The positioning device system must be assembled in a way that limits free fall to 2 feet (0.6 m) or less.

4.3 Fall Arrest Systems

Fall arrest systems are used to minimize free fall distance and stop a fall at a proper deceleration rate.

Fall Arrest System Components

Component	Specification
Full Body Harness	A full body harness is required for fall arrest. Body belts **may not** be used in fall arrest systems.
Anchorage	Capable of supporting 5000 lb. (2300 kg) for each person attached Capable of providing a safety factor of two for the maximum impact load that it might experience, as determined by a Qualified Person
Lanyard	Includes a deceleration device designed to limit the maximum arresting force on the user to 1800 lbs. (820 kg) Only one deceleration device should be used in each system; shock-absorbing lanyards may not be coupled or be connected to self-retracting lifelines.

Fall Arrest Systems	**The fall arrest system must be set up to:** • Minimize free fall distance • Prevent contact with a lower level • Minimize the potential for swinging
Free Fall and Deceleration Distances	**The MAXIMUM:** • Allowable free fall distance is **6 feet (1.8 m)** • Deceleration distance is **3.5 feet (1 m)** • Safety factor is minimum of **2 feet** • See Appendix D This can be accomplished by selecting an anchorage that is as high as possible and is directly above the fall hazard, and by using the shortest practical lanyard or a self-retracting lifeline. **Note:** Tie-off points shall never be below the feet.

5.0 Equipment

5.1 General Equipment Requirements

Prior to selecting equipment, a Qualified Person shall make an assessment of workplace conditions where the equipment is required and understand the intended use of such equipment. The equipment selected must match the work situation and work environment.

Personal Fall Protection System Requirements	• Components of personal fall protection systems must be manufactured according to recognized quality standards (e.g. ANSI in the United States) and must have the manufacturer's label attached. • Fall protection components must be used according to manufacturer's recommendations and instructions. **Warning:** Body belts, harnesses, lanyards and other components must only be used as part of a personal fall protection system and must never be used to hoist materials, or for any other purpose for which it was not originally designed.
Defective Components	• Defective components will be removed from service and either be secured until repair is completed or be made inoperable. • Any component that is missing the manufacturer's label will be removed from service until the label is replaced under the direction of the manufacturer.
Snap Hooks	• All snap hooks must require double action to open.
Body Belts – Limited Use	• Body belts may be utilized for positioning in specific tasks but may NEVER be used in fall arrest systems.

Maintenance of Fall Systems	• Permanently installed systems, such as horizontal and vertical lifelines and trolley systems, will be placed on formal preventative maintenance schedules in accordance with manufacturer's recommendations. • Equipment used in corrosive environments will be inspected more frequently.
Anchorage	• All field-fabricated anchorages will be designed, tested and installed under the supervision of a Qualified Person. • Welding shall be conducted by a qualified welder for the material being utilized. • Anchorages used to attach personal fall arrest systems will be independent of any anchorage being used to support or suspend working platforms. • Guardrails and handrails may not be used as anchorage points for fall arrest systems unless they are specifically designed for that purpose. • All connectors and components must have strength sufficient to withstand the maximum possible impact load on the system. • If the strength of an anchorage point is unknown, a supervisor must be contacted for assistance before connecting to it. An engineering review may be required to ensure the anchorage will support weight of a fall.
Connectors	• Lanyards shall not be attached to anchorage points by doubling back and attaching the snap hook to the lanyard unless approved by the manufacturer. • Beam straps, beam clamps and other connectors designed for the specific purpose will be used when appropriate. • Knots shall not be tied in lanyards.
Storage of Fall Protection Equipment	• Personal fall protection equipment will be stored in a manner that prevents exposure to chemicals, excessive sunlight and weather. According to the manufacturer's specifications
Appropriate Component Usage	• Components should be selected to be compatible with the conditions of use. **For example,** lanyards used by welders should be constructed of wire rope rather than synthetic rope. Refer to the manufacturer's guidelines.
Horizontal Life Lines	• Horizontal lifelines may be installed by a Qualified Person according to the manufacturer's requirements. • Site built systems must be designed, installed and used under the supervision of a qualified person, as part of a complete personal fall protection system, which maintains a safety factor of at least two. • A tag indicating the maximum number of persons permitted on a lifeline must be affixed to each accessible end of the lifeline. • In some situations, a Y-lanyard may be necessary to ensure 100% tie-off when passing support structures.

