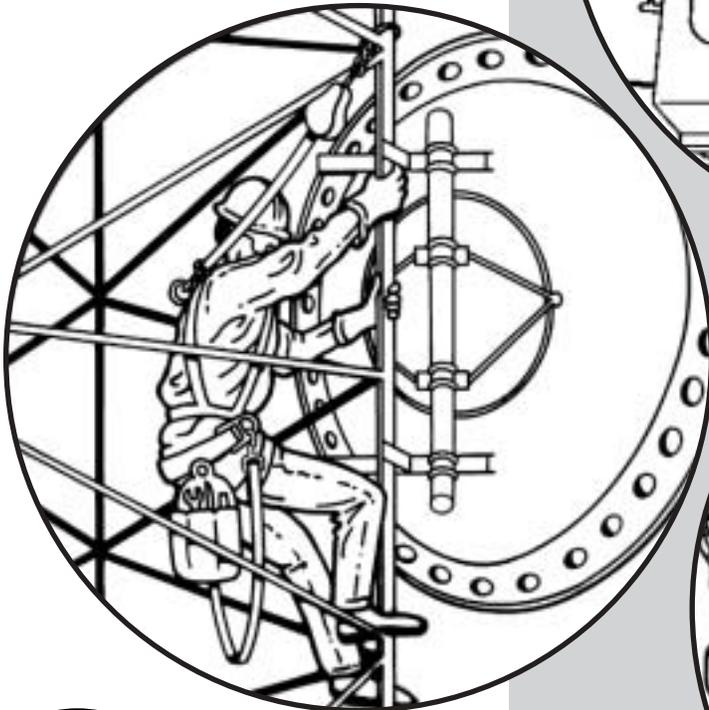
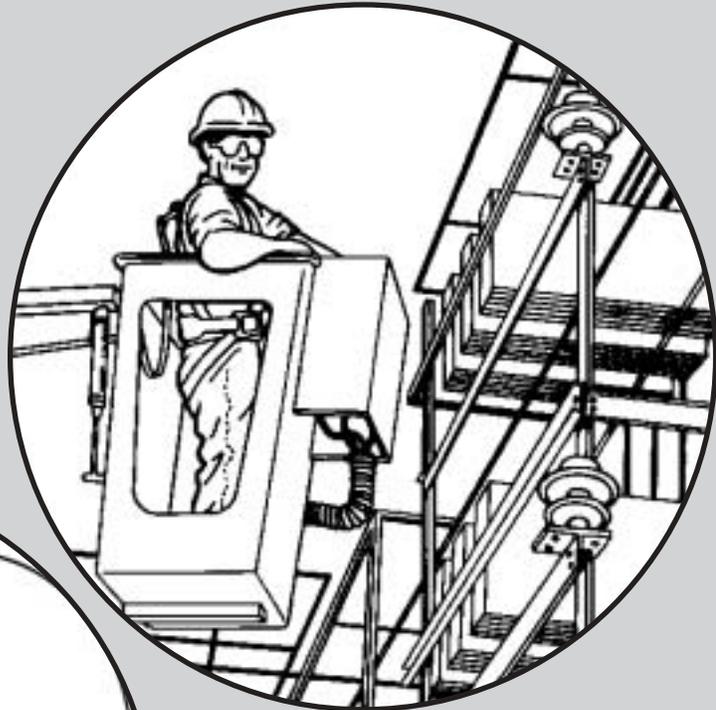


Power System Maintenance Manual - Chapter 2  
Power System Communication & Control Manual - Chapter 7

# Fall Protection

June 2001



# **FALL PROTECTION**

## **JUNE 2001**

**Western Area Power Administration**

**Power System Maintenance Manual**  
**Chapter 2**

**Power System Communication and Control Manual**  
**Chapter 7**

**Approved for Publication and  
Distribution**

A handwritten signature in cursive script that reads "Terry Dembrowski". The signature is written in black ink and is positioned above a horizontal line.

**Terry Dembrowski**  
**Safety and Security Manager**

---

**Date**

## **Disclaimer**

The information contained in this chapter regarding commercial products or firms may not be used for advertising or promotional purposes and is not to be construed as an endorsement of any product or firm by Western Area Power Administration (Western). The information contained in this chapter was developed for Western; no warranty as to the accuracy, usefulness, or completeness is expressed or implied when used by other entities.

## **Preface**

This chapter is issued by the Western Area Power Administration (Western) and is designed to provide specific guidelines, instructions, procedures and criteria for establishing and maintaining a fall protection program for maintenance work on Western facilities. Procedures and guidelines are in accordance with Western's Power System Safety Manual (PSSM). Corrections or comments concerning this chapter may be addressed to Western Area Power Administration, CSO, Safety and Security Office, Attn: Safety Manager, 12155 W. Alameda Parkway, Lakewood, CO 80228-2802.



# TABLE OF CONTENTS

SECTION	PAGE
1. GENERAL .....	1
1.1 Introduction .....	1
1.2 Scope .....	1
1.3 Purpose .....	1
2. INTERPRETATIONS AND DEFINITIONS.....	1
2.1 Interpretations.....	1
2.2 Definitions .....	1
3. RESPONSIBILITIES .....	4
3.1 Customer Service Regions.....	4
3.2 Maintenance Managers and Supervisors/Foremen.....	5
3.3 Job Supervisor.....	5
3.4 Work Crew .....	5
3.5 Safety Managers.....	5
3.6 Fall Protection Coordinator .....	5
3.7 Qualified Instructor .....	5
4. PERSONAL EQUIPMENT .....	5
4.1 General .....	5
4.2 Fall Prevention/Positioning Equipment.....	6
4.2.1 Line-worker’s Body Belt .....	6
4.2.2 Single D-ring Body Belt (Bucket Belt) .....	6
4.2.3 Positioning Strap/Rope Lanyard .....	6
4.2.4 Pole Climbers .....	7
4.3 Fall Arrest Equipment .....	8
4.3.1 Full-Body Harness.....	8
4.3.2 Lanyards With Energy Absorber.....	8
4.3.3 Self-retracting Lanyard/Lifeline .....	9
4.3.4 Fixed Ladder Safety Climbing System.....	9
4.4 Rescue Equipment .....	10
5. ANCHORAGES AND AERIAL AND FIXED CLIMBING DEVICES.....	10
5.1 Anchorage .....	10
5.2 Aerial Devices.....	11

SECTION	PAGE
5.3 Communication Structure Climbing Safety Devices .....	11
6. FALL PROTECTION REQUIREMENTS FOR ELEVATED WORK.....	11
6.1 General .....	11
6.2 Qualified Climber .....	11
6.3 Common Requirements.....	12
6.3.1 Walking Surfaces.....	12
6.3.2 Working from an Aerial Device .....	12
6.3.3 Transferring Between an Aerial Device and a Structure .....	12
6.4 Communication Structure Requirements.....	13
6.5 Substation Structure and Equipment Requirements.....	13
6.5.1 When Working More Than 4 Feet Above Ground .....	13
6.5.2 While Moving or Working More Than 4 Feet Above a Lower Level.....	13
6.5.3 Fixed Ladders .....	14
6.5.4 Portable Straight or Extension Ladders .....	14
6.5.5 Scaffolds .....	14
6.6 Transmission Line Structure Requirements .....	14
6.6.1 Wood Structures .....	14
6.6.2 Non-Wood Structures .....	14
6.6.3 Fixed Ladders .....	14
6.6.4 Detachable Ladders.....	14
6.6.5 Hook Ladders .....	15
6.6.6 Cable Carts and Boatswain's Chairs .....	15
7. RESCUE PROCEDURES.....	15
7.1 General Requirements.....	15
7.2 Rescue .....	15
8. TRAINING AND CERTIFICATION .....	15
8.1 General Requirements.....	15
8.2 Certification Requirements for Qualified Climbers.....	16
8.2.1 Training Requirements .....	16
8.2.2 Other Requirements .....	16
8.2.3 Recertification Requirements .....	17

