JUNE 2005

GENERIC
FALL PROTECTION
PLAN

Contents

Fall Protection Policy
Scope

This policy will apply to XYZ Company.

Policy

XYZ Company is committed to providing a safe work environment for its employees and preventing occupational injuries due to falls.

Fall Protection is an integral part of our commitment to a safe work environment. Any time a worker is exposed to a fall hazard there will be a procedure and equipment to reduce and/or eliminate the hazard of working at height.

Fall Protection shall be achieved through a hierarchy of controls that will involve all levels of management, shop, supervisory and field personnel. This hierarchy shall be: identification of hazards, elimination of hazards through engineering (design) and procedural practices, control and mitigation of hazards through prevention and restraint systems and finally, the use of fall arrest. Workers shall be expected to assess the risks associated with a task and ensure that proper mitigation is in place to protect them while climbing and working at heights. Where a worker is unsure of the methods, equipment or procedures to reduce the risk, they are to seek direction from their supervisor.

The application of this policy shall be outlined within the fall protection plan and shall be the responsibility of every worker within the company. This policy is supported by the highest levels of management and shall be enforced without exception. It is the intention of XYZ Company to reduce and ultimately eliminate any injuries resulting from working at height.

It is the duty of all personnel employed by XYZ Company to report to their supervisor, manager, safety representative, or member of the safety committee as soon as possible any hazardous conditions, injury, accident, or illness related to the workplace. In addition, employees must protect their health and safety by complying with applicable Acts and Regulations and to follow policies, procedures, rules and instructions as prescribed by XYZ Company.

Company Name / Organization recognizes the employee's duty to identify hazards and supports and encourages employees to play an active role in identifying hazards and to offer suggestions or ideas to improve the health and safety program.

Senior Management: _____ Date: _____

Legislation:
Within Canada, each province and territory has jurisdiction over workplace health and safety issues. Legislation is specific and often different depending upon the province you are working in. The most recent and stringent within the western provinces are those of British Columbia and Alberta. As such, it is those two provinces' legislation and that of the Northwest Territories, which XYZ Company shall use as a basis for protecting its workers at height. The following illustrates the basic requirement for fall protection on the worksite and does not reproduce or supply the entire legislation, which is available to any worker.

WORKERS' COMPENSATION BOARD OF BRITISH COLUMBIA

FALL PROTECTION REGULATIONS
GENERAL REQUIREMENTS

Obligation
8.102

(1) Unless elsewhere provided for in these regulations, the employer must ensure a fall protection system is used when work is being at a place:
  (a) from which a fall of 3 metres (10 feet) or more may occur, or
  (b) where a fall from a lesser height involves an unusual risk of injury.

(2) The employer must ensure that guardrails, or other similar means of fall restraint are used when practicable.

(3) When compliance with clause (2) is not practicable, the employer must ensure that another fall restraint system is used.

(4) When the use of a fall restraint system is not practicable, the employer must ensure that a fall arrest system is used.

(5) When the use of a fall arrest system is not practicable or will result in a hazard greater than if the system was not used, the employer must ensure:
  (a) A control zone is used in accordance with these regulations, or
  (b) A safety monitor system with a control zone is used in accordance with these regulations, or
  (c) Other procedures acceptable to the board are followed.

Fall
8.104
(1) The employer must have a written fall protection plan for a workplace where:

(a) Work is being done at a location where workers are not protected by permanent guardrails, and from which a fall of 7.5 metres (25 feet) or more may occur.
(b) The employer uses a safety monitor and control zone or other work procedures as the means of fall protection, or
(c) The board so directs, because a fall may involve an unusual risk of injury.

(2) The fall protection plan must be available at the workplace before work with a risk of falling begins.

(3) The plan must specify:
(a) the fall hazards expected in each work area,
(b) the fall protection system or systems to be used in each area,
(c) the procedures to assemble, maintain, inspect, use and disassemble the fall protection system or systems, and
(d) the procedures for rescue of a worker who has fallen and is suspended by a personal fall protection system or safety net, but is unable to effect self rescue.

Instruction of Workers
8.106
Before a worker is allowed into an area where a risk of falling exists, the employer must ensure the worker is instructed in the fall protection system for the area and the procedures to be followed.

Free fall limits
8.142
(1) A personal fall arrest system without a shock absorber must limit the free fall of a worker to 1.2 metres (4 feet).

(2) A personal fall arrest system with a shock absorber may allow a free fall of up to 2 metres (6.5 feet), or the limit specified in the manufacturer’s instructions, whichever is less.

ALBERTA Occupational Health and Safety Act
Occupational Health and Safety Code

GENERAL REQUIREMENTS

Part 9

139
(1) An employer must ensure that workers use a fall protection system at a temporary or permanent work area if:
  (a) a worker may fall 3 metres or more, or
  (b) there is an unusual possibility of injury if a worker falls less than 3 metres.

143
(1) An employer must develop procedures in a fall protection plan for a workplace if a worker at the work site may fall 3 metres or more and workers are not protected by guardrails.

(2) A fall protection plan must specify:
  (a) fall hazards at the work site,
  (b) the fall protection system to be used on site,
  (c) the procedures to assemble, maintain, inspect, use and disassemble the fall protection system, and
  (d) the rescue procedures to be used if a worker falls, is supported by a personal fall arrest system or safety net and needs to be rescued.

Instruction of Workers
144
An employer must ensure that a worker is trained in the fall protection plan and the safe use of the fall protection system before allowing the worker to work in an area where a fall protection system must be used.

Free fall limits – Maximum Arresting Force
150
(1) An Employer must ensure that a personal fall arrest system without a shock absorber limits a workers free fall distance to 1.2 metres.

(2) An employer must ensure a personal fall arrest system with a shock absorber limits a workers free fall distance to 2 metres, or the limit specified in the manufacturer's specifications whichever is less.

NORTH WEST TERRITORIES : SAFETY ACT
GENERAL SAFETY REGULATIONS
R.R.N.W.T. 1990,c.S-1

INCLUDING AMENDMENTS MADE BY
R.R.N.W.T. 1990,c.S-1(Supp.)
In force September 15, 1992;
SI-013-92; R-028-93; R-096-93; R-072-95; R-135-98; R-079-2000 (CIF 01/12/2000)

Safety-belts, Body Harnesses, Lanyards and Lifelines
57.
(1) A worker shall wear a lanyard, lifeline and safety-belt or body harness where that worker is working:
(a) at an elevation of 3 metres (10 feet) or more above grade or floor level,
(b) over a pit, a shaft, or operating machinery, or
(c) where a fall could result in his or her drowning, and where it is impracticable to provide adequate work platforms or guarding.

58.
An employer shall ensure that:
(d) a safety-belt, body harness, lanyard or lifeline is assembled and used in a manner that will limit the free fall of a worker to 1.25 metres (4.1 feet.);
(e) safety-belts, body harnesses, lanyards and lifelines must be:
(i) protected from heat, flame, abrasion and corrosive materials during storage, and
(ii) carefully inspected before use and any defective part removed from service.

Risk identification
While there are several identified tasks where fall protection is normally required, every task undertaken by a worker can have inherent risks associated with it. It is the responsibility of the worker to assess their current task, the risk associated with it and what precautions have been taken to reduce and/or eliminate that risk.

Slips, trips and falls from the same level.
It is the policy of XYZ Company that the workplace shall be kept as clean as possible to reduce the risk of falls from the same level. Procedures are in place to deal with same level hazards and are to be followed as per those policies.

Falls from a different level.
Once a hazard is identified, a work procedure shall be developed to ensure that the risk of working at height is minimized or, if at all possible, eliminated. For those tasks, which have not been identified, the fall task form shall be used to assess the hazard and detail procedures to reduce that hazard.

Identified Risks/activities:

The following activities have been identified to require fall protection during their completion. It should be noted that this is not an exhaustive list and may require additions.

DRILLING	DRILLING	SERVICING
Rigging up/down fall protection equipment	Installing belly pad for tubing in triple derrick	Running/pulling tubulars
Erecting substructure	Working from Ladder	Disconnecting horse head on pump jack
Washing/working on top of buildings	Working from scaffolding	Working on rod board
Climbing crown stands when derrick down	Hanging blocks	Inspect, nipple up, nipple down BOPs
Coiling and uncoiling lines on top of derrick	Scrubbing derrick	Installing flow line
Hanging easy rider line	Maintaining derrick lights	Installing escape buggy
Walking drilling line back to draw works during rig up	Installing cement head, circulating head and test head	Working on cat walks (no rails)
Pinning top of A-legs	Hoisting using man-rated hoist	Rigging up rescue equipment and carry out rescue
Installing missing floor boards	Rigging up rescue equipment and carry out rescue	
Setting handrails	Installing escape buggy	
Bridle up and bridle down	**SERVICING**	**3RD PARTY EQUIPMENT**
Hanging/disconnecting kelly hose	Stump testing (BOPs)	Servicing centrifuges
Erecting and dismantling prefabs	Hanging wire line sheaves (free pointing), tube testing	Climbing 400 barrel tanks
Rigging up line spooler	Installing hand rails	Working on premix tanks
Rigging in survey line	Picking up pipe off high boy trailer	Servicing top drive
Installing prefabs monkey board	Chaining/unchaining blocks	Using pipe handling equipment
Working on/above mud tanks	Rigging snubbing units	Picking up pipe/rods off high boy trailer for wireline and swabbing
Working around open pits/sumps	Rigging in pack-off hoses	
Greasing blocks, swivel, crown	Locking BOPs when using flanges	
Installing stabbing board	Greasing crown, installing flags	
Running casing	Positioning secondary retractable	
Opening/closing mud tanks gates	Rigging in pipe handling equipment and using scissor lifts	
Running high collars above monkey board	Switching from 4-6 lines or 6-4 lines derrick standing	
Retrieving stand from across derrick	Nippling up on high well heads	
Washing inside/outside of subs	Plugging up on high well heads	
Install/remove cable trays	Maintaining Derrick lights	*Taken from PITS Rig Work*
Install/remove grasshopper trays	Working from ladder	*Fall Protection Training manual 2005*

Equipment Selection/Use:
All equipment selected for fall protection shall be Canadian Standards Association (CSA) approved and as per most manufacturers recommendations and legislated requirements shall be inspected prior to use by the worker using the equipment and at least annually by a competent person. It is imperative that workers follow the manufacturers guidelines in the use, care and maintenance of the specific equipment used.

Self Retracting Lifeline (SRL):
It is a recognized hazard where a worker can fall and have the SRL line (cable and/or web) come into contact with a sharp edge. Where this hazard exists, the worker increases the potential of injury and/or death due to the SRL not being allowed to function properly. Wherever possible, the placement and use of the SRL should take this hazard into consideration and the worker should eliminate the possibility of the SRLs line coming into contact with an unprotected sharp edge. Where the elimination of this hazard is not possible, it is industry practice and XYZ Company's policy to use a shock absorber (not a shock absorbing lanyard) attached between the harness dorsal D-ring and the SRLs snap hook. By adding this shock absorber it reduces (not eliminates) the potential of the SRL line's failure over the sharp edge.

It is important to understand that where the shock absorber is integral to the harness it must be taken into consideration when attaching other fall protection components. For example when attaching a lanyard to the shock pack, both freefall and increased required clearances must be taken into consideration by attaching a 6 foot lanyard to the shock pack the potential free fall when anchoring at shoulder height is now approximately 7 feet and 6 inches versus the normal 6 feet. As most manufacturers and legislative bodies allow for a maximum freefall of 6 feet this becomes a serious issue.

Remember that due-care and attention is always necessary, as no fall arrest system totally eliminates all the risk of injury. It is imperative where a shock absorber is used in conjunction with an SRL that the manufacturer's guidelines are followed and that, where necessary, the manufacturer has been contacted and approval is granted for this application (see Appendix B, DBI technical bulletin for sharp edges).

Rescue from Heights:
It is recognized both through due diligence and legislation that if a worker is exposed to the risk of a fall, a rescue plan must be in place to effectively retrieve that worker. Wherever possible, rescue should be as simple and safe as possible and it is the policy of XYZ Company that, where possible, workers should affect a self-rescue by climbing back onto the adjacent structure. If the worker is not capable of reaching suitable structure, a line should be passed to the worker to assist them in reaching suitable structure. Where the worker is incapable of reaching suitable structure or has been injured, XYZ Company has implemented a rescue program using a man rated winch or as per the variance given by the Workers' Compensation Board of British Columbia, a non-man rated winch so long as the only lifting of personnel conducted is limited to that required to release the individual from their deployed fall arrest system. Where that unit is not available, a pre-rigged rope haul system or similar unit shall be employed. Raising or lowering of individuals for maintenance or general work purposes shall only be conducted on a man rated winch. Personnel-hoisting procedures shall be employed anytime a worker is raised or lowered using the man rated winch. It should be noted that any rescue should always be as simple and safe as possible. Rescuers exposed to the risk of a fall will always use proper fall protection procedures in the course of a rescue operation and will only be exposed to that risk where absolutely necessary. Only where there is no possibility of reaching a fallen worker from a stable structure (with the rescuer secured and properly protected), should a rescuer be suspended to affect a rescue pick off. When using a non-man rated winch, rescuers must be lowered to the fallen worker (vs. raised). The pick off procedure should use a properly sized and rated connector that will be attached to the dorsal D-ring of the fallen worker and to the lifting point (normally front D-ring) of the rescuer or connection point to the haul system/winch line. Both the rescuer and fallen worker should be provided with fall protection during the rescue operation.

Rescue should be practiced and pre-assigned roles established. As a minimum, a rescue team requires the following:
Rescue Leader: normally the most senior personnel on site, this person should direct the operation and only under extreme circumstances should they actively participate in the rescue.
Rescuer: these individuals will be the climbers who set up the system and attach the system to the fallen worker.
***Haul Team*:** any workers who are available at the floor or ground level. They will prepare the rescue kit to be set up and will provide the *muscle* when using a rope haul system.
***First Aiders*:** will attend to the fallen worker once on the ground.

Small crews will often have to fill more than one role and should always be cross-trained, so that they can assist where necessary.

XYZ Company has identified the following procedures that are common to the

majority of at height activities:

001: Climbing with an SRL

002: Climbing without an SRL

003: Climbing with a Fixed Ladder Safety System

004: Climbing and Working on the Rig with an SRL

005: Climbing Across the Sides or Inside of the Rig

006: Climbing with a Vertical Lifeline and Automatic Fall Arrester

007: Working on the Monkey Board or Rod Basket

008: Working from a Secondary Platform (portable ladder or vehicle)

009: Working with a Horizontal Lifeline

010: Personnel Hoisting

011: Confined Space Entry (non-entry rescue)

Fall Protection Procedure 001: Climbing with an SRL

Task: Workers will be required to vertically climb the rig or other structure on a fixed ladder using a pre-installed SRL.

Hazard: Workers climbing a fixed ladder are faced with the risk of falling if they lose their footing or hand grip.

Equipment:

Anchorage: Prior to any worker climbing on the ladder, an SRL shall be attached to a pre-engineered anchorage point (normally at or on the crown). This anchorage will be designed for the attachment of a CSA approved SRL.

Body Support: A CSA full body harness suitable to the task conducted at height will be required. Workers will have a choice of either a derrick mans' harness for working on the monkey board, or a general purpose harness for working on other areas of the rig. See Appendix A for equipment approved by XYZ Company.

Connecting Means: Workers will use the integral snap hook on the SRL cable to connect to the harness

Specialty Equipment: CSA approved SRL, suitable in length to reach the base of the ladder without any extensions attached.

Pre-use inspection: all fall protection equipment should be inspected prior to use as per manufacturers instructions.

Anchorage: The SRL will be pre-installed and the anchorage will be inspected prior to rig up.

Body Support:
Webbing should be free of any cuts or damage including major abrasion holes or burns.

Buckles should be functioning properly and not showing any signs of damage or distortion.

D-rings should be free of cuts, nicks or abrasion that could possibly damage webbing.

Connecting Means: If a shock absorber is being used on the harness and is not sewn integral to the back D-ring, check to ensure that snaphook and D-ring are free from defects, cuts, nicks abrasion and that the

snaphook functions properly with the necessary two actions to open the hook gate.

Ensure that the shock absorber is sewn onto the connecting means (ensure you can see the stitching forming the loop around the connector).

Inspect shock absorber for signs of deployment
- Impact indicator deployed
- Shock material visibly torn and coming out of the shock pack

Snaphook as per SRL.

Specialty Equipment:
Inspect the SRL snaphook to ensure it takes two movements in order to open and that it automatically closes and locks.

Inspect the impact indicator (where the snaphook attaches to the cable or webbing).

Pull sharply on the SRL cable (snaphook) to ensure that the SRL will lock off.

Procedure
Inspect and then put on appropriate CSA approved full body harness.
Retrieve the SRL snaphook and cable by pulling down the tagline attached to the unit. Properly inspect the SRL and connecting hardware. If any piece of equipment fails the pre-use inspection, that equipment shall be removed from service until a formal inspection by a competent person has been conducted and the equipment is either destroyed, repaired or returned to service.