Vertical Life Lines	• Vertical lifelines must have a minimum breaking strength of 5000 lb. (2300 kg). • Only one person may be connected to each vertical life line. • If rope grabs are used, they must be specifically designed and approved by the manufacturer for attachment to the type and size of life line in use.

5.2 Ladders

Persons may climb ladders of 20 feet (6.1 m) or less without fall protection as long as they maintain three points of contact and control at all times.

Working from Ladders	**Persons may work from ladders without fall protection, provided that:** 1. Feet are less than 6 feet (1.8 m) from the lower level 2. The ladder steps are dry and clean 3. The ladder is placed on a level surface 4. The work does not require leaning or reaching away from the ladder 5. The person has effectively controlled remaining risks **NOTE:** Welding or cutting from a ladder is not permitted without an exemption.
Extension Ladders	For extension ladders, utilize the 4-to-1 principal, the base of the ladder should be placed at a distance from the wall that is equal to one fourth of the height that the ladder is extended. (i.e. a ladder that is extended 20 ft. high should have its base approximately 5 ft. from the wall)
Ladder Securement	When employees are on extension ladders at heights of 20 feet or higher, either a second person will be present to steady the ladder's base or the top of the ladder will be effectively tied off to a sound anchor point. Ladders that will be utilized for an extended period of time such as construction projects will need to be secured.

5.3 Aerial Work Platforms

Personal fall protection systems must be utilized when working from aerial lifts and mobile platforms such as JLGs, man baskets, approved fork truck-mounted baskets, etc.

Guardrails	Persons must never work outside the guardrails. Persons must never climb or stand on a guardrail.
Scissor Lifts as Scaffolding	Scissor lifts (those meeting ANSI 92.6) qualify as scaffolding. Personal fall protection is not required on scissor lifts, provided that: 1. A complete handrail / mid-rail / toe board system is present 2. The lift is used and operated according to the manufacturer's instructions 3. ***Users feet do not leave the floor of the platform***
Scissor Lifts on	Scissor lifts that are mounted on mobile equipment (per ANSI 92.2) do not

Mobile Equipment	qualify as scaffolding; users must use personal fall protection systems when working from these lifts.

6.0 Training

All training related to this policy shall be conducted by a Qualified Person.

Training Requirements	All persons working on FCX property will be made aware of this policy before working where fall hazards exist. All persons who may be required to use a personal fall protection system will receive training as noted below before they use it. All training will be documented.
Authorized Users	Persons using personal fall protection systems will receive specific training on the equipment they will be using. Training will include: • This policy • The nature of fall hazards in the work area • Inspection procedures • Fitting procedures • Limitations of fall protection systems • Specific instruction on the fall protection equipment being used, per manufacturer's instructions • Fall physics, fall calculations and clearances • Component selection, compatibles, selection • Fall systems • Rescue, including self-rescue
Refresher Training	Affected persons will receive annual refresher training on the requirements of this policy and lessons learned. More frequent training may be required for any trained persons who demonstrate a lack of understanding of the requirements of this policy.
Rescue Training	Sites that use fall arrest systems shall provide rope rescue training for existing response teams or, in cases where the site relies on local emergency service providers, the site shall confirm that the local emergency service providers have rope rescue capabilities and are familiar with the site.

7.0 Definitions

Anchorage	A secure point of attachment for lifelines, lanyards or deceleration devices.
Body Belt	A strap with means both for securing it about the waist and for attaching it to a lanyard or lifeline in a fall restraint system or positioning device system.
Body Harness	Straps which may be secured about the person in a manner that will distribute the fall arrest forces over at least the thighs, pelvis, waist, chest and shoulders with means for attaching it to other components of a personal fall protection system.