<b>SECTION</b>	<b>PAGE</b>
8.3 Documentation.....	17
8.4 Retraining .....	17
9. PRECAUTIONS .....	17
9.1 General .....	17
9.2 Leather Positioning Strap .....	17
9.3 Fall Arrest .....	17
9.4 Line-worker’s Body Belt Flip-out.....	17
10. REFERENCES.....	18

## LIST OF FIGURES

<b>FIGURE</b>	<b>TITLE</b>	<b>PAGE</b>
1.	Lattice Steel Member Anchorage .....	11

## APPENDIXES

<b>APPENDIX</b>	<b>TITLE</b>	<b>PAGE</b>
A.	Elements of a Fall Protection Program .....	19
B.	Fall Protection Training Registration Forms .....	20
B1.	Initial Certification Training for Qualified Climbers (Fall Protection) .....	20
B2.	Certification for Fall Protection Trainers (Fall Protection Trainer).....	22
B3.	Recertification for Qualified Climbers (Fall Protection Recertification).....	24



# 1. General

**1.1 Introduction.** Western Area Power Administration (Western) regards safety and health as the primary consideration in any job and is committed to preventing job-related accidents and illnesses by establishing and adhering to an effective risk reduction Fall Protection Program.

The elements of a fall protection program (see appendix A) and the definitions used in this chapter are taken from national standards and OSHA regulations to ensure uniformity of language.

**1.2 Scope.** This chapter provides direction for a fall protection program using both fall prevention and fall arrest equipment for Western transmission line structures, substation structures, electrical equipment and telecommunications structures. These directions are based on recommendations from each of Western's original fall protection committees, sound engineering principles, engineering safety considerations, applicable national standards and regulations and research into the tools, methods, practices and available training.

This chapter does not include rescue from cable vaults or confined spaces.

**1.3 Purpose.** The purpose of this chapter is to present, in one document, sufficient details of proven present day methods, equipment and training requirements necessary to provide safe and adequate procedures for workers climbing, moving, resting and working at elevated work sites.

## 2. Interpretations and Definitions

### 2.1 Interpretations.

**“May”** - Permissive Choice (“**may**” equals “**is permitted**”).

**“Must”** or **“Shall”** - Mandatory under normal conditions (“**must**” or “**shall**” equals “**is required to**”).

**“Should”** - Advisory. **“Should”** statements represent the best advice available at the time of printing (“**should**” equals “**is recommended that**”).

**“Will”** - Mandatory, but allowing the responsible employee or party some discretion as to when, where, and how.

Male pronouns and related terms are used in reference to both male and female employees.

### 2.2 Definitions.

**Aerial device.** Any piece of equipment utilizing a bucket or platform to place the worker(s) at an elevated work site.

**Anchorage.** A secure means of attachment to which the fall protection system is connected.

**Belt, line-worker's body.** A belt which consists of a belt strap and D-rings and may include a cushion section or a tool saddle.

**Carabiner.** A connector component generally comprised of a trapezoidal or oval shaped body with a normally closed gate or similar arrangement which may be opened to permit the body to receive an object and when released, automatically closes to retain the object.

Carabiners are generally one of three types:

- a) the locking type (required by Western) with a self-closing, self-locking gate which remains closed and locked until intentionally unlocked and opened for connection or disconnection; or
- b) the nonlocking type (not permitted by Western) with a self-closing gate which remains closed, but not locked, until intentionally opened by the user for connection or disconnection; or
- c) the manual locking type (not permitted by Western) with a self-closing gate which remains closed but not locked (unless purposely locked by the user) until intentionally opened by the user for connection or disconnection.

**Climbing.** The vertical (ascending and descending) and horizontal movement to access the elevated work site. (See Transferring and Transitioning.) Climbing is not considered a work or rest activity. Attachment is required during work or rest activities.

**Competent person.** One who, because of training, experience, and authority, is capable of identifying and correcting hazardous or dangerous conditions in the personal fall arrest system or any component thereof under consideration, as well as, its application and use with related equipment.

**Deceleration device.** Any mechanism which serves to dissipate a substantial amount of energy during a fall arrest, or otherwise limit the energy imposed on an employee during fall arrest.

**Deceleration distance.** The additional vertical distance a falling worker travels, excluding lifeline elongation and free fall distance, before stopping, from the point at which the deceleration device begins to operate. It is measured as the distance between the location of a line-worker's body belt or full-body harness attachment point at the moment of activation, at the onset of fall arrest forces of the deceleration device, during a fall and the location of that attachment point after the worker comes to a full stop (1.1 m (3.5 feet) maximum).

**Detachable ladders.** Detachable ladders are those that are not permanently installed to a structure but are the normal means of accessing the facilities on the structure as well as the structure itself.

**Energy (shock) absorber.** A component whose primary function is to dissipate energy and limit deceleration forces on the body during fall arrest.

Such devices may employ various principles such as deformation, friction, tearing of materials or breaking of stitches to accomplish energy absorption. An energy absorber causes an increase in the deceleration distance. Shock absorbing lanyards shall only be used for fall arrest and shall not be used as a positioning or climbing device.

**Engineered anchorage.** A fall protection anchorage which is designed and will operate to withstand the maximum expected impact load while maintaining a specified overload capacity factor (OCF) of two.

**Engineered system.** A fall protection system which is designed to absorb the energy of a worker(s) during a fall while accommodating the static loads of tools and hardware. See fall protection system.

**Fall arrest system.** The assemblage of equipment such as line-worker's body belt or full-body harness in conjunction with a deceleration device and anchorage to limit the forces that a worker experiences during a fall from one elevation to another.

**Fall prevention system.** A system intended to prevent a worker from falling from one elevation to another.

Such systems include positioning device systems, guardrails, barriers and restraint systems. Fall prevention systems are used in an attempt to prevent workers from falling from an elevation. It should be noted that these devices do not absolutely prevent a worker from falling; their function is to keep the worker at the same elevation.

**Fall protection program.** A program intended to protect workers from injury due to falls when working at elevations (See appendix A).

**Fall protection system (hardware).** Consists of either a fall prevention system or a fall arrest system. The system must have three integral parts: an anchorage, a line-worker's body attachment device and a means of connecting the body attachment device to the anchorage.

**Flip-out.** The unintentional separation from the body support component during or after fall arrest.

**Example:** A worker flipping upside down in a line-worker's body belt during a fall arrest and slipping from the line-worker's body belt.

**Free fall distance.** The vertical displacement of a fall arrest attachment point on the line-worker's body belt (610 mm (2 feet) maximum) or full-body harness (1.9 m (6 feet) maximum) between onset of the fall and just before the system begins to apply force to arrest the fall. This distance excludes deceleration distance, lifeline and lanyards elongation, but includes any deceleration device slide distance or self-retracting lifeline/lanyard extension before they operate and fall arrest forces occur.

**Full-body harness.** A component with a design of straps which is fastened around the worker in a manner so as to contain the torso and distribute the fall arrest forces over at least the upper thighs and buttocks, pelvis, chest and shoulders with means for attaching it to other components or subsystems.

