

	FALL PROTECTION ALL-HSE-PRC-188	Retention Code: CG01 - CA
		Revised: February 2015
Owner: HSE Performance Assurance	Approved By: Manager, HSE Performance Assurance	Review Frequency: Five years or less



Table of Contents

	Page
1.0 Purpose	2
2.0 Hazards to Mitigate	2
3.0 Procedure-Specific Roles and Responsibilities	2
3.1. Permit Issuer.....	2
3.2. Permit Receiver	2
3.3. Workers	2
4.0 Procedures	3
4.1. Requirements for Fall Protection	3
4.1.1. Types of fall protection	3
4.1.2. Work procedure in place of fall protection equipment.....	3
4.2. Hazard Assessment/Permit	3
4.3. Fall Protection Plan.....	4
4.4. Fall Protection System	4
4.5. Anchor Points	4
4.5.1. Mandatory Criteria	5
4.6. Clearance Distances.....	6
4.7. Inspection and Maintenance	6
4.8. Removal from Service.....	7
4.9. Fixed Ladders/Climbable Structures.....	7
5.0 References	7
6.0 Document Retention	7
Appendix A – Definitions	8
Appendix B – Revision Record	9

1.0 Purpose

This procedure is to support employees and contractors in implementing fall protection requirements when working above ground level.

Compliance with the requirements of this procedure applies to all ConocoPhillips Canada (CPC) operations where there is a risk of persons falling while working above ground level.

It is the responsibility of those conducting work to ensure all regulatory requirements for working at height are being met.

This procedure excludes the requirements for high angle rescue or industrial rope access.

Drilling rig, high angle, well service rig and rescue services must have procedures to meet fall protection regulations.

2.0 Hazards to Mitigate

- Falls from height.
- Suspension trauma.
- Improper use/set-up of equipment.
- Damaged equipment.

3.0 Procedure-Specific Roles and Responsibilities

3.1. Permit Issuer

- Ensure all aspects of working at heights are covered by a hazard assessment/permit.
- Ensure workers understand the hazards associated with the work area and how to control them.

3.2. Permit Receiver

- Accept the hazard assessment/permit and work assignment from the permit issuer/work initiator.
- Ensure workers are competent in fall protection.
- Have a rescue plan developed.
- Remain on site, for the duration of the work, ensure a copy of the hazard assessment/permit is available and oversee the work.

3.3. Workers

- Must be competent in fall protection, use of fall protection equipment, and components of working at heights and rescue plans.
- Follow directions of supervisor including work procedures and requirements of the hazard assessment/permit.
- Use appropriate protective equipment when required.

4.0 Procedures

4.1. Requirements for Fall Protection

A fall protection system is required if a worker could fall:

- 3 m or more (where no guardrail is in place).
Note: If a fall could be more than 1.2 m but less than 3 m at a permanent work area, a guardrail must be used.
- Less than 3 m where there is a possibility that a worker could sustain injuries more serious than those likely to result from landing on a solid, flat surface.
- Onto a hazardous substance, object or through an opening in a work surface.

4.1.1. Types of fall protection

The selection of fall protection systems should occur in the following order of preference:

- Guardrail.
- Travel restraint system.
- Fall arrest system.

4.1.2. Work procedure in place of fall protection equipment

Work procedures in place of fall protection equipment are restricted to the following situations:

- Installation or removal of fall protection equipment.
- Roof inspection and repairs (must be limited to light duty tasks of limited duration).
- Emergency repairs.

4.2. Hazard Assessment/Permit

- Fall hazards and suspension trauma potential **must** be reviewed prior to starting the work.
- A fall protection plan must be developed in the following circumstances:
 - A danger of a worker falling 3 m or more (where no guardrail is in place).
 - A danger of a worker falling less than 3 m where hazard is greater than falling to a level surface (where no guardrail is in place).
- The fall protection plan must be prepared before work begins.
- The plan is to be reviewed with workers and made available at the worksite while work is in progress.
- Attach the plan to the permit once the work is completed.
- Stop work if the conditions affecting the fall protection plan changes.
 - Review and update the permit.
 - Communicate the change to affected workers.

4.3. Fall Protection Plan

- Ensure the completed Fall Protection Plan (ALL-HSE-FRM-2016) is available to workers.
- Specify the following information:
 - The fall hazards at the work site.
 - The fall protection system (equipment and other safeguards) being used.
 - The anchors to be used during the work.
 - Confirmation that clearance distances below the work area are sufficient to prevent the worker from striking the ground or other objects.
 - The procedures required to assemble, maintain, inspect, use and disassemble the fall protection system.
 - The rescue procedures to be used if a worker falls and is suspended in their personal fall arrest system and requires emergency extraction.
 - Names of the workers and verification of fall protection/rescue training certificates for all personnel involved in the work.
- Attach the fall protection plan to the permit when the work is completed.