Deceleration Device	Any mechanism, such as a rope grab, rip-stitch lanyard, specially-woven lanyard, tearing or deforming lanyard, automatic self-retracting lifelines/lanyards, etc., which serves to dissipate a substantial amount of energy during a fall arrestor otherwise limit the energy imposed on an person during fall arrest.
Deceleration Distance	The additional vertical distance a falling person travels, excluding lifeline elongation and free fall distance, before stopping, from the point at which the deceleration device begins to operate. It is measured as the distance between the location of an person's body belt or body harness attachment point at the moment of activation (at the onset of fall arrest forces) of the deceleration device during a fall and the location of that attachment point after the person comes to a full stop
Free Fall	The act of falling before a personal fall arrest system begins to apply force to arrest the fall.
Free Fall Distance	The vertical displacement of the fall arrest attachment point on the person's body belt or body harness between onset of the fall and just before the system begins to apply force to arrest the fall. This distance excludes deceleration distance and lifeline/lanyard elongation, but includes any deceleration device slide distance or self-retracting lifeline/lanyard extension before they operate and fall arrest forces occur.
Guardrail System	Barrier erected to prevent persons from falling to lower levels.
Lanyard	A flexible line of rope, wire rope or strap which generally has a connector at each end for connecting the body belt or body harness to a deceleration device, lifeline or anchorage.
Lifeline	A component consisting of a flexible line for connection to an anchorage at one end to hang vertically (Vertical Lifeline) or for connection to anchorages at both ends to stretch horizontally (Horizontal Lifeline)and which serves as a means for connecting other components of a personal fall protection system to the anchorage.
Qualified Person	One who, by possession of a recognized degree, certificate or professional standing or who by knowledge, training and experience, has successfully demonstrated his ability to solve or resolve problems relating to the subject matter, the work or the project.
Self-Retracting Lifeline/Lanyard	A deceleration device containing a drum-wound line which can be slowly extracted from, or retracted onto, the drum under slight tension during normal person movement and which, after onset of a fall, automatically locks the drum and arrests the fall

8.0 References

The following sources were used in the development of this document	
FCX-DOHS References	Guarding, Flagging, Open-Hole Guideline (FCX-01) FCX Flagging and Barricading Guideline FCX Open Hole Policy (FCX-02)
OSHA References	For additional guidance and best practices regarding fall hazards and protective equipment reference www.OSHA.gov. Key sections include: • 1926.500(b): Definitions • 1926.501: Exposures that require fall protection • 1926.502: Fall protection systems, criteria, and practices • 1926 Subpart M Appendices: Various guidance • 1926.451(g): Fall Protection in Scaffolding • 1926.760(a): Fall Protection for Steel Erection • 1926.453: Aerial lifts • 1910.25, 1910.26, and 1910.27: Ladders
ANSI References	ANSI/ASSE Z359 Fall Protection

9.0 Records

Records Retention	The following records must be retained according to the FCX Records Retention Policy: • Employee Training Records • Annual program review • Equipment inspection records • Exemption Request Forms • Rescue Plans

10.0 Revision History

2009 Rev 1	Initial Release	
2013 Rev 2	This update includes many changes from the previous version, some minor and some significant. Users should review in its entirety.	1. Changed title from Fall Protection Guideline to Working at Heights Policy. 2. Clarified requirements for anchor points and other fall prevention devices to be designed and constructed under direction of qualified person. 3. Changed references to “competent” to a “qualified”. 4. Moved Definitions to end of document. 5. Exemption Request Form 6. Requirement for monthly documented inspections of fall arrest equipment (ie, harness, lanyard, etc.)
2013 Rev	This update	1. On page 7, removed the option for quarterly documented inspections to make

3	includes minor clarifications to previous revision.	this consistent with the rest of the document which referenced monthly documented inspections. 2. On page 9, corrected to anchor point requirement for fall restraint systems to 1000 lb force. The 3000 lb force requirement is required for positioning systems. This is consistent with the ANSI standard.
4	This update includes minor clarifications to previous revision.	1. Section 5.2 clarification on welding from ladders and work that requires leaning or reaching beyond the ladder.