**NOTE:** Wherever the word "harness" is used by itself in this chapter, it refers to full-body harness unless otherwise specified.

**Hazard.** Anything which can potentially endanger personnel, impair safe working conditions, and conceivably cause injury or loss of life.

**Jobsite.** The assembly point at the structure or equipment where the workers, tools and vehicles are assembled to perform the climbing to the work site.

**Lanyard.** A flexible line of rope, or strap which generally has a connector at each end for connecting to the body belt or full-body harness to deceleration device, lifeline, or anchorage.

**Lineman's body belt.** See Belt, Line-worker's body belt.

**Overload capacity factor.** The number by which a maximum load is multiplied to assure that the system does not fail when loaded to the design load.

**Pole strap.** See Positioning strap.

**Positioning strap.** A strap with snaphook(s) to connect to the D-rings of a line-worker's body belt. Used as a positioning device (also known as pole strap or safety strap).

**Qualified climber.** A worker who, by reason of training and experience, understands the methods and has routinely demonstrated proficiency in climbing and in knowledge of the hazards and equipment associated with climbing with respect to his profession.

**Qualified Instructor.** A qualified climber who has been certified by the Regional Maintenance Manager or his designee to instruct and administer tests for the purpose of qualifying individuals in climbing and rescue procedures.

**Qualifying Supervisor:** The supervisor who is familiar with the climbing capabilities of the worker being certified as a qualified climber.

**Roll-out.** A movement or process by which a snaphook or carabiner accidentally disengages from an anchorage or object to which it is coupled.

**Safety strap.** See Positioning Strap.

**Self-retracting lanyard/lifeline.** A device which contains a drum-wound web lanyard or steel line which may be slowly extracted from or retracted onto the drum under slight tension during normal movement of the user. The line has means for attachment to the fall arrest attachment on the body support. After onset of a fall, the device automatically locks the drum and arrests the fall. The device may have integral means for energy absorption.

**Snaphook.** A connector comprised of a hook-shaped member with a normally closed keeper or similar arrangement, which may be opened to permit the hook to receive an object and when released, automatically closes to retain the object. There are two types of snaphooks:

- a) The locking type (required by Western) with a self-closing, self-locking keeper which remains closed and locked until unlocked and pressed open for connection or disconnection (two distinct operations are required to open a locking type snaphook), and
- b) The nonlocking type (not permitted by Western) with a self-closing keeper which remains closed until pressed open for connection or disconnection.

**Total fall distance.** The maximum vertical distance between the person's position before a fall and after the fall is arrested. The total fall distance includes maximum free fall distance plus maximum deceleration distance. Total fall distance excludes dynamic elongation.

**Transferring.** The act of moving from one distinct object to another (e.g., between an aerial device and a structure).

**Transitioning.** The act of moving from one location to another on equipment or a structure while going around or over an obstruction.

**Work site.** The elevated location on the structure or equipment where the worker is in position to perform the assigned work or task.

**Written work procedure.** A set of specific instructions outlining the course of action for performing tasks in a safe and timely manner.

### 3. Responsibilities

**3.1 Customer Service Regions.** Each Customer Service Region shall establish an effective fall protection program in accordance with requirements of the PSSM and the general guidelines given in

this document. Regional Managers shall assure that the guidelines contained in this document are adopted for Regional climbing and elevated location work activities as appropriate.

**3.2 Maintenance Managers, Supervisors, and Foremen.** Maintenance Managers, supervisors or foremen shall:

- a) Ensure that the established Fall Protection Program is carried out in an effective manner.
- b) Assure that employees receive the proper training required in the use, care and inspection of fall protection equipment and ensure the proficiency requirements—which allow workers to perform climbing activities—are met.
- c) Participate in the refinement and implementation of a Western-wide fall protection program.
- d) Certify that the worker has met all requirements to be a qualified climber (i.e., has successfully completed the training, passed the annual physical, and has demonstrated proficiency in climbing.)

**3.3 Job Supervisor.** The job supervisor, in concurrence with the crew, shall specify the fall protection system to be used before engaging in the work activity. The job supervisor shall assure that the safety requirements and pertinent work procedures are clearly defined and well understood by the work crew. If during the work activity, a safety concern is addressed by any member of the work crew, the job supervisor shall resolve the issue and if necessary, consult with higher management or safety personnel to resolve the issue. As the job progresses, the job supervisor shall be aware of changes in conditions and events that may require review and modifications of the fall protection system in use.

**3.4 Work Crew.** Each member of a work crew has the responsibility to adhere to fall protection rules and procedures and identify unsafe and unhealthful conditions that exist or are anticipated at a jobsite. They are required to participate in the review of the work procedure to obtain an understanding of the safety and health requirements and the work procedures of the job.

Workers shall be responsible for inspecting their personal fall protection equipment prior to each use.

**3.5 Safety Managers.** The safety manager should assist in the development and establishment of the regional fall protection program. The safety manager should assist maintenance personnel in the selection of fall protection equipment. Safety manager or his/her designee shall maintain and track fall protection training and certification records.

**3.6 Fall Protection Coordinator.** The fall protection coordinator will take the lead and be the focal point to develop fall protection procedures with the support of regional maintenance managers or their designee.

**3.7 Qualified Instructor.** Provide training, test proficiency, and evaluate new equipment and fall protection systems with the support of the regional maintenance managers or their designee.

## 4. Personal Equipment

**4.1 General.** This section identifies and provides details for the proper application of various pieces of personal equipment utilized by workers while climbing, resting and performing work at elevated locations. The equipment described is utilized to help place the worker in a desirable working position, and to eliminate potential fall accident injuries:

- a) Climbing equipment is to be safely stored and protected when not in use. Routine

inspection of equipment before each use will serve to minimize accidents resulting from the use of defective equipment.

- b) Synthetic materials and hardware of fall protection equipment shall be periodically inspected.
- c) Manufacturer's instructions and recommendations shall be incorporated into inspection, replacement, and preventive maintenance programs. Defective equipment shall immediately be removed from service.
- d) Equipment identified in this section will have application to both energized and non-energized facilities.
- e) Use of personal equipment shall be in accordance with the manufacturer's recommendations and instructions. Personal equipment is utilized to position and stabilize workers so both hands are free to perform the work and to protect the workers from falls once they have reached a work or rest position.

## 4.2 Fall Prevention/Positioning Equipment.

**4.2.1 Line-worker's Body Belt.** When used on wood poles, a line-worker's body belt—in conjunction with pole climbers—permits work positioning and limits the exposure to falls while the worker has both hands free to perform a work task. A line-worker's body belt with positioning strap or lanyard will not prevent falling vertically (sliding) down wood poles. The line-worker's body belt, with a positioning strap or lanyard, is a fall prevention system when the positioning strap or lanyard will limit falls to 610 mm (2 feet) or less.

Non-composite (100 percent leather) positioning straps and line-worker's body belt buckle straps shall not be used. (See paragraph 9.2.)

Line-worker's body belts shall be inspected for the following:

- a) Hardware cracks, nicks, distortion, or corrosion
- b) Loose or worn rivets
- c) Loose waist strap grommets or elongated holes
- d) Worn materials
- e) Compatible D-rings and snaphooks (See paragraph 9.3 for a discussion of roll-out.)

**4.2.2 Single D-ring Body Belt (Bucket Belt).** Single D-ring body belts shall not be worn in aerial devices.

**4.2.3 Positioning Strap/Rope Lanyard.** Positioning straps or rope lanyards shall have each end snapped into a separate D-ring of a line-worker's body belt when in a rest or work position. Rope lanyards should be spliced to connect fittings, other ropes, extensions and attachments with a minimum four-tuck splice or more if required by the rope manufacturer. Knots shall not be allowed in rope lanyards for any reason.

