

## ***Working at Heights***

# **BP WIND ENERGY POLICIES AND PROCEDURES**

## **Working at Heights**

[Document Control Details](#)

## ***Working at Heights***

### **1.0 Purpose/Scope**

- 1.1 The purpose of this Health, Safety, Security, and Environment Procedure is to establish minimum requirements for the use of fall prevention measures, fall protection equipment, and systems to protect employees exposed to fall hazards while working at BPWE facilities.
- 1.2 This procedure applies to all employees and subcontractors' employees exposed to fall hazards, while working at the same level, at elevated levels, and near excavations, pits, or shafts.

### **2.0 Reference**

- 2.1 BP Golden Rules, Working at Heights
- 2.2 29 CFR 1910.269, Occupational Safety and Health Administration; 'Electric power generation, transmission, and distribution'
- 2.3 29 CFR 1910.66, Occupational Safety and Health Administration; 'Powered Platforms' and Appendix C, Personal Fall Arrest Systems
- 2.4 29 CFR 1926.502, Occupational Safety and Health Administration; 'Fall Protection Systems Criteria and Practices'
- 2.5 29 CFR 1926.501, Occupational Safety and Health Administration; 'Duty to have Fall Protection'
- 2.6 29 CFR 1926.451, Occupational Safety and Health Administration; 'General Requirements'
- 2.7 29 CFR 1926.503, Occupational Safety and Health Administration; 'Training Requirements'
- 2.8 29 CFR 1926.753, Occupational Safety and Health Administration; 'Safety Nets'
- 2.9 ANSI Z359.1, 1992, Fall Protection in General Industry
- 2.10 ANSI 1264.I 2002, Safety Requirements for Workplace Floor and Wall Openings, Stairs and Railing Systems

### **3.0 Responsibilities**

#### **3.1 Facility/Project Manager**

- Ensure that all employees and contracted Service Providers operating on a BPWE site have systems in place to comply with this procedure.
- Ensure the designation of the Competent Person(s) responsible for training and other specific duties outlined in this procedure.
- Ensure a program is in place for storing, inspecting, and procuring fall arrest equipment.
- Approve any exceptions to the use of traditional fall protection methods such as safety nets, warning line systems, etc. as recommended by a qualified person.

## ***Working at Heights***

### **3.2 Supervisors**

- Ensure that workers have received proper training on fall hazard recognition, fall prevention measures, and the use of fall protection equipment.
- Ensure visual and documented inspections of fall protection equipment.
- Assure that provisions for prompt rescue of fallen employees are planned.
- Assure that fall protection equipment is used in compliance with this work instruction including manufacturer and regulatory requirements.

### **3.3 Employees**

- Identify fall hazards associated with their work and ensure that such hazards are properly addressed.
- Know the uses and limitations of fall protection equipment.
- Inspect fall protection equipment prior to each use and remove any defective equipment from service.
- Comply with this policy and the BP Golden Rule for Working at Heights.
- Remove from service any fall protection equipment subjected to a fall.
- Immediately report both injury and non-injury falls to supervision.

### **3.4 Competent Persons**

- Train the employees in:
  - a. The nature of fall hazards in the work area,
  - b. The correct procedures for using and erecting fall protection systems,
  - c. The proper use of guardrail systems, personal fall arrest systems, etc,
  - d. The correct procedures for handling and storing equipment.
- Maintain the written documentation of the training provided.
- Supervise the installation and use of third-party manufactured fall arrest systems.

## **4.0 Acronyms and Definitions**

**Acronyms Table**

Acronym	Definition
ANSI	American National Standards Institute
OSHA	Occupational Safety and Health Administration
PFAS	Personal Fall Arrest System
PIC	Person in Charge