Appendix Forms and Permits

Appendix A- Working at Heights Exemption Request Form

When any portion of this policy cannot be met, an exemption must be completed. Complete this form with a detailed description of the area and reason for a Working at Heights exemption request. A task review by an engineer or other qualified individual to consider other controls must be completed prior to submitting to the division manager. Approval from the division manager or higher is required prior to proceeding.		
Date:	**Time:**	**Division Manager:**
Location of Activity:		
Purpose of Activity:		
Description of Request:		
Justification:		
Control Measures:		
Signature of Requestor:		
Signature of Division Manager or Delegate:		

*When completed give a copy of all related documentation to the division record keeper for filling purposes.

Appendix B – Maintenance and Inspection of Fall Arrest Equipment

To maintain their service life and high performance, all belts and harnesses should be inspected frequently. Visual inspection before each use should become routine, and also a routine inspection by a qualified person. Sites shall include these routine inspections within the preventative maintenance process. If any of the conditions listed below are found the equipment will not be used until repaired or replaced.

Harness Inspection

1. *Belts and Rings*: For harness inspections begin at one end, hold the body side of the belt toward you, grasping the belt with your hands six to eight inches apart. Bend the belt in an inverted "U." Watch for frayed edges, broken fibers, pulled stitches, cuts or chemical damage. Check D-rings and D-ring metal wear pads for distortion, cracks, breaks, and rough or sharp edges. The D-ring bar should be at a 90 degree angle with the long axis of the belt and should pivot freely.

Attachments of buckles and D-rings should be given special attention. Note any unusual wear, frayed or cut fibers, or distortion of the buckles. Rivets should be tight and not removable with fingers. Body side rivet base and outside rivets should be flat against the material. Bent rivets will fail under stress.

Inspect harness for frayed or broken strands. Grasp the webbing with hands 6 to 8 inches apart. Bend the webbing in an inverted “U”. The resulting surface tension makes damaged fibers or cuts easier to detect. Follow this procedure for the entire length of the webbing inspecting both sides of each strap. Broken webbing strands generally appear as tufts on the webbing surface. Any broken, cut or burnt stitches will be readily seen.

Any fall indicators present should be inspected to ensure that they do not indicate that the harness has been subject to fall.

2. *Tongue Buckle*: Buckle tongues should be free of distortion in shape and motion. They should overlap the buckle frame and move freely back and forth in their socket. Rollers should turn freely on the frame. Check for distortion or sharp edges.

3. Friction Buckle: Inspect the buckle for distortion. The outer bar or center bars must be straight. Pay special attention to corners and attachment points of the center bar.

Lanyard Inspection

When inspecting lanyards, begin at one end and work to the opposite end. Slowly rotate the lanyard so that the entire circumference is checked. Spliced ends require particular attention. Hardware should be examined under procedures detailed below.

Snaps: Inspect closely for hook and eye distortion, cracks, corrosion, or pitted surfaces. The keeper or latch should seat into the nose without binding and should not be distorted or obstructed. The keeper spring should exert sufficient force to firmly self-close the keeper. Keeper locks must prevent the keeper from opening once the keeper closes.

Thimbles: The thimble (protective plastic sleeve) must be firmly seated in the eye of the splice, and the splice should have no loose or cut strands. The edges of the thimble should be free of sharp edges, distortion, or cracks.

Steel Lanyards: While rotating a steel lanyard, watch for cuts, frayed areas, or unusual wear patterns on the wire. The use of steel lanyards for fall protection without a shock-absorbing device is not recommended.

Web Lanyard: While bending webbing over a piece of pipe, observe each side of the webbed lanyard. This will reveal any cuts or breaks. Due to the limited elasticity of the web lanyard, fall protection without the use of a shock absorber is not recommended.