Snaphook gates shall face outward away from the worker's body.

Tools, handlines, or other objects that may interfere with the snaphook and cause roll-out shall not be attached to, or hung from the positioning strap.

Positioning straps and rope lanyards shall be inspected for the following:

- a) Snaphook keeper spring tension
- b) Exposure of colored wear-warning inner layer
- c) Elongation of holes in positioning strap material
- d) Cuts, burns, extra holes, or fraying of material
- e) Loose or worn rivets
- f) Cracks, burns, or corrosion in the snaphook
- g) Excessive side movement of the snaphook keeper
- h) Locking mechanism must be in good working order

**4.2.4 Pole Climbers.** Pole climbers may not be used if the gaffs are less than 32 mm (1-1/4 inches) in length as measured on the underside of the gaff. The gaffs of pole climbers shall be covered with gaff protectors when not being used.

Pole climbers shall be inspected before each use for the following:

- a) Fractured or cracked gaffs, shanks, or leg irons
- b) Wear on stirrup, shanks, or leg irons
- c) Loose or dull gaffs
- d) Proper sharpening of gaffs
- e) Broken straps or buckles

If any of these conditions exist, the defect shall be corrected before the climbers are used.

Pole climbers may not be worn when working on ladders (unless using the wood structure as access to a work site on a ladder) or when working from an aerial device.

Pole climbers may be worn on ladders, in aerial devices, or when walking if used as part of an access system incidental to work activity.

Gaffs shall be protected while working in an aerial device.

ASTM F887-91a provides detailed information for care of pole climbers.

**4.3 Fall Arrest Equipment.** Fall arrest equipment shall have locking-type snaphooks or approved carabiners. Fall arrest equipment shall be used as a component of the system explained in appendix A. This equipment minimizes physical trauma to the worker, comfortably supports the worker after a fall until a rescue can be made and suspends the worker in a more easily retrievable position for rescuers.

Fall arrest equipment should be attached to an engineered anchorage above the worker's waist when possible. Regardless of the attachment height, the length of the body attachment shall be such that the free fall distance (see definition) shall not exceed 1.9 m (6 feet).

Fall arrest equipment receiving an impact from a fall shall be removed from service. The equipment shall be returned to the manufacturer for repair, shall be repaired by a competent person using a qualified facility, or shall be destroyed.

The preventive maintenance and inspection program shall include determination of shelf and service life times and the load limitations for the system to be used.

**4.3.1 Full-body Harness.** Full-body harnesses shall have a chest strap and a seat strap to distribute part of the load across the buttocks. The D-ring should be at the center of the upper back to distribute forces to the body most effectively. The D-ring may be worn at the center of the upper chest where the work or climbing procedure warrants.

Full-body harnesses shall be inspected for the following:

- a) Cuts, tears and chafing
- b) Electrical burns
- c) Physical deterioration
- d) Ultraviolet deterioration
- e) Wear on connection devices
- f) Evidence of shock loading
- g) Chemical deterioration

Suspect harnesses shall be destroyed. Harnesses shall be stored in a dry, dark and protected environment.

**4.3.2 Lanyards with Energy Absorber.** Lanyards and their associated energy absorbers shall be used in accordance with the following:

- a) Possible falls into a fall arrest system shall not exceed 1.9 m (6 feet) free fall, 2.9 m (9.5 feet) total fall distance and 8 kN (1800 pounds) maximum force.
- b) Manufacturer's shock force data or test data should be incorporated into the total arrest system design (including anchorage).
- c) Energy absorbers that have shock force indicators should be used (when available).
- d) Lanyards shall be equipped with locking snaphooks or carabiners.
- e) Lanyards shall not be knotted or attached back onto themselves.

- f) Lanyards shall not be attached back onto themselves unless a carabiner or ladder hook is used.

Lanyards and energy absorbers shall be inspected for the following:

- a) Partial activation of the energy absorbing device
- b) Cuts, tears and chafing
- c) Electrical burns
- d) Physical deterioration
- e) Wear on snaphooks
- f) Operation of snaphooks

Suspect lanyards and/or energy absorbing equipment shall be destroyed. Lanyards and energy absorbing devices shall be stored in a dry, dark and protected environment.

**4.3.3 Self-retracting Lanyard/Lifeline.** Self-retracting lanyards and lifelines are attached to an automatic rewinding reel that quickly arrests a fall and limits the shock load to the worker. Self-retracting lanyards and lifelines limit the freedom of movement up to the length of the lanyard or webbing.

Self-retracting lanyards and lifelines shall be used in accordance with the following:

- a) Manufacturer's energy absorbing data or test data should be incorporated into the total arrest system design (including anchorage).
- b) Self-retracting lanyards that have shock force indicators should be used (when available).
- c) Self-retractable lanyards shall be equipped with locking snaphooks or carabiners.
- d) Self-retracting lifelines shall be permanently marked with the manufacturer's name, model number, rating and date of manufacture.

Self-retracting lanyards and lifelines shall be inspected for the following:

- a) Partial activation of the energy absorbing device
- b) Snaphook keeper spring tension
- c) Cuts, burns, extra holes, or fraying of material
- d) Excessive side movement of the snaphook keeper

Suspect or shock activated self-retracting lanyards and lifelines shall be returned to the manufacturer or other qualified repair service for repair. Periodical inspections shall be in accordance with the manufacturer's recommendations.

**4.3.4 Fixed Ladder Safety Climbing System.** Fixed ladder safety climbing devices (which usually consist of a fixed rail, tube, or tensioned cable with slider shall permit the worker using the system to

climb without continually having to hold, push, or pull any part of the system, leaving both hands free for climbing. The connection between the slider and the attachment point on a body belt or full-body harness shall not exceed 230 mm (9 inches). These systems shall be activated within 610 mm (2 feet) after a fall occurs, in order to limit the descending velocity of the worker to 2.1 m/sec (7 ft/sec) or less. These systems are typically mounted on the face of a fixed ladder on the structure.

The climber shall insure that the structure, system and personal equipment are inspected to ensure proper working order and activation operation prior to each use.

**4.4 Rescue Equipment.** Controlled descent devices are used to make emergency descents from aerial devices or elevated positions on structures. Controlled descent devices shall be sized to include the maximum elevated position obtainable from the bucket, platform, or elevated position. The rate of descent shall be controlled by the worker (or rescuer) or by a friction type brake.

Controlled descent devices shall be stored in a clean, dry, protected environment. They shall be cleaned and inspected prior to and after each use.

Rope (handline) rescue methods presently used by Western or other approved vendor products, or methods, are acceptable. Videotapes demonstrating this method are available through, your local maintenance office.