If the harness is supplied with an integral shock absorber already attached to the harnesses dorsal D-ring, attach SRL snaphook to the shock absorber's D-ring. If the harness is not supplied with an integral shock absorber attach the SRL snap hook to the dorsal D of the harness.

Climb at an appropriate rate of speed, so as not to climb up faster than the unit can retrieve cable and down fast enough to lock off the unit. Proper climbing requires that three points of contact be on the ladder at all times.

When you have reached your work platform, attach to the fall protection system appropriate for and/or designated for that area and detach from the SRL. If other workers are required to climb to height, the SRL must be reattached to the tagline and retracted into its housing. If you will be the only worker at height, the SRLs snaphook can be attached to the ladder or an accessible connection point to be available for your climb down.

Upon finishing work, re-attach to the SRL, detach from the work area fall arrest system and climb down. Once off the ladder, detach the SRL snaphook from the harness, reattach the tagline and allow the cable to slowly retract into the housing.

Ensure that the tagline is tied off and out of the way.

Return the harness to its storage location, noting any damage to the equipment used (if there is any damage, equipment is to be removed from service and inspected by a competent person).

Rescue

If a worker falls during climbing and they cannot reach the ladder and/or rescue themselves, the rig rescue plan will need to be put into effect. Rescue is conducted by trained individuals utilizing a winch line (where available and appropriate) or alternatively a pre-engineered rope haul system or similar device.

Winch line Rescue

Using proper fall protection techniques as outlined within this document, one rescuer will immediately climb the rig with a rope tagline, rescue pulley (or similar shiv), anchor strap and positioning lanyard attached to his harness. Once properly secured using the positioning lanyard, the rescuer will immediately assess the medical condition of the fallen worker and administer appropriate first aid. Normally, the extent of medical attention that can be administered at height is limited to stemming the flow of blood from an open wound. The tagline will be looped through a pulley anchored to the ladder or adjacent structure and the tagline will be lowered to the workers below. By this time, the haul crew will have prepared the winch for the rescue operation (see *manufacturers requirements for personnel hoisting*). Workers at the rig floor will attach the tag line to the winch line's connector and the connector shall be raised to the rescuer. The tag line will provide two functions, first to allow the rescuer to get a hold of the end of the line and then to keep the worker from entangling in the structure during lowering operations. The winch line will be connected to the workers dorsal D-ring using an appropriate sized and rated connector. Once the winch line is connected to the fallen worker the tagline should be removed from the winch line and attached to the side or rear belt D-ring of the fallen worker's harness. If the workers harness only has a dorsal D-ring, attach to that D. If the winch line's path of travel will take the worker away from the ladder or structure (into the middle of the rig) then the tagline can remain attached to the rescue pulley to aid in easing the worker into the proper lowering path. However, if it is necessary to pull the worker away from the structure during lowering operations, the tagline should be removed from the rescue pulley to allow for a direct pull from the rig floor.

The winch will be used to lift the fallen worker (only enough to unlock his SRL) and then carefully lower him to the rig floor. It is important that the speed is controlled so the SRL does not lock off during descent.

At the base of the structure, first aid personnel will take over and properly attend to, and package the worker in a stretcher. It is important that workers expected to package the worker (put the fallen worker in a stretcher) are properly trained and that the medical condition of the fallen worker is immediately assessed to determine the best and most appropriate course of action.

Haul System Rescue

Using proper fall protection techniques as outlined within this document, one rescuer will immediately climb the rig with a rope tagline, rescue pulley (or similar shiv), anchor strap and positioning lanyard attached to the harness. Once properly secured using the positioning lanyard, the rescuer will immediately assess the medical condition of the fallen worker and administer appropriate first aid. Normally, the extent of medical attention that can be administered at height is limited to stemming the flow of blood from an open wound. The tagline will be looped through a pulley anchored to the ladder or adjacent structure and the tagline will be lowered to the workers below. By this time, the haul crew will have brought the rescue kit to the base of the structure below the fallen worker and workers will attach the rescue unit, an anchor strap and appropriate connectors to the tagline. A haul team (whoever is available at the base of the structure) will haul the rescue unit up to the rescuer who will anchor it above the fallen worker (ensuring there is sufficient distance to raise the worker enough to unlock the SRL). The tagline will then be removed from the rescue pulley and attached to the waist connection of the fallen workers harness (side or preferably back).

The rescuer will attach the haul system to the workers dorsal D-ring.

Workers on the rig floor will lift the fallen worker enough to unlock his SRL and then carefully lower him to the rig floor. The tagline will be used to keep the worker off of the ladder rungs and/or getting caught up in adjacent structure.

At the base of the structure, first aid personnel will take over and properly attend to, and package the worker in a stretcher. It is important that workers expected to package a worker (put the fallen worker in a stretcher) are properly trained and that the medical condition of the fallen worker is immediately assessed to determine the best and most appropriate course of action.

Reporting and Logging

It is critical that any accident or fall is reported, so that equipment and procedures can be properly evaluated. Any piece of fall protection equipment that has seen the force of a fall must be immediately removed from service and inspected by a competent person prior to future use.

Fall Protection Procedure 002: Climbing without an SRL

Task: Workers will be required to vertically climb the rig or other structure on a fixed ladder without a SRL.

Hazard: Workers climbing a fixed ladder are faced with the risk of falling if they lose their footing or hand grip.

Equipment:

Anchorage: Workers will use the ladder rungs themselves as anchorage for the double leg lanyard. Most legislation requires an uncertified anchorage for fall protection must be capable of withstanding a minimum impact of 22.2 kN (5000 pounds) without failure. As a rule of thumb, the worker must ensure that the anchorage used will be capable of holding the weight of a ¾ tonne truck.

Body Support: A CSA full body harness suitable to the task conducted at height will be required. Workers will have a choice of either a derrick mans' harness for working on the monkey board, or a general purpose harness for working on other areas of the rig. See Appendix A for equipment approved by XYZ Company.
It is important that the connecting means used matches the connection point on the harness.

Connecting Means: Workers will use an appropriate length double leg lanyard with shock absorber to climb the ladder. The snaphooks will be sufficiently sized to connect to the ladder rungs without causing undue strain on the gate and/or hook itself. If the double leg lanyard used has an integral shock absorber, then it must be connected directly to the dorsal D-ring of the harness (no extensions or harness shock absorbers). If the double leg lanyard used does not have an integral shock absorber, then it must be connected to the harness' integral shock absorber.

Specialty Equipment: N/A.

Pre-use Inspection: all fall protection equipment should be inspected prior to use as per manufacturers instructions.

Anchorage: Ladder rungs should be inspected for their suitability for an anchorage, ensuring they are strong enough and properly attached to the ladder rails. Questionable rungs should not be used. Wherever possible, each leg of the double leg lanyard should be attached to a separate rung as anchorage.

Body Support: Webbing should be free of any cuts or damage including major abrasion holes or burns. Buckles should be functioning properly and not showing any signs of damage or distortion. D-rings should be free of cuts, nicks or abrasion that could possibly damage webbing.

Connecting Means: Double leg lanyard with integral shock absorber should be checked for webbing and hardware as follows:

Webbing should be free of any cuts or damage, including major abrasion holes or burns.

Inspect the lanyard snap hooks to ensure it takes two movements in order to open and that it automatically closes and locks.

Ensure snap hooks are free from rust and corrosion, nicks, dents or any sharp edges that may come into contact with webbing.

Inspect shock absorber for:

- Signs of deployment
- Impact indicator deployed
- Shock material visibly torn and coming out of the shock pack

Ensure that the shock absorber is sewn onto the connecting means (ensure you can see the stitching forming the loop around the connector).

If shock absorber is on harness and is not sewn integral to the back D-ring, check to ensure that snaphook and D-ring are free from defects, cuts, nicks abrasion and that the snaphook functions properly with the necessary two actions to open the hook gate.

Specialty Equipment:

N/A

Procedure

Inspect all fall protection components as per manufacturer's recommendations. If any piece of equipment fails the pre-use inspection, that equipment shall be removed from service until a formal inspection by a competent person has been conducted and the equipment is either destroyed, repaired or returned to service. Put on appropriate CSA approved full body harness

Attach the double leg lanyard to the back dorsal D-ring (if it is a shock absorbing lanyard) or the harness' shock absorber (if it is a non-shock absorbing lanyard). Attach the two legs of the lanyard to the ladder rungs, one at eye level and one as high as you can reach. Climb one or two steps, always ensuring that at least one of the legs is at shoulder height or higher to minimize free fall. Once the higher leg is at shoulder height, remove the lower snap hook and move it to a

rung as high as you can reach. Proper climbing requires that three points of contact be on the ladder at all times. It is important to ensure that once the snaphook is attached to the ladder rung, you remove your hand from the snaphook and return it to the ladder rung (do not climb with your hand on the snaphook). Continue this process until you reach your desired work area. Once at height, if it is your intention to work from the ladder, ensure that at least one of the legs is as high as you can reach to minimize free fall.

If you will be working on the structure away from the ladder, attach to the fall protection system appropriate for and/or designated for that area and detach from the ladder rungs. If the lanyard is attached directly to your dorsal D, you can leave it there so long as the work area system can be attached to your harness shock absorber. If the work area system must be attached to the dorsal D, then the new system is attached and the double leg lanyard is taken off the D and left at the ladder.

Upon finishing work, re-attach to the ladder and/or double leg lanyard, detach from the work area system and climb down, protecting yourself as per the ascent.

NB. It is very important that the maximum freefall is kept to the legal and manufacturer limits (normally 6 feet). This means that while climbing with a 6 foot lanyard it is critical that you maintain at least one of your anchor points at shoulder height or higher. Any lanyards used for fall arrest must have a shock absorber attached between the lanyard and the harness.

Rescue

If a worker falls during climbing and they cannot reach the ladder and/or rescue themselves, the rig rescue plan will need to be put into effect. Rescue is conducted by trained individuals utilizing a winch line or pre-engineered rope haul system (or similar device).

Winch line Rescue:

Using proper fall protection techniques as outlined within this document, one rescuer will immediately climb the rig with a rope tagline, rescue pulley (or similar shiv), anchor strap and positioning lanyard attached to the harness. Once properly secured using the positioning lanyard, the rescuer will immediately assess the medical condition of the fallen worker and administer appropriate first aid. Normally, the extent of medical attention that can be administered at height is limited to stemming the flow of blood from an open wound. The tagline will be looped through a pulley anchored to the ladder or adjacent structure and the tagline will be lowered to the workers below. By this time, the workers below will have prepared the winch for the rescue operation (see manufacturer's requirements for personnel hoisting). Workers at the rig floor will attach the tag line to the winch line's connector and will have a secondary fall arrest system available (SRL or rope grab and vertical lifeline); the secondary fall arrest system shall be raised to the rescuer to be installed above the fallen worker. The tag line

will provide two functions, first to allow the rescuer to get a hold of the end of the winch line and then to keep the worker from entangling in the structure during lowering operations.

Positioning himself above the worker, the rescuer will anchor the secondary fall arrest system (vertical lifeline) on a suitable anchor point. Then, return to the worker to attach the connector for the rope grab (which has been attached to the vertical lifeline) to the workers dorsal D. It is recommended that a worker at floor level hold the bottom end of the lifeline (if possible) to keep it out of the way and ensure it remains taut during the descent.

The winch line will be connected to the workers dorsal D-ring using an appropriate sized and rated connector. Once the winch line is connected to the fallen worker the tagline should be removed from the winch line and attached to the side or rear belt D-ring of the fallen worker's harness. If the workers harness only has a dorsal D-ring, attach to that D. If the winch line's path of travel will take the worker away from the ladder or structure (into the middle of the rig) then the tagline can remain attached to the rescue pulley to aid in easing the worker into the proper lowering path. However, if it is necessary to pull the worker away from the structure during lowering operations, the tagline should be removed from the rescue pulley to allow for a direct pull from the rig floor.

The winch will be used to lift the fallen worker (only enough to detach his lanyard) and then carefully lower him to the rig floor. It is important that the speed is controlled to maintain safety.

At the base of the structure, first aid personnel will take over and properly attend to, and package the worker in a stretcher. It is important that workers expected to package the worker (put the fallen worker in a stretcher) are properly trained and that the medical condition of the fallen worker is immediately assessed to determine the best and most appropriate course of action.

Haul System Rescue:
Using proper fall protection techniques as outlined within this document, one rescuer will immediately climb the rig with a rope tagline, rescue pulley (or similar shiv), anchor strap and positioning lanyard attached to his harness. Once properly secured using the positioning lanyard, this rescuer will immediately assess the medical condition of the fallen worker and administer appropriate first aid. Normally, the extent of medical attention that can be administered at height is limited to stemming the flow of blood from an open wound. The tagline will be looped through a pulley anchored to the ladder or adjacent structure and the tagline will be lowered to the workers below. By this time, the haul crew will have brought the rescue kit to the base of the structure below the fallen worker and workers will attach the rescue unit, an anchor strap, vertical lifeline, automatic rope grab and appropriate connectors to the tagline. A haul team (whoever is available at the base of the structure) will haul the rescue unit up to the rescuer.

Positioning himself above the worker, the rescuer will anchor the haul system onto the ladder rails (ensuring there is sufficient distance to raise the worker enough to detach the double leg lanyard). Then, anchor the vertical lifeline higher up the ladder (so that the vertical lifeline and haul system are distributed on the ladder rails). The tagline will then be removed from the rescue pulley and attached to the waist connection of the fallen workers harness (side or preferably rear belt high).

The rescuer will attach the haul system to the workers dorsal D-ring as well as the connector for the rope grab which has been attached to the vertical lifeline.

Workers on the rig floor will lift the fallen worker enough to enable the rescuer to detach the fallen worker's double leg lanyard and then carefully lower him to the rig floor. The tagline will be used to keep the worker off of the ladder rungs and/or getting caught up in adjacent structure. It is recommended that a worker at floor level hold the bottom end of the lifeline (if possible) to keep it out of the way and ensure it remains taut during the descent.

At the base of the structure, first aid personnel will take over and properly attend to, and package the worker in a stretcher. It is important that workers expected to package the worker (put the fallen worker in a stretcher) are properly trained and that the medical condition of the fallen worker is immediately assessed to determine the best and most appropriate course of action.

Reporting and Logging

It is critical that any accident or fall is reported so that equipment and procedures can be properly evaluated. Any piece of fall protection equipment that has seen the force of a fall must be immediately removed from service and inspected by a competent person prior to future use.

Fall Protection Procedure 003: Climbing with a Fixed Ladder Safety System

Task: Workers will be required to vertically climb the rig or other structure on a fixed ladder with a ladder safety system.

Hazard: Workers climbing a fixed ladder are faced with the risk of falling if they lose their footing or hand grip.

Equipment:

Anchorage: As the ladder safety system is a pre-engineered system and shall be installed prior to the worker climbing, the anchorage shall be pre-determined as per the specifications of the manufacturer of the ladder safety system. Engineered anchorages shall be a minimum of 22.2 kN (5000 pounds) or shall maintain a minimum safety factor of 2:1 of the actual load seen during a fall.

Body Support: A CSA full body harness suitable to the task conducted at height will be required. This harness shall meet the CSA classification *L* for ladder climbing. This includes the location of a D-ring at sternum height that is compatible with the connectors used in the ladder safety system. See Appendix A for equipment approved by XYZ Company.
It is important that the connecting means used matches the connection point on the harness.

Connecting Means: Workers will use a suitable carabiner or quick link to connect to the ladder climbing sleeve. CSA standards limit the length of the connecting means to a maximum of 0.2 metres (7-7/8 inches). Ensure that the proper length is determined as per the manufacturer's specifications. Certain manufacturers may measure the distance differently. As an example, one manufacturer measures the total length from the centerline of the cable to the harness D-ring and limits the total connection including the slider to 9 feet.

Specialty Equipment: Fixed ladder safety system, pre-installed by a competent worker.

Pre-use inspection: All fall protection equipment should be inspected prior to use as per manufacturer's instructions.

Anchorage: The anchorage shall be the ladder itself or other suitable structure, pre-determined by a competent person during installation of the ladder safety system.

Body Support: Webbing should be free of any cuts or damage including major abrasion holes or burns.

Buckles should be functioning properly and not showing any signs of damage or distortion.

D-rings should be free of cuts, nicks or abrasion that could possibly damage webbing.

Connecting Means: Check to ensure that the carabiner is free from defects, cuts, nicks abrasion and that it functions properly with the necessary two actions to open the gate, and that the gate automatically closes and locks upon release.

Specialty Equipment: Inspect the ladder safety system cable or rail ensuring that it is free from kinks or breaks that would restrict the travel of the slider. Ensure that it is securely attached to the anchorage by gently pulling on the cable itself.

Inspect the slider to ensure it will lock onto the cable and that it cannot accidentally be removed from the cable or rail.

Move the slider up and down ensuring that it moves freely and does not bind unnecessarily on the cable or rail.