Rope Lanyard: Rotation of the rope lanyard while inspecting from end to end will bring to light any fuzzy, worn, broken or cut fibers. Weakened areas from extreme loads will appear as a noticeable change in original diameter. The rope diameter should be uniform throughout, following a short break-in period. When a rope lanyard is used for fall protection, a shock-absorbing system should be included.

Shock-Absorbing Packs: The outer portion of the shock-absorbing pack should be examined for burn holes and tears. Stitching on areas where the pack is sewn to the D-ring, belt or lanyard should be examined for loose strands, rips and deterioration.

Visual Indication of Damage to Webbing and Rope Lanyards

Heat: In excessive heat, nylon becomes brittle and has a shriveled brownish appearance. Fibers will break when flexed and should not be used above 180 degrees Fahrenheit.

Chemical: Change in color usually appears as a brownish smear or smudge. Transverse cracks appear when belt is bent over tight. This causes a loss of elasticity in the belt.

Ultraviolet Rays: Do not store webbing and rope lanyards in direct sunlight, because ultraviolet rays can reduce the strength of some material.

Molten Metal or Flame: Webbing and rope strands may be fused together by molten metal or flame. Watch for hard, shiny spots or a hard and brittle feel. Webbing will not support combustion, nylon will.

Paint and Solvents: Paint will penetrate and dry, restricting movements of fibers. Drying agents and solvents in some paints will appear as chemical damage.

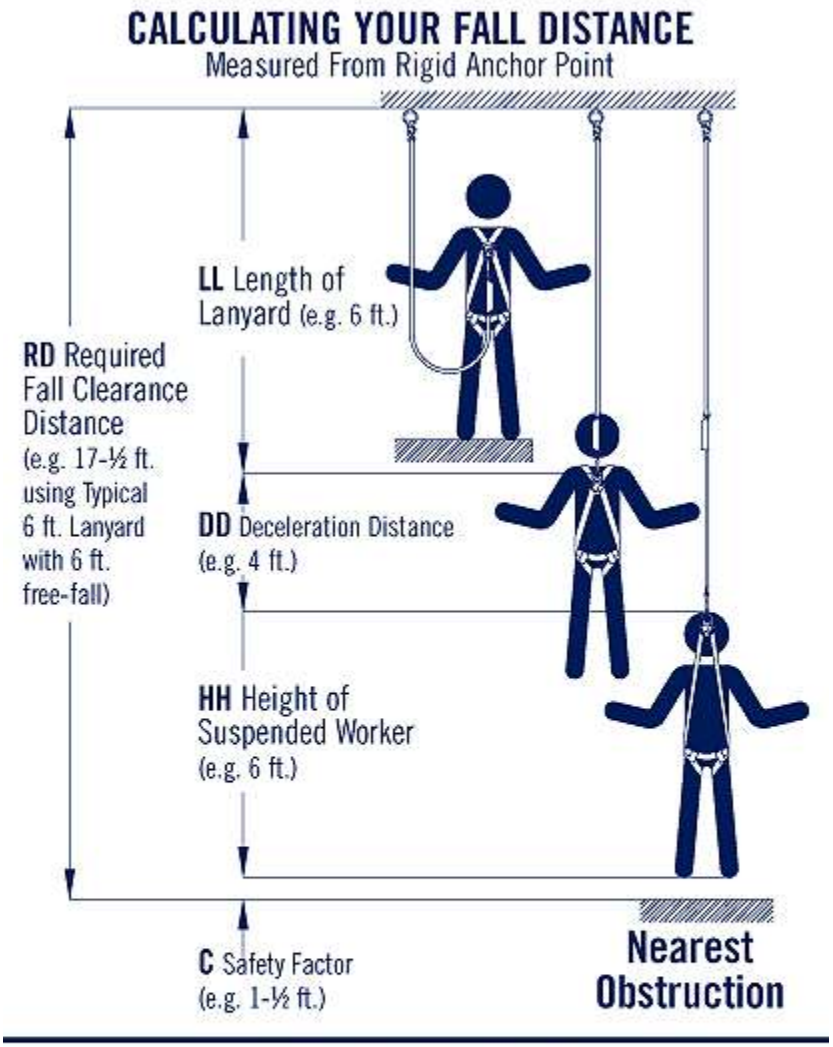
Appendix C – Safety Harness Monthly Inspection – Example