## 5. Anchorages and Aerial and Fixed Climbing Devices

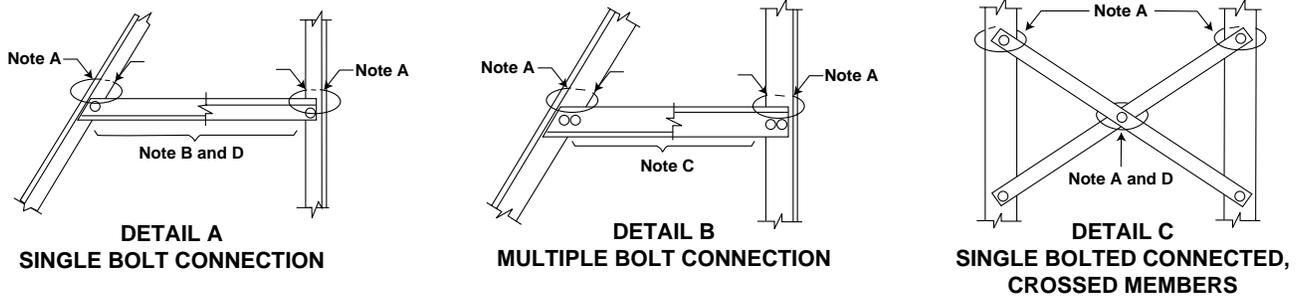
**5.1 Anchorage.** Attachment to slanted structure members should be avoided. When used, the slide distance must be included in the maximum allowable free fall distance. Anchors may be eyebolts, rigging points, slings, ropes, or other attachments designed into the structure.

Anchorages shall meet the minimum requirements of an engineered system for each worker attached. An engineered system must meet and/or consider the following criteria:

- a) An anchorage of sufficient design to withstand a static load of 22.2 kN (5,000 pounds) or the maximum anticipated impact load times an overload capacity factor (OCF) of at least 2.0 for one worker
- b) An additional OCF of 0.2 multiplier for each additional worker attached to the anchorage
- c) Inclusion of additional static and dynamic loads associated with hardware and rigging attached to the anchorage
- d) Energy absorbing properties of the fall arrest system, when incorporated into the anchorage design, will usually reduce the maximum forces imposed onto the anchorage

Attachment around a lattice member supported by one bolt on each end may be permitted with the proper fall arrest equipment if multiple-bolted members are not available. Preferred lattice anchorages are around multiple bolted angle iron members or around and above joints where multiple members are connected. (See figure 1)

**FIGURE 1  
LATTICE STEEL MEMBER ANCHORAGE**



**NOTES:** A - Attachment around and above all joints is permitted

B - Attachment around a lattice member supported by one bolt on each end may be permitted with the proper work positioning equipment .

C - Attachment around multiple bolted member is permitted

D - For communication structures (see paragraph 6.4 Note.)

Anchorage shall be visually inspected at the time of attachment for loose or missing bolts, cracks, and bends. Damaged anchorages shall be repaired prior to use.

Fall arrest anchorages that have received a shock load shall be immediately inspected for damage. The job supervisor, in concurrence with the worker, shall determine if the anchorage is to be reused.

Damage to anchorages shall be reported.

**5.2 Aerial Devices.** Bucket and platform anchorages shall meet minimum engineered loads while limiting potential free falls to 1.8 m (6 feet) while in a full-body harness. Aerial device anchorages shall receive an annual inspection and a visual inspection prior to use. Boom straps are the preferred anchorage. Walking surfaces shall have an anti-skid surface.

**5.3 Communication Structure Climbing Safety Devices.** Communications tower ladder climbing devices shall be kept in good repair. Devices determined to be a safety risk shall be immediately removed from service and reported to the proper authority. Corrective measures shall be completed prior to the next climb.

## 6. Fall Protection Requirements for Elevated Work

**6.1 General.** Aerial devices shall be the first preference for work at elevated locations. This section defines the fall protection requirements for working at elevations on communication, substation and transmission line structures and equipment. The design and type of structure determines the method of climbing and fall protection devices required for climbing, transferring, resting and working.

**6.2 Qualified Climber.** Qualified climbers shall be trained in accordance with (Section 8–Training) and shall be equipped in accordance with the specifics required by their profession and position descriptions. Qualified climbers shall climb, move, rest and work in accordance with the requirements of this section. Qualified climbers shall have passed an annual physical examination. A climber shall become qualified upon the determination of a trainer (when applicable) and the job supervisor, in concurrence with the next higher level supervisor.

For any personnel who is not certified as a qualified climber, attachment is required to an anchorage while moving or working more than 4 feet above a lower level on fixed electrical substation equipment, communication, or transmission line structures.

Only qualified climbers or an unqualified climber climbing under the direction and observation of a qualified climber shall be permitted to climb poles, towers, electrical equipment, or other similar structures. Each qualified climber may not supervise more than one unqualified climber at a time during on-the-job training. Formal training programs may be established specifically to train multiple climbers under the supervision of one qualified climber.

**6.3 Common Requirements.** Workers shall be attached to an engineered anchorage at all times when working or resting at elevated locations (4 feet and above). Moving, relocating, transitioning and transferring are activities incidental to the work which do not require attachment unless otherwise stated.

**NOTE:** In cases where a positive fall protection system cannot be achieved, it shall be addressed in a written Job Hazard Analysis (JHA) and approved by each member involved in the work. In developing the JHA, the entire work to be performed shall be reviewed to ensure additional hazards are not introduced because of the implementation of the fall protection system.

Free falls into line-worker's body belts shall be limited to a maximum of 4 kN (900 pounds) and/or 610 mm (2 feet). Free falls into a full-body harness shall be limited to 1800 pounds (8 kN) and/or no more than 6 feet (1.8 m) with a maximum additional 1.1 m (3.5 feet) for deceleration of the fall arrest device (2.9 m (9.5 feet) total fall distance).

**6.3.1 Walking Surfaces.** Walking surfaces on heavy equipment, substation equipment, ladder rungs, etc., shall be furnished with anti-skid surfaces where possible. Ladders with deteriorated anti-skid surfaces shall be removed from service until repaired. The walking surfaces shall be kept free of clutter. Walking of crossarms is prohibited unless attached to an engineered anchorage system.

**6.3.2 Working from an Aerial Device.** Prior to the bucket or platform being raised, workers shall be attached to an engineered anchorage on the aerial device by a full-body harness in conjunction with a shock absorbing or retractable lanyard. Snaphooks shall be of the locking type. A lineman's body belt may be worn with a full-body harness. Working or standing on the lip of a bucket or top rail of an aerial device shall not be permitted.

**6.3.3 Transferring Between an Aerial Device and a Structure.** A qualified climber may transfer between a single or multiple occupancy aerial device and a structure, conductor, aerial ladder, cablecart, or electrical equipment in accordance with the following:

- a) Buckets and platforms shall be positioned to remain stable during a transfer. The platform or bucket shall have a fixed-pin or a locking mechanism to provide stability during transfer.
- b) The transfer shall be made from the aerial device by a door, step, or secured ladder designed solely for the purpose of assisting the worker over the rim of the bucket or platform. Portable ladders shall not extend beyond the rim of the bucket. Portable ladders shall be removed from the bucket after the worker returns to the bucket. Platform guardrail systems must meet the design requirements of ANSI/SIA A92.2.
- c) The aerial device shall be attended at all times when employees are transferring from or to the aerial device. The aerial device shall be considered to be attended as long as a qualified operator remains at the controls either in the bucket or at ground level. The climber and the operator shall remain in voice and/or visual contact at all times when a climber is

aloft. While a climber is working aloft and not transferring, the operator may work on other jobs at the site provided the operator is available when needed at the controls.

- d) A climber transferring between an aerial device and a structure shall be attached to the structure with both feet on the floor of the bucket or platform prior to making the transfer. The employee shall not be connected to the aerial device while attaching to the structure. The unattached time shall be kept to a minimum.
- e) There shall be a second qualified climber present at the location at any time this procedure is performed. The second qualified climber requirement does not apply while working on substation equipment at heights of less than 4 feet.

