

TAMPA ELECTRIC COMPANY ENERGY SUPPLY FALL PROTECTION PROGRAM

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OSHA FALL PROTECTION STANDARD 1926 Subpart M

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PURPOSE

The purpose of this program is to protect human life and prevent injuries by establishing a system of hazard assessment, personal protective equipment selection and use, and employee training as it relates to personal fall protection.

When performing tasks at elevations of 4' (four feet) or greater, preference should be given to the implementation of engineering controls or modifications, such as fixed platforms or installing guardrails which eliminate the fall hazards. Use of personal fall protection should be considered only when other options are not feasible.

INTRODUCTION

Tampa Electric is dedicated to providing a safe and healthful workplace for its employees. This program outlines employee education and training as well as requirements for the appropriate selection and use of personal fall protection.

This program contains the following elements:

- A procedure for selecting appropriate personal fall protection equipment based on hazards identified
- Employee education and training program related to the safe use of personal fall protection equipment
- Inspection and care of personal fall protection equipment
- Documentation / Recordkeeping / Employee training

ROLES AND RESPONSIBILITIES

Each Station Director is responsible for the implementation and maintenance of the Fall Protection Program.

The Joint Departmental Committee Safety Programs is responsible for reviewing, maintaining and revising this program as necessary. Responsibilities supporting this objective may be assigned to others as designated.

All personnel (employees, contractors, and visitors) are responsible for following the requirements of this program.

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EMPLOYEE TRAINING

Target Audience - Tampa Electric, Energy Supply employees, and other Tampa Electric employees that may perform work in Energy Supply Facilities at unprotected elevations of 4' or greater shall receive training in accordance with this program.

Frequency - Initial training shall be provided to each affected employee prior to the assignment of tasks requiring the use of fall protection systems or equipment.

Retraining shall be conducted whenever:

- Changes in the workplace render previous training obsolete
- Changes in the types of fall protection systems or equipment to be used renders the training obsolete
- Inadequacies in an affected employee's knowledge or use of fall protection systems or equipment indicate that the employee has not retained the requisite understanding or skills.

Methods – Training shall be accomplished through Computer-Based Training, by PowerPoint presentation with video, or other training materials determined adequate by the Safety and Health Department.

At a minimum, the content of the training shall include the details of the contents of this program.

EMPLOYEE TRAINING DOCUMENTATION

Tampa Electric Employees - All training will be documented electronically in Cority. Classroom training will require the attendees to sign a roster and that information will later be transferred into Cority. When Computer Based Training is used, the training may be documented in the separate CBT program database or transferred into Cority, where practical.

PROGRAM REQUIREMENTS

- Fall Protection is required any time an employee is working at unprotected elevations of 4' or greater, including exposed edges and unprotected floor openings.
- Fall protection shall be used when working from aerial boom style and/or scissors lifts.

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- Fall protection shall be used when working within six feet of unprotected sky lights.
- Fall protection shall be used when working from a steep roof or surface greater than 4 x 12 pitch (vertical to horizontal).
- Fall protection shall be used when working on top of rail cars, trucks or trailers.
- Installation of guardrails, or work from scaffolding shall be the first preference in affording passive fall protection whenever possible. Scaffolding shall be constructed in accordance with the [Energy Supply Scaffolding Program](#). Guardrails shall meet all requirements of [29 CFR 1926.502\(b\)](#).
- When work must take place from a straight, extension or fixed ladder, and the job requires the use of both hands, a personal fall arrest system shall be used. Personal fall protection is not required when using ladders solely for access (ascending and descending).
- All components of personal fall protection systems shall comply with [29 CFR 1926.502\(d\)](#).
- Body belts and chest harnesses are prohibited. Only full body harnesses may be used for personal fall protection.
- Only locking snap hooks and carabiners are permitted as components of Personal Fall Protection systems. Non-locking snap hooks and carabiners are prohibited.
- Snap hooks may not be connected to loops made in webbing-type lanyards. Snap hooks may not be connected to each other.
- Only retractable lanyards or lanyards equipped with shock absorbing devices may be used.
- Only company provided personal fall protection equipment may be used.
- Lifelines and anchor straps shall be protected against being cut or abraded.
- Anchorage points for positioning fall-arrest equipment shall be located above the full-body harness attachment point and rated to 5000 pounds. Structural members shall be utilized whenever possible.
- A competent person shall evaluate structural members prior to use as an anchor point with fall-arrest equipment. Structural Members that are questionable due to their size or condition shall be evaluated and approved by a licensed Professional Engineer or TECO civil-structural engineer prior to use.