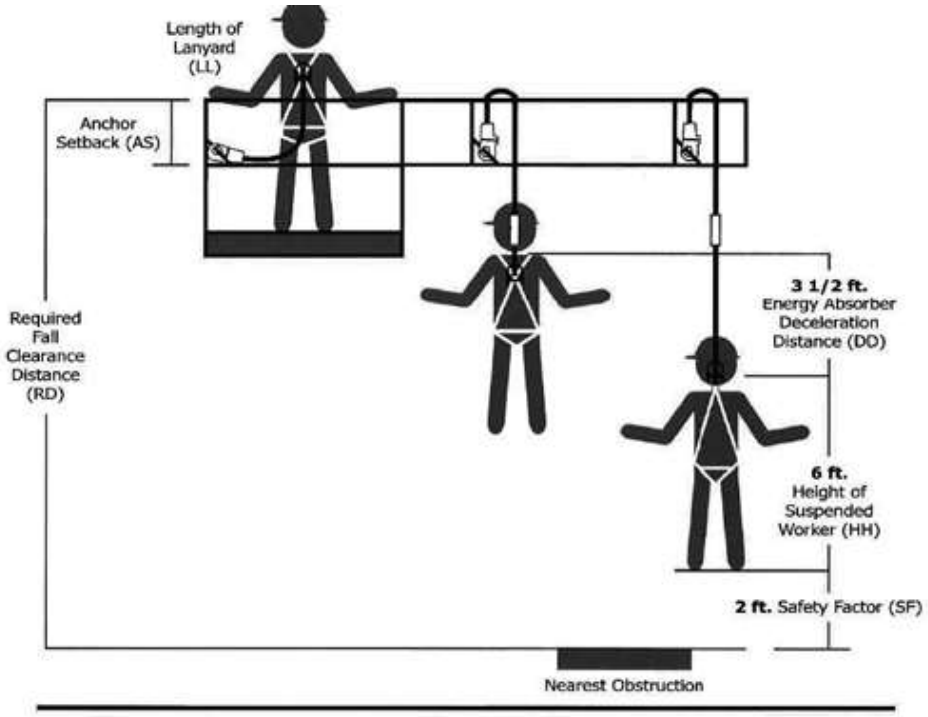
Safety Harness Monthly Inspection Report

Inspected by: (Supervisor's name)			Date:							
Division:		Dept.								
Instructions 1. All parts of safety belt and attachments have to be inspected for excessive wear and damage. 2. This ✔ symbol is for YES or OK. This **X** symbol is for NO or REPLACE. 3. To be inspected monthly and report turned in to Safety Dept.			Belt Webbing or Leather	All Stitching	Rivets and Eyelets	D-Ring(s) Buckel(s) (if applicable)	Lanyard	Hook Safety Latch	Certification or Data Tag
Employee Name	PeopleSoft #	Mfg's Serial Number							

Appendix D – Basic Fall Clearance Calculation

A qualified person should consider other factors, including but not limited to, swing fall, other workers, fall away from anchor, and other obstructions.




Length of Lanyard (LL)
Anchor Setback (AS)
Required Fall Clearance Distance (RD)
3 1/2 ft. Energy Absorber Deceleration Distance (DD)
6 ft. Height of Suspended Worker (HH)
2 ft. Safety Factor (SF)
Nearest Obstruction