Procedure

Inspect all fall protection components as per manufacturer's recommendations. If any piece of equipment fails the pre-use inspection, that equipment shall be removed from service until a formal inspection by a competent person has been conducted and the equipment is either destroyed, repaired or returned to service.

Put on appropriate CSA approved full body harness.

Attach the slider to the cable/rail of the ladder safety system and ensure it is moving effortlessly along the cable/rail both up and down. Attach the slider's carabiner to the front chest high D-ring of the harness. Climb the ladder to your work area. As you climb up the slider will follow you as you pull it up the cable. Once at height, if it is your intention to work from the ladder, you can still be protected by the ladder safety system. However, it is very important **not** to use the ladder safety system as a positioning device (locking off the slider and then leaning into it). This practice makes the safety system your primary attachment, leaving the worker with no secondary system and will possibly kink the cable creating problems when climbing and possibly compromising the system.

If you will be working on the structure away from the ladder, attach to the fall protection system appropriate for and/or designated for that area and detach

from the ladder safety system.

Upon finishing work, re-attach to the ladder safety system, detach from the work area system and climb down. When climbing down with a ladder safety system, the weight of the slider will lead the worker. It is important that workers do not climb down faster than the slider, and that they do not lean out away from the ladder causing the slider to lock off and impede the workers progress. Upon reaching the bottom of the ladder, the worker should detach from the ladder safety system and return the equipment to its storage location.

Rescue
If a worker falls during climbing and then cannot regain their grip on the ladder and/or rescue themselves, the rig rescue plan will need to be put into effect. Rescue is conducted by trained individuals utilizing a winch line, pre-engineered rope haul system or similar device.

Winch line Rescue:
Using proper fall protection techniques as outlined within this document, one rescuer will immediately climb the rig with a rope tagline, rescue pulley (or similar shiv), anchor strap and positioning lanyard attached to his harness. If there are additional ladder safety sliders, then the rescuer can use the ladder safety system to reach the worker; however, as the worker will be hanging from the system, a rescuer will need to use a double leg lanyard to get beside and above the worker. The rescuer will need to pass the injured worker to get beside them for assessment, and then above them to set the secondary fall arrest system. Once properly secured using the positioning lanyard, the rescuer will immediately assess the medical condition of the fallen worker and administer appropriate first aid. Normally, the extent of medical attention that can be administered at height is limited to stemming the flow of blood from an open wound. The tagline will be looped through a pulley anchored to the ladder or adjacent structure and the tagline will be lowered to the workers below. By this time, the workers below will have prepared the winch for the rescue operation (see manufacturer's requirements for personnel hoisting). Workers at the rig floor will attach the tag line to the winch line's connector and will have a secondary fall arrest system available (SRL or rope grab and vertical lifeline), the secondary fall arrest system shall be raised to the rescuer to be installed above the fallen worker. The tag line will provide two functions, first to allow the rescuer to get a hold of the end of the winch line, and then to keep the worker from entangling in the structure during lowering operations.

Positioning himself above the worker, the rescuer will anchor the secondary fall arrest system (vertical lifeline) on a suitable anchor point, then return to the worker to attach the connector for the rope grab (which has been attached to the vertical lifeline) to the workers dorsal D. It is recommended that a worker at floor level hold the bottom end of the lifeline (if possible) to keep it out of the way and ensure it remains taut during the descent.

The winch line will be connected to the workers dorsal D-ring using an appropriate sized and rated connector. Once the winch line is connected to the fallen worker, the tagline should be removed from the winch line and attached to the side or rear belt D-ring of the fallen worker's harness. If the workers harness only has a dorsal D-ring, attach to that D. If the winch line's path of travel will take the worker away from the ladder or structure (into the middle of the rig), then the tagline can remain attached to the rescue pulley to aid in easing the worker into the proper lowering path. However, if it is necessary to pull the worker away from the structure during lowering operations, the tagline should be removed from the rescue pulley to allow for a direct pull from the rig floor.

The winch will be used to lift the fallen worker (only enough to detach his connection to the ladder safety system) and then carefully lower him to the rig floor. It is important that the speed is controlled to maintain safety.

NB. While it may be desirable to lower the worker using the ladder safety system as their backup instead of installing a vertical lifeline, it is not recommended. This is due to the difficulty of keeping them close enough to the ladder so that the system does not continually lock off, but still keeping them far enough off the ladder to allow them to be lowered without hooking body parts in the rungs.

At the base of the structure, first aid personnel will take over and properly attend to, and package the worker in a stretcher. It is important that workers expected to package the worker (put the fallen worker in a stretcher) are properly trained and that the medical condition of the fallen worker is immediately assessed to determine the best and most appropriate course of action.

Haul System Rescue:

Using proper fall protection techniques as described within this document, one rescuer will immediately climb the rig with a rope tagline, rescue pulley (or similar shiv), anchor strap and positioning lanyard attached to his harness. If there are additional ladder safety sliders then the rescuer can use the ladder safety system to reach the worker; however, as the worker will be hanging from the system a rescuer will need to use a double leg lanyard to get beside and above the worker. The rescuer will need to pass the injured worker to get beside them for assessment and then above them to set the rescue system. Once properly secured using the positioning lanyard, this rescuer will immediately assess the medical condition of the fallen worker and administer appropriate first aid. Normally, the extent of medical attention that can be administered at height is limited to stemming the flow of blood from an open wound. The tagline will be looped through a pulley anchored to the ladder or adjacent structure and the tagline will be lowered to the workers below. By this time, the haul crew will have brought the rescue kit to the base of the structure below the fallen worker and workers will attach the rescue unit, an anchor strap, vertical lifeline, automatic rope grab and appropriate connectors to the tagline. A haul team (whoever is

available at the base of the structure) will haul the rescue unit up to the rescuer. Positioning himself above the worker, the rescuer will anchor the haul system onto the ladder rails or adjacent structure (ensuring there is sufficient distance to raise the worker enough to detach the ladder climbing system). The next step is to anchor the vertical lifeline higher up the ladder or adjacent structure (so that the vertical lifeline and haul system are distributed on the ladder rails). The tagline will then be removed from the rescue pulley and attached to the waist connection of the fallen workers harness (side or preferably rear belt high).

The rescuer will attach the haul system to the workers dorsal D-ring as well as the connector for the rope grab, which has been attached to the vertical lifeline.

Workers on the rig floor will lift the fallen worker enough to enable the rescuer to detach the fallen worker's connection to the ladder safety system and then carefully lower him to the rig floor. The tagline will be used to keep the worker off of the ladder rungs and/or getting caught up in adjacent structure. It is recommended that a worker at floor level hold the bottom end of the lifeline (if possible) to keep it out of the way and ensure it remains taut during the descent.

NB. While it may be desirable to lower the worker using the ladder safety system as their backup instead of installing a vertical lifeline, it is not recommended. This is due to the difficulty of keeping them close enough to the ladder so that the system does not continually lock off, but still keeping them far enough off the ladder to allow them to be lowered without hooking body parts in the rungs.

At the base of the structure, first aiders will take over and properly attend to, and package the worker in a stretcher. It is important that workers expected to package the worker (put the fallen worker in a stretcher) are properly trained and that the medical condition of the fallen worker is immediately assessed to determine the best and most appropriate course of action.

Reporting and Logging

It is critical that any accident or fall is reported, so that equipment and procedures can be properly evaluated. Any piece of fall protection equipment that has seen the force of a fall must be immediately removed from service and inspected by a competent person prior to future use.

Fall Protection Procedure 004: Climbing and Working on the Rig with an SRL

Task: Workers will be required to climb from the ladder and horizontally across the face of the rig to conduct work or get to the sides of the rig.

Hazard: Workers climbing horizontally across the rig on a girt are faced with the risk of falling if they lose their footing or balance. When working on the rig, the worker will require the use of their hands to complete their tasks. As it is always required that three points of contact be maintained at all times when climbing or working at height, a work positioning system will be required.

Equipment:

Anchorage: Prior to any worker climbing on the rig, the SRL used to vertically climb the fixed ladder will have been attached to a pre-engineered anchorage point (normally at the crown). This anchorage will be designed for the attachment of a CSA approved SRL.
The rig structure itself will be used for a positioning anchorage. While Canadian legislation does not specify a requirement for a positioning anchorage, Occupational Safety and Health Administration (OSHA), USA, specifies that an anchorage for work positioning must meet a minimum strength requirement of 18 kN (3600 pounds).

Body Support: A CSA full body harness suitable to the task conducted at height will be required. It is recommended that a derrick man's harness is not used when working on the face of the rig. A general purpose harness with side D-rings for positioning will be suitable for this task. See Appendix A for equipment approved by XYZ Company.

Connecting Means: Workers will use the integral snap hook on the SRL cable to connect to the harness.

When in place the worker must use a positioning lanyard. This lanyard will be 4 feet in length and may be adjustable. It will not have an integral shock absorber.

Specialty Equipment: A CSA approved SRL, suitable in length to reach the base of the ladder without any extensions attached.

Pre-use inspection: harnesses should be inspected prior to use as per manufacturers instructions. Pre-use inspection will have been conducted prior to the worker leaving the ground.

Anchorage: The SRL will be pre-installed and the anchorage will be inspected prior to rig up.

The rig structure should be inspected for its suitability for a positioning anchorage and ensure it will meet the adequate strength requirements.

Anchorages must be inspected to ensure that they do not have sharp edges that would cut or damage the positioning lanyard used.

Ensure that when you attach the anchorage, you will not damage adjacent piping (steam, hydraulics, power) or structure.

Body Support: Webbing should be free of any cuts or damage including major abrasion holes or burns.

Buckles should be functioning properly and not showing any signs of damage or distortion.

D-rings should be free of cuts, nicks or abrasion that could possibly damage webbing.

Connecting Means: If shock absorber is not sewn integral to the back D-ring, check to ensure that snaphook and D-ring are free from defects, cuts, nicks abrasion and that the snaphook functions properly with the necessary two actions to open the hook gate.

Ensure that the shock absorber is sewn onto the connecting means (ensure you can see the stitching forming the loop around the connector).

Inspect shock absorber for signs of deployment:

Impact indicator deployed.
Shock material visibly torn and coming out of the shock pack.

Snaphook as per SRL.

Positioning lanyard without integral shock absorber should be checked for webbing and hardware as follows:

Webbing should be free of any cuts or damage including major abrasion holes or burns.

Inspect the lanyard snap hooks to ensure it takes two movements in order to open and that it automatically closes and locks.

Ensure snap hooks are free from rust and corrosion, nicks, dents or any sharp edges that may come into contact with webbing.

Specialty Equipment:
Inspect the SRL snap hook to ensure it takes two movements in order to open and that it automatically closes and locks.

Inspect the impact indicator (where the snaphook attaches to the cable).

Pull sharply on the SRL cable (snaphook) to ensure that the SRL will lock off.

Procedure
This procedure is limited to climbing across the face of the structure where the attached SRL will be within its operating limits, and should not be used if the worker is climbing on the structure where there is a possibility, during a fall, or having the SRL cable come over a sharp edge.

Inspect all fall protection components as per manufacturer's recommendations. If any piece of equipment fails the pre-use inspection, that equipment shall be removed from service until a formal inspection by a competent person has been conducted and the equipment is either destroyed, repaired or returned to service.

The worker will already be attached to the SRL and can move across the structure (from the ladder to their work area) without additional fall protection (additional to the existing SRL). If the worker is required to move to an area outside of the operating guidelines of the SRL, the worker will need to follow: ***Procedure 005: Climbing across the structure without an SRL***. It is important to note that the risk associated with *Swing Fall* is increased the farther away the worker gets from directly below the SRL.

Once the worker is at their desired work area, they will take the positioning lanyard which will have one end (snaphook) attached to their side D-ring, and wrap the lanyard around an adjacent structure adjusting the distance by the number of wraps on the structure. Current Canadian legislation does not limit the maximum allowable freefall with a positioning system; however, OSHA identifies that the maximum freefall with a work positioning system is 2'. Care should be taken to ensure that there are no sharp edges. Once wrapped, the loose end will be attached to the opposite side hip D.

Rescue
As the worker is moving away from the anchor point, the natural tendency will be to swing back below the anchor point (swing fall). If the worker's swing is not impeded, they will be hanging directly below the anchor point (at the ladder). In that case, the rescue procedure and equipment will be the same as previous rescue procedures where the worker is suspended at the ladder position.

However, if the workers swing is impeded and comes to a stop away from the ladder, the following procedure will need to be followed:

> *If a worker falls during climbing and he cannot reach the ladder and/or rescue himself, the rig rescue plan will need to be put into effect. Rescue is conducted by trained individuals utilizing a winch line, pre-engineered rope haul system or similar device.*

Winch line Rescue:

Using proper fall protection techniques, as outlined within this document, one rescuer will immediately climb the rig with a rope tagline, rescue pulley (or similar shiv), anchor strap and positioning lanyard attached to his harness. The rescuer will need to move to the worker from the ladder; this will require them to move across the face of the rig using appropriate fall protection. The rescuer will stop at the same level of the fallen worker, move across the rig to the worker and properly position themselves using the positioning lanyard. Once the fallen worker's condition is established, the rescuer will administer appropriate first aid. Normally, the extent of medical attention that can be administered at height is limited to stemming the flow of blood from an open wound. The rescuer will then anchor the tagline's pulley, thread it and lower the tagline to the workers below. By this time, the haul crew will have prepared the winch for the rescue operation (see manufacturer's requirements for personnel hoisting). Workers at the rig floor will attach the tag line to the winch line's connector and the connector shall be raised to the rescuer. The tag line will provide two functions, first to allow the rescuer to get a hold of the end of the line, and then to keep the worker from entangling in the structure during lowering operations. The rescuer will connect the winch line to the worker's dorsal D-ring using an appropriate sized and rated connector. Once the winch line is connected to the fallen worker, the tagline should be removed from the winch line and attached to the side or rear belt D-ring of the fallen worker's harness. If the workers harness only has a dorsal D-ring, attach to that D. If the winch line's path of travel will take the worker away from the ladder or structure (into the middle of the rig), then the tagline can remain attached to the rescue pulley to aid in easing the worker into the proper lowering path. However, if it is necessary to pull the worker away from the structure during lowering operations, the tagline should be removed from the rescue pulley to allow for a direct pull from the rig floor.

The winch will be used to lift the fallen worker (only enough to unlock his SRL), and then carefully lower him to the rig floor. It is important that the speed is controlled so that the SRL does not lock off during descent.

At the base of the structure, first aid personnel will take over and properly attend to, and package the worker in a stretcher. It is important that workers expected to package the worker (put the fallen worker in a stretcher) are properly trained and that the medical condition of the fallen worker is immediately assessed to determine the best and most appropriate course of action.

Haul System Rescue:
Using proper fall protection techniques as outlined within this document, one rescuer will immediately climb the rig with a rope tagline, rescue pulley (or similar shiv), anchor strap and positioning lanyard attached to his harness. The rescuer will need to move to the worker from the ladder. This will require them to move across the face of the rig using appropriate fall protection. Due to the time necessary to travel from the ladder to the worker, the rescuer will stop at the same level of the fallen worker to make a visual assessment of their condition. Once their condition is established, the rescuer will proceed to the level above the worker and move out across the face of the rig until they are directly above the fallen worker. Once properly positioned using the positioning lanyard, the rescuer will anchor the tagline's pulley thread it and lower the tagline to the workers below. By this time, the haul crew will have brought the rescue kit to the base of the structure below the fallen worker, and workers will attach the rescue unit, an anchor strap and appropriate connectors to the tagline. A haul team (whoever is available at the base of the structure) will haul the rescue unit up to the rescuer who will anchor it above the fallen worker (ensuring there is sufficient distance to raise the worker enough to unlock the SRL). At this point, the rescuer will remove the tagline pulley, anchor strap and their positioning system, and will then move back to the ladder. The rescuer will climb down to the same level as the fallen worker, move out to him (using proper fall protection at all times) and immediately assess the medical condition of the fallen worker and administer appropriate first aid. Normally, the extent of medical attention that can be administered at height is limited to stemming the flow of blood from an open wound. The tagline will then be attached to the waist connection of the fallen worker's harness (side or preferably back).

The rescuer will attach the haul system to the worker's dorsal D-ring.
Workers at the structure base will lift the fallen worker enough to unlock his SRL and then carefully lower him down. The tagline will be used to keep the worker from getting caught up in adjacent structure.

At the base of the structure, first aid personnel will take over and properly attend to, and package the worker in a stretcher. It is important that workers expected to package (put the fallen worker in a stretcher) are properly trained and that the medical condition of the fallen worker is immediately assessed to determine the best and most appropriate course of action.

Reporting and Logging
It is critical that any accident or fall is reported, so that equipment and procedures can be properly evaluated. Any piece of fall protection equipment that has seen the force of a fall must be immediately removed from service and inspected by a competent person prior to future use.

Fall Protection Procedure 005: Climbing across the structure without an SRL

Task: Workers will be required to horizontally climb across the structure from the fixed ladder or a work platform without an attached SRL.