4.4. Fall Protection System

- A full body harness is the only fall-arresting or travel restraint device approved for use on CPC worksites.
- CPC workers must use shock-absorbent lanyards.
- Maximum arresting force for personal fall arrest systems are as follows:
 - 6 kilonewtons (kN) (1350 pounds-force) in Alberta
 - 8 kN in British Columbia and Saskatchewan
- The lanyard must be secured to an anchor point above the shoulder height of the worker, as high reasonably practicable.
- The free fall distance must not exceed 1.2 m.
- Carabiners and snap hooks:
 - Must be self-closing and self-locking.
 - Must have at least two consecutive deliberate manual actions in order to open.
 - Must be marked with breaking strength on major axis and the name or trademark of the manufacturer.
- All equipment and components used for a fall protection system must be compatible.
- Equipment must meet and be used in accordance with a CSA or ANSI standard (or CEN in Alberta).
- The certifying standard must be labeled on the equipment.

4.5. Anchor Points

Acceptable anchor points include manufacturer anchors, pipes and structural steel as specified below:

- **Pipe:** 3-inch or greater nominal pipe size (NPS) metal pipe may be used as an anchor point.
 - The span between pipe supports must not be greater than 6 m for any pipe size.
 - The pipe length must be continuous for at least two supports on either side of the attachment.
- **Structural Steel:** 2½" x 2½" x ⅜" angle-span must be 6 m or less.

The following table summarizes anchor point requirements based on provincial OHS codes.

Work Type	Travel Restraint System	Fall Arrest System
Temporary	<p>AB: minimum breaking strength of at least 3.5 kN (790 pounds-force) per worker attached.</p> <p>SK: ultimate load capacity of at least 3.5 kN per worker attached.</p> <p>BC: ultimate load capacity of at least 3.5 kN or four times the weight of the worker.</p>	<p>AB: 16 kN (3600 pounds-force) or two times the maximum arresting force per worker attached.</p> <p>SK: Ultimate load capacity of at least 22.2 kN (5000 pounds-force) per worker attached.</p> <p>BC: Ultimate load capacity of at least 22 kN or two times the maximum arresting force.</p>
Permanent	<p>AB: For anchors installed after July 1, 2009: minimum breaking strength of 16 kN or two times the maximum arresting force per worker attached.</p> <p>For anchors installed April 30, 2004 to June 30, 2009: ultimate load capacity of at least 22.2 kN per worker attached.</p> <p>SK: For anchors installed after August 9, 2007: ultimate load capacity of at least 8.75 kN (1970 pounds-force) per worker attached.</p> <p>BC: Ultimate load capacity of at least 22.2 kN per worker attached.</p>	<p>AB: For anchors installed after July 1, 2009: minimum breaking strength of 16 kN or two times the maximum arresting force per worker attached.</p> <p>For anchors installed April 30, 2004 to June 30, 2009: ultimate load capacity of at least 22.2 kN per worker attached.</p> <p>BC& SK: Ultimate load capacity of at least 22.2 kN per worker attached.</p>

4.5.1. Mandatory Criteria

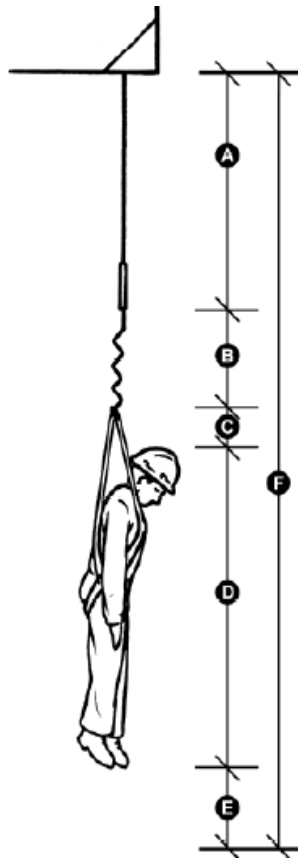
- Multiple connections or permanent anchor points must be designed and approved by a professional engineer.
- An anchor point to which a personal fall arrest system is attached must **not** be used to support or suspend a platform.
- Anchor points must be easily accessible, located directly above the worker and work surface, and positioned high enough to prevent a lower level from being struck if a fall occurs.