## ***Working at Heights***

### Definitions Table

Term	Definition
Anchor Point	A secure point of attachment of lifelines, lanyards, or deceleration devices. Anchor points must be capable of supporting a static load of 5,000 pounds per person attached.
Carabiner	A D-shaped ring with a spring catch on one side, used for fastening ropes in climbing activities and mountaineering.
Competent Person	<p>A person who has demonstrated that they have the knowledge, training, and experience required to perform the defined role to the standard required. A competent person is capable of identifying existing and predictable hazards, soil types in the surroundings, or working conditions that are unsanitary, hazardous, or dangerous to personnel and has authority to take prompt corrective measures to eliminate them.</p> <p>For this chapter, the competent person is typically is a supervisor, lead hand, manager, or foreman who is more experienced in fall protection as it relates to the work than the authorized person and is in a position of authority. The competent person often times is implementing, supervising, and monitoring the requirements of their employer's fall protection program.</p>
Deceleration Device	Any mechanism such as a rope grab, self-retracting lifeline, or shock absorbing lanyard that serves to dissipate the force of the fall, which would otherwise be imposed on the employee.
Deceleration Distance	The vertical distance between the harness attachment point at the activation of the fall arrest equipment and that attachment point once the individual comes to a complete stop.
Lanyard	A flexible line made from synthetic fibers having connectors at each end for connecting the body harness to a deceleration device, lifeline, or anchor point.
Personal Fall Arrest System (PFAS)	An assembly of components and subsystems that comprises a system and is used to arrest a person in a free fall. This system always includes a full body harness and connecting means between the harness and an anchor or anchorage connector. Such connecting means may consist of a lanyard, energy absorber, fall arrester, lifeline, self-retracting, lanyard or suitable combinations of these means.
Program Administrator	The program administrator is responsible for the development, implementation, monitoring, and evaluation of the managed fall protection program. The program administrator need not be an exclusive designation. The same person may also function as a qualified person, competent person, competent person trainer, qualified person trainer or competent rescue trainer.
Qualified Person	<p>One familiar with the construction and operation of the equipment and the hazards involved and are permitted to work on or near exposed energized parts.</p> <p>For this chapter, the qualified person shall be responsible for supporting the fall protection program. Areas of expertise may include system design, horizontal lifeline design, structural analysis, calculation of impact forces and clearances,</p>

## **Working at Heights**

Term	Definition
	testing, anchorage certification, methods of control, equipment selection, and compliance with applicable regulations and standards. The qualified person's role is as a technical resource to all people involved in a fall protection program.
Safety Harness	The part of fall protection equipment which supports the body in the event of a fall.
Working Height	The distance from the worker's footing to the next lower working level or surface to which personnel can fall.

### **5.0 Procedure**

When employees work from an unprotected elevation of six feet or more, fall protection equipment shall be used. Working means while traveling, stationary, or at anytime exposed to a fall from a surface not protected by approved handrails, guardrails, or some other approved fall arrest or restraint device. The potential fall hazard distance is measured from the employee's feet to the walking and working surface below.

#### **5.1 Hierarchy of Fall Hazard Control**

Fall prevention planning should begin during the design phase whenever possible. Even when the design phase is complete, many engineering controls are still feasible. Fall hazard control measures should be initiated in the following order.

- A. Fall Elimination – Eliminate work at elevation by:
  - Performing work on the ground,
  - Attaching guardrail protection to forms and work platforms while on the ground,
  - Attaching fall arrest systems to formwork or other structural components before erection,
  - Using ground release devices to disconnect rigging from the ground, or
  - Maximizing the pre-assembly of formwork, structural steel, and other components.
  
- B. Design Safety and Engineering Controls
 

“Design-out or Engineer-out” fall hazards:

  - Review shop drawings and interface with fabricators and material suppliers to design safety features into the structure, material, or equipment to be used.
  - Maximize use of prefabricated modular units.
  - Add stairways and platforms that can be used for access both during construction and maintenance operations.
  - Design attachment points for guardrail systems, stanchions, or self-retracting lifelines that can be attached on the ground and provide protection for the first person to access the elevation.

## ***Working at Heights***

C. Fall Prevention

Prevent falls from elevation by using:

- Guardrail systems,
- Scaffolds,
- Aerial lifts,
- Skylight/scuttle guarding,
- Fall restraint, and
- Hole/Floor covers,

D. Fall Protection

Protect employees when they fall by the use of fall arrest systems.