Hazard: Workers climbing the structure are faced with the risk of falling if they lose their footing or balance. When working on the structure, the worker will require the use of their hands to complete their tasks. As it is always required that three points of contact be maintained at all times when climbing or working at height, a work positioning system will be required.

Equipment:

Anchorage: Workers will use the adjacent structure as an anchorage for the double leg lanyard. Most legislation requires an uncertified anchorage for fall protection must be capable of withstanding a minimum impact of 22.2 kN (5000 pounds) without failure. As a rule of thumb, the worker must ensure that the anchorage used will be capable of holding the weight of a ¾ tonne truck.

The adjacent structure will also be used for a positioning anchorage. While Canadian legislation does not specify a requirement for a positioning anchorage, OSHA specifies that an anchorage for work positioning must meet a minimum strength requirement of 18 kN (3600 pounds).

Body Support: A CSA full body harness suitable to the task conducted at height will be required. It is recommended that a derrick man's harness is not used when working on the structure. A general purpose harness with side D-rings for positioning will be suitable for this task. See Appendix A for equipment approved by XYZ Company.

It is important that the connecting means used, matches the connection point on the harness and the anchorage connector used.

Connecting Means: Workers will use a 6 foot double leg lanyard with shock absorber to climb the rig structure. The snaphooks will be sufficiently sized to connect to an anchorage connector's D-ring. Ensuring compatibility of hardware is critical to the function of this system and the safety of the worker. If the double leg lanyard used has an integral shock absorber, then it must be connected directly to the dorsal D-ring of the harness (no extensions or harness shock absorbers). If the double leg lanyard used does not have an integral shock absorber, then it must be connected to the harness' integral shock absorber.

Appropriate anchorage connectors will be necessary to attach to the rig

structure. Properly sized tie off adaptors or cable slings are required to provide this connection. Alternatively, a tie back lanyard will provide the connecting means including anchorage connector.

When in place, the worker must use a positioning lanyard. This lanyard will be 4 feet in length and may be adjustable. It will not have an integral shock absorber.

Specialty Equipment: N/A.

Pre use inspection: All fall protection equipment should be inspected prior to use, as per manufacturer's instructions.

Anchorage: The rig structure should be inspected for its suitability for an anchorage, ensuring it will meet the adequate strength requirements.

Anchorages must be inspected to ensure that they do not have sharp edges that would cut or damage the anchorage connector used.

Ensure that when you attach the anchorage, you will not damage adjacent piping (steam, hydraulics, power) or structure. Wherever possible, each leg of the double leg lanyard should be attached to a different point on the structure as anchorage.

Body Support: Webbing should be free of any cuts or damage including major abrasion holes or burns.

Buckles should be functioning properly and not showing any signs of damage or distortion.

D-rings should be free of cuts, nicks or abrasion that could possibly damage webbing.

Connecting Means: Double leg lanyard with integral shock absorber should be checked for webbing and hardware as follows:

Webbing should be free of any cuts or damage including major abrasion holes or burns.

Inspect the lanyard snap hooks to ensure it takes two movements in order to open and that it automatically closes and locks.

Ensure snap hooks are free from rust and corrosion, nicks, dents or any sharp edges which may come into contact with webbing.

If the double leg lanyard is a tie back lanyard, the worker must also ensure that the floating D-ring is free from corrosion, burs, nicks and or sharp edges.

Positioning lanyards shall be inspected as above.

Inspect shock absorber for:

- Signs of deployment:
  - Impact indicator deployed
  - Shock material visibly torn and coming out of the shock pack

Ensure that the shock absorber is sewn onto the connecting means (ensure you can see the stitching forming the loop around the connector).

If shock absorber is on harness and is not sewn integral to the back D-ring, check to ensure that snaphook and D-ring are free from defects, cuts, nicks abrasion and that the snaphook functions properly with the necessary two actions to open the hook gate.

Anchorage connectors:

- Tie off adaptors should be inspected as per any web product:
  - Webbing should be free of any cuts or damage, including major abrasion holes or burns
  - Ensure D-rings are free from rust and corrosion, nicks, dents or any sharp edges which may come into contact with webbing
- Cable slings:
  - Cable slings should have a protective plastic coating that is intact without any breaks or major discolouration
  - Inspect for kinks and/or any breaks in the wire rope
  - Ensure that the thimbles are present, secure and not distorted or showing any damage (out of shape, loose in the wire rope)

Specialty Equipment: N/A

Procedure

Inspect all fall protection components as per manufacturer's recommendations. If any piece of equipment fails the pre-use inspection, that equipment shall be removed from service until a formal inspection by a competent person has been conducted and the equipment is either destroyed, repaired or returned to service. Workers will have a full body harness on that has previously inspected. Attach the double leg lanyard to the back dorsal D-ring (if it is a shock absorbing lanyard) or the harness' shock absorber (if it is a non-shock absorbing lanyard). Attach the anchorage connector to the structure (the worker will have a second

connector attached to their side D-ring). Attach one leg of the double leg lanyard to the anchorage connector. Disconnect from the SRL or whatever fall arrest system the worker is currently using. If the worker has just climbed up using the double leg lanyard, then they will merely need to disconnect the other leg. The loose leg should be attached to a tear away connector on the workers harness. The worker will move horizontally from the anchor point 4 to 6 feet (depending upon anchor height and workers reach) from the original anchor point. At this point, they will attach the second anchorage connector; attach the extra leg of the lanyard and then move back to disconnect the first anchor point. The first anchorage connector is now attached to the harness along with the extra leg. The worker can keep moving horizontally in this fashion, moving from one anchor point to the next, until they reach the desired work area.

Once the worker is at their desired work area, they will take the positioning lanyard which will have one end (snaphook) attached to their side D-ring and wrap the lanyard around an adjacent structure, adjusting the distance by the number of wraps on the structure. Care should be taken to ensure that there are no sharp edges. Once wrapped, the loose end will be attached to the opposite side D.
Once they have completed their work task, they will return to the ladder or work platform in the same manner, always ensuring that they have at least one leg attached to the structure at any time.

By using a tie back lanyard this process is simplified; the design of a tie back lanyard is to allow the worker to combine both the lanyard and anchorage connector into a single unit. With a tie back lanyard, the worker will wrap the double leg lanyard around the structure and then attach the snap hook to the lanyards floating D-ring. Following that, they will move to the next point, wrap the second leg around the structure securing its snaphook to that leg's floating D. Once secured, the first leg can be detached and attached again farther down the structure.

NB. It is very important that the maximum freefall is kept to the legal and manufacturer limits (normally 6 feet). This means that while climbing with a 6 foot lanyard, it is critical that you maintain your anchor points at shoulder height or higher. This means, that if you are using a tie off adaptor or cable sling that hangs down from the anchorage 2 feet, the anchorage must be at least 2 feet above your shoulder height.

Rescue
If a worker falls during climbing and they cannot reach the ladder and/or rescue themselves the rig rescue plan will need to be put into effect. Rescue is conducted by trained individuals utilizing a winch line, pre-engineered rope haul system or similar device.

Winch line Rescue:
Using proper fall protection techniques as outlined within this document one rescuer will immediately climb the rig with a rope tagline, rescue pulley (or similar shiv), anchor strap and positioning lanyard attached to his harness. The rescuer will need to move to the worker from the ladder, this will require them to move across the face of the rig using appropriate fall protection. The rescuer will stop at the same level of the fallen worker, move across the rig to the worker and properly position themselves using the positioning lanyard. Once the fallen worker's condition is established, the rescuer will administer appropriate first aid. Normally, the extent of medical attention that can be administered at height is limited to stemming the flow of blood from an open wound. The rescuer will then anchor the tagline's pulley, thread it and lower the tagline to the workers below.

By this time, the haul crew will have prepared the winch for the rescue operation (see manufacturers requirements for personnel hoisting), will attach the tag line to the winch line's connector and will have a secondary fall arrest system available (SRL or rope grab and vertical lifeline). The secondary fall arrest system shall be raised to the rescuer to be installed above the fallen worker. The tag line will provide two functions, first to allow the rescuer to get a hold of the end of the winch line, and then to keep the worker from entangling in the structure during lowering operations.

The rescuer will anchor the secondary fall arrest system (vertical lifeline) on a suitable anchor point, then return to the worker to attach the connector for the rope grab (which has been attached to the vertical lifeline) to the worker's dorsal D. It is recommended that a worker at floor level hold the bottom end of the lifeline (if possible) to keep it out of the way, and ensure it remains taut during the descent.

The rescuer will then connect the winch line to the workers dorsal D-ring using an appropriate sized and rated connector. Once the winch line is connected to the fallen worker, the tagline should be removed from the winch line and attached to the side or rear belt D-ring of the fallen worker's harness. If the worker's harness only has a dorsal D-ring, attach to that D. If the winch line's path of travel will take the worker away from the ladder or structure (into the middle of the rig), then the tagline can remain attached to the rescue pulley to aid in easing the worker into the proper lowering path. However, if it is necessary to pull the worker away from the structure during lowering operations, the tagline should be removed from the rescue pulley to allow for a direct pull from the rig floor.

The winch will be used to lift the fallen worker (only enough to detach his lanyard) and then carefully lower him to the rig floor. It is important that the speed is controlled to maintain safety.

At the base of the structure, first aid personnel will take over and properly attend to, and package the worker in a stretcher. It is important that workers expected

to package the worker (put the fallen worker in a stretcher) are properly trained and that the medical condition of the fallen worker is immediately assessed to determine the best and most appropriate course of action.

Haul System Rescue:
Using proper fall protection techniques as described within this document, one rescuer will immediately climb the structure with a rope tagline, rescue pulley (or similar shiv), anchor strap and positioning lanyard attached to his harness. Due to the time necessary to travel from the ladder to the worker, the rescuer will stop at the same level of the fallen worker to make a visual assessment of their condition. Once their condition is established, the rescuer will proceed to the level above the worker, and move out across the structure until they are directly above the fallen worker. Once properly positioned using the positioning lanyard, the rescuer will anchor the tagline's pulley, thread it and lower the tagline to the workers below. By this time, the haul crew will have brought the rescue kit to the base of the structure below the fallen worker and workers will attach the rescue unit, an anchor strap, vertical lifeline, automatic rope grab and appropriate connectors to the tagline. A haul team (whoever is available at the base of the structure) will haul the rescue unit up to the rescuer. Positioning himself above the worker, the rescuer will anchor the haul system onto the structure as an anchorage (ensuring there is sufficient distance to raise the worker enough to detach the double leg lanyard), then anchor the vertical lifeline on adjacent structure. At this point, the rescuer will remove the tagline pulley, anchor strap and their positioning system, and move back to the ladder. The rescuer will climb down to the same level as the fallen worker, move out to him (using proper fall protection at all times) and immediately assess the medical condition of the fallen worker and administer appropriate first aid. Normally, the extent of medical attention that can be administered at height is limited to stemming the flow of blood from an open wound. The tagline will then be attached to the waist connection of the fallen workers harness (side or preferably rear belt high).

The rescuer will attach the haul system to the workers dorsal D-ring, as well as the connector for the rope grab which has been attached to the vertical lifeline.

Workers on the rig floor will lift the fallen worker enough to enable the rescuer to detach the fallen worker's double leg lanyard and then carefully lower him to the structures base. The tagline will be used to keep the worker off of the ladder rungs and/or getting caught up in adjacent structure. It is recommended that a worker at the base of the structure hold the bottom end of the lifeline (if possible) to keep it out of the way and ensure it remains taut during the descent.

At the base of the structure, first aid personnel will take over and properly attend to, and package the worker in a stretcher. It is important that workers expected to package (put the fallen worker in a stretcher) are properly trained and that the medical condition of the fallen worker is immediately assessed to determine the best and most appropriate course of action.

Reporting and Logging

It is critical that any accident or fall is reported, so that equipment and procedures can be properly evaluated. Any piece of fall protection equipment that has seen the force of a fall must be immediately removed from service and inspected by a competent person prior to future use.

Fall Protection Procedure 006: Climbing with a vertical lifeline and automatic fall arrestor (rope grab)

Task: Workers will be required to vertically move on the rig (either climbing or being hoisted) using a vertical lifeline and automatic fall arrester as a secondary system.

Hazard: Workers climbing or being hoisted on or around the rig are faced with the risk of falling if their primary support system fails (lose their footing or hand grip or the hoist system fails).

Equipment:

Anchorage: The vertical lifeline will be used as a secondary fall protection system either in a rescue or during normal operations. Most legislation requires an uncertified anchorage for fall protection must be capable of withstanding a minimum impact of 22.2 kN (5000 pounds) without failure. As a rule of thumb, the worker must ensure that the anchorage used will be capable of holding the weight of a ¾ tonne truck.

Body Support: A CSA full body harness suitable to the task conducted at height will be required. It is important to note that the suitability of the harness must take into account the task undertaken by the worker. As a minimum to attach to the fall arrestor, the harness must meet an *A* classification which has a rear dorsal D-ring for attachment of the fall arrest system. See Appendix A for equipment approved by XYZ Company.

It is important that the connecting means used matches the connection point on the harness.

Connecting Means: The choice of connecting means will be dependant upon the fall arrestor used. Fall arrestors which are not panic proof (these units do not eliminate the possibility of panic grip) must be fitted with an integrally attached (by the manufacturer) with a connecting means no longer than 0.6 metres (2 feet). Panic proof automatic fall arrestor must use connecting means with a maximum length of 1 metre (3 feet) to maintain a maximum freefall of 2 metres (6 feet).

Appropriate anchorage connectors will be necessary to attach to the rig structure. Properly sized tie off adaptors or cable slings are required to provide this connection.

Specialty Equipment:
Vertical lifeline meeting the CSA requirements for vertical lifelines.

Automatic fall arrestor (panic or non panic model).

It is critical that the lifeline and arrestor are matched as per manufacturer's specifications.

Pre use inspection: All fall protection equipment should be inspected prior to use as per manufacturers instructions.

Anchorage: Anchorages must be inspected to ensure that they do not have sharp edges that would cut or damage the anchorage connector used.

Ensure that when you attach to the anchorage you will not damage adjacent piping (steam, hydraulics, power) or structure.

Anchorages for fall arrest must be strong enough to withstand a minimum 22.2 kN force without failure.

Body Support:
Webbing should be free of any cuts or damage including major abrasion holes or burns.

Buckles should be functioning properly and not showing any signs of damage or distortion.

D-rings should be free of cuts, nicks or abrasion that could possibly damage webbing.

Connecting Means:
Inspect shock absorbers for:

Signs of deployment:

- Impact indicator deployed
- Shock material visibly torn and coming out of the shock pack

Ensure that the shock absorber is sewn onto the connecting means (ensure you can see the stitching forming the loop around the connector).

If shock absorber is on harness and is not sewn integral to the back D-ring, check to ensure that snaphook and D-ring are free from defects, cuts, nicks abrasion and that the snaphook functions properly with the necessary two actions to open the hook gate.

Anchorage connectors:

Tie off adaptors: should be inspected as per any web product

Webbing should be free of any cuts or damage including major abrasion holes or burns.

Ensure D-rings are free from rust and corrosion, nicks, dents or any sharp edges which may come into contact with webbing.

Cable slings: Cable slings should have a protective plastic coating that is intact, without any breaks or major discolouration.

Inspect for kinks and/or any breaks in the wire rope

Ensure that the thimbles are present, secure and not distorted or showing any damage (out of shape, loose in the wire rope).

Check to ensure that carabiners are free from defects, cuts, nicks abrasion and that they function properly with the necessary two actions to open the gate and that the gate automatically closes and locks upon release.

Specialty Equipment:

Vertical lifelines are to be inspected for any cuts, breaks, kinks (if cable).

Ensure thimble and termination is secure (splice or swage). Inspect layed construction to ensure there is no bunching or unraveling. Looks for signs of material degradation (stiff fibers, excessive dirt, cracking sounds when flexed).

Vertical lifelines should be finished with a CSA approved connector on one end and should be free of any knots and/or splices save for the end termination.

Inspect the fall arrestor to ensure it will lock onto the lifeline and that it cannot accidentally be removed.

Move the slider up and down ensuring that it moves freely and does not bind unnecessarily on the lifeline.

Procedure:
Inspect all fall protection components as per manufacturer's recommendations. If any piece of equipment fails the pre-use inspection, that equipment shall be removed from service until a formal inspection by a competent person has been conducted and the equipment is either destroyed, repaired or returned to service. Put on appropriate CSA approved full body harness.

Lifeline installation:

Using 100% fall protection, access the anchorage and install the appropriate anchorage connector. Attach the vertical lifeline to the anchorage connector using the end that has an integral connector (snaphook or carabiner.). Allow the lifeline to hang directly below the anchorage and ensure the length of the lifeline comes within 1.2 metres of the landing platform. Once installed, it is recommended that a weight be attached to the lower end of the lifeline to keep it taut.