**6.4 Communication Structure Requirements.** When provided, fixed ladders shall be used for ascending and descending communication structures, except where work assignments or conditions dictate otherwise. When ladder safety climbing systems are available and operational, they shall be used to ascend and descend a communication structure. In situations where ladder safety climbing systems are not available or operational, and climbing has been determined necessary, only a qualified climber shall be used. Activities such as bolt tightening, resting, and activities other than climbing or transitioning from one location to another, require the climber to be attached to the structure. One hundred percent attachment is not required while utilizing approved work platforms, having guardrails in accordance with OSHA 1910.23 and 1910.24 as a means of transitioning from the climbing ladder or other means of ascent/descent to the work site.

Climbing devices shall permit the climber to climb without intervention on the part of the climber. Both hands shall be free for climbing at all times. The connection between the slider and the point of attachment to the body belt or full-body harness shall not exceed 230 mm (9 inches).

**6.5 Substation Structure and Equipment Requirements.** Attachment is required to an anchorage:

**6.5.1 When working more than 4 feet above the ground** while climbing, moving, and working on structures.

**6.5.2 When moving or working more than 4 feet above a lower level** on fixed electrical substation equipment without an approved railing.

- (a) For working, inspecting, testing, etc., on substation equipment
  - (i) Perform all tasks using an aerial manlift, if possible, or
  - (ii) Perform all tasks using a portable ladder properly secured.
- (b) If 2 (a), (i) or (ii) above cannot be accomplished, all attempts shall be made to use some type of temporary fall protection system. Examples of temporary fall protection systems are—but not limited to—the following:
  - (i) A lifeline capable of arresting a fall shall be attached between two adjacent structures and crossing directly over the substation equipment to be worked.
  - (ii) Attachment of a lanyard to an overhead boom or other approved anchorage point. (Crane hooks are not an approved anchorage point.)
  - (iii) Erect scaffolding under the supervision of a competent person.

- (iv) Using bushings on substation equipment for anchorage is acceptable only if all other options are not feasible. Climbing or using SF-6 breaker bushings as an anchorage is not permitted.

**NOTE:** All attachment points shall be at waist level or above.

- (c) If all attempts have been looked at to provide a positive fall protection system and one still can not be used, a safety observer shall be positioned to observe and warn all workers of encroaching a potential fall hazard.

**6.5.3 Fixed Ladders.** When provided, fixed ladders shall be used for ascending and descending except where work assignments dictate otherwise

**6.5.4 Portable Straight or Extension Ladders.** Portable straight or extension ladders shall be placed at an angle that will not permit slippage of the ladder base when climbing. Unsecured ladders should be supported by a ground worker (where possible) until the climber has transferred from the ladder or has secured the ladder. Where possible, the ladder shall be secured (tied) to the equipment to prevent slippage. The side rails of the ladder shall extend 3.5 feet above landing.

**6.5.4 Scaffolds.** Scaffolds shall be assembled and used in accordance with OSHA 1926.451.

## **6.6 Transmission Line Structure Requirements.**

**6.6.1 Wood Structures.** Wood poles shall be climbed with a line-worker's body belt or combination body belt–full-body harness and positioning strap. Attachment is optional for qualified climbers when moving on a double crossarm or when transitioning objects. (Refer to paragraph 6.3.1 for walking on crossarms.)

Climbing on or sliding X-braces is prohibited.

Prior to climbing wood poles, an inspection shall be made for shell rot or other defects by the worker to determine that the structure is capable of sustaining the additional or unbalanced loads to which they will be subjected. Where poles or structures may be unsafe for climbing, they shall be maintained by use of an aerial device or shall not be climbed until made safe by guying, bracing, or other adequate means of support.

**6.6.2 Non-Wood Structures.** Attachment is optional for qualified climbers when adequate climbing devices are not available or operational and when using step bolts and fixed ladders or moving between work locations while on structures such as poles, towers, or similar structures.

Activities such as bolt tightening, resting and activities other than climbing or transitioning from one location to another, require the climber to be attached to the structure.

**6.6.3 Fixed Ladders.** When provided, fixed ladders shall be used for ascending and descending except where work assignments dictate otherwise. Fixed rail or cable safety devices shall be used where available and operational.

**6.6.4 Detachable Ladders.** A qualified climber in the process of installing or removing detachable ladders on the structure shall use an appropriate fall protection system.

After the ladders are in place on the structure, the qualified climber may climb or reposition without the use of fall protection.

**6.6.5 Hook Ladders.** Hook ladders shall be positively secured to an engineered anchorage to prevent accidental displacement. The anchorage must be designed to support tool and line hardware loads as well as the fall protection system.

Attachment shall be required at all times while climbing (horizontally and vertically) and when transferring between the structure and the ladder.

Hook ladders shall be equipped with a nonconductive safety rope along each side of the ladder. The worker's positioning strap shall be inside of at least one of the side ropes when climbing. The worker shall attach at the work site on the ladder by a ladder rung hook or similar device that will limit a free fall to 610 mm (2 feet) into a line-worker's body belt or 1.8 m (6 feet) into a full-body harness.

**6.6.6 Cable Carts and Boatswain's Chairs.** Worker's shall be attached at all times when transferring between cable cart or boatswain's chair and a structure, conductor, or overhead ground wire.

A climber transferring between a cable cart or boatswain's chair shall be attached to the structure prior to making the transfer. They shall not be connected to the cable cart or boatswain's chair while attaching to the structure. The unattached time shall be kept to a minimum.

## 7. Rescue Procedures

**7.1 General Requirements.** The rescue procedure shall provide for prompt rescue of employees or a means of self-rescue (e.g., providing controlled descent device, radio, etc.). A crew briefing (meeting) shall be held at the beginning of each day, job, or change in work procedure to review the potential hazards involved in the work to be performed and potential rescue methods available. These discussions will be used to ensure the availability of proper rescue equipment and required number of qualified climbers to facilitate quick rescue of the worker.

Rescue of victims shall be included in training and job planning. Aerial devices, cranes, handlines, or other device capable of lifting the victim may be used.

**7.2 Rescue.** Rescue procedures which provide for the prompt rescue of a worker when working in an elevated position or in the event of a fall shall be established. These procedures shall assure that self-rescue techniques are available.

Workers shall be trained and shall have demonstrated proficiency in the rescue procedures relevant to the work they perform. Rescue shall be practiced by qualified climbers and others involved with climbing activities on a regular basis and at least annually.

## 8. Training and Certification

**8.1 General Requirements.** Workers shall be trained in the use of fall protection and rescue equipment and the application limits, proper anchoring, tie-off techniques, determination of elongation and deceleration distance, methods of use and inspection and storage of the system. Workers shall become familiar with manufacturer's recommendations, reduction in strength caused by certain tie-offs and the maximum allowed free fall distance and total fall distance.

Due to the variety of required climbing techniques and associated hazards in electrical and communication utility work, it is essential that each respective climber be given sufficient training to

master the required skills. In addition to the worker possessing the basic physical attributes needed to perform the work, the worker shall demonstrate proficiency in climbing functions and shall understand the hazards associated with each function.

Climbing instruction shall be presented in a way that the worker can recognize and avoid the dangerous conditions while at the same time mastering the rigors of climbing, resting and positioning for work.

Each piece of equipment used for climbing and work site attachment shall be explained and demonstrated. The worker shall become proficient in the use and care of the equipment to avoid abuse or use beyond its predetermined life. Workers shall be made aware of all the aspects on the equipment and materials that they are working with regarding the stresses and resultant effects on safety margins while climbing or working aloft.

Training shall be required for a worker to become qualified in their respective work discipline.

Other formal training programs may be established specifically to train multiple climbers under the supervision of one qualified climber.

**8.2 Certification Requirements for Qualified Climbers.** Workers whose job assignments require climbing poles, towers, electrical equipment, or other similar structures shall be trained as qualified climbers. Training shall be specific to the type of work to be performed. When the worker successfully completes the training, successfully passes testing requirements, and meets other requirements identified below, the climber shall be considered qualified. Testing is only required for initial certification. Individuals may be retested if requested by the individuals or their supervisors.

**8.2.1 Training Requirements:** Training shall include:

- a) Recognition of hazards unique to the work to be performed and to avoid unsafe actions while mastering the rigors of climbing and positioning for work on the structure.
- b) Selection of the proper climbing equipment and fall protection system for the specific type of work to be performed.
- c) Proper use of the fall protection devices at the work position.
- d) Various methods for climbing poles, towers, electrical equipment and other similar structures such as transitioning, belting and other climbing techniques.
- e) Methods to identify energized lines, apparatus, other equipment and to be knowledgeable of the rules applicable to work on and around the energized facilities adjacent to the structure to be climbed.
- f) Techniques for safely performing aerial rescue of an injured or ill climber.
- g) Proper care, inspection and maintenance of climbing equipment and fall protection systems or devices.

Required training may be on-the-job, classroom, or a combination of both. All required testing for qualified climber certification and rescue shall be conducted by a qualified instructor. Documentation stating that the individual has been tested (written and competency) and has satisfactorily passed, shall be sent to the Regional Maintenance Manager or his designee.

**8.2.2 Other Requirements:** Before being certified as a qualified climber, the worker shall also:

- a) Adequately demonstrate proficiency in climbing to the satisfaction of the qualifying supervisor, and,
- b) Pass an annual physical examination.

**8.2.3 Recertification Requirements:** Annual recertification for qualified climbers is required and shall include the following:

- a) Demonstrated proficiency in rescue to satisfaction of a qualified instructor
- b) Pass and annual physical examination
- c) Concurrence (through on-the-job observation) from the qualifying supervisor that the worker has maintained proficiency in climbing.

**8.3 Documentation.** Documentation shall indicate that the individual has the skill required to be proficient in the fall protection program required by this chapter. Demonstrated proficiency shall be included in the documentation. Documentation shall be made when the employee successfully completes the training. The qualifying supervisor will forward the completed training roster (refer to Appendix B) to the Regional Safety Office. The Regional Safety Office or their designee will keep a copy of the training attendance roster, and forward the original to Human Resources Training Coordinator to be entered as the official record on file. The documentation shall be retained and maintained for the duration of the worker's employment.

**8.4 Retraining.** Workers who, in the judgement of responsible supervision, fail to demonstrate adequate skill, knowledge, or physical ability, or who have not performed climbing work for an extended period (to be determined by the supervisor) shall be retrained. The extent of retraining necessary shall be at the discretion of the supervisor.

## 9. Precautions

**9.1 General.** Manufacturer's recommendations, in addition to Western requirements, should be followed for the care, inspection, use, replacement and maintenance of climbing and safety equipment.

The worker shall determine that all components of the fall protection system are properly engaged and that they are secure in the line-worker's body belt, full-body harness, or other fall protection system.

**9.2 Leather Positioning Strap.** Non-composite leather (100 percent leather) positioning straps and line-worker's leather body belt buckle straps **shall not be used**. Composite positioning straps that have a colored wear warning inner layer and the rated strength required by this chapter **shall be used**.

**9.3 Fall Arrest.** Placing the two snaphooks of the same pole strap or lanyard into the same D-ring (body belt or harness) is prohibited when being used as part of a fall arrest system.

Snaphooks shall not be connected to each other, a webbing loop, or webbing lanyard. Snaphooks shall not be attached back onto their own lanyard.

Shock absorbing lanyards shall only be used for fall arrest and shall not be used as a positioning or climbing device.

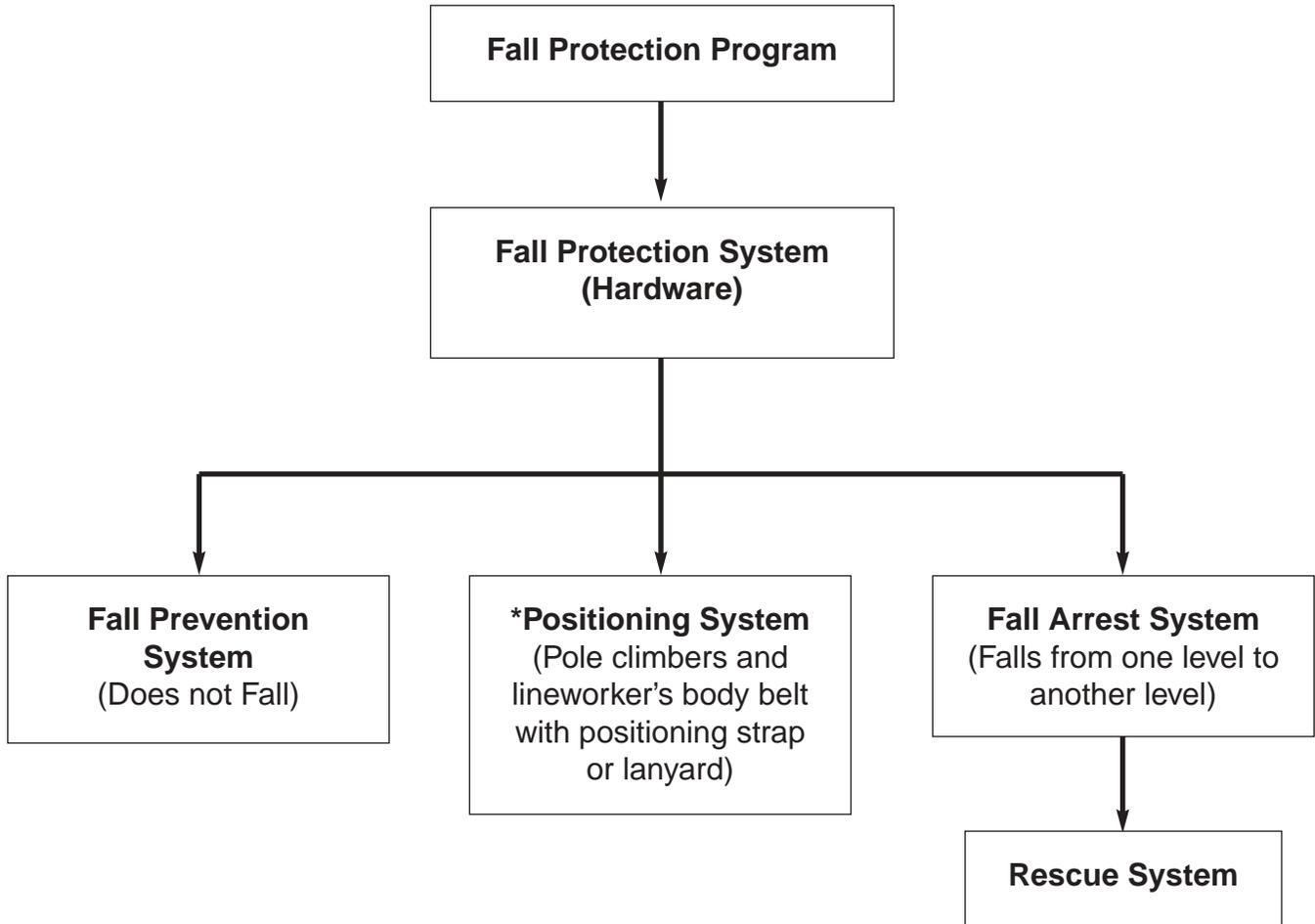
**9.4 Line-worker's Body Belt Flip-Out.** The line-worker's body belt shall be worn snugly around the worker's midsection to prevent flip-out. The consequences of wearing a line-worker's body belt incorrectly during a fall arrest may cause the worker to pivot head forward or feet forward and possibly allow them to slip through the line-worker's body belt.

## 10. References

The following publications provide detailed information and specifications for the purchase, maintenance and use of fall protection equipment. When the following standards are superseded by an approved revision, the revision shall apply.

- [1] ANSI Std A14.1, Portable Wood Ladders, Safety Requirements For.
- [2] ANSI Std A14.2, Portable Metal Ladders, Safety Requirements For.
- [3] ANSI Std A14.3, Fixed Ladders, Safety Requirements For.
- [4] ANSI Std A14.4, Job-Made Wooden Ladders, Safety Requirements for.
- [5] ANSI Std A14.5, Safety Requirements for Portable Reinforced Plastic Ladders.
- [6] ANSI Std A14.7, Mobile Ladders, Stands and Mobile Work Platforms, Safety Requirements for.
- [7] ANSI Std A92.2, Vehicle Mounted Elevating and Rotating Aerial Devices (SIA).
- [8] ANSI Std A92.3, Elevating Work Platforms, Manually Propelled (SIA).
- [9] ANSI Std A92.5, Boom-Supported Elevated Work Platforms.
- [10] ANSI Std A92.6, Work Platforms, Self Propelled Elevating (SIA).
- [11] ANSI Std C2, National Electrical Safety Code
- [12] ANSI Std P1307, Trial Guide for Fall Protection for the utility Industry.
- [13] ANSI Std Z133.1, Tree Care Operations - Pruning, Trimming, Repairing, Maintaining and Removing Trees and Cutting - Safety Requirements.
- [14] ANSI Std Z359.1, Personal Fall Arrest Systems, Subsystems and Components.
- [15] ASTM Std F711, Specification for Fiberglass-Reinforced Plastic (FRP) Rod and Tube Used in Live-Line Tools.
- [16] ASTM F887, Standard Specifications for Personal Climbing Equipment.
- [17] ASTM Std, Non-Conductive Rope for Utility Purposes.
- [18] CFR-29, OSHA 1910, Government Printing Office.
- [19] CFR-29, OSHA 1926, Government Printing Office.
- [20] IEEE Std 516, Guide for Maintenance Methods on Energized Power Lines (ANSI).
- [21] Western Area Power Administration, Power System Safety Manual.

## Appendix A Elements of a Fall Protection Program



\* It is possible to “cutout” and slide a woodpole with this system which means that it is neither a fall prevention nor arrest system.

**Appendix B  
Fall Protection Registration Forms**

**WESTERN AREA POWER ADMINISTRATION  
TRAINING ATTENDANCE ROSTER**

**NAME OF COURSE:**  Fall Protection (Initial) \_\_\_\_\_

**CATALOG/COURSE#:**  000355 \_\_\_\_\_

**DATE(S) OF TRAINING:** \_\_\_\_\_ **TOTAL HOURS OF TRAINING:** \_\_\_\_\_

**VENDOR NAME:** \_\_\_\_\_  
(Write in Western location, Federal Agency or contractor)

**VENDOR ADDRESS:** \_\_\_\_\_

**DIRECT COST:** \_\_\_\_\_ **PAYMENT INFO:** \_\_\_\_\_  
(Includes Tuition; Books or materials; Other)

**INDIRECT COST:** \_\_\_\_\_ **PAYMENT INFO:** \_\_\_\_\_  
(Includes Travel; Per Diem; Other)

**TRAINING LOCATION:** \_\_\_\_\_  
(City/State) (District, Office, or Station)

Name of person to verify that people listed on attached sign in sheet actually attended this training (Signature is required for input into the CHRIS-TAM)

Name (print): \_\_\_\_\_ Phone: \_\_\_\_\_

Signature: \_\_\_\_\_ Title: \_\_\_\_\_

<p>WAPA Authorizing Official:</p> <p><b>Training Reason:</b> 1. Compliance 2. Directed by Management 3. Developmental</p> <p><b>COURSE OBJECTIVE:</b> (benefit to be derived by the Government):</p>
--

**RETURN THIS FORM TO: CSO, A7200, TRAINING DATA ENTRY**



**WESTERN AREA POWER ADMINISTRATION  
TRAINING ATTENDANCE ROSTER**

**NAME OF COURSE:**  Fall Protection Trainer

**CATALOG/COURSE#:**  000356

**DATE(S) OF TRAINING:** \_\_\_\_\_ **TOTAL HOURS OF TRAINING:** \_\_\_\_\_

**VENDOR NAME:** \_\_\_\_\_  
(Write in Western location, Federal Agency or contractor)

**VENDOR ADDRESS:** \_\_\_\_\_

**DIRECT COST:** \_\_\_\_\_ **PAYMENT INFO:** \_\_\_\_\_  
(Includes Tuition; Books or materials; Other)

**INDIRECT COST:** \_\_\_\_\_ **PAYMENT INFO:** \_\_\_\_\_  
(Includes Travel; Per Diem; Other)

**TRAINING LOCATION:** \_\_\_\_\_  
(City/State) (District, Office, or Station)



Name of person to verify that people listed on attached sign in sheet actually attended this training (Signature is required for input into the CHRIS-TAM)

Name (print): \_\_\_\_\_ Phone: \_\_\_\_\_

Signature: \_\_\_\_\_ Title: \_\_\_\_\_

<p>WAPA Authorizing Official:</p> <p><b>Training Reason:</b> 1. Compliance 2. Directed by Management 3. Developmental</p> <p><b>COURSE OBJECTIVE:</b> (benefit to be derived by the Government):</p>
--

**RETURN THIS FORM TO: CSO, A7200, TRAINING DATA ENTRY**



**WESTERN AREA POWER ADMINISTRATION  
TRAINING ATTENDANCE ROSTER**

**NAME OF COURSE:**  Fall Protection Recertification

**CATALOG/COURSE#:**  000357

**DATE(S) OF TRAINING:** \_\_\_\_\_ **TOTAL HOURS OF TRAINING:** \_\_\_\_\_

**VENDOR NAME:** \_\_\_\_\_  
(Write in Western location, Federal Agency or contractor)

**VENDOR ADDRESS:** \_\_\_\_\_

**DIRECT COST:** \_\_\_\_\_ **PAYMENT INFO:** \_\_\_\_\_  
(Includes Tuition; Books or materials; Other)

**INDIRECT COST:** \_\_\_\_\_ **PAYMENT INFO:** \_\_\_\_\_  
(Includes Travel; Per Diem; Other)

**TRAINING LOCATION:** \_\_\_\_\_  
(City/State) (District, Office, or Station)

Name of person to verify that people listed on attached sign in sheet actually attended this training (Signature is required for input into the CHRIS-TAM)

Name (print): \_\_\_\_\_ Phone: \_\_\_\_\_

Signature: \_\_\_\_\_ Title: \_\_\_\_\_

<p>WAPA Authorizing Official:</p> <p><b>Training Reason:</b> 1. Compliance 2. Directed by Management 3. Developmental</p> <p><b>COURSE OBJECTIVE:</b> (benefit to be derived by the Government):</p>
--

**RETURN THIS FORM TO: CSO, A7200, TRAINING DATA ENTRY**