- Fall protection systems/equipment used to arrest falling employees are the least desirable method of protection because:
  - a. They only minimize the consequences of a fall rather than prevent its occurrence, and
  - b. They rely on human behavior to prevent injury.
- The use of fall protection equipment, such as harnesses, lanyards, anchorage, retractable devices, etc. must be planned in the work activity and used properly to reduce the risk of injury from falling.

### **5.2 Fall Hazard Control**

Personnel shall be prevented from falling or protected by a fall arrest system whenever working six feet or more above a lower level. This requirement applies to unprotected sides/edges, leading edges, hoist areas, holes, and floor openings, formwork, and reinforcing steel, excavations, roofing work, pre-cast concrete erection, and other walking/working surfaces not otherwise addressed.

A. Methods of Fall Prevention and Protection

- Fall hazard control shall be provided in the form of fall prevention systems, which includes guardrail systems, scaffolds, aerial lifts, barricades, and hole covers.
- Fall protection measures include the use of personal fall arrest systems or similar means of fall protection. Emphasis should also be placed on providing protection from falling objects and from slips and trips on the same level.

B. Planning – Prior to each phase of work, site supervision is responsible for planning fall prevention and fall protection measures to protect employees from fall exposures. The planning effort includes:

- Identifying potential fall hazards,
- Using design safety to eliminate or engineer out fall exposure,
- Determining the appropriate method of protection,
- Supplying anchorage,
- Providing education, training, and enforcement, and
- Arranging for rescue and rescue equipment.

## ***Working at Heights***

### **5.3 Fall Prevention Methods**

Fall prevention is preferred over the use of fall protection devices. Fall prevention methods are described below.

- A. Proper Access – Providing safe access to and from work locations is the first step in preventing falls. This includes planning safe access/egress routes of travel and proper installation and use of:
- Ladders
  - Scaffolds,
  - Stair Towers,
  - Stairways,
  - Ramps,
  - Backfilling around footers, slabs, and other structures.
- B. Guardrail Protection – Work locations requiring guardrail protection include:
- Elevated work platforms such as formwork,
  - Scaffolds,
  - Openings/holes in decks, floors, roofs, and slabs,
  - Unprotected sides of ramps, stairs, platforms, roofs,
  - Leading edges,
  - Elevator shaft openings,
  - Ladderway, skylight, manhole, and trap door openings.

### **5.4 Fall Prevention System Requirements**

- A. Guardrail Systems
- Guardrail systems shall be so surfaced to prevent injury from punctures or lacerations and to prevent snagging of clothes.
  - The ends of top rails and mid-rails shall not overhang the terminal posts, except where such projection does not constitute a projection hazard.
  - Guardrail systems used around holes and horizontal wall openings shall be erected on *all* unprotected sides and edges of holes.
  - Guardrail systems used on ramps and runways shall be erected along each unprotected side or edge.
  - Guardrail systems shall be used around holes, which are points of access, such as ladderways. Every ladderway floor opening or platform shall be guarded by a standard guardrail system including toeboards on all exposed sides, except at the entrance to the opening. The passage through the railing shall either be provided with a swing gate or barrier or offset such that a person cannot walk directly into the opening.
  - Guardrail installation should occur as work progresses.
  - Plan inspections for damage and proper construction and immediately replace damaged guardrails.

## ***Working at Heights***

### Top-Rails

- a. Top-rail height must be 42 inches plus or minus 3 inches above the walking and/or working surface.
- b. Guardrail systems shall be capable of withstanding, without failure a force of 200 pounds applied within 2 inches of the top edge in any direction.
- c. When the 200 pounds is applied in a downward direction to the top edge of the guardrail, it shall not deflect to a height less than 39 inches above the walking or working level.

### Mid-Rails

- a. Mid-rails, screens, mesh, intermediate vertical members or equivalent intermediate structural members shall be installed between the top edge of the guardrail system and the walking/working and when there is no wall or parapet wall at least 21 inches high.
- b. Mid-rails when used shall be installed at a location midway between the top edge of the guardrail system and the walking or working level.
- c. Screens and mesh when used shall extend from the top-rail to the walking/working level and along the complete opening between top-rail supports.
- d. Mid-rails, screens, mesh intermediate vertical members or equivalent structural members shall be able to withstand a force of at least 150 pounds applied in any direction.
- e. Intermediate vertical members when used between posts shall not be more than 19 inches apart.