Using the Fall Arrestor:
Attach the fall arrestor to the vertical lifeline and ensure it is moving effortlessly along the rope or cable both up and down. If the fall arrestor is a panic proof type, you will attach a shock absorbing lanyard no longer than 1 metre in length from the dorsal D-ring of your harness to the connection point of the fall arrestor. If the fall arrestor is not panic proof, then you will attach a shock absorbing lanyard no longer than 0.6 metres in length from the dorsal D-ring of your harness to the connection point of the fall arrestor.

NB. If the connecting means attached to the fall arrestor has an integral shock absorber, the connecting means should be attached directly to the dorsal D-ring and not the harnesses integral shock absorber.

As you climb up, the fall arrestor will automatically follow you as you pull it up the lifeline. Always ensure that the fall arrestor is moving on the lifeline and that the lifeline is not being dragged up with the arrestor (which would greatly increase the potential freefall). Once at height, if it is your intention to work below the lifelines anchorage, you can still be protected by the fall arrestor. However, it is very important to always *park* the fall arrestor by moving it up the lifeline as far as you can reach, to minimize potential free fall.

If you will be working on the structure away from the line below the anchorage, attach to the fall protection system appropriate for and/or designated for that area and detach from the fall arrestor.

Upon finishing work, re-attach to the fall arrestor and vertical lifeline, detach from the work area system and climb down. If the worker is still attached to the fall arrestor, un-park it (unlock it off the lifeline and allow it to slide down the lifeline until it is hanging below you). When climbing down with an automatic fall arrestor and vertical lifeline, the weight of the fall arrestor will keep it moving down the lifeline leading the worker. It is important that workers do not climb down faster than the fall arrestor, or that they do not try to climb too far from the vertical line below the anchorage causing the fall arrestor to lock off and impede the workers progress. Upon reaching the lower level, the worker should detach from the lifeline and return the equipment to its storage location.

Rescue:
If a worker falls during climbing or work operations while using the vertical lifeline

and automatic fall arrestor and they cannot reach the ladder and/or rescue themselves, the rig rescue plan will need to be put into effect. Rescue is conducted by trained individuals utilizing a winch line (when not being hoisted or a pre-engineered rope haul system (when being hoisted) or similar device.

Winch line Rescue:
Using proper fall protection techniques as outlined within this document, one rescuer will immediately climb the rig with a rope tagline, rescue pulley (or similar shiv), anchor strap and positioning lanyard attached to his harness. The rescuer will need to move to the worker from the ladder; this will require them to move across the face of the rig using appropriate fall protection. The rescuer will stop at the same level of the fallen worker, move across the rig to the worker and properly position themselves using the positioning lanyard. Once the fallen worker's condition is established, the rescuer will administer appropriate first aid. Normally, the extent of medical attention that can be administered at height is limited to stemming the flow of blood from an open wound. The rescuer will then anchor the tagline's pulley, thread it and lower the tagline to the workers below.

By this time, the haul crew will have prepared the winch for the rescue operation (see manufacturer's requirements for personnel hoisting), will attach the tag line to the winch line's connector and will have a secondary fall arrest system available (SRL or rope grab and vertical lifeline). The secondary fall arrest system shall be raised to the rescuer to be installed above the fallen worker. The tag line will provide two functions, first to allow the rescuer to get a hold of the end of the winch line, and then to keep the worker from entangling in the structure during lowering operations.

The rescuer will anchor the secondary fall arrest system (vertical lifeline) on a suitable anchor point. Then return to the worker to attach the connector for the rope grab (which has been attached to the vertical lifeline) to the worker's dorsal D. It is recommended that a worker at floor level hold the bottom end of the lifeline (if possible) to keep it out of the way, and ensure it remains taut during the descent.

The rescuer will then connect the winch line to the workers dorsal D-ring using an appropriate sized and rated connector. Once the winch line is connected to the fallen worker, the tagline should be removed from the winch line and attached to the side or rear belt D-ring of the fallen worker's harness. If the worker's harness only has a dorsal D-ring, attach to that D. If the winch line's path of travel will take the worker away from the ladder or structure (into the middle of the rig), then the tagline can remain attached to the rescue pulley to aid in easing the worker into the proper lowering path. However, if it is necessary to pull the worker away from the structure during lowering operations, the tagline should be removed from the rescue pulley to allow for a direct pull from the rig floor.

The winch will be used to lift the fallen worker (only enough to detach his lanyard)

and then carefully lower him to the rig floor. It is important that the speed is controlled to maintain safety.

At the base of the structure, first aid personnel will take over and properly attend to, and package the worker in a stretcher. It is important that workers expected to package the worker (put the fallen worker in a stretcher) are properly trained and that the medical condition of the fallen worker is immediately assessed to determine the best and most appropriate course of action.

Haul System Rescue:
Using proper fall protection techniques as described within this document, one rescuer will immediately climb the structure with a rope tagline, rescue pulley (or similar shiv), anchor strap and positioning lanyard attached to his harness.

The rescuer will need to move to the worker from the ladder; this will require them to move across the structure using fall protection procedures described within this document. Due to the time necessary to travel from the ladder to the worker, the rescuer will stop at the same level of the fallen worker to make a visual assessment of their condition. Once their condition is established, the rescuer will proceed to the level above the worker, move out across the structure until they are directly above the fallen worker. Once properly positioned using the positioning lanyard, the rescuer will anchor the tagline's pulley, thread it and lower the tagline to the workers below. By this time, the haul crew will have brought the rescue kit to the base of the structure below the fallen worker and workers will attach the rescue unit, an anchor strap, vertical lifeline, automatic rope grab and appropriate connectors to the tagline. A haul team (whoever is available at the base of the structure) will haul the rescue unit up to the rescuer. Positioning himself above the worker, the rescuer will anchor the haul system onto the structure as an anchorage (ensuring there is sufficient distance to raise the worker enough to detach the current fall arrestor), then, anchor the new vertical lifeline on adjacent structure. At this point, the rescuer will remove the tagline pulley, anchor strap and their positioning system, and move back to the ladder. The rescuer will climb down to the same level as the fallen worker, move out to him (using proper fall protection at all times) and immediately assess the medical condition of the fallen worker and administer appropriate first aid. Normally, the extent of medical attention that can be administered at height is limited to stemming the flow of blood from an open wound. The tagline will then be attached to the waist connection of the fallen worker's harness (side or preferably rear belt high).

The rescuer will attach the haul system to the workers dorsal D-ring, as well as the connector for the rope grab which has been attached to the vertical lifeline.

Workers on the rig floor will lift the fallen worker enough to enable the rescuer to detach the fallen worker's loaded fall arrestor, and then carefully lower him to the structures base. The tagline will be used to keep the worker off of the ladder

rungs and/or getting caught up in adjacent structure. It is recommended that a worker at the base of the structure hold the bottom end of the lifeline (if possible) to keep it out of the way and ensure it remains taut during the descent.

At the base of the structure, first aid personnel will take over and properly attend to, and package the worker in a stretcher. It is important that workers expected to package (put the fallen worker in a stretcher) are properly trained and that the medical condition of the fallen worker is immediately assessed to determine the best and most appropriate course of action.

Reporting and Logging:
It is critical that any accident or fall is reported, so that equipment and procedures can be properly evaluated. Any piece of fall protection equipment that has seen the force of a fall must be immediately removed from service and inspected by a competent person prior to future use.

Fall Protection Procedure 007: Working on the Monkey Board or Rod Basket

Task: Once at height, workers will be required to work on the monkey board and protect themselves using the available system.

Hazard: While working on the monkey board, the potential to slip and fall is always present. Fall arrest and work positioning shall be used in order to minimize this risk.

Equipment:

Anchorage: Prior to any worker being on the monkey board, an SRL shall be attached to a pre-engineered anchorage point specifically established for the work on the monkey board.
A predetermined/engineered anchorage and anchor point will also be used for a positioning anchorage. While Canadian legislation does not specify a requirement for a positioning anchorage, OSHA specifies that an anchorage for work positioning must meet a minimum strength requirement of 18 kN (3600 pounds).

Body Support: A CSA full body harness designed for derrickmen will be required for this task. This harness has an integral waistbelt with a rear D-ring on the belt for work positioning. It is the recommendation of the Canadian Association of Oilwell Drilling Contractors (CAODC) and general industry practice that all full body harnesses used with SRLs must have an integral shock absorber attached to the dorsal D-ring. See Appendix A for equipment approved by XYZ Company.

Connecting Means: Workers will use the integral snap hook on the SRL cable to connect to the harness. In addition, a positioning lanyard for attachment to the belt rear D-ring will be required. This lanyard will meet CSA standards for lanyards and will incorporate two integral snap hooks or other approved connectors.

Specialty Equipment: CSA approved SRLs, suitable in length to reach all areas of the monkey board, including the rig ladder in order to facilitate the exchange from ladder to monkey board.

Pre-use inspection: All fall protection equipment should be inspected prior to use as per manufacturer's instructions.

Anchorage:
The SRL will be pre-installed and the anchorage will be inspected prior to rig up.

Body Support:
Webbing should be free of any cuts or damage, including major abrasion holes or burns.

Buckles should be functioning properly and not showing any signs of damage or distortion.

D-rings should be free of cuts, nicks or abrasion that could possibly damage webbing.

Connecting Means:
If shock absorber is not sewn integral to the back D-ring, check to ensure that snaphook and D-ring are free from defects, cuts, nicks abrasion and that the snaphook functions properly with the necessary two actions to open the hook gate.

Ensure that the shock absorber is sewn onto the connecting means (ensure you can see the stitching forming the loop around the connector).

Inspect shock absorber for signs of deployment:

- Impact indicator deployed
- Shock material visibly torn and coming out of the shock pack

Snaphook as per SRL

The positioning lanyard will either be constructed of webbing or layed rope and should be inspected for damage as per that material.

- For layed rope, you will inspect for any burns, cuts or visible bunching of the rope lays. Missing or bent thimbles and damage to the connection splice.

Specialty Equipment:
Inspect the SRL snap hook to ensure it takes two movements in order to open and that it automatically closes and locks.

Inspect the impact indicator (where the snaphook attaches to the cable).

Pull sharply on the SRL cable (snaphook) to ensure that the SRL will lock off.

Procedure
Inspect all fall protection components as per manufacturer's recommendations. If any piece of equipment fails the pre-use inspection, that equipment shall be removed from service until a formal inspection by a competent person has been conducted and the equipment is either destroyed, repaired or returned to service.

Proper climbing and fall protection procedures will be required to access the

monkey board. Depending upon what method was used to climb the rig, the worker will either be moving from the rig's SRL or a double leg lanyard to the monkey board's SRL. Once at the monkey board, the worker will step onto the board and retrieve the monkey board's SRL snaphook and cable by pulling down the tagline attached to the unit. Properly inspect SRL and connecting hardware.

Attach the monkey board SRL snaphook to the shock absorber integral to the dorsal D of the harness. If the worker has used the rig SRL to climb up, remove the rig SRLs snaphook and reattach it to the tagline, or to a suitable point to keep it available for climbing down. If the worker used a double leg lanyard, they would detach the legs from the ladder and attach them to a suitable attachment point on their harness. Alternatively, the double leg lanyard can be detached from the dorsal D-ring and left on the ladder. Caution should be taken when a lanyard is attached to the harness, such that it does not become entangled in moving machinery or worn such that it becomes a trip hazard.

The worker will now attach the positioning lanyard (which is connected to the workers belt high, rear D-ring) to a designated anchor point at the back of the monkey board, ensuring the length of the positioning lanyard is adequate to allow full movement of during work operations.

When the worker is ready to come down, they will detach the positioning lanyard from the back of the monkey board, re-attach the rig SRL (or lanyard), detach the monkey board SRL, attach the tagline to the monkey board SRL and allow the cable to retract into the housing. Properly protected, the worker can now climb back down to the floor.

Rescue:

Rescue from a fall

If a worker falls while working on the monkey board and they cannot reach the structure and/or rescue themselves, the rig rescue plan will need to be put into effect. Rescue is conducted by trained individuals utilizing a pre-engineered rope haul system or similar device.

Winch line Rescue:

Using proper fall protection techniques as described within this document, one rescuer will immediately climb the rig with a rope tagline, rescue pulley (or similar shiv), anchor strap and positioning lanyard attached to his harness. The first rescuer will immediately climb to the crown to set up the rescue system. While he is setting up the rescue system, a second rescuer will climb (using appropriate fall protection) to the monkey board to establish contact with the fallen worker in order to assess their medical condition and assist with the rescue operation. Normally, the extent of medical attention that can be administered at height is limited to stemming the flow of blood from an open wound.

Once properly positioned and protected at the crown, the first rescuer will anchor

the tagline's pulley, thread it and lower the tagline to the workers below.

By this time, the haul crew will have prepared the winch for the rescue operation (see manufacturers requirements for personnel hoisting), will attach the tag line to the winch line's connector and will have a secondary fall arrest system available (SRL or rope grab and vertical lifeline) the secondary fall arrest system shall be raised to the rescuer to be installed at the crown above the fallen worker. The tag line will provide two functions, first to allow the rescuer to get a hold of the end of the winch line, and then to keep the worker from entangling in the structure during lowering operations.

The rescuer will anchor the secondary fall arrest system (vertical lifeline) on a suitable anchor point and remove the tagline from the rescue pulley (leaving it attached to the winch line). At this point, the first rescuer will climb down to the floor to assist the haul team. The tagline will be positioned so that the second rescuer can reach it and the winch line brought down to the second rescuer. The winch line will be attached to the back D-ring of the fallen worker, using an appropriate sized and rated connector and the tag line will be attached to the belt high, rear D-ring. Finally, the second rescuer will have brought a rope grab with them and will now attach it to the vertical lifeline and the rear D-ring of the fallen worker. It is recommended that a worker at floor level hold the bottom end of the lifeline (if possible) to keep it out of the way and ensure it remains taut during the descent.

The winch will be used to lift the fallen worker (only enough to detach his lanyard) and then carefully lower him to the rig floor. It is important that the speed is controlled to maintain safety.

At the base of the structure, first aid personnel will take over and properly attend to, and package the worker in a stretcher. It is important that workers expected to package the worker (put the fallen worker in a stretcher) are properly trained, and that the medical condition of the fallen worker is immediately assessed to determine the best and most appropriate course of action.

Haul System Rescue:
Using proper fall protection techniques as described within this document, one rescuer will immediately climb the rig with a rope tagline, rescue pulley (or similar shiv), anchor strap and positioning lanyard attached to his harness. The first rescuer will immediately climb to the crown to set up the rescue system. While he is setting up the rescue system, a second rescuer will climb (using appropriate fall protection) to the monkey board to establish contact with the fallen worker in order to assess their medical condition and assist with the rescue operation. Normally, the extent of medical attention that can be administered at height is limited to stemming the flow of blood from an open wound.

Once properly positioned and protected at the crown, the first rescuer will anchor

the tagline's pulley, thread it and lower the tagline to the workers below. By this time, the haul crew will have brought the rescue kit to the base of the structure below the fallen worker and workers will attach the rescue unit, an anchor strap, vertical lifeline and appropriate connectors to the tagline. A haul team (whoever is available at the base of the structure) will haul the rescue unit up to the rescuer. Positioning himself above the worker, the rescuer will anchor the haul system onto the rig structure, as an anchorage, and then anchor the vertical lifeline on adjacent structure. At this point, the rescuer will remove the tagline pulley, anchor strap and their positioning system, and attach the tagline end to the connector on the traveling block of the haul system. The first rescuer will then climb down to the floor to assist the haul team. The tagline will be positioned so that the second rescuer can reach it and the traveling block brought down to the second rescuer. The haul system will be attached to the back D-ring of the fallen worker and the tag line will be attached to the belt high, rear D-ring. Finally, the second rescuer will have brought a rope grab with them and will now attach it to the vertical lifeline and the rear D-ring of the fallen worker. The tagline will then be attached to the waist connection of the fallen worker's harness (side or preferably rear belt high).

Workers on the rig floor will lift the fallen worker enough to enable the rescuer to detach the fallen worker's SRL and positioning lanyard and then carefully lower him to the rig floor. The tagline will be used to keep the worker off of adjacent structure. It is recommended that a worker at floor level hold the bottom end of the lifeline (if possible) to keep it out of the way and ensure it remains taut during the descent.

Once on the rig floor, first aid personnel will take over and properly attend to, and package the worker in a stretcher. It is important that workers expected to package (put the fallen worker in a stretcher) are properly trained and that the medical condition of the fallen worker is immediately assessed to determine the best and most appropriate course of action.

Stretcher Rescue from the Monkey board:
If a worker is injured or becomes incapacitated while working on the monkey board and is not suspended in their harness. The decision may be made that the worker should be put into a stretcher prior to being lowered to the floor. The procedure below describes the use of an engineered haul system which can be substituted for a winch line.

Rescue is conducted by trained individuals utilizing a pre-engineered rope haul system or similar device. Using proper fall protection techniques as described within this document, one rescuer will immediately climb the rig with a rope tagline, rescue pulley (or similar shiv), anchor strap and positioning lanyard attached to his harness. The first rescuer will immediately climb to the crown to set up the rescue system. While he is setting up the rescue system, a second rescuer will climb using appropriate fall protection as described within this

document, to the monkey board to establish contact with the fallen worker in order to assess their medical condition and assist with the rescue operation. Normally, the extent of medical attention that can be administered at height is limited to stemming the flow of blood from an open wound.

Once properly positioned and protected at the crown, the first rescuer will anchor the tagline's pulley, thread it and lower the tagline to the workers below. By this time, the haul crew will have brought the rescue kit to the base of the structure below the fallen worker and workers will attach the rescue unit, an anchor strap, vertical lifeline and appropriate connectors to the tagline. A haul team (whoever is available at the base of the structure) will haul the rescue unit up to the rescuer. Positioning himself above the worker, the rescuer will anchor the haul system onto the rig structure, as an anchorage, and then anchor the vertical lifeline on adjacent structure. At this point, the rescuer will remove the tagline pulley, anchor strap and their positioning system, and attach the tagline end to the connector on the traveling block of the haul system. Then the first rescuer will climb down to the monkey board to assist the second rescuer. Using the tagline, the traveling block will be brought down to the floor and the stretcher will be attached to the haul system. The stretcher will then be hauled up to the monkey board and positioned on the board. Once the stretcher is on the board, the two rescuers will secure the injured worker into the stretcher, and attach the haul system to accommodate a horizontal lower of the stretcher. The workers positioning lanyard will be detached from his harness and the boards anchor point and then attached to one end of the stretcher. The tagline will be attached to the other end of the stretcher and held by personnel below to guide it down. Finally, the second rescuer will have brought a rope grab with them and will now attach it to the lifting point on the stretcher as a secondary system for the lowering process. One of the rescuers will now climb to the floor to assist with the lowering operation.

Workers on the rig floor will lift the stretcher off the board as the remaining rescuer guides the stretcher away from the board using the positioning lanyard as a tagline. It is recommended that a worker at floor level hold the bottom end of the lifeline (if possible) to keep it out of the way and ensure it remains taut during the descent. The stretcher will be lowered to the floor where medical treatment can be administered

Reporting and Logging

It is critical that any accident or fall is reported so that equipment and procedures can be properly evaluated. Any piece of fall protection equipment that has seen the force of a fall must be immediately removed from service and inspected by a competent person prior to future use.

Fall Protection Procedure 008: Working on the Rig Structure from another Secondary Platform (portable ladder/vehicle)

Task: Workers will be required to access the rig structure from a secondary platform to perform task typically related to rig up or down. This access platform will normally be temporary and will not normally have fall protection attached to it.

Hazard: Workers will have the potential to fall while accessing the work area and while working at height.

Equipment: workers may use either a shock absorbing lanyard or short SRL

Anchorage: Workers will use the rig structure as anchorage. Most legislation requires an uncertified anchorage for fall protection must be capable of withstanding a minimum impact of 22.2 kN (5000 pounds) without failure. As a rule of thumb, the worker must ensure that the anchorage used will be capable of holding the weight of a ¾ tonne truck. The rig structure itself will be used for a positioning anchorage. While Canadian legislation does not specify a requirement for a positioning anchorage, OSHA specifies that an anchorage for work positioning must meet a minimum strength requirement of 18 kN (3600 pounds).

Body Support: A CSA full body harness suitable to the task conducted at height will be required. Workers should use a general purpose harness for this task. It is the recommendation of the CAODC and general industry practice that all full body harnesses used with SRLs must have an integral shock absorber attached to the dorsal D-ring. See Appendix A for equipment approved by XYZ Company. It is important that the connecting means used matches the connection point on the harness.

Connecting Means: Workers will use a 6 foot shock absorbing lanyard to work from a secondary platform. The snaphooks will be sufficiently sized to connect to an anchorage connector's D-ring. Ensuring compatibility of hardware is critical to the function of this system and the safety of the worker. The lanyard must be connected directly to the dorsal D-ring of the harness (no extensions or harness shock absorbers).

Appropriate anchorage connectors will be necessary to attach to the rig structure. Properly sized tie off adaptors or cable slings are required to provide this connection. Alternatively, a tie back lanyard will provide the connecting means including anchorage connector.

When in place, the worker must use a positioning lanyard. This lanyard will be 4 feet in length and may be adjustable. It will not have an integral shock absorber

Specialty Equipment: CSA approved SRL, suitable in length to reach the ground without any extensions attached.

Pre use inspection: All fall protection equipment should be inspected prior to use as per manufacturers instructions.

Anchorage:
The rig structure should be inspected for its suitability for an anchorage, ensuring it will meet the adequate strength requirements.

Anchorages must be inspected to ensure that they do not have sharp edges that would cut or damage the anchorage connector used.

Ensure that when you attach the anchorage, you will not damage adjacent piping (steam, hydraulics, power) or structure.

Body Support:
Webbing should be free of any cuts or damage including major abrasion holes or burns.

Buckles should be functioning properly and not showing any signs of damage or distortion.

D-rings should be free of cuts, nicks or abrasion that could possibly damage webbing.

Connecting Means:
Lanyards with integral shock absorber should be checked for webbing and hardware as follows:

Webbing should be free of any cuts or damage including major abrasion holes or burns.

Inspect the lanyard snap hooks to ensure it takes two movements in order to open and that it automatically closes and locks.

Ensure snap hooks are free from rust and corrosion, nicks, dents or any sharp edges which may come into contact with webbing.

If the double leg lanyard is a tie back lanyard, the worker must also ensure that the floating D-ring is free from corrosion, burs, nicks and or sharp edges.

Positioning lanyards shall be inspected as above.

Inspect shock absorber for:

Signs of deployment:

Impact indicator deployed

Shock material visibly torn and coming out of the shock pack

Ensure that the shock absorber is sewn onto the connecting means (ensure you can see the stitching forming the loop around the connector).

If shock absorber is on harness and is not sewn integral to the back D-ring, check to ensure that snaphook and D-ring are free from defects, cuts, nicks abrasion and that the snaphook functions properly with the necessary two actions to open the hook gate.

Anchorage connectors:

Tie off adaptors: should be inspected as per any web product

Webbing should be free of any cuts or damage including major abrasion holes or burns.

Ensure D-rings are free from rust and corrosion, nicks, dents or any sharp edges which may come into contact with webbing.

Cable slings:

Cable slings should have a protective plastic coating that is intact without any breaks or major discolouration.

Inspect for kinks and/or any breaks in the wire rope.

Ensure that the thimbles are present, secure and not distorted or showing any damage (out of shape, loose in the wire rope).

Specialty Equipment:

Inspect the SRL snap hook to ensure it takes two movements in order to open and that it automatically closes and locks.

Inspect the impact indicator (where the snaphook attaches to the cable/webbing).

Pull sharply on the SRL cable (snaphook) to ensure that the SRL will lock off.

Procedure

Inspect all fall protection components as per manufacturer's recommendations. If any piece of equipment fails the pre-use inspection, that equipment shall be removed from service until a formal inspection by a competent person has been

conducted and the equipment is either destroyed, repaired or returned to service. Inspect, and then put on appropriate CSA approved full body harness.

Attach the lanyard to the back dorsal D-ring. Carefully climb to the work area using caution as there is no fall protection in place while climbing on the secondary structure. Once at height, inspect the chosen anchorage and attach the anchorage connector to the structure. Attach the lanyard's snap hook to the anchorage connector and proceed to work. If an SRL is to be used, attach the SRL to the anchorage connector and then attach the SRLs' snap to the harness shock absorber. It is important to ensure that you have sufficient clearance for your fall arrest system.

To facilitate hands-free work, a positioning lanyard can be used by attaching the one end of the positioning lanyard to the side D-ring, wrapping the lanyard around the structure and then attaching the other end to the opposite side D.
Upon finishing work, detach the fall arrest system and carefully climb down.

Rescue
Given the limited height that this type of work will be conducted from, rescue can be as simple as positioning a ladder below or adjacent to the fallen worker and helping them climb down. Specific rescue procedures will rely upon the area where the worker falls, access to that area and adjacent structure. Wherever possible, rescue should be kept as simple as possible. Workers accessing the area for rescue must use proper fall protection procedures as outlined within this document.

Reporting and Logging
It is critical that any accident or fall is reported so that equipment and procedures can be properly evaluated. Any piece of fall protection equipment that has seen the force of a fall must be immediately removed from service and inspected by a competent person prior to future use.

Fall Protection Procedure 009: Working with a Horizontal Lifeline

Task:
Workers will be required to horizontally move across the rig or structure using a horizontal lifeline and appropriate connecting means. It is important to understand that the use of a horizontal lifeline will be appropriate for specific circumstances, and that the use of that horizontal system must be according to the manufacturer and/or designing engineer's specifications. Installation, inspection and connecting equipment must be specifies as per manufacturer and/or designing engineer. Horizontal lifelines will be supplied with user manual detail relevant information for that system. Permanent system must be installed and tested by a qualified person prior to the initial use by a worker. The following procedure applies to a temporary horizontal lifeline installed and inspected as per manufacturer's specifications. Always refer to manufacturer's recommendations/instructions as to applicability of their system to your situation.

Hazard:
As the use of a horizontal lifeline is specific to your application, the hazards associated will depend upon the location of installation. It is recognized that the horizontal system is being utilized to either restrict movement such that a travel restraint system is in place and/or the installed system will provide fall arrest to minimize the risk of a fall from the work platform.

Equipment

Anchorage: The horizontal lifeline will be designed and engineered to meet an anchor requirement of at least two times the actual load generated during a fall. This load will be substantially more than just the vertical impact generated and must take into account the type and construction of the lifeline, span, number of workers, shock absorption used and more. Always follow the criteria set out by the designer/engineer who designed the system. Because of the increased forces normally encountered with a horizontal lifeline, it is very important that the anchorage be substantial and free from any sharp edges or manufacturing defects.

As specified by the horizontal system manufacturer/designer, the specified anchorage strength for this horizontal fall protection system shall be _____kN (xx pounds). XYZ Company has determined that the following structure is suitable for attachment of this horizontal system _____

Body Support: A CSA full body harness suitable to the task conducted at height will be required. It is important to note that the suitability of the harness must take into account the task undertaken by the worker. As a minimum to attach to the horizontal lifeline, the harness must meet an *A* classification which has a rear dorsal D-ring for attachment of the fall

arrest system. See Appendix A for equipment approved by XYZ Company.

As specified by the horizontal system manufacturer/designer, the specified body support for this horizontal fall protection system shall be a CSA Class ___ full body harness. It is important that the connecting means used matches the connection point on the harness.

Connecting Means: The choice of connecting means will be dependant upon the design of the horizontal and its placement relative to the dorsal D-ring of the worker. The length of the connecting means will also be determined by the design of the horizontal system.

As specified by the horizontal system manufacturer/designer the specified connecting means for this horizontal fall protection system shall be _____, it shall not exceed ___ metres in length and shall include a shock absorber to reduce the force to below 4 kN (900 pounds).

Appropriate anchorage connectors as specified by the horizontal manufacturer/designer will be necessary to attach to the rig structure.

Specialty Equipment:
Horizontal lifeline as specified by the manufacturer.

CSA approved SRL, length specified by the manufacturer/designer of the horizontal lifeline.

Pre use inspection: All fall protection equipment should be inspected prior to use as per manufacturers instructions.

Anchorage:
Anchorages must be inspected to ensure that they do not have sharp edges that would cut or damage the anchorage connector used.

Ensure that when you attach to the anchorage you will not damage adjacent piping (steam, hydraulics, power) or structure.

Anchorages must meet the requirements of the manufacturer/designer of the horizontal system.

Body Support:
Webbing should be free of any cuts or damage including major abrasion holes or burns.

Buckles should be functioning properly and not showing any signs of damage or distortion.

D-rings should be free of cuts, nicks or abrasion that could possibly

damage webbing.

Connecting Means:
Inspect shock absorbers for:

Signs of deployment:

Impact indicator deployed

Shock material visibly torn and coming out of the shock pack

Ensure that the shock absorber is sewn onto the connecting means (ensure you can see the stitching forming the loop around the connector).

If shock absorber is on harness and is not sewn integral to the back D-ring, check to ensure that snaphook and D-ring are free from defects, cuts, nicks abrasion and that the snaphook functions properly with the necessary two actions to open the hook gate.

Anchorage connectors:

Tie off adaptors: should be inspected as per any web product

Webbing should be free of any cuts or damage including major abrasion holes or burns.

Ensure D-rings are free from rust and corrosion, nicks, dents or any sharp edges which may come into contact with webbing.

Cable slings:

Cable slings should have a protective plastic coating that is intact without any breaks or major discolouration.

Inspect for kinks and/or any breaks in the wire rope.

Ensure that the thimbles are present, secure and not distorted or showing any damage (out of shape, loose in the wire rope).

Check to ensure that carabiners are free from defects, cuts, nicks abrasion and that they function properly with the necessary two actions to open the gate and that the gate automatically closes and locks upon release.

Specialty Equipment:
Inspect the SRL snaphook to ensure it takes two movements in order to open and that it automatically closes and locks.

Inspect the impact indicator (where the snaphook attaches to the cable or webbing).

Pull sharply on the SRL cable (snaphook) to ensure that the SRL will lock off.

Inspect the horizontal lifeline as per the manufacturer/designers specifications.

Procedure
Inspect all fall protection components as per manufacturer's recommendations. If any piece of equipment fails the pre-use inspection, that equipment shall be removed from service until a formal inspection by a competent person has been conducted and the equipment is either destroyed, repaired or returned to service. Put on appropriate CSA approved full body harness.

It is critical that the manufacturer's user manual be read and followed regarding the inspection, installation and use of the system.

Lifeline installation:
Using 100% fall protection, access the anchorage and install the appropriate anchorage connector. Attach the horizontal lifeline to the anchorage connector using the end that does not have a tensioning unit. Climb down to the ground and move to the other anchorage, climb to height (using 100% fall protection) then attach anchorage connector and the remaining end of the horizontal lifeline. Tension the horizontal lifeline as per manufacturer/designers specifications.

Using the horizontal system:.
Once installed, the worker can attach the specified connector to their dorsal D-ring of their harness and attach to the lifelines system (some lifelines have an integral ring or slider on the lifeline. If it is available, it is important that the connection be made at this point. The worker will then be able to walk along the level surface without impediment. If the system has intermediate supports, care will need to be taken to pass these points. How the worker passes an intermediate will depend upon the system design and the horizontal user manual should always be consulted and followed.

Rescue
Rescue for a fallen worker using a horizontal lifeline will depend upon the lifelines location and what adjacent structure is available for anchorage points. Company XYZ has determined that the following rescue procedures are necessary when working with the horizontal system at this location.

_____

Reporting and Logging
It is critical that any accident or fall is reported so that equipment and procedures can be properly evaluated. Any piece of fall protection equipment that has seen the force of a fall must be immediately removed from service and inspected by a

competent person prior to future use.

Fall Protection Procedure 010: Raising Personnel with a Man Rated Winch, for General Operations or Rescue.

Task:
Workers will be required to be raised on a man rated winch. The application of this procedure is based upon the requirements and operating procedures of the Braden man rated winch which has been designed to accommodate manriding and reduces the pull (load rating to below 700 pounds). Use of this winch requires that workers properly lock out the winch, so that it is switched to manriding capacity only. Workers being raised on a winch will be required to utilize a secondary fall arrest system anchored separately from the winch line itself. Workers will be protected from falling using either a vertical lifeline and automatic rope grab, or a SRL.

Hazard:
Workers being raised by a winch line risk a fall should the main line fail or the winch be allowed to free wheel. It is important to note that there are several risks associated with the raising and lowering of workers on a winch line beyond those addressed with fall protection. The use of a motorized winch for suspension of a worker must be properly evaluated and approved by management.

Equipment

Winch: Raising and lowering of personnel for both regular operations and/or rescue must be conducted utilizing a properly designed man rated winch. The designation of a *man rated winch* can be achieved through several standards bodies including CSA, ANSI, UL, DNV and more. Of greatest concern when using a man rated winch, is that the winch is limited in its rated capacity and either shuts down or *clutches*/slips at a point which will not cause serious damage to the worker being raised/lowered. This procedure is based upon the Braden Gearmatic Personnel Hoisting System modified with a manrider hydraulic loop that can be locked out and limits the working load to 500 pounds. The use of this winch for personnel hoisting is only approved with this modification and when it is locked in the manrider position. Installation, inspection, maintenance and operation must follow manufacturer's recommendations.

Anchorage: The vertical lifeline or SRL will be used as a secondary fall protection system either in a rescue or during normal operations. Most legislation requires an uncertified anchorage for fall protection must be capable of withstanding a minimum impact of 22.2 kN (5000 pounds) without failure. As a rule of thumb, the worker must ensure that the anchorage used will be capable of holding the weight of a ¾ tonne truck.

Body Support: A CSA full body harness suitable to the task conducted at height will be required. It is important to note that the suitability of the harness must take into account the task undertaken by the worker. As a

minimum to attach to the fall arrestor, the harness must meet an *A* classification which has a rear dorsal D-ring for attachment of the fall arrest system. In addition, the harness must include a D-ring and/or bosuns chair in order to support the worker on the winch. See Appendix A for equipment approved by XYZ Company.
It is important that the connecting means used matches the connection point on the harness.

Connecting Means: The choice of connecting means will be dependant upon whether the SRL or the vertical lifeline and automatic fall arrestor is used. The SRL will connect via the integral snaphook. However, if the automatic fall arrestor is used, the type of arrestor will determine the connecting means. Fall arrestors which are not panic proof (these units do not eliminate the possibility of panic grip) must be fitted with an integrally attached (by the manufacturer) connecting means no longer than 0.6 metres (2 feet). Panic proof automatic fall arrestor must use connecting means with a maximum length of 1 metre (3 feet) to maintain a maximum freefall of 2 metres (6 feet).

Appropriate anchorage connectors will be necessary to attach to the rig structure if a permanent connection is not already established. Properly sized tie off adaptors or cable slings are required to provide this connection.

Connecting to the winch line for the purpose of being raised shall be accomplished by using an approved and properly sized carabiner or a bolt type anchor shackle (painted yellow).

Specialty Equipment:
CSA approved SRL.

Vertical lifeline meeting the CSA requirements for vertical lifelines**.**

Automatic fall arrestor (panic or non panic model).
It is critical that the lifeline and arrestor are matched as per manufacturer specifications.

Pre use inspection: All fall protection equipment should be inspected prior to use as per manufacturers instructions.

Winch:
Ensure there are no visible defects, loose or missing hardware. Check all hydraulic lines and fittings for leak, corrosion or wear, and tighten or replace as necessary.

Inspect the lubricating oil site glass for proper levels and replenish as needed.

Ensure that the hydraulic fluid has been properly pre-warmed prior to any functional checks being carried out.

Cycle the winch controls checking for chattering, fluid leaks, and unusual operations by raising and lowering the winch about ten feet.

Ensure the brakes are in good condition and carry out a brake test functional check as recommended by the manufacturer.

The winch cable must be checked for even spooling onto the drum and must not show any evidence of *birdcaging*.

Anchorage:
Anchorages must be inspected to ensure that they do not have sharp edges that would cut or damage the anchorage connector used.

Ensure that when you attach to the anchorage you will not damage adjacent piping (steam, hydraulics, power) or structure.

Anchorages for fall arrest must be strong enough to withstand a minimum 22.2 kN force without failure.

Body Support:
Webbing should be free of any cuts or damage including major abrasion holes or burns,

Buckles should be functioning properly and not showing any signs of damage or distortion.

D-rings should be free of cuts, nicks or abrasion that could possibly damage webbing.

Connecting Means:
Inspect shock absorbers for:

- Signs of deployment
  - Impact indicator deployed
  - Shock material visibly torn and coming out of the shock pack

Ensure that the shock absorber is sewn onto the connecting means (ensure you can see the stitching forming the loop around the connector).

If shock absorber is on harness and is not sewn integral to the back D-ring, check to ensure that snaphook and D-ring are free from defects, cuts,

nicks abrasion and that the snaphook functions properly with the necessary two actions to open the hook gate.

Anchorage connectors:

Tie off adaptors: should be inspected as per any web product

Webbing should be free of any cuts or damage including major abrasion holes or burns.

Ensure D-rings are free from rust and corrosion, nicks, dents or any sharp edges which may come into contact with webbing.

Cable slings:

Cable slings should have a protective plastic coating that is intact without any breaks or major discolouration.

Inspect for kinks and/or any breaks in the wire rope.

Ensure that the thimbles are present, secure and not distorted or showing any damage (out of shape, loose in the wire rope).

Check to ensure that carabiners are free from defects, cuts, nicks abrasion and that they function properly with the necessary two actions to open the gate and that the gate automatically closes and locks upon release.

Specialty Equipment:

Vertical lifelines are to be inspected for any cuts, breaks, kinks (if cable).

Ensure thimble and termination is secure (splice or swage). Inspect layed construction to ensure there is no bunching or unraveling. Looks for signs of material degradation (stiff fibers, excessive dirt, cracking sounds when flexed).

Vertical lifelines should be finished with a CSA approved connector on one end and should be free of any knots and/or splices save for the end termination.

Inspect the fall arrestor to ensure it will lock onto the lifeline and that it cannot accidentally be removed.

Move the slider up and down ensuring that it moves freely and does not bind unnecessarily on the lifeline.

Inspect the SRL snaphook to ensure it takes two movements in order to open and that it automatically closes and locks.

Inspect the impact indicator (where the snaphook attaches to the cable or webbing).

Pull sharply on the SRL cable (snaphook) to ensure that the SRL will lock off.

Procedure
Inspect all hoisting and fall protection components as per manufacturer's recommendations. If any piece of equipment fails the pre-use inspection, that equipment shall be removed from service until a formal inspection by a competent person has been conducted and the equipment is either destroyed, repaired or returned to service.
Put on appropriate CSA approved full body harness.

Using an SRL:
If the existing SRL is available and can safely be used with the winch (does not rub on any sharp edges), then the worker will need to ensure they can access the tagline from the drilling floor. If a separate SRL is to be installed, workers must select an appropriate anchorage, use 100% fall protection at all times during installation and install the anchorage connector, SRL and tagline.

Lifeline installation:
Using 100% fall protection, access the anchorage and install the appropriate anchorage connector. Attach the vertical lifeline to the anchorage connector using the end that has an integral connector (snaphook or carabiner). Allow the lifeline to hang directly below the anchorage and ensure the length of the lifeline comes within 1.2 metres of the landing platform. Once installed, it is recommended that a weight be attached to the lower end of the lifeline to keep it taut.

Using the Fall Arrestor:
Attach the fall arrestor to the vertical lifeline and ensure it is moving effortlessly along the cable/rope both up and down. If the fall arrestor is a panic proof type, you will attach a shock absorbing lanyard no longer than 1 metre in length from the dorsal D-ring of your harness to the connection point of the fall arrestor. If the fall arrestor is not panic proof, then you will attach a shock absorbing lanyard no longer than 0.6 metres in length from the dorsal D-ring of your harness to the connection point of the fall arrestor.

NB. If the connecting means attached to the fall arrestor has an integral shock absorber, the connecting means should be attached directly to the dorsal D-ring and not the harnesses integral shock absorber.

As you are raised up, the fall arrestor will automatically follow you as you pull it up the lifeline. Always ensure that the fall arrestor is moving on the lifeline and that the lifeline is not being dragged up with the arrestor (which would greatly

increase the potential freefall). Once at height, it is very important to always *park* the fall arrestor by moving it up the lifeline as far as you can reach to minimize potential free fall.

Upon finishing work, un-park the fall arrestor (unlock it off the lifeline and allow it to slide down the lifeline until it is hanging below you). When being lowered with an automatic fall arrestor and vertical lifeline, the weight of the fall arrestor will keep it moving down the lifeline leading the worker. It is important that workers are not lowered faster than the fall arrestor, or that they do not try to move too far from the vertical line below the anchorage causing the fall arrestor to lock off and impede the workers progress. Upon reaching the lower level, the worker should detach from the lifeline and return the equipment to its storage location.

Raising Operations

It is the policy of Company XYZ that workers using the Braden Gearmatic Winch for the purpose of hoisting personnel follow the following operational procedures. Always refer to manufacturer specifications and formal training documentation for additional and specific procedures.

Training: It is critical that, prior to operating or participating in personnel hoisting operations, workers are properly trained in the procedures and hazards associated with raising operations. Company XYZ maintains a training program for this procedure and the winch used. Please contact your supervisor to receive the proper training.

Safe Work Permit: Prior to any man lift operations, a safe work permit must be initiated. You will find the safe work permits within the dog house.

Pre-Hoist Checks: Pre hoist checks will not begin until the safe work permit has been initiated and all other work on the rig has ceased. It is good work practice to follow a pre-hoist checklist. This will aid you in the steps to be performed before hoisting is safe to proceed (see Appendix ? for a sample check list).

Visually inspect the lift as per the manufacturer's recommendations as outlined within the pre-hoist checklist in Appendix ?

Inspect the hoist to be sure it is in good condition with no visible defects, loose or missing hardware. Check all hydraulic lines and fittings for leaks corrosion or wear and tighten or replace as necessary.

Lock out selector switch in the manwinch operations position.

Follow all necessary functional tests to ensure winch is operating properly

Pre-Hoist JSA Discussion: Communications between the crew

members is an essential part of the pre-hoist operation checks.

Topics need to be covered include:

Job Safety Analysis (JSA): identify hazards and risk and the steps to reduce or eliminate those risks.

Assigning crew positions: each member of the crew will have a role in raising an individual.

> ***Winch Controller*:** must have a thorough understanding in operation of the controls and should never leave controls unattended. The winch controller must always have a visual bearing on the worker being hoisted to watch for hand signals and any pertinent safety issues.
>
> ***Tag Line Spotter***: maneuvers the tag lines and rider to ensure the cables are not twisted and prevents the rider from spinning. He will keep his eyes on the man hoisted, looking for potential hazards to alert the controller to stop.
>
> Crew communication is paramount in any personnel hoisting operation.

Emergency Response Plan: providing a means of rescue is necessary when lifting personnel.

Any safety equipment requirements.

Riding the Winch: Personnel being hoisted must use the proper approved harness and connectors for being raised.

The rider will be connected to the winch with either a bolt type anchor shackle or a large carabiner. Both types of connectors must be rated for personnel hoisting.

Connection to the harness shall be via the front chest ring of a cross over harness or via the suspension D-rings on a bosuns chair. See Appendix ? for approved harnesses.

Connection to the hoist shall depend upon the hoist itself. If the hoist is used exclusively for man riding, a finished eye will be available at the end of the hoist line for man-riding applications. If the winch is used for material hoisting, as well as personnel hoisting, the worker must connect to the finished eye connected to the material hook. Connection must be made directly to the cable and not to anything else.

Personnel being raised must have a separate fall arrest system that is anchored separate to the winch line. Fall protection gear must be inspected as per the manufacturer's recommendations and must meet all CSA and legislative requirements.

Emergency Operations: The Braden Gearmatic Winch is equipped with the ability to lower workers manually should the power be lost. Operation of the unit is dependent upon proper training, isolation of controls and emergency procedures outlined within the unit's operations manual. Workers using the Braden Winch must be properly trained on the isolation and operation of the unit in an emergency lower.

Rescue

If the workers primary support (winch line) fails during a hoisting operation, the worker will be suspended on either the SRL or vertical lifeline and automatic rope grab. If the worker cannot reach the ladder and/or rescue themselves, the rig rescue plan will need to be put into effect. Rescue is conducted by trained individuals utilizing a pre-engineered rope haul system or similar device. Using proper fall protection techniques as described within this document, one rescuer will immediately climb the structure with a rope tagline, rescue pulley (or similar shiv), anchor strap and positioning lanyard attached to his harness.

The rescuer will need to move to the worker from the ladder, this will require them to move across the structure using fall protection procedures described within this document. Due to the time necessary to travel from the ladder to the worker the rescuer will stop at the same level of the fallen worker to make a visual assessment of their condition. Once their condition is established the rescuer will proceed to the level above the worker, move out across the structure until they are directly above the fallen worker. Once properly positioned using the positioning lanyard, the rescuer will anchor the tagline's pulley, thread it and lower the tagline to the workers below. By this time, the haul crew will have brought the rescue kit to the base of the structure below the fallen worker and workers will attach the rescue unit, an anchor strap, vertical lifeline, automatic rope grab and appropriate connectors to the tagline. **(NB. If the fallen worker was using an SRL, the need for the vertical lifeline will not be necessary as the worker will still be protected by their SRL during rescue operations.)** A haul team (whoever is available at the base of the structure) will haul the rescue unit up to the rescuer. Positioning himself above the worker, the rescuer will anchor the haul system onto the structure as an anchorage (ensuring there is sufficient distance to raise the worker enough to detach the current fall arrestor). He will then anchor the new vertical lifeline on adjacent structure. At this point, the rescuer will remove the tagline pulley, anchor strap and their positioning system, and move back to the ladder. The rescuer will climb down to the same level as the fallen worker, move out to him (using proper fall protection at all times) and immediately assess the medical condition of the fallen worker and

administer appropriate first aid. Normally, the extent of medical attention that can be administered at height is limited to stemming the flow of blood from an open wound. The tagline will then be attached to the waist connection of the fallen workers harness (side or preferably rear belt high).

The rescuer will attach the haul system to the workers dorsal D-ring, as well as the connector for the rope grab which has been attached to the vertical lifeline (**if necessary**).

Workers on the rig floor will lift the fallen worker enough to enable the rescuer to detach the fallen worker's loaded fall arrestor and then carefully lower him to the structures base. The tagline will be used to keep the worker off of the ladder rungs and/or getting caught up in adjacent structure. It is recommended that a worker at the base of the structure hold the bottom end of the lifeline (if possible) to keep it out of the way and ensure it remains taut during the descent.

At the base of the structure, first aid personnel will take over and properly attend to, and package the worker in a stretcher. It is important that workers expected to package (put the fallen worker in a stretcher) are properly trained and that the medical condition of the fallen worker is immediately assessed to determine the best and most appropriate course of action.

Reporting and Logging

It is critical that any accident or fall is reported so that equipment and procedures can be properly evaluated. Any piece of fall protection equipment that has seen the force of a fall must be immediately removed from service and inspected by a competent person prior to future use.

Fall Protection Procedure 011: Confined Space Entry

Task:
Workers will be required to enter into a confined space for the purpose of general maintenance or inspection. The application of fall protection procedures ensures the safety of the worker entering the confined space and facilitates the legal requirement for rescue.

Hazard:
Workers entering a confined space risk several hazards depending upon the atmosphere within the confined space, the access methods and operations going on in the confined space. Workers climbing a fixed ladder are faced with the risk of falling if they lose their footing or hand grip. In addition, the very nature of a confined space makes rescue more difficult, should the worker suddenly feel overcome.

Equipment:

Anchorage: Prior to any worker entering a confined space, a suitable platform/anchorage shall be determined such that it will support CSA approved Tripod or Davit arm designed specifically for fall protection and rescue.

Body Support: A CSA full body harness suitable to the task conducted will be required. Workers entering into the confined space should select the simplest harness available avoiding harnesses with multiple attachment points (if not required) and extra rigging that could potentially hinder a rescue from the confined space. See appendix A for equipment approved by XYZ Company.

Connecting Means: A CSA approved tripod or davit arm designed for the purpose of fall protection/access, egress and rescue shall be used. Workers will use the integral snap hook on the SRL/winch cable to connect to the harness.

Specialty Equipment: CSA approved SRL with retrieval capability and/or man rated personnel winch, suitable in length to provide protection for the worker from the top of the entry to the expected work area, without any extensions attached.

Pre-use Inspection: All fall protection equipment should be inspected prior to use as per manufacturer's instructions.

Anchorage:
Ensure the platform for the Tripod/Davit is stable and secure.

Body Support:

Webbing should be free of any cuts or damage including major abrasion holes or burns.

Buckles should be functioning properly and not showing any signs of damage or distortion.

D-rings should be free of cuts, nicks or abrasion that could possibly damage webbing.

Connecting Means:
If shock absorber is not sewn integral to the back D-ring, check to ensure that snaphook and D-ring are free from defects, cuts, nicks abrasion and that the snaphook functions properly with the necessary two actions to open the hook gate.

Ensure that the shock absorber is sewn onto the connecting means (ensure you can see the stitching forming the loop around the connector).

Inspect shock absorber for signs of deployment:

impact indicator deployed
shock material visibly torn and coming out of the shock pack

Snaphook as per SRL.
Tripods/davits should be inspected for any damage to the legs ensuring that they are not bent or broken:

Ensure that connection points on the Tripod/Davit are secure and are not bent, cracked or showing signs of corrosion or damage.

If supplied with the tripod, ensure that the leg restraining chains are in place and not damaged.

Specialty Equipment:
Inspect the SRL snaphook to ensure it takes two movements in order to open and that it automatically closes and locks.

Inspect the impact indicator (where the snaphook attaches to the cable or webbing)

Ensure that switch on the retrieval SRL (SRL to winch) is in the SRL position.

Pull sharply on the SRL cable (snaphook) to ensure that the SRL will lock off.

Inspect the winch that it both raises and lowers and that all safety features, (dead mans brake, overspeed brake, etc.) as set out in the user manual, are functioning properly.

Inspect the winch snaphook to ensure it is functioning properly and takes two separate motions to open it.

Procedure

Entry procedures will depend upon access into the confined space. If the confined space is accessed with a fixed ladder, then only a fall protection and rescue components will be utilized. If the worker must be lowered into the confined space, then both the SRL and the man rated winch must be used. Where workers are lowered with the rigs manrider system, then those procedures should be followed. This procedure deals with the fall protection/retrieval requirements only and does not detail proper monitoring, ventilation and/or communication issues necessary for entry into a confined space. Entry permits will be required prior to entering into a confined space and a safety monitor must be in place anytime an individual enters into the confined space. Rescue procedures are outlined for non-entry rescue only, refer to relevant confined space plan for entry rescue procedures.