- Anchor points must not be located where sharp objects or rough edges could cause excessive wear on equipment.
- Do not select anchor points that will cause load to be applied to the snap hook locking mechanism.
- Multiple lanyards must not be used together to reach an anchor point.
- Never use guardrails, electrical conduit, floor gratings, scaffold members, insulated pipe, plastic pipe or fire suppression piping as anchor points.

4.6. Clearance Distances

The following is an example of how to calculate the minimum clearance distance below an anchor point based on a worker's fall arrest system.

This worker needs approximately 6 m (20 ft) of clear space below the anchor point.



Assumptions:

The worker is 1.8 m (6 ft.) tall using a 1.8 m (6 ft.) long lanyard. The combined weight of the worker, clothing, and tool belt is at least 100 kg (200 lbs).

- A Length of lanyard – 1.8 m (6 ft.)
- B 1.1 m (3.5 ft) due to shock absorber pulling apart
- C Harness stretch plus D-ring sliding – 0.45 m (1.5 ft.)
- D Height of worker – 1.8 m (6 ft)
- E Safety factor – clearance below feet of 0.9 m (3 ft.)
- F A+B+C+D+E
Overall minimum clearance is 6.0 m (20 ft.)

4.7. Inspection and Maintenance

All fall protection equipment must be:

- Inspected prior as per manufacturer's instructions.
- Inspected prior to use.
- Kept free from substances and conditions that could contribute to its deterioration.

- Re-certified as required and specified by the manufacturer.

4.8. Removal from Service

After a fall:

- **Immediately** remove from service all equipment used to arrest the fall.
- Ensure equipment is inspected and recertified by the manufacturer or by a professional engineer before reuse.

Fall protection equipment is to be removed from service when the equipment is:

- Defective in condition or function.
- Has come into contact with excessive heat, a chemical or other damaging/corrosive substance.

Once equipment is removed from service:

- Tag equipment as not for use.
- Destroy and dispose of the equipment.

4.9. Fixed Ladders/Climbable Structures

- A fall arrest system must be incorporated in the ladder design/structure if the ladder/structure extends vertically more than 3 m and is not protected by a guardrail.

5.0 References

- Alberta OH&S Code, Part 9, Fall Protection
- Alberta OH&S Code, Part 8, Entrances, Walkways, Stairways and Ladders
- British Columbia OH&S Regulation, Part 11, Fall Protection
- Saskatchewan OH&S Regulations, Part VII, Personal Protective Equipment
- Saskatchewan OH&S Regulations, Part IX, Safeguards, Storage, Warning Signs and Signals

6.0 Document Retention

Records must be retained in accordance with ConocoPhillips' Document Retention Schedule.

Record	Owner	Classification	Retention
Site-Specific Fall Protection Plan (ALL-HSE-FRM-2016)	BU	HE11	2 years
Inspection Reports	BU	EF04	Disposition of Equipment/System + 10 Years

Appendix A – Definitions

Terms that are important to understanding the Fall Protection Procedure are defined below:

Anchor	A component or subsystem or a fall protection system used to connect the other parts of a fall protection system to an anchorage, and includes an anchorage connector.
Anchor Point	A secure connection point for a fall protection system.
Emergency Repairs	Does not include normal maintenance and service tasks.
Fall Arrest System	A system that will stop a worker’s fall before they hit the ground, an object, or a level below the work area.
Lanyard	A flexible line of webbing, or synthetic rope that is used to secure a full body harness to a lifeline or a fixed anchor point.
Lifeline	A synthetic or wire rope, rigged from one or more anchors, to which a worker’s lanyard or other part of a personal fall protection system is attached.
Permit Issuer	A CPC representative who has been deemed competent and authorized to issue permits.
Permit Receiver	An individual who receives a permit on behalf of themselves or respective work group and oversees the work scope and conditions of the permit.
Roof Inspection/Repair	The work must be a light duty task such as inspection, estimating, or simple emergency repair. The work done at each work area within the work site must be less than approximately 15 minutes in duration. While doing the task the worker should not turn his or her back to the edge and should keep the edge in sight.
Travel Restraint System	A system to prevent a worker from falling from a work position, or from travelling to an unguarded edge from which the worker could fall.

Appendix B – Revision Record

Page #	February 24, 2015	Previous Information	Change Assessment
All	Document reformatted		
	Training requirements removed	Details of what should be covered in fall protection training.	Information to be covered in training/competency guide.
3	Work procedures in place of fall protection equipment	Not included	Additional requirements are low impact.
7	Fixed ladders/climbable structures	Not included	Additional requirements are low impact.
	Working on portable ladders removed		Not part of Fall Protection.