Toeboards – Falling object protection is provided by toeboards, or screens on guardrail systems. Toeboards shall be:

- a. Erected along the edge of the overhead walking/working surface for a distance sufficient to protect employees below
- b. Capable of withstanding, without failure, a force of 50 pounds applied in any direction.
- c. A minimum of 3½ inches in vertical height.
- d. No more than ¼ inch above the walking and/or working surface.
- e. Solid or have openings not more than 1 inch in greatest dimension
- f. Where tools, material, equipment are piled higher than the top edge of a toeboard, paneling or screening shall be erected from the walking/working surface to the top of the guardrail systems top or mid-rail for a distance sufficient to protect employees below.

### B. Covers for Opening and Holes

- All covers, including those covers located in roadways, shall be capable of supporting at least twice the weight of employees, equipment, and material that may be imposed on the cover at any one time.
- Covers shall be secured to prevent accidental displacement by cleating the

## ***Working at Heights***

underside, tying the cover to grating, or other means to prevent accidental displacement.

- Covers shall be color coded, or marked with the word “hole” or “cover”.
  - Identify openings and holes. Holes are defined as a gap or void 2 inches or more in at least one dimension in a floor, roof, or walking, and working surface
  - Install protection as soon as an opening is created.
  - Immediately replace covers, which have been removed or damaged.
  - Perform regular inspection and proper maintenance.
  - Use fall arrest equipment when working near unprotected openings.
- C. Elevated Equipment – Employees are required to be tied-off 100% of the time when operating:
- Aerial lifts and scissor lifts.
  - Crane suspended personnel work platforms. Use of this equipment is limited and governed by applicable regulations and should only be used as a last resort. Use of a crane suspended personnel work platform requires prior authorization by the Facility/Project Manager (or designee).
- D. Housekeeping
- Keep walking and working areas free of debris, material, and equipment.
  - Enforce daily clean up of work areas.
  - Provide a sufficient number of trash containers for clean up.

### **5.5 Fall Protection and Fall Arrest Systems**

- A. The primary function of a fall arrest system is to minimize the consequences of a fall rather than prevent its occurrence. Fall arrest systems provide complete and continuous fall protection while accessing and working at elevation.
- B. A complete fall arrest system includes the proper anchorage, body support (harness), and connecting device (lanyards/lifelines) interconnected and properly rigged to arrest a free fall.
- C. Fall arrest systems must be installed and used in accordance with the manufacturer’s recommendations and under the supervision of a Qualified Person.

### **5.6 Fall Protection Equipment Requirements**

- A. General Requirements
- Any equipment that is used as part of a fall protection system must be specifically designed for use as part of a fall protection system and must be used according to the manufacturer’s recommendations.
  - In hot-work operations or those involving chemicals or other factors that could cause damage, fall protection equipment must be designed and/or protected to avoid burning or deterioration.
  - All components of personal protection, i.e., harnesses, lanyards, anchorage, lifelines, and connectors must meet the manufacturer and local regulatory requirements.