Inspect then put on appropriate CSA approved full body harness.

Put the Tripod/Davit in place on the work platform with the anchor points directly over the entry hole. Attach SRL and winch, so that the retrieval unit is placed on the highest possible anchor point. Depending upon the manufacturer of the tripod, this is normally achieved by using a re-direct system on the Tripod/Davit where the retrieval SRL is attached to the leg of the Tripod/Davit, and then the cable is run through a shiv anchored on the apex of the Tripod/Davit. It is important to position the retrieval unit for maximum clearance out of the confined space to facilitate an efficient retrieval of a fallen worker.

Lowering operations:

While it is industry practice to attach an SRL to a harnesses integral shock absorber, the inclusion of the shock absorber will decrease the overhead clearance during a retrieval operation. As such for the purpose of entering into a confined space where the cable will not be impacted over a sharp edge, attach the snap hook from the fall arrest and rescue system (SRL) to the harnesses, dorsal D-ring. Properly inspect SRL and connecting hardware. If any piece of equipment fails the pre-use inspection, that equipment shall be removed from service until a formal inspection by a competent person has been conducted and the equipment is either destroyed, repaired or returned to service. Once attached to the SRL, the worker can approach the entrance and then connect the winch line to their front suspension points on their harness or bosuns chair. The attendant will raise the worker up with the winch to position him over the entrance, and then lower him down to the work level. Once at the work level, the worker will detach from the winch line, but remain connected to the SRL. As the

worker moves away from the entrance, the SRL will pay out and then retract as they come back. Once the worker is finished, they will return to the area below the entrance, reconnect to the winch line and the attendant will raise them up out of the confined space.

Once back on the work platform, the worker will disconnect from the winch, step away from the entrance and then disconnect from the SLR.

Non-entry Rescue from a Confined Space

Rescue from a confined space can be for any number of reasons and should be affected as quickly and safely as possible. If a worker cannot return out of the confined space as they went in, they will need to be retrieved by the safety watch. Non-entry rescue is based upon the retrieval of an incapacitated worker without having to enter the confined space. The retrieval SRL attached to the dorsal D-ring of the worker is designed to facilitate this type of rescue. Once it is identified that the worker cannot return to the entrance and the attendant has raised the alarm, the attendant (safety watch) will switch the SRL to retrieval mode and begin cranking up the worker. It is very important that the attendant take caution and pays attention to the incapacitated worker, to ensure that they do not become tangled in the ladder or anything else within the confined space. Once the incapacitated worker is retrieved to the work platform, first aid personnel will take over and properly attend to, and package the worker in a stretcher. It is important that workers expected to package a worker (put the fallen worker in a stretcher) are properly trained and that the medical condition of the fallen worker is immediately assessed to determine the best and most appropriate course of action.

Reporting and Logging

It is critical that any accident or injury is reported, so that equipment and procedures can be properly evaluated. Any piece of fall protection equipment that has seen the force of a fall must be immediately removed from service and inspected by a competent person prior to future use.

Equipment logging and inspection
All fall protection equipment used on the rig shall be inspected as per the manufacturer's recommendations, and a written log shall be in place identifying those inspections and the service history of the equipment.

Inspections shall be carried out by a competent person, trained in the inspection of that equipment, and knowledgeable of the manufacturer's requirements for inspection.

Training
All personnel required to use fall protection equipment must be trained in its use by a competent person. CAODC and XYZ Company recognizes the Petroleum Industry Training Service (PITS) fall protection training as an awareness level course that will be supplemented by onsite orientation to the hazards of the worker's rig.

Personnel expected to conduct a site rescue will be trained in the procedures and techniques to conduct such a rescue.

Fall Protection Procedures: Synopsis

Fall Protection Procedure 001: Climbing with an SRL

Task: Workers will be required to vertically climb a structure using the structures ladder using a pre-installed SRL.

Equipment: Full body harness (as appropriate for the work task), SRL

Procedure

Inspect then put on appropriate CSA approved full body harness.
Inspect and attach SRL.
Climb to work area.
Transfer to work area fall protection system.

Rescue
Rescue will be conducted using a pre-engineered rope haul system or similar device and appropriate fall arrest for both rescuers and fallen worker. See detail description of this procedure for rescue procedures.

Fall Protection Procedure 002: Climbing without an SRL

Task: Workers will be required to vertically climb the structure using the structures ladder without an SRL. Workers will protect themselves using a double leg lanyard

Equipment: full body harness (general purpose), double leg lanyard, anchorage

will be the ladder rungs.

- **Anchorage:** Workers will use the ladder rungs themselves as anchorage for the twin.

Procedure

Inspect then put on appropriate CSA approved full body harness.
Inspect and attach double leg lanyard to harness.
Attach the two legs of the lanyard to the ladder rungs, one at eye level and one as high as you can reach.
Climb one or two steps then reposition lanyard legs, always ensuring that at least one of the lanyard legs is at shoulder height or higher to minimize free fall.

NB. It is very important that the maximum freefall is kept to the legal and manufacturer limits (normally 6 feet), this means that while climbing with a 6 foot lanyard, it is critical that you maintain at least one of your anchor points at shoulder height or higher.

Rescue

Rescue will be conducted using a pre-engineered rope haul system or similar device and appropriate fall arrest for both rescuers and fallen worker. See detail description of this procedure for rescue procedures.

Fall Protection Procedure 003: Climbing with a Fixed Ladder Safety System

Task: Workers will be required to vertically climb a fixed ladder using a pre-installed ladder safety system.

Equipment: Full body harness with front chest connection, ladder system sleeve (slider), short connection (carabiner).

Procedure

Inspect, then put on appropriate CSA approved full body harness.
Inspect and attach ladder safety sleeve.
Climb to work area.
Transfer to work area fall protection system.

Rescue

Rescue will be conducted using a pre-engineered rope haul system or similar device and appropriate fall arrest for both rescuers and fallen worker. See detail description of this procedure for rescue procedures.

Fall Protection Procedure 004: Climbing and Working on the Rig with an SRL

Task: Workers will be required to climb from the ladder and horizontally across the face of the structure.
Equipment: Full body harness (general purpose), positioning lanyard, rig SRL.
Procedure

Inspect all equipment as per manufacturer's recommendations.
Move from the ladder to work area on the face of the rig.
Use positioning lanyard to work hands free.

Rescue
Rescue will be conducted using a pre-engineered rope haul system or similar device and appropriate fall arrest for both rescuers and fallen worker. See detail description of this procedure for rescue procedures.

Fall Protection Procedure 005: Climbing across the structure without an SRL

Task: Workers will be required to horizontally climb across the structure from the structure's ladder or a work platform without an attached SRL.

Equipment: Full body harness (general purpose), positioning lanyard, double leg lanyard, and appropriate anchorage connector

Procedure

Inspect all equipment as per manufacturer's recommendations.
Move from the ladder to work area on the face of the structure.
Transfer from ladder system to double leg lanyard setting anchorage connectors as you move horizontally.
Use positioning lanyard to work hands free.

NB. It is very important that the maximum freefall is kept to the legal and manufacturer limits (normally 6 feet), this means that while climbing with a 6 foot lanyard it is critical that you maintain your anchor points at shoulder height or higher. This means that if you are using a tie off adaptor or cable sling that hangs down from the anchorage 2 feet, the anchorage must be at least 2 feet above your shoulder height.

Rescue
Rescue will be conducted using a pre-engineered rope haul system or similar device and appropriate fall arrest for both rescuers and fallen worker. See detail description of this procedure for rescue procedures.

Fall Protection Procedure 006: Climbing with a vertical lifeline and

automatic fall arrestor (rope grab),

Task: Workers will be required to vertically move on the rig (either climbing or being hoisted) using a vertical lifeline and automatic fall arrester as a secondary system.

Equipment: Full body harness (general purpose or CSA approved harness with some suspension capability), vertical lifeline, automatic fall arrestor (rope grab), appropriate length lanyard, shock absorber and connecting means.

Procedure

Inspect then put on appropriate CSA approved full body harness.
Inspect and attach automatic fall arrestor.
Inspect and attach connecting means (if the fall arrestor has a panic device then the total length of the lanyard, connectors and shock absorber cannot exceed 1 metre; if the fall arrestor does not have a panic device then the total length cannot exceed 0.6 metres).
Climb to work area.
Transfer to work area fall protection system, or if working from the lifeline system, park the arrestor (raise it up and lock it onto the lifeline).
When coming down reattach to the arrestor from the work area system, or un-park the arrestor allowing it to hang below you.
Descend to the ground with the arrestor leading your descent.

Rescue

Rescue will be conducted using a pre-engineered rope haul system or similar device and appropriate fall arrest for both rescuers and fallen worker. See detail description of this procedure for rescue procedures.

Fall Protection Procedure 007: Working on the Monkey Board or Rod Basket

Task: Once at height, workers will be required to work on the monkey board and protect themselves using the available system.

Equipment: Full body harness (derrickman's harness), positioning lanyard, SRL (for monkey board and rod basket.

Procedure

Inspect all equipment as per manufacturer's recommendations.
Access the monkey board or rod basket as per proper climbing procedures.
Switch to the board's SRL.
Attach positioning lanyard to rear of the board adjusting for proper length.

Rescue
Rescue will be conducted using a pre-engineered rope haul system or similar device and appropriate fall arrest for both rescuers and fallen worker. See detail description of this procedure for rescue procedures.

Fall Protection Procedure 008: Working on the Rig Structure from Another Secondary Platform (portable ladder/vehicle)

Task: Workers will be required to access the rig structure from a secondary platform to perform task typically related to rig up or down. This access platform will normally be temporary and will not usually have fall protection attached to it.

Equipment: Full body harness (general purpose), shock absorbing lanyard or small SRL, anchorage connectors.

Procedure

Inspect all equipment as per manufacturer's recommendations.
Access the rig with due care and attention.
Once at height attach the anchorage connector on a suitable part of the rig.
Attach the lanyard or SRL to the anchorage connector.
Proceed with work.

Rescue
Given the limited height that this type of work will be conducted from, rescue can be as simple as positioning a ladder below or adjacent to the fallen worker and helping them climb down. Specific rescue procedures will rely upon the area where the worker falls, access to that area and adjacent structure. Wherever possible, rescue should be kept as simple as possible. Workers accessing the area for rescue must use proper fall protection procedures as outlined within this document.

Fall Protection Procedure 009: Working with a Horizontal Lifeline

Task: Workers will be required to horizontally move across the rig or structure using a horizontal lifeline and appropriate connecting means.

Equipment: CSA approved full body harness, appropriate length single or double leg shock absorbing lanyard (as specified by horizontal designer).

Procedure

NB. Remember to always use 100% fall protection in the installation of horizontal lifelines and during access to the lifeline.

Inspect, then put on appropriate CSA approved full body harness.

Inspect and attach lifeline as per designer/manufacturer specifications.

Attach lanyard to rear dorsal D-ring of harness and then to lifeline.

Move horizontally (or vertically if lifeline incorporates SRL).

Rescue

Rescue for a fallen worker using a horizontal lifeline will depend upon the lifelines location, and what adjacent structure is available for anchorage points. Company XYZ has determined that the following rescue procedures are necessary when working with the horizontal system at this location. _____.

Fall Protection Procedure 010: Raising Personnel with a Man Rated Winch, for General Operations or Rescue

Task: Workers will be required to be raised on a man rated winch. The application of this procedure is based upon the requirements and operating procedures of the Braden Man Rated Winch, which has been designed to accommodate manriding and reduces the pull (load rating to below 700 pounds). Use of this winch requires that workers properly lock out the winch, so that it is switched to manriding capacity only. Workers being raised on a winch will be required to utilize a secondary fall arrest system anchored separately from the winch line itself. Workers will be protected from falling using either a vertical lifeline and automatic rope grab or a SRL.

Equipment: CSA approved full body harness with front suspension capability, Vertical lifeline and automatic fall arrestor or SRL and appropriate connecting means for suspension (designated carabiner connected into the finished end of the winch cable (not the hook) or *Bolt Type Anchor Shackle* painted yellow.

Procedure

Complete the appropriate Safe Work Permit for personnel hoisting.
Follow proper inspection procedures of all lifting equipment and fall arrest equipment as per manufacturer specifications.
Conduct hosting JSA to establish crew roles and identify safety concerns.
Inspect, then put on appropriate CSA approved full body harness.
Install fall arrest lifeline or retrieve SRL snap hook.

Attach winch line to front suspension points.
Raise and lower as required, parking arrestor (if used) when at height.

Rescue
Rescue will be conducted using a pre-engineered rope haul system or similar device and appropriate fall arrest for both rescuers and fallen worker. See detail description of this procedure for rescue procedures.

Fall Protection Procedure 011: Confined Space Entry

Task:
Workers will be required to enter into a confined space for the purpose of general maintenance or inspection. The application of fall protection procedures ensures the safety of the worker entering the confined space and facilitates the legal requirement for rescue.

Hazard:
Workers entering a confined space risk several hazards depending upon the atmosphere within the confined space, the access methods and operations going on in the confined space. Workers climbing a fixed ladder are faced with the risk of falling if they lose their footing or hand grip. In addition, the very nature of a confined space makes rescue should the worker become overcome more difficult.

Equipment: Full body harness (appropriate for confined space entry/retrieval), Tripod/Davit arm designed for fall protection and rescue. Man rated winch (if entry does not have a ladder), retrieval SRL (for fall protection and non-entry rescue).

Procedure
This procedure deals with the fall protection/retrieval requirements only and does not detail proper monitoring, ventilation and/or communication issues necessary for entry into a confined space. Entry permits will be required prior to entering into a confined space and a safety monitor must be in place anytime an individual enters into the confined space.

Inspect all equipment as per manufacturer's recommendations.

Inspect and put on CSA approved harness.

Set up Tripod/Davit at the entry point and attach SRL and winch (if necessary)
> The rig's man rated winch can be used for this purpose if the operator can maintain a clear view of the entrant and the cable does not contact any surfaces.

Attach to the retrieval SRL, then winch line (if there is no ladder) and enter the confined space.

Retrieval SRL will be attached to the rear dorsal D-ring to allow for proper orientation during a rescue operation.

During any work in the confined space, the retrieval SRL will remain attached to the worker's dorsal D-ring.

Rescue

Rescue will be conducted using the retrieval SRL. If the worker needs to be retrieved, a switch on the unit will change it from normal SRL operations to retrieval, the worker is then cranked out of the confined space taking care not to hook the entrant on anything, including machinery and/or the ladder rungs. If it is necessary to enter the confined space, additional workers must be called out as per emergency procedures for entry rescue.

Appendices:

Appendix A — Approved Equipment

The following list of equipment has been approved by XYZ Company for use in fall protection systems on site.

MANUFACTURER	MODEL #	DESCRIPTION

Appendices B — DBI technical bulletin, SRLs and sharp edges

Fall Protection Experts

Technical Bulletin No. SRL007

Subject: Self-Retracting Lifelines on Drilling and Service Rigs

There is a recognized hazard where the available anchorage and necessary movement of a worker using a self-retracting lifeline (SRL) on a drilling and/or service rig is such that the cable or webbing of an SRL could come in contact with a structural edge of the rig (column and/or girder). The use of DBI/SALA SRL's for fall protection on drilling and/or service rigs(or similar applications where the SRL is not located directly overhead of the work area and the risk of contacting a structural edge is apparent) is acceptable under certain circumstances provided special precautions are taken as described in this bulletin.

The following guidelines must be followed when using SRL's in areas where structural edges are in abundance:

1. Swing fall hazards may exist, especially when working near corners, or out away from the SRL. Added fall clearance distances may be required, depending on the swing fall hazard. Collision with objects during a swing fall should be guarded against.

2. The total fall distance may be greater than if the SRL were mounted directly overhead. Therefore, increased clearance distances will be required to prevent striking a lower level or obstruction.

3. Where the potential to impact on a structural edge exists, a separate in-line energy absorber must be installed between the end of the lifeline and the harness to reduce the arrest forces resulting from falling over an edge. This energy absorber is connected in-line between the harness dorsal d-ring and the SRL's snap hook. If the harness being used does not have an integral shock absorber attached to the rear "D" ring, DBI/SALA and Protecta offers a special model energy absorber (part number 1220362) for this purpose that includes a snap hook on one end and a d-ring on the other to ensure compatible connections can be made. **DO NOT** use energy absorbing lanyards for this purpose. See bulletin SRL002. DBI/SALA also offers a leading edge type SRL that contains heavier wire rope lifeline and a built in energy absorber for added protection against lifeline damage when contact is made with sharp edges.

4. Sharp edges which the lifeline may contact during a fall could cut or damage the SRL's lifeline. Sharp edges must be avoided or covered over. Falls where the lifeline may slide along a sharp edge must be guarded against.

5. All applicable user instruction manuals should be reviewed and followed.

6. Employee training should be conducted to help assure a safe working environment.

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