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- Arc-Resistant rated personal fall arrest equipment shall be used by employees performing hot work.
- Personal fall-arrest systems shall be designed such that an employee can neither free-fall more than six feet nor contact any lower level.
- The potential for a swing-fall hazard shall be addressed in the design of each fall-arrest system. After calculating required fall clearance, the area within this distance should be examined for any obstructions and if necessary, modify the fall arrest system so that the obstruction is not in the fall clearance area.
- If vertical lifelines or droplines are used, not more than one employee may be attached to any one lifeline.
- Safety Harnesses shall be used when climbing fixed ladders equipped with a Ladder Safety Device.
- Fall restraint shall be used when working within six feet of a Leading Edge. This includes flat roofs that do not have a handrail.
- A Rope Grab system may be used while working on swing stage scaffolds.
- Suspension Trauma Straps shall be used when a fall will result with the worker being suspended.
- Modifications that alter functionality of the restraint system or defeat safety latches are prohibited.

EQUIPMENT INSPECTION

Inspection of personal fall arrest equipment is one of the most important steps before donning, because human life depends on the equipment working properly. Visual inspection on a frequent basis allows the user(s) to become familiar with the equipment's visual appearance. Inspecting for wear, damage and corrosion on personal fall protection equipment is a very small investment on an important resource, human life.

As a minimum, always follow the manufacturer's directions and recommendations for inspection requirements. ***All employees are required to inspect personal fall arrest equipment before and after each use. Any Fall Protection Equipment that is found to be defective or has been subject to a fall shall be immediately removed from service, destroyed and properly discarded.***

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Below are elements of the inspection program for components of a personal fall arrest system.

Full Body Harness

- While flexing the components into an inverted U, look for torn, frayed, or broken fibers, pulled stitches, frayed edges, cuts or chemical damage, and burn marks.
- Examine the D-ring for excessive wear, pitting, deterioration, deformation or cracks.
- Verify that buckles are not deformed or cracked and that they operate properly.
- Check that all grommets are present, secure and are not deformed.
- The harness should never have additional punched holes.
- All rivets should be tight and not deformed.
- Check the tongue straps for excessive wear from repeated buckling.
- Check all metal parts for corrosion.

Self-Retracting Lifeline / Lanyard (Pre-use check)

- Visually inspect the outer casing to ensure there is no physical damage.
- Ensure all nuts and rivets are tight.
- Ensure all cable ends are securely crimped and cable eye and rubber stops are in place.
- Ensure the entire length of the cable / nylon strap is undamaged and retracts freely.
- Test unit by pulling sharply on the cable / nylon strap to verify that the locking mechanism is operating correctly.
- If the unit has undergone a fall, or if visible damage is found, or if the load indicator label tag above the snap hook is visible, or if the housing pin is extended and fully visible, remove the unit from service, and do not allow its reuse.
- Inspect the snap hooks for corrosion or distortion of the hook, lock, and eye.

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- Inspect for -Tagged for service information assuring Annual Inspection

Lanyard (Pre- use check)

- Check lanyard material for cuts, burns, abrasions, kinks, knots, broken stitches.
- Inspect the snap hooks for corrosion or distortion of the hook, lock, and eye.
- Ensure that all locking mechanisms are of the safety latch style, seat and lock securely to prevent accidental opening.
- Verify that there is no visible warning tag which notifies the user that the lanyard has been exposed to a fall.
- Visually inspect shock absorber for any signs of damage, paying close attention to where the shock absorber attaches to the lanyard and sewn terminations are secure, complete and without damage.
- Verify that the point where the lanyard attaches to the snap hooks is free of defects.

Anchor Point Connectors

- Check carabiner for excessive wear, distortion, and lock operation.
- Inspect the snap hooks for distortion of the hook, lock, and eye.
- Verify there are no cracks, pitted surfaces or corrosion.
- The keeper latch should not be bent, distorted or obstructed.
- Verify that the keeper latch seats into the nose of the hook without binding.
- Verify that the keeper spring securely closes the keeper latch.
- Test the locking mechanism to verify that the keeper latch locks properly.

Anchorage Points

Prior to utilizing anchor points, an inspection shall be conducted to:

- Look for excessive wear, corrosion, cracking, sharp edges or deformity which could weaken the anchor point.
- Determine if there is evidence of misuse with the anchor point, such as the anchor point being used for rigging or lifting heavy loads.

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- Determine that the anchor point is rated for 5000 lbs.
- Determine that the anchor point is above the harness and within the approved angle to avoid a swing-fall hazard.