## ***Working at Heights***

- B. Anchorage – Anchorage planning is the key to designing fall arrest systems. Anchorage requirements include:
- Strength – capable of supporting 5,000 pounds per employee or twice the anticipated force and designed by a Qualified Person.
  - Independence – anchorages must be independent of the work platform, guardrail system, or surfaces/structures supporting employees.
  - Location – anchorages should be located overhead to minimize free fall distance. Minimum height policy for most lanyard anchorage is shoulder level, and overhead anchorage locations for both retractable devices and rope grab lifelines. When anchorage is below shoulder level, a Qualified Person shall determine what changes if any need to be made to the fall arrest system such as shorter lanyards, additional shock absorbing capability, etc.
  - Sufficient fall clearance – calculate the total fall distance to ensure anchorage height is sufficient to prevent collision with the ground. Also, ensure lateral movement from fixed anchorage does not create a swing fall hazard.
  - Identification – anchorage points should be pre-planned and clearly identified to employees.
- C. Full-body Harness
- Full-body harnesses must also be worn and properly anchored when employees are working from aerial lifts, scissor lifts, suspended work platforms, suspended scaffolds, and similar equipment.
  - Full-body harnesses must fit and be worn properly with the straps tucked so as not to be caught on equipment or otherwise cause a hazard. Chest straps must be worn between the chest and collarbone and the rear D-ring being worn between the shoulder blades.
  - Body belts are not allowed for fall arrest.
- D. Snaphooks
- Only self-closing, self-locking snaphooks are allowed for fall protection use.
  - Snaphooks must open and close properly and be fully closed around their anchorage point.
  - Locking mechanisms shall be functionally checked before each use.
- E. Shock Absorbers (Deceleration Devices)
- Are a required component of an overall fall protection system and
  - Minimize loads experienced by anchorage and personnel.
- F. Lanyards
- Always use the shortest possible lanyard length.
  - Lanyards shall be anchored at a location to limit the free fall distance to no more than six feet.
  - Lanyards must be used with a shock absorber unless the fall distance is shortened enough to limit the fall force to 1,800 pounds.
  - Lanyards must be maintained free of knots.
  - No more than one employee may be attached to the same lanyard.
  - Dual or “Y” lanyards may be required to achieve 100% fall protection in some work

## Working at Heights

situations.

- When not in use, the lanyard must be secured in a fashion as to not cause a tripping hazard or become entangled in equipment.
- Flexible steel cable lanyards shall not be used by personnel performing work on or in close proximity to electrical equipment. A non-conductive lanyard must be used.

### G. Retractable Devices and Self-Retracting Lifelines

- Retractable devices are designed to arrest a fall within 2 feet.
- Locking mechanism must be tested before each use.
- Lifeline must be pulled out and inspected for cuts, fraying, or other signs of damage.
- Use taglines to make the device accessible from the ground.
- Taglines must be used to prevent the uncontrolled retraction of these devices.
- Retractable devices should only be attached to overhead anchorage.
- Retractable devices attached to fixed anchorage must be used with the wearer at less than a 45-degree angle from the device to reduce the hazards of a swing fall.
- Only retractable devices bearing current manufacturer's certification shall be used.

### H. Fall Distance

- A fall protection system must not allow for more than a six-foot free fall.
- The fall protection system must be used and secured in a fashion so that the user cannot contact the next lower level should a fall occur. This requires calculating a clearance distance that includes:
  - a. Free fall distance,
  - b. System elongation, e.g., vertical lifeline or in-line energy absorber,
  - c. Deceleration distance of shock absorbers,
  - d. Employee height,
  - e. Deflection in horizontal life line (HLL) system, and
  - f. A minimum safety factor of 2 feet.

## 5.7 Rescue

- A. The responsible supervisor must ensure that personnel can be promptly rescued or self-rescue themselves, should a fall occur.
- B. The availability of rescue personnel, aerial lifts, ladders, other rescue equipment or rescue services and response time should be evaluated prior to elevated work taking place.
- C. Workers should not be allowed to work alone in situations where personal fall protection is required.

## 5.8 Equipment Storage

- A. Fall protection equipment must be stored in a clean dry location away from exposure to abrasive materials, cutting tools, equipment or materials, excessive heat, direct sunlight, and chemicals.
- B. Full-body harnesses should be hung by the D-ring for storage.

## **Working at Heights**

### **5.9 Inspections**

- A. Fall protection equipment must be inspected by the user prior to each use.
- B. The relevant Site Manager shall ensure a program is in place for inspection of jobsite fall protection equipment by a competent person. Inspections must be conducted at least quarterly, although monthly inspections are preferable. Inspection results must be documented.
- C. Some types of fall protection equipment, such as self-retracting lifelines, require periodic re-certification by the manufacturer at scheduled intervals. The Competent Person must be familiar with these requirements and have a documented re-certification performed, as required.
- D. The Competent Person shall utilize the specific fall protection equipment manufacturer's inspection instructions and the following information to perform inspections.