Appendix E – Working at Heights Significant Risk Assessment

Potentially Fatal Risk	Critical Controls to Reduce or Eliminate
Fall From Height/Fall to Ground	Utilized working platform for safe access (handrails, scaffolding, pipe crossovers, scissor lifts and man-lifts)
	Use substantial barricades and guards around openings or fall hazards
	Inspect PPE/Restraint System
	Pre-job planning and evaluation of scope of work
	Fall Arrest and Restraint (i.e., Safety nets, self-retracting lanyard, air bags)
	Use of 100% tie off - use of two lanyards to allow for at least one connection at all times
	Training in use of fall protection systems and devices
	In field observation of work at heights
	PM process for critical tie-off point inspection
	Use of fall arrest equipment (lanyards, body harness, etc.)
	Critical Behaviors – placing body appropriately, use of fall arrest equipment, avoiding complacency in routine work, use of engineered tie –off points, being prepared for task with appropriate PPE and equipment, coming to work fit for duty, participating in pre-job planning and tailgate meetings, stopping when work changes to re-evaluate the safety aspects, stopping unsafe work
Suspension Trauma	Rescue plan that includes a way for safe/fast rescue (i.e., Man-lift, scissor lifts)
	Suspension trauma straps
	Pre-job planning and evaluation of scope of work
	Quick response to lower a person from suspension
	Critical Behaviors – using the suspension trauma straps provide, reviewing and understanding the rescue plan
Free Fall or Swing Radius	Lanyard with appropriate length
	Use of self-retracting lanyard
	Pre-task review to determine fall potential and plan to prevent free-fall or swing radius issues
	Critical Behaviors – position body appropriately to avoid entanglement of lanyard on other objects or other lanyards in the area, complete a pre-task risk review to identify potential issues and mitigate risk.
Improper Use/Defective Fall Protection Equipment	Training on proper equipment and donning and doffing of harness
	Proper pre-use inspection of harness and lanyards
	Use of Fall Protection procedures
	Monthly documented inspection of lanyards and other equipment
	Process for removal and proper disposal of defective equipment
	Critical Behaviors – inspect harness and lanyards prior to every use, properly dispose of defective equipment, avoiding complacency to routine tasks, avoiding cultural influences or social norms to take shortcuts
Fall into rotating or moving parts	Design an engineered working platform for safe access
	Ensure safe access methods are provided (man-lift, scissor-lift, scaffolding)
	Use of proper handrails or other substantial guards or barricades
	Pre-job evaluation/planning to review risks in the area
	Proper lock out of machinery within working area or potential fall area
	Guarding of moving machine parts.
	Critical Behaviors – use appropriate length of lanyard to avoid fall into lower level equipment, follow proper LOTOTO policy, conduct a pre-job safety analysis to mitigate hazards
Fall from or Failure of Work Platforms	Handrails or other barriers
	Engineering and proper design of work platforms to withstand load
	Preventative maintenance of work platforms and scaffolding
	Pre-shift inspection of platforms, scaffolding
	100% tie-off to engineered and approved points (NOTE: tie-off to the scaffolding structure is not permitted)
	Signs on buildings stating when roof is not made to support weight of individuals
	Critical Behavior – inspect working platforms prior to use, use the system per design specifications, utilize the proper fall protection for the work being performed, complete a pre-job risk evaluation prior to starting work, ensure controls are in place to perform the work safely.

Red Flags – Indicate potential unsafe behavior or lack of controls
Housekeeping issue/unclean work area
No pre-job risk assessment
Poor anchor point location
Absence of supervision
Absence of Rescue Plan
No clear access method
Using incompatible components in fall system
No barricading around work area
Placement of material in proximity to people working creating trip hazards
Misuse of fall protection equipment
Emergency work/unplanned work
Employees appear to be nervous, not fit for duty
When asked, employees are unsure of proper procedure or the work plan
Using fall protection when other controls could be applied
Employees tied off below feet, using wrong lanyard, no D-ring or proper tie-off point
Fall arrest system being used when fall potential less than 6’ to ground
Temporary ladder not tied to anything
Fall arrest gear not stored properly or in poor condition
Inspection of equipment not complete
People working at heights during high winds or other weather conditions
Supervisor involved in or doing the work rather than supervising or absence of a supervisor
Lack of understanding of controls by employees doing the work