DONNING/DOFFING PROCEDURES

Donning Procedures (Putting on the harness)

- Grasp the harnesses by the back D-ring and shake it to allow all of the straps to untangle.
- If the waist and / or leg straps are buckled, release the straps and unbuckle them at this time.
- Before donning the harness, remove all contents of your pockets.
- If donning a vest-style harness, slip the straps over your shoulders so the Dee ring is located in the middle of your back.
- If the harness is equipped with a waist strap, connect the waist strap. It should be tight, but not binding.
- Pull the buckle portion of the leg strap between the legs and connect it to opposite end of leg strap. Repeat this process with the second leg strap. Some harnesses may require the procedure to be reversed. The buckle portion will be on the outside of the leg and the strap will be pulled between the legs.
- After all of the straps have been connected, tighten the buckles so the harness fits snugly, but allows a full range of movements. Inserting two fingers between the strapping and your body may be used as an indicator of proper fit.
- If the harness contains a chest strap, pull the chest strap around the shoulder strap and fasten it in the mid chest area. Tighten the chest strap to keep the shoulder straps in place.
- Strap keepers shall be used for all strap ends
- Assure straps that have been buckled have no twists

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Doffing Procedures (Removing the harness)

- To remove the harness, reverse the procedures listed above.

CLEANING AND STORAGE

- Storage areas should be clean, dry, and free of exposure to fumes or corrosive elements.
- Washing in soapy water works best for nylon and polyester. After washing, rinse the equipment in fresh water. Do not dry clean or use solvents on synthetic material, as this can affect the structure and integrity of the equipment.
- Wipe off surface dirt with a sponge dampened in plain water. Squeeze the sponge dry. Dip the sponge in a solution of water and mild soap or detergent. Work up a thick lather, with a vigorous back and forth motion. Then wipe the equipment dry with a clean cloth. Hang freely to air dry. Keep away from excessive heat or direct sunlight. Belts and other equipment should be allowed to dry thoroughly in a cool area away from heat sources, steam and UV light.
- When not in use, the harness should be stored hanging by the back D ring. This allows the harness to retain its original shape.
- The equipment should be stored in a cool dry place until needed.

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APPENDIX A – GLOSSARY

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Anchorage - a secure point of attachment for lifelines, lanyards, or deceleration device.

Anchorage Connectors - a device which is used to couple (connect) the connecting device to the anchorage point.

Connecting Device - means a flexible line used to secure a full body harness to a lifeline or directly to a point of anchorage.

Deceleration Device - any mechanism which serves to dissipate energy during a fall.

Deceleration Distance - the additional vertical distance a falling employee travels, excluding lifeline elongation, before stopping, from the point at which the deceleration device begins to operate. It is measured as the distance between the location of an employee's full body harness attachment point just prior to activation of the deceleration device during a fall, and the location of that attachment point after the employee comes to a full stop.

Free Fall - the act of falling, before the personal fall protection system begins to arrest the fall

Free Fall Distance - the vertical distance an employee falls before the fall arresting system begins to arrest the fall.

Full Body Harness - a design of straps which is secured about the employee in a manner to distribute the arresting forces over at least the thighs, shoulders, and pelvis, with provisions for attaching a lanyard, lifeline, or deceleration device.

Ladder Safety Device - a device, other than a cage or well, designed to prevent accidental falls from ladders, or to limit the length of such falls. A ladder safety device usually consists of a carrier, safety sleeve, and body belt or harness.

Lanyard - means a flexible line used to secure a full body harness to a lifeline or directly to a point of anchorage.

Leading Edge - means the edge of a floor, roof, or formwork for a floor or other walking/working surface (such as the deck) which changes location as additional floor, roof, decking, or formwork sections are placed, formed, or constructed.

Lifeline - a line provided for direct or indirect attachment to a worker's harness, lanyard, or deceleration device. Such lifelines may be horizontal or vertical in application.

Personal Fall Arrest System - a system used to capture an employee in a fall. It consists of an anchorage and connecting device and body wear.

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Retractable Lifeline - an automatic tensioning line that pays out and retracts a line at a certain speed and locks or brakes when the speed is exceeded. Also known as a connecting device.

Rope Grab - a device which attaches to a lifeline as an anchoring point that provides a means of arresting a fall.

Self-Retracting Lifeline/Lanyard - a deceleration device which contains a drum-wound line which may be slowly extracted from, or retracted onto, the drum under slight tension during normal employee movement, and which, after onset of a fall, automatically locks the drum and arrests the fall.

Shock-absorbing Lanyards - specially designed shock-absorbing lanyard that elongates during a fall to significantly reduce fall arresting forces. Shock absorbers are a component of a personal fall arrest system which allows dissipation of energy by extending the deceleration distance and reducing fall arrest forces.

Snap-Hook - A self-closing device with a keeper, latch or other similar arrangement which will remain closed until manually opened.

Suspension Trauma Straps – device that allows a personal fall protection user to stand up in harness to relieve pressure applied to top of legs in the event of a fall.

Swing Fall Hazard - hazard created by a pendulum effect in which a fallen worker can swing back and forth into a nearby surface, such as a wall or protruding beam

Total Fall Distance - the maximum vertical distance between the worker's full body harness attachment point and the lowest extremity of their body before and after the fall is arrested including shock-absorbing lanyard extension and/or deceleration distance.