- Inspection of Harnesses, Lanyards, and Lifelines – Inspections shall evaluate:

Harnesses	Lanyards and Lifelines
Stitching	Frayed/Broken Strands
Rivets	Burns
Buckles	Cuts
Buckle Tabs	Tears
“D” Rings	Snap Hooks
Rust and Abrasion	Connectors
Burns, Cuts, Tears	Corrosion

**Note: 5.9**

Equipment found to be defective must be immediately removed from service, tagged as defective and repaired, or destroyed and replaced.

- Inspection Markings  
 Fall protection equipment, which has been satisfactorily inspected, shall be marked and/or color-coded with vinyl tape or some other secure means to designate current inspection.  
  
 Care should be used not to cover any equipment feature/component vital to inspection or performance, such as stitching, grommets, adjusting mechanisms, labels, etc., with the tape or marking means.

## ***Working at Heights***

### **6.0 Training**

6.1 Fall arrest system training must include the proper use, care, and limitations of fall protection equipment prior to being allowed to use the equipment. A Competent Person must be designated to provide instruction.

Training must, at a minimum, address the following areas:

- A. BPWE Fall Working at Heights Procedure (or equivalent for contractors)
- B. BP Golden Rule for Working at Heights
- C. How to evaluate fall hazards
- D. Fall prevention measures
- E. Equipment use, care, and limitations
- F. Proper fitting and wearing of fall protection equipment
- G. Requirements and proper use of anchor points
- H. Inspection

6.2 All fall protection training must be documented. Documentation must be signed and dated by the employee and instructor and maintained in the employee's safety training record.

6.3 Retraining is required when previous training is rendered obsolete due to:

- A. Changes in the activity/workplace,
- B. Changes in the fall protection equipment/system, or
- C. A demonstrated improper use or misunderstanding of fall protection systems.

## Working at Heights

### 7.0 Attachment A

#### Fall Protection Inspection Guidance Document

To maintain their service life and high performance, all harnesses should be inspected frequently. Harnesses shall be visually inspected before each use and a routine inspection by a competent person should be performed yearly. If any of the conditions listed below are found the equipment should be replaced before being used.

##### **Harness Inspection**

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

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

Inspect frayed or broken strands. Broken webbing strands generally appear as tufts on the webbing surface. Any broken, cut or burnt stitches will be readily seen.

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

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

##### **Lanyard Inspection**

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

##### **Hardware**

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

## ***Working at Heights***

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

### **Lanyards**

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

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

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

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

### **Visual Indication of Damage to Webbing and Rope Lanyards**

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

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

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

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

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

### **Cleaning of Equipment**

Basic care for fall protection safety equipment will prolong and endure the life of the equipment and contribute

## ***Working at Heights***

toward the performance of its vital safety function. Proper storage and maintenance after use is as important as cleaning the equipment of dirt, corrosives or contaminants. The storage area should be clean, dry and free of exposure to fumes or corrosive elements.

Nylon and Polyester: Wipe off all surface dirt with a sponge dampened in plain water. Squeeze the sponge dry. Dip the sponge in a mild solution of water and commercial soap or detergent. Work up a thick lather with vigorous back and forth motions. Then wipe the belt dry with a clean cloth. Hang freely to dry, but away from excessive heat.

Drying: Harness, belts and other equipment should be dried thoroughly without exposure to heat, steam or long periods of sunlight.

## Working at Heights

### Document Control Details

<b>Document Name</b>		Working at Heights			
<b>Scope</b>		BP Wind Energy			
<b>Document #</b>		<b>HSSE 23.10.01</b>	<b>Issue Date</b>	9/27/2011	
<b>Revision Date</b>			<b>Next Review</b>	9/27/2014	
<b>Authority</b>		Pat West	COO BPWE	<b>Custodian</b> Dale Smith HSSE Manager Operations	
Rev#	Revision Date	Revision Detail		Authority	